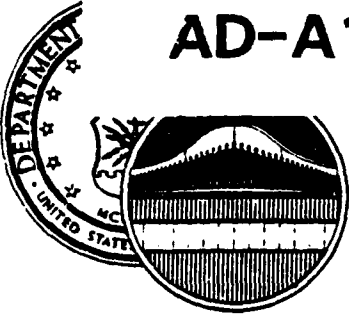


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UNITED STATES AIR FORCE

EPI REPORT

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ELECTRONIC PRINCIPLES INVENTORY
KEESLER TECHNICAL TRAINING CENTER
AFPT 90-EPI-490
APRIL 1984

OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150

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TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE.....	iii
SUMMARY OF RESULTS.....	iv
INTRODUCTION.....	1
History.....	1
Survey Administration.....	2
PRESENTATION OF RESULTS.....	5
5-Skill Level Use of Electronics Principles.....	8
5- AND 7-SKILL LEVEL DIFFERENCES.....	11
DISCUSSION.....	16
APPENDIX.....	17

PREFACE

This report presents the results of an Air Force Electronics Principles Survey of those specialties for which electronics training is provided at Keesler Technical Training Center, Keesler AFB, Mississippi. Authority for conducting electronics principles surveys is contained in AFR 35-2.

The survey instrument used to collect data from career ladder incumbents was the Electronics Principles Inventory (EPI). This survey instrument was originally developed by Dr. Hendrick W. Ruck and Major Thomas J. O'Connor in 1976. It was revised and updated in 1979 by Mr. James L. Slovak and Captain Frederick B. Bower, Jr. Mr. Slovak further refined and updated the instrument in 1981.

Second Lieutenant Mary Thomasson analyzed the data and wrote the final report. Computer support was provided by Ms. Olga Velez. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Analysis Branch, USAF Occupational Measurement Center, Randolph AFB, Texas 78150.

Copies of this report are available to Air Staff sections, major commands, and other training and management personnel. Requests for additional copies should be addressed to the USAF Occupational Measurement Center, attention of the Chief, Occupational Analysis Branch (OMY), Randolph AFB, Texas 78150.

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SUMMARY OF RESULTS

1. Survey Coverage: The Electronics Principles Inventory (EPI) was administered to 3,447 5- and 7-skill level members across Air Force samples of 12 specialties which receive electronics fundamentals training at Keesler Technical Training Center.

2. Five-Skill Level Use of Electronics Principles: Thirty percent or more of 5-skill level personnel in 10 of the 12 AFSCs studied answered "yes" to 96 questions, indicating they used 18 categories of electronics principles. Personnel in two AFSCs (20550 and 30750) reflected less use of electronics principles.

3. Five- and Seven-Skill Level Differences: Large differences between 5- and 7-skill level use of electronics principles were found in only 4 of the 12 specialties studied (304X0, 304X1, 305X4, and 328X2). The largest differences were found in AFS 328X2.

4. Discussion: Personnel in the 205X0 and 307X0 specialties use fewer electronics principles than the others, which may indicate the need for a different type or degree of training for personnel in these specialties. Data are provided to assist in reviewing the electronics principles requirements for all 12 specialties.

Electronics Principles Inventory Keesler Technical Training Center

INTRODUCTION

The USAF Occupational Measurement Center provides specialty task data to training personnel in the form of occupational survey reports (OSR) and training extracts. Such data are presented in task statements which are quantified according to percent members performing, relative time spent, task difficulty, and training emphasis. This task statement data provides a precise picture of the kinds of functions personnel in a specific AFS actually perform at a specific point in time. When properly applied, OSR data can be a powerful tool in the design of training content.

Generally speaking, OSR task statements are sometimes difficult to translate directly into knowledge requirements. This is especially true of tasks which require some degree of electronics knowledge. Prior to development of the Electronics Principles Inventory, training managers and command representatives had to rely on subjective judgments to arrive at the kinds of knowledge required to perform electronics-oriented tasks. A need for more objective criteria for determining the amount of electronics knowledge necessary to perform Air Force jobs resulted in the development of a new type of USAF job inventory, called the Electronics Principles Inventory.

The EPI is a knowledge-based job inventory which identifies the range of electronics principles personnel must understand to perform any electronics-oriented job. Training managers can use EPI data in conjunction with OSR data to determine precisely what specialists do and what electronics principles they employ on the job. By using EPI and OSR data in this manner, training managers satisfy one of the most important aspects of the Instructional Systems Development (ISD) process: determine what specialists do on the job before developing a course to train individuals to perform the job.

History

In 1974, the initial request to develop a method of determining electronics fundamentals used on the job was made by Major General Charles G. Cleveland, Deputy Chief of Staff, Technical Training, Air Training Command. At the time, General Cleveland needed some means of accurately measuring how much electronics fundamentals training was actually used on the job. He envisioned using EPI data to streamline training by eliminating "nice-to-know" information in the area of electronics security.

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At the General's request, Dr. Walter E. Driskill, Chief of the Occupational Analysis Branch, set up a task force to conceptualize, develop, and apply a method for measuring job usage of electronics principles. The task force was composed of personnel from the Occupational Analysis Branch who were well qualified in theoretical physics and electronics. These personnel also had considerable expertise in task analysis and survey development. With assistance by these individuals, electronics experts from 5 ATC Technical Training Centers, averaging 12 years maintenance experience and 4 years of electronics principles instruction experience, spent 3 weeks working on the development of the EPI. This tentative EPI then was reviewed and refined by over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFSC, as well as personnel at the Electronics Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory. The resulting EPI contained 1,257 items under 62 subject-matter areas covering all electronics principles training given at the 5 ATC Technical Training Centers.

During 1977, this EPI was administered to more than 11,000 airmen in 54 different Air Force specialties. Since the aim of the EPI was to determine the extent electronics fundamentals were actually used in the performance of Air Force jobs, the logical person to survey was one at the worker level with sufficient time on the job to understand all that it entailed. Consequently, only 5-skill level personnel with more than 18 months active duty service were surveyed. Results from this project were used extensively by the various training managers to refine their respective plans of instruction.

This original EPI was revised in 1978 and 1979 to more accurately reflect some of the computer-oriented and various other electronics principles. The revision was accomplished by Mr. James L. Slovak, Inventory Development Specialist, and Captain Frederick Bower, Occupational Analyst, after consultation with electronics principles instructors at each of the technical training centers. Mr. Slovak conducted a further revision of the EPI in 1981, following additional consultation with electronics principles experts. Following this extensive review, the EPI was reprinted in its current format, which includes 1,366 items.

Survey Administration

The electronics principles inventory was administered to 5- and 7- skill level personnel in those specialties for which electronics training is provided at Keesler AFB. These AFSs included:

205X0	Electronics Intelligence Operations
304X0	Wideband Communications Equipment
304X1	Navigation Aids Equipment
304X4	Ground Radio Communication
305X4	Electronics Computer and Switching Systems
307X0	Telecommunications Systems Control
328X0	Avionic Communications
328X1	Avionic Navigation Systems

- 328X2 Airborne Warning and Control Radar
- 328X3 Electronics Warfare Systems
- 328X4 Avionic Inertial and Radar Navigation Systems
- 328X5 Airborne Command Post Communication Equipment

Inventories were administered to a stratified random sample of career ladder incumbents. In each specialty surveyed, booklets were sent to selected career ladder incumbents randomly selected across the 5- and 7-skill levels. No more than 500 booklets were administered to any given specialty. Table 1 shows the specialty representation of the sample. The inventories were administered between December 1982 and July 1983.

The EPI booklet differs from the usual task-oriented survey in two major respects. First, the EPI asks two general questions: "What do you do," and "What electronics knowledge do you use in performing your job?" The second difference is the EPI can be administered to anyone who works with electronics. That is, it is general in nature, unlike the usual job inventory, which is aimed at a single specialty.

TABLE 1
SPECIALTY REPRESENTATION IN KEESLER EPI SAMPLE

<u>AFSC</u>	<u>TOTAL 5- AND 7- SKILL LEVEL ASSIGNED</u>	<u>DESIRED SAMPLE*</u>	<u>FINAL SAMPLE</u>	<u>PERCENT OF ASSIGNED IN SAMPLE</u>	<u>PERCENT OF DESIRED IN SAMPLE**</u>
205X0	477	463	281	59%	61%
304X0	2,066	500	305	15%	61%
304X1	932	500	320	34%	64%
304X4	3,377	500	310	9%	62%
305X4	2,156	500	291	13%	58%
307X0	1,487	500	318	21%	64%
328X0	1,567	500	332	21%	66%
328X1	1,745	500	335	19%	67%
328X2	205	179	105	51%	87%
328X3	2,013	500	340	17%	68%
328X4	987	500	331	34%	66%
328X5	300	289	168	56%	58%

* For large specialties, a maximum of 500 cases was selected. Larger percentages of small population specialties were selected to ensure their representation in the final sample.

** A minimum acceptable level of 50 percent of desired sample was used as a cutoff for closing field administration.

PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,366 electronics principles questions as related to their present job. Table 2 shows the specific areas covered in the inventory. Task Factor Print Program (FCPRTS) computer printouts are presented in the Appendix, beginning on page 2. The printouts display the percentage of personnel in each AFSC group who responded "yes" to each question asked in the EPI.

In accordance with ATC Regulation 52-22, electronics principles used by at least 50 percent or more 5-skill level personnel should be considered for inclusion in a basic residence course. Principles used by at least 30, but less than 50 percent, may be considered for inclusion in formal training, although not necessarily in a resident course.

The journeyman job (5-skill level) is the most appropriate target for making training decisions. Five-skill level personnel have been on the job a sufficient amount of time to know what electronics principles are used. Also, unlike 7-skill level personnel, they are still in technical jobs rather than supervisory positions.

In the following sections, electronics principles used by 5-skill level personnel are discussed. To examine what changes occur between the two skill levels, 7-skill level data were collected. The results of a comparison between 5- and 7-skill level personnel are discussed in the 5- and 7-skill level difference section.

TABLE 2
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREAS TITLE</u>	<u>BEGINNING ITEM NUMBER</u>
1	MATHEMATICS	A1
2	DIRECT CURRENT	A12
3	RESISTORS/RESISTIVE CIRCUIT	A25
4	METER/MULTIMETER	B60
5	ALTERNATING CURRENT	B68
6	INDUCTORS/INDUCTIVE REACTANCE	B75
7	CAPACITORS/CAPACITIVE REACTANCE	C97
8	TRANSFORMERS	C126
9	MAGNETISM	C168
10	RCL CIRCUITS	D180
11	TIME CONSTANTS	D226
12	FILTERS	D233
13	COUPLING	E249
14	SOLDERING/SOLDERLESS CONNECTIONS	E263
15	RELAYS	E277
16	MICROPHONES AND SENSING DEVICES	F295
17	SPEAKERS	F309
18	OSCILLOSCOPES	F324
19	SEMICONDUCTOR DIODES	G342
20	TRANSISTORS	G383
21	TRANSISTOR AMPLIFIERS	G407
22	SOLID-STATE SPECIAL-PURPOSE DEVICES	H453
23	POWER SUPPLIES	H467
24	OSCILLATORS	H498
25	MULTIVIBRATORS	I529
26	LIMITERS AND CLAMPERS	I540
27	ELECTRON TUBES	I550
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J589
29	SPECIAL-PURPOSE ELECTRON TUBES	J596
30	HETERODYNING AND MODULATION- DEMULATION	J611
31	AM SYSTEMS	K618
32	FM SYSTEMS	K638
33	NUMBERING SYSTEMS	K660
34	LOGIC FUNCTIONS	L685
35	BOOLEAN EQUATIONS	L718
36	COUNTERS	L730
37	TIMING CIRCUITS	L752
38	USE OF SIGNAL GENERATORS	M764
39	MOTORS AND GENERATORS	M778
40	METER MOVEMENTS	N809

TABLE 2 (CONTINUED)
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREAS TITLE</u>	<u>ITEM NUMBER</u>
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N821
42	WAVESHAPING CIRCUITS	N833
43	SINGLE OR INDEPENDENT SIDEBAND SYSTEMS	O854
44	PULSE MODULATION SYSTEMS	O884
45	ANTENNAS	O924
46	TRANSMISSION LINES	P969
47	WAVEGUIDES AND CAVITY RESONATORS	P1000
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1044
49	REGISTERS	Q1121
50	STORAGE DEVICES	Q1128
51	DIGITAL TO ANALOG AND ANALOG TO DIGITAL CONVERTERS	Q1155
52	PHANTASTRONS	Q1177
53	SCHMITT TRIGGERS	Q1183
54	CABLE FABRICATION	R1186
55	INPUT/OUTPUT (PERIPHERAL) DEVICES	S1188
56	PHOTO SENSITIVE DEVICES	S1202
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1207
58	INFRARED SYSTEMS	T1216
59	LASERS	T1244
60	DISPLAY TUBES	T1278
61	TELEVISION	T1294
62	COMPUTERS, MICROPROCESSORS, AND PROGRAMMING	U1304
63	DB AND POWER RATIOS	U1361

5-Skill Level Use of Electronics Principles

Beginning on page 1 of the Appendix, the survey data for 5-skill level members are presented. The data reflects the percent answering "yes" to each question; that is, percent using each referenced principle. While training personnel should study the appendix data in detail, this section presents the highlights of that data.

When looking at the data, note that the 20550 and 30750 personnel do not use the electronics principles included in the inventory to the same extent as the other AFSCs. Examples of these differences can be seen in Table 3. This may indicate the need for a different type or degree of training for personnel in these specialties.

Thirty percent or more 5-skill level personnel in all AFSCs (except the 20550 and 30750) answered "yes" to 96 questions in the electronics principles survey. These 96 questions generally fell into 1 of 18 categories of electronics principles related to the following:

- mathematics
- direct current
- resistors/resistive circuits
- meters/multimeters
- alternating current
- capacitors/capacitive reactance
- transformers
- RCL circuits
- filters
- soldering/solderless connections
- relays
- oscilloscopes
- transistors
- solid-state special-purpose devices
- power supplies
- oscillators
- heterodyning and modulation-demodulation
- meter movements

Note that these 18 categories cover a wide range of electronics principles, indicating career ladder members typically need a large amount of formal training in electronics principles. Yet, the above list does not exhaust training needs. When considering each AFSC separately, many more categories are included. In fact, the only categories that have less than 30 percent of the personnel responding "yes" in all AFSCs are:

- synchronous vibrations (chopper circuits)
- infrared systems
- lasers
- display tubes
- television

This suggests that electronics principles relating to these categories should not be included in a formal training course. The data also indicate some principles are appropriate for a common electronics principles course and some should be included only in the SETS portion of a course. For example, personnel in AFSCs 30554 and 32852 are using principles related to computers, microprocessors, and programming to a greater extent than the other specialties (see page 68 of the Appendix). This suggests that these principles could be more effectively taught in the SETS portion of the 30554 and 32852 courses, rather than the common electronics principles course.

TABLE 3

EXAMPLES OF PRINCIPLES WHICH DIFFERENTIATE PERSONNEL IN AFSCs 20550 AND 30750 FROM OTHERS
(PERCENT MEMBERS USING)

PRINCIPLES	TOTAL* SAMPLE	DAFSC 20550	DAFSC 30750
DO YOU INSPECT RESISTORS?	78	0	8
DO YOU ADJUST RESISTORS?	78	0	10
DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY POTENTIOMETER?	80	1	19
DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES?	83	2	20
DO YOU WORK WITH CAPACITORS IN AC CIRCUITS?	72	3	8
DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC?	71	3	8
DO YOU SOLDER CONNECTIONS?	80	0	16
DO YOU DESOLDER CONNECTIONS?	80	0	17
DO YOU INSPECT POWER SUPPLIES?	75	1	11
DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES?	77	1	9

* Represents average of personnel in AFSCs except 20550 and 30750

5- AND 7-SKILL LEVEL DIFFERENCES

To determine if variations occur between 5- and 7-skill level jobs, 7-skill level data were also examined.

Differences between the 5- and 7-skill level groups are reflected in the listings of tasks in Tables 4 through 7. The comparison of 5- and 7-skill level groups showed the differences were important in only four specialties. In general, differences were found in tasks performed by 5-skill level personnel to a greater extent than 7-skill level personnel. As seen in Tables 4 and 6, 30450 and 30554 airmen perform more principles related to power supplies and soldered connections than 30470 and 30574 personnel. Table 7 reveals the largest differences between the 5- and 7-skill level personnel are in AFS 328X2.

Although 7-skill level airmen still use electronics principles, very few were being performed to a greater extent by 7-skill level than 5-skill level personnel. Usually, 7-skill level personnel are responsible for supervisory and management tasks which were not included in the Electronics Principles Inventory.

TABLE 4

PRINCIPLES WHICH BEST DIFFERENTIATE 304X0 5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS USING)

PRINCIPLES			DAFSC 30450 (N=182)	DAFSC 30470 (N=123)	DIFFERENCE
H469	H2-3	DO YOU CLEAN POWER SUPPLIES?	78	52	+26
E283	E3-7	DO YOU REMOVE OR REPLACE RELAYS?	73	49	+24
E264	E2-2	DO YOU SOLDER CONNECTIONS?	84	60	+24
E265	E2-3	DO YOU DESOLDER CONNECTIONS?	84	60	+24
H470	H2-4	DO YOU ALIGN OR ADJUST POWER SUPPLIES?	82	59	+23
H468	H2-2	DO YOU INSPECT POWER SUPPLIES?	82	59	+23
E267	E2-5	DO YOU INSPECT SOLDERED CONNECTIONS?	83	60	+23
E271	E2-9	DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS?	81	59	+22
E272	E2-10	DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS?	80	58	+22
E269	E2-7	DO YOU MAKE HARDWIRE CONNECTIONS?	80	58	+22
C128	C2-3	DO YOU CLEAN TRANSFORMERS?	63	41	+22
E268	E2-6	DO YOU CLEAN OR TIN CONNECTIONS?	82	60	+22
H474	H2-8	DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS?	70	49	+22
H473	H2-7	DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES?	78	57	+21
E263	E2-1	IN YOUR PRESENT JOB, DO YOU CONNECT ELECTRONICS CIRCUITS USING SOLDERLESS CONNECTIONS OR SOLDERING TECHNIQUES?	82	61	+21
F327	F3-4	DO YOU TROUBLESHOOT ELECTRONICS CIRCUITS USING OSCILLOSCOPES?	80	59	+21
H472	H2-6	DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS?	70	50	+20
E270	E2-8	DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS?	79	59	+20

TABLE 5

PRINCIPLES WHICH BEST DIFFERENTIATE 304X1 5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS USING)

PRINCIPLES			DAFSC 30451 (N=199)	DAFSC 30471 (N=122)	DIFFERENCE
D242	D3-10	DO YOU WORK WITH BAND-REJECT FILTERS?	73	47	+27
E275	E2-13	DO YOU PERFORM CRIMPING IN LIEU OF SOLDERING?	68	43	+25
F340	F3-17	DO YOU USE OSCILLOSCOPES TO OBSERVE PHASE RELATIONSHIPS?	79	55	+24
B91	B3-17	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC (ALTERNATING CURRENT) INDUCTOR CIRCUITS?	54	30	+24
A39	A3-15	DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE?	40	16	+24
D241	D3-9	DO YOU WORK WITH BANDPASS FILTERS?	87	64	+23
D245	D3-13	DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS?	72	49	+23
A33	A3-9	DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY SIDE TAP?	79	57	+22
D240	D3-8	DO YOU WORK WITH HIGH PASS FILTERS?	82	61	+22
E263	E2-1	IN YOUR PRESENT JOB, DO YOU CONNECT ELECTRONICS CIRCUITS USING SOLDERLESS CONNECTIONS OR SOLDERING TECHNIQUES?	82	61	+22
D239	D3-7	DO YOU WORK WITH LOW PASS FILTERS?	84	62	+22
G407	G3-1	DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB?	74	52	+21
E269	E2-7	DO YOU MAKE HARDWIRE CONNECTIONS?	79	58	+21
G349	G1-8	DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONICS COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE?	80	59	+21
G348	G1-7	DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES?	71	50	+21
D233	D3-1	DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB?	84	63	+21
H497	H2-31	DO YOU WORK WITH SOLID-STATE POWER SUPPLY REGULATOR CIRCUITS?	84	63	+21

TABLE 6

PRINCIPLES WHICH BEST DIFFERENTIATE 305X4 5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS USING)

PRINCIPLES			DAFSC 30554 (N=156)	DAFSC 30574 (N=136)	DIFFERENCE
H469	H2-3	DO YOU CLEAN POWER SUPPLIES?	76	46	+30
Q1149	Q2-22	DO YOU CLEAN STORAGE DEVICES?	72	44	+28
E268	E2-6	DO YOU CLEAN OR TIN CONNECTIONS?	78	51	+27
E264	E2-2	DO YOU SOLDER CONNECTIONS?	80	54	+26
E265	E2-3	DO YOU DESOLDER CONNECTIONS?	80	54	+26
E267	E2-5	DO YOU INSPECT SOLDERED CONNECTIONS?	80	54	+26
G348	G1-7	DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES?	59	33	+26
H473	H2-7	DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES?	79	54	+25
G356	G1-15	DO YOU DETERMINE DIRECTION OF CURRENT THROUGH A DIODE?	76	51	+25
I536	I1-8	DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS?	69	43	+25
A28	A3-4	DO YOU ADJUST RESISTORS?	79	54	+25
A35	A3-11	DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY POTENTIOMETER?	84	60	+24
G383	G2-1	DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB?	80	56	+24
I535	I1-7	DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS?	65	41	+24
A25	A3-1	DO YOU WORK WITH RESISTORS OR RESISTIVE CIRCUITS IN YOUR PRESENT JOB?	79	55	+24
C97	C1-1	DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB?	79	55	+24
B71	B2-4	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM WAVELENGTH IN YOUR PRESENT JOB?	59	35	+24
H470	H2-4	DO YOU ALIGN OR ADJUST POWER SUPPLIES?	79	56	+24
A29	A3-5	DO YOU MEASURE RESISTORS	80	57	+24

TABLE 7

PRINCIPLES WHICH BEST DIFFERENTIATE 328X2 5- AND 7-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS USING)

PRINCIPLES			DAFSC 32852 (N=63)	DAFSC 32872 (N=43)	DIFFERENCE
P1048	P3-5	DO YOU USE OR REFER TO RADIO FREQUENCY (RF) LOSSES IN EXTERNAL CIRCUITRY FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	49	9	+40
B62	B1-3	DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE CURRENT?	70	35	+35
P1065	P3-22	DO YOU REMOVE OR REPLACE COMPLETE KLYSTRONS OR TWTs	60	26	+35
P1011	P2-12	DO YOU REMOVE OR INSTALL OTHER BENDS?	48	14	+34
F333	F3-10	DO YOU USE OSCILLOSCOPES TO MEASURE ALTERNATING CURRENT (AC) VOLTAGES	59	26	+33
P1008	P2-9	DO YOU REMOVE OR INSTALL DUMMY LOADS	56	23	+32
P1002	P2-3	DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS?	51	19	+32
P1004	P2-5	DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	57	26	+32
P1007	P2-8	DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS?	57	26	+32
P1014	P2-15	DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS?	52	21	+31
P1005	P2-6	DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS?	59	26	+30
H482	H2-16	DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS	56	26	+30
0932	03-9	DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS?	54	28	+29
D189	D1-10	DO YOU USE OR REFER TO AVERAGE POWER (P SUB AVE) WHEN WORKING WITH RCL CIRCUITS?	48	19	+29
P981	P1-13	DO YOU TROUBLESHOOT TRANSMISSION LINES?	48	19	+29
P1006	P2-7	DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES?	48	19	+29
B63	B1-4	DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE POWER?	73	44	+29
P1010	P2-11	DO YOU REMOVE OR INSTALL H BENDS?	38	9	+29

DISCUSSION

This review of Electronics Principles for AFSs trained at Keesler AFB showed personnel in the 205X0 and 307X0 specialties do not use the electronics principles included in the inventory to the same extent as do the others. This may indicate the need for a different type of training for personnel in these specialties. An analysis of electronics principles used by each AFSC will be addressed in AFSC-specific occupational survey reports as they are accomplished.

The data provided in this report should be useful in reviewing both the common electronics principles training requirements for specialties trained at Keesler, as well as which AFSCs need additional electronics principles training. If additional computer products would be useful, please contact USAFOMC/OMYX, Randolph AFB, Texas 78150.

APPENDIX A

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

KEESLER EPI CAREER LADDERS, ELECTRONIC PRINCIPLES INVENTORY (EPI) DATA ARE PRESENTED BELOW EACH DUTY TITLE. DATA FOR THIS PRINTOUT WERE COLLECTED FROM CAREER LADDER INCUMBENTS DURING THE PERIOD DECEMBER 1982 THROUGH JULY 1983.

USE OF EPI PRINTOUT: THE PERCENT OF VARIOUS CAREER LADDER GROUPS RESPONDING TO EPI QUESTIONS IS LISTED TO THE RIGHT OF EACH EPI ITEM. THUS, THE APPROPRIATE SAMPLE CRITERION GROUPS CAN BE IDENTIFIED WITH THE COLUMN HEADINGS AT THE TOP RIGHT OF EACH PRINTOUT PAGE. THEN THE PERCENT OF THAT GROUP USING THE CONCEPT OR PIECE OF EQUIPMENT CAN BE IDENTIFIED.

USE OF EPI DATA: THESE DATA MAY BE USED IN HELPING TO IDENTIFY, DELINEATE, AND VALIDATE ELECTRONIC PRINCIPLES ITEMS IN THE STS. CRITERIA LISTED IN ATRC 52-22 FOR ABR TRAINING MAY BE USEFUL IN HELPING DEVELOP ENTRY-LEVEL ELECTRONIC PRINCIPLE COURSES. ALSO, CDC WRITERS MAY USE EPI DATA TO HELP DETERMINE AREAS TO EMPHASIZE IN 5- AND 7-SKILL LEVEL CDS, CONSISTENT WITH STS CODES.

FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/OMYO, AUTOVON 487-5811.

VECTOR TYPE CODES:

- (T) = 3 TIME SPENT BY ALL MEMBERS
- (M) = 4 MEMBERS PERFORMING
- (F) = TASK FACTOR
- (D) = DICHOTOMOUS SET
- (B) = 3 TIME SPENT BY MEMBERS PERFORMING
- (-) = PROGRAM GENERATED VECTOR

NO	TYPE	VECTOR	MEAN	SD	DESCRIPTION	FACTOR #
1	M	304 50	182		DAFSC 30450 AIRMEN	31
2	M	304 51	199		DAFSC 30451 AIRMEN	33
3	M	304 54	184		DAFSC 30454 AIRMEN	35
4	M	305 54	156		DAFSC 30554 AIRMEN	37
5	M	328 50	190		DAFSC 32850 AIRMEN	41
6	M	328 51	196		DAFSC 32851 AIRMEN	43
7	M	328 52	63		DAFSC 32852 AIRMEN	45
8	M	328 53	199		DAFSC 32853 AIRMEN	47
9	M	328 54	168		DAFSC 32854 AIRMEN	49
10	M	328 55	81		DAFSC 32855 AIRMEN	51

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USE OF EPI DATA: THESE DATA MAY BE USED IN HELPING TO IDENTIFY, DELINEATE, AND VALIDATE ELECTRONIC PRINCIPLES ITEMS IN THE STS. CRITERIA LISTED IN ATCR 52-22 FOR ABR TRAINING MAY BE USEFUL IN HELPING DEVELOP ENTRY-LEVEL ELECTRONIC PRINCIPLE COURSES. ALSO, CDC WRITERS MAY USE EPI DATA TO HELP DETERMINE AREAS TO EMPHASIZE IN 5- AND 7-SKILL LEVEL CDS, CONSISTENT WITH STS CODES.

FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/OMYO, AUTOVON 487-5811.

D TSK	TITLES	304 (M)	304 (M)	305 (M)	304 (M)	304 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
		50	54	54	50	51	52	53	54	55			

A MATHEMATICS (A1), DIRECT CURRENT (A2), RESISTANCE AND RESISTIVE CIRCUITS (A3)

A 1	AI-1 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METER OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10?	81.9	88.9	73.9	83.3	71.1	88.8	73.0	88.9	76.2	85.2		
A 2	AI-2 DO YOU USE PUBLICATIONS, SUCH AS 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?	51.6	63.8	51.1	48.7	47.9	59.7	60.3	55.3	34.5	53.1		
A 3	AI-3 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS?	50.5	75.9	57.1	35.9	36.8	48.0	60.3	43.7	38.1	45.7		
A 4	AI-4 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY?	23.1	36.7	24.5	7.7	7.9	14.3	9.5	8.5	14.9	11.1		
A 5	AI-5 DO YOU SOLVE FOR UNKNOWN QUANTITIES SUCH AS SOLVING FOR X IN THE EQUATION $x + 6 = 8$?	39.6	59.3	41.8	22.4	20.0	35.7	31.7	27.1	23.8	22.2		
A 6	AI-6 DO YOU USE LOGARITHM TABLES?	34.6	24.6	16.3	2.6	5.8	14.8	33.2	12.1	11.3	9.9		
A 7	AI-7 DO YOU SOLVE QUADRATIC EQUATIONS SUCH AS SOLVING FOR X IN THE EQUATION $x^2 + 4x + 4 = 0$?	12.6	25.1	8.7	3.8	5.3	8.7	4.8	6.0	8.9	6.2		
A 8	AI-8 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES?	13.7	55.8	11.4	7.7	3.2	11.2	12.7	9.0	30.4	4.9		
A 9	AI-9 DO YOU USE TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT?	13.7	37.7	13.0	8.3	6.3	19.4	57.1	11.6	47.0	4.9		
A 10	AI-10 DO YOU SOLVE OR USE PROPORTIONS? AN EXAMPLE OF A PROPORTION IS 2 : 5 :: 4 : 10. ANOTHER WAY TO EXPRESS THE SAME RELATIONSHIP IS 2/5 = 4/10. SOMETIMES, ONE OF THE QUANTITIES IS UNKNOWN AND HAS TO BE SOLVED FOR, SUCH AS 2 : X :: 4 : 10 (X IN THIS CASE IS UNKNOWN).	34.1	66.3	42.9	21.8	28.4	36.2	28.6	27.6	17.9	27.2		
A 11	AI-11 DO YOU USE MATHEMATICAL EXPONENTS OR SUBSCRIPTS IN OTHER THAN POWERS OF 10?	35.7	50.3	29.3	47.4	24.2	38.8	79.4	39.2	32.1	23.5		
A 12	AZ-1 DO YOU USE (PERHAPS IN TECHNICAL ORDERS) THE TERM VOLTAGE OR VOLT (V)?	95.1	96.5	93.5	96.8	97.4	96.9	100.0	98.5	97.0	100.0		

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 4

O TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
A 29	A3-5 DO YOU MEASURE PLISTORS?	85.2	86.9	79.3	80.1	77.4	82.1	50.8	68.3	65.5	84.0
A 30	A3-6 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASK YOU PERFORM?	22.0	37.2	28.8	16.7	25.8	31.6	22.2	22.6	19.6	21.0
A 31	A3-7 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY CAREON?	55.5	65.8	67.4	53.2	54.2	58.7	14.3	41.7	40.5	60.5
A 32	A3-8 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED WIRE?	65.9	77.9	72.8	62.2	64.2	67.3	33.3	57.3	48.2	77.8
A 33	A3-9 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY SLIDE TAP?	52.7	79.4	54.3	46.2	47.9	45.4	11.1	39.2	29.9	72.8
A 34	A3-10 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY RHEOSTAT?	62.7	80.4	69.6	64.7	68.9	73.0	34.9	65.8	45.8	79.0
A 35	A3-11 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY POTENTIOMETER?	82.4	92.0	81.0	84.0	76.3	83.2	58.7	81.4	69.0	88.9
A 36	A3-12 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED FILM?	33.0	43.7	33.7	25.6	22.1	32.1	4.8	21.6	19.6	33.3
A 37	A3-13 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE?	44.1	88.9	79.9	73.7	72.1	80.1	22.2	69.8	57.1	82.7
A 38	A3-14 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE?	75.3	85.4	74.5	66.0	60.0	71.9	19.0	56.3	49.4	77.8
A 39	A3-15 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE?	31.9	40.2	29.9	28.2	27.4	26.5	7.9	20.6	19.6	40.7
A 40	A3-16 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES?	87.4	91.0	82.1	85.9	80.5	86.2	73.0	83.4	69.6	91.4
A 41	A3-17 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	67.6	80.4	71.2	53.8	58.9	62.8	11.3	50.8	47.6	60.5
A 42	A3-18 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	65.4	78.9	67.4	50.0	51.1	60.2	34.9	48.7	39.3	51.9
A 43	A3-19 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	62.1	79.9	67.9	55.1	53.2	61.2	36.5	55.3	45.2	61.7

304	304	304	305	328	328	328	328	328	328	328
50	51	54	54	50	51	52	53	54	55	(M)

D TSK TITLES

- A 58 A3-34 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?
- A 59 A3-35 DO YOU CALCULATE POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?

B METERS/MULTIMETERS (B1), ALTERNATING CURRENT (AC) (B2), INDUCTORS AND INDUCTIVE REACTANCE (B3)

- B 60 B1-1 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE RESISTANCE?
- B 61 B1-2 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE VOLTAGE?
- B 62 B1-3 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE CURRENT?
- B 63 B1-4 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE POWER?
- B 64 B1-5 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE FREQUENCY?
- B 65 B1-6 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE TEMPERATURE?
- B 66 B1-7 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE PRESSURE?
- B 67 B1-8 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE LIGHT LEVELS?
- B 68 B2-1 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM EFFECTIVE VOLTAGE (RMS) IN YOUR PRESENT JOB?

Q TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
B 69	82-2 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PEAK TO PEAK VOLTAGE IN YOUR PRESENT JOB?	83.5	93.0	84.2	79.5	72.6	82.7	74.6	82.4	73.2	93.0	93.0	93.0	93.0
B 70	82-3 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM AVERAGE VOLTAGE (DC) IN YOUR PRESENT JOB?	73.1	85.9	75.0	66.7	68.9	84.2	57.1	73.4	71.4	74.1	74.1	74.1	74.1
B 71	82-4 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM WAVE LENGTH IN YOUR PRESENT JOB?	60.4	83.4	57.6	59.0	60.0	68.9	69.8	57.3	53.0	70.4	70.4	70.4	70.4
B 72	82-5 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM FREQUENCY IN YOUR PRESENT JOB?	85.2	92.5	89.7	85.9	82.6	90.3	88.9	93.5	81.0	96.3	96.3	96.3	96.3
B 73	82-6 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM INSTANTANEOUS VALUE IN YOUR PRESENT JOB?	28.0	35.7	24.5	13.5	16.3	33.7	23.8	27.1	16.1	17.3	17.3	17.3	17.3
B 74	82-7 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PHASE RELATIONSHIPS IN YOUR PRESENT JOB?	59.3	89.9	61.4	69.9	60.0	81.6	81.0	67.3	62.5	81.5	81.5	81.5	81.5
B 75	83-1 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKO COILS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C1-1; IF YES, CONTINUE.	53.8	71.4	66.3	44.9	60.0	66.3	15.9	41.7	30.1	65.4	65.4	65.4	65.4
B 76	83-2 DO YOU INSPECT INDUCTORS?	57.7	74.4	71.7	44.2	59.5	67.3	9.5	44.7	33.9	67.9	67.9	67.9	67.9
B 77	83-3 DO YOU CLEAN INDUCTORS?	42.9	63.3	64.7	31.4	54.7	58.7	6.3	31.7	23.2	49.4	49.4	49.4	49.4
B 78	83-4 DO YOU ADJUST INDUCTORS?	47.8	70.9	67.4	28.2	61.1	68.4	7.9	33.7	25.0	66.7	66.7	66.7	66.7
B 79	83-5 DO YOU MEASURE INDUCTORS?	44.0	52.8	50.5	32.7	45.3	50.0	9.5	30.7	23.8	50.6	50.6	50.6	50.6
B 80	83-6 DO YOU USE OR REFER TO INDUCTANCE?	59.3	76.9	70.1	38.5	57.9	66.3	11.1	42.7	29.8	67.9	67.9	67.9	67.9
B 81	83-7 DO YOU USE OR REFER TO HENRIES?	44.5	61.3	60.9	27.6	37.9	48.0	7.9	29.6	18.5	45.7	45.7	45.7	45.7
B 82	83-8 DO YOU USE OR REFER TO INDUCTIVE REACTANCE?	47.3	60.3	53.3	26.3	37.4	48.5	12.7	28.6	22.0	48.1	48.1	48.1	48.1
B 83	83-9 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS?	2.2	12.1	14.7	3.2	5.3	9.7	.0	8.5	5.4	4.9	4.9	4.9	4.9
B 84	83-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS?	6.0	13.6	16.8	9.0	5.8	7.7	1.6	7.5	6.0	3.7	3.7	3.7	3.7
B 85	83-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS?	2.8	10.1	13.6	4.5	5.8	8.7	.0	5.0	4.8	7.4	7.4	7.4	7.4
B 86	83-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL?	17.0	25.6	16.0	9.6	15.8	17.9	7.9	9.0	9.5	12.3	12.3	12.3	12.3

D YSM	TITLES	304	304	304	304	304	304	304	304	304	304	304	304	304	304	304	304	304	304	304	
B 87	B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CROSS INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE?	11.5	20.6	16.3	9.6	10.5	12.2	9.8	7.5	8.9	7.4	11.5	20.6	16.3	9.6	10.5	12.2	9.8	7.5	8.9	7.4
B 88	B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH?	12.1	22.6	14.7	7.1	11.6	14.3	3.2	9.0	7.7	12.3	12.1	22.6	14.7	7.1	11.6	14.3	3.2	9.0	7.7	12.3
B 89	B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE PERMEABILITY OF THE CORE MATERIAL?	11.5	22.6	16.8	7.1	11.1	13.8	3.2	10.1	7.7	7.8	11.5	22.6	16.8	7.1	11.1	13.8	3.2	10.1	7.7	7.8
B 90	B3-16 DO YOU CALCULATE INDUCTANCE IN ELECTRICAL/ELECTRONIC CIRCUITS?	14.3	30.2	20.7	10.3	15.8	18.4	9.5	11.1	6.5	16.0	14.3	30.2	20.7	10.3	15.8	18.4	9.5	11.1	6.5	16.0
B 91	B3-17 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS?	22.6	54.3	41.3	17.3	30.0	39.8	11.1	22.1	17.9	25.9	22.6	54.3	41.3	17.3	30.0	39.8	11.1	22.1	17.9	25.9
B 92	B3-18 DO YOU CALCULATE INDUCTIVE REACTANCE?	17.6	34.2	25.0	14.1	17.9	21.4	6.3	12.6	6.5	16.0	17.6	34.2	25.0	14.1	17.9	21.4	6.3	12.6	6.5	16.0
B 93	B3-19 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY?	29.1	42.2	39.7	13.5	24.7	30.1	7.9	19.1	10.1	25.9	29.1	42.2	39.7	13.5	24.7	30.1	7.9	19.1	10.1	25.9
B 94	B3-20 DO YOU WORK WITH POWER INDUCTORS?	34.1	53.8	44.0	30.1	36.8	44.9	11.1	22.1	21.4	44.4	34.1	53.8	44.0	30.1	36.8	44.9	11.1	22.1	21.4	44.4
B 95	B3-21 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS?	46.7	60.3	69.6	14.7	55.8	56.1	4.8	20.6	23.4	58.0	46.7	60.3	69.6	14.7	55.8	56.1	4.8	20.6	23.4	58.0
B 96	B3-22 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS?	51.6	70.9	71.2	7.1	57.9	65.8	12.7	40.2	17.3	64.2	51.6	70.9	71.2	7.1	57.9	65.8	12.7	40.2	17.3	64.2

C CAPACITORS AND CAPACITIVE REACTANCE (C1), TRANSFORMERS (C2), MAGNETISM (C3)

C 97	C1-1 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C2-1; IF YES, CONTINUE.	79.1	86.4	81.0	78.8	68.9	78.6	38.1	66.8	62.5	89.0	79.1	86.4	81.0	78.8	68.9	78.6	38.1	66.8	62.5	89.0
C 98	C1-2 DO YOU INSPECT CAPACITORS?	76.9	83.4	78.3	75.0	66.3	74.5	25.4	62.8	60.1	76.5	76.9	83.4	78.3	75.0	66.3	74.5	25.4	62.8	60.1	76.5
C 99	C1-3 DO YOU CLEAN CAPACITORS?	66.5	72.4	67.4	53.8	57.9	65.8	9.5	44.2	43.5	58.0	66.5	72.4	67.4	53.8	57.9	65.8	9.5	44.2	43.5	58.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTOI PAGE 9

D TSK	TITLES	304 (M)	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
C 100	CI-4 DO YOU ADJUST CAPACITORS?	72.0	82.4	75.0	40.4	65.8	69.4	12.7	39.7	37.5	70.4			
C 101	CI-5 DO YOU TEST CAPACITORS?	72.5	76.4	69.0	63.5	59.5	70.9	12.7	48.2	52.4	69.1			
C 102	CI-6 DO YOU DISCHARGE CAPACITORS?	72.6	81.4	72.8	64.1	51.6	74.0	25.4	49.2	44.0	56.8			
C 103	CI-7 DO YOU MEASURE CAPACITORS?	52.7	60.8	56.0	51.9	41.1	58.7	12.7	42.2	39.9	54.3			
C 104	CI-8 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE?	15.9	24.6	20.7	9.0	16.8	15.3	9.5	21.1	10.1	13.6			
C 105	CI-9 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC?	5.5	11.1	4.9	1.9	3.2	7.1	6.3	4.5	1.8	4.9			
C 106	CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS?	74.7	86.9	78.8	69.9	61.6	69.9	23.6	58.3	46.4	70.4			
C 107	CI-11 DO YOU USE OR REFER TO CAPACITANCE?	77.5	85.9	77.2	67.9	65.8	74.0	28.6	58.3	53.6	77.8			
C 108	CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT?	26.9	28.1	26.1	12.2	17.9	24.5	11.1	16.1	10.1	14.8			
C 109	CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS?	61.5	72.4	66.3	46.2	42.6	49.5	15.9	37.2	31.5	54.3			
C 110	CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE?	46.7	59.3	45.7	31.4	34.7	42.3	15.9	30.7	19.6	44.4			
C 111	CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES?	28.0	43.2	33.2	24.4	29.5	34.7	4.8	19.6	13.7	25.9			
C 112	CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS?	82.4	87.9	80.4	80.1	67.4	78.6	41.3	67.3	65.5	85.2			
C 113	CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS?	80.2	85.9	79.9	69.2	69.5	78.6	44.4	66.3	63.1	84.0			
C 114	CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC?	79.1	84.4	81.0	66.0	69.5	77.6	39.7	63.8	64.9	82.7			
C 115	CI-19 DO YOU CALCULATE CAPACITANCE IN ELECTRICAL/ELECTRONIC CIRCUITS?	19.8	37.7	23.4	16.0	17.9	25.5	9.5	17.1	11.9	18.5			
C 116	CI-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT?	14.8	24.6	23.9	9.6	14.2	18.9	4.8	11.6	6.0	13.6			
C 117	CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS?	13.7	23.6	21.7	8.3	13.7	15.8	4.8	8.0	5.4	17.3			
C 118	CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO	45.1	62.3	49.5	28.8	32.6	44.4	12.7	33.2	32.1	45.7			

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPI01 PAGE 11

D TSN	TITLES	304 (M)	304 (M)	305 (M)	320 (M)	320 (M)	320 (M)	320 (M)	328 (M)	328 (M)	328 (M)	328 (M)	55 (M)
C 141	C2-16 DO YOU WORK WITH SATURABLE CORE TRANSFORMERS?	25.3	43.7	45.7	14.7	33.7	39.8	6.3	23.6	17.3	24.7	24.7	
C 142	C2-17 DO YOU WORK WITH SENSING TRANSFORMERS?	20.3	39.2	20.1	15.4	17.4	24.0	4.8	14.6	14.9	16.0	16.0	
C 143	C2-18 DO YOU WORK WITH CONTROL TRANSFORMERS?	23.6	48.7	25.5	17.3	23.2	48.5	7.9	21.1	43.5	23.5	23.5	
C 144	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE?	62.6	75.4	69.0	48.1	55.3	70.4	19.0	43.2	41.7	63.0	63.0	
C 145	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE?	58.2	70.9	66.8	46.2	54.2	67.9	19.0	38.7	40.5	58.0	58.0	
C 146	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES?	59.3	68.3	58.7	46.2	47.9	64.8	20.6	38.7	39.7	56.8	56.8	
C 147	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO?	25.8	29.6	22.8	19.2	23.7	25.5	4.8	15.6	13.1	19.8	19.8	
C 148	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO?	42.3	50.3	42.9	27.6	35.8	39.3	7.9	30.2	19.0	39.5	39.5	
C 149	C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS?	76.9	86.4	77.7	59.0	66.3	76.0	38.1	54.3	53.0	71.6	71.6	
C 150	C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS?	61.5	79.4	72.8	46.8	60.0	70.4	17.5	47.7	39.9	67.9	67.9	
C 151	C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	65.9	78.4	71.7	48.1	63.2	71.4	19.0	46.7	42.9	67.9	67.9	
C 152	C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	70.9	83.4	76.1	53.8	63.2	74.5	20.6	49.2	45.8	72.8	72.8	
C 153	C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	38.5	51.8	53.8	17.9	35.8	42.3	9.5	28.6	19.0	46.9	46.9	
C 154	C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	45.6	53.8	56.0	19.9	40.0	48.0	11.1	36.7	26.2	51.9	51.9	
C 155	C2-30 DO YOU REFER TO VARIABLE TRANSFORMER SCHEMATIC SYMBOLS?	56.6	71.4	63.6	25.6	54.7	62.8	6.3	38.2	33.9	60.5	60.5	
C 156	C2-31 DO YOU REFER TO COMBINATIONS OF SCHEMATIC SYMBOLS FOR TRANSFORMERS?	58.2	70.4	65.8	35.3	51.1	66.3	20.6	38.7	38.7	66.7	66.7	

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
C 157	C2-32 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS?	37.4	61.3	47.8	26.9	40.0	56.1	11.1	30.2	23.2	34.6							
C 158	C2-33 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH?	21.4	34.7	35.3	11.5	22.1	20.4	7.9	15.6	7.7	21.0							
C 159	C2-34 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO?	23.6	32.2	29.3	14.7	18.4	20.9	1.6	21.6	11.3	21.0							
C 160	C2-35 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS?	40.1	60.3	53.3	28.2	28.9	40.3	12.7	29.1	20.2	32.1							
C 161	C2-36 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	14.3	22.6	18.5	7.1	12.1	15.8	1.6	14.1	6.5	16.0							
C 162	C2-37 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	9.2	18.1	13.0	4.5	8.9	12.8	1.6	9.0	5.4	8.6							
C 163	C2-38 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS?	31.9	63.8	22.3	24.4	43.2	33.2	41.3	38.2	27.4	66.7							
C 164	C2-39 DO YOU INSPECT THREE PHASE TRANSFORMERS?	27.5	60.3	20.1	25.6	40.5	32.1	34.9	18.7	23.2	58.0							
C 165	C2-40 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS?	22.0	45.7	14.1	17.3	28.4	24.0	17.5	22.6	10.7	32.1							
C 166	C2-41 DO YOU ADJUST THREE PHASE TRANSFORMERS?	14.8	27.1	9.2	9.6	18.4	24.0	4.8	15.6	5.4	28.4							
C 167	C2-42 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS?	22.5	53.8	14.7	20.5	31.6	28.1	33.3	33.2	17.9	58.0							
C 168	C3-1 DO YOU USE OR REFER TO PERMANENT MAGNETS?	37.9	23.1	33.2	27.6	21.1	54.6	17.5	39.2	26.2	21.0							
C 169	C3-2 DO YOU USE OR REFER TO TEMPORARY MAGNETS?	20.3	24.1	29.3	23.1	15.3	29.1	9.5	15.6	17.9	21.0							
C 170	C3-3 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS?	8.8	10.1	19.0	17.9	2.6	10.2	4.8	10.6	10.1	3.7							
C 171	C3-4 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS?	9.3	11.1	14.7	12.8	3.2	7.7	4.8	9.5	8.3	3.7							
C 172	C3-5 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS?	12.6	13.1	19.6	17.3	4.7	12.8	4.8	13.6	8.9	4.9							
C 173	C3-6 DO YOU USE OR REFER TO RESIDUAL MAGNETISM?	12.6	13.6	26.1	29.5	6.8	16.3	6.3	10.6	11.9	4.9							
C 174	C3-7 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX?	33.0	29.1	33.7	37.8	15.8	33.2	19.0	25.1	26.8	13.6							

D TSM	TITLES	204 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
D 190	DI-11 DO YOU USE OR REFER TO APPARENT POWER (P SUB A) WHEN WORKING WITH RCL CIRCUITS?	15.9	25.1	17.9	5.0	14.7	17.3	7.9	14.1	11.3	12.3	12.3	12.3
D 191	DI-12 DO YOU USE OR REFER TO POWER FACTOR (PFI) WHEN WORKING WITH RCL CIRCUITS?	17.0	33.7	18.5	7.7	14.7	23.0	9.5	15.6	10.7	12.3	12.3	12.3
D 192	DI-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS?	51.1	73.4	62.0	21.0	44.7	57.7	22.2	36.2	27.4	54.3	54.3	54.3
D 193	DI-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS?	57.7	78.4	69.6	17.3	52.1	70.4	44.4	44.7	33.9	65.4	65.4	65.4
D 194	DI-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS?	51.1	72.4	65.0	7.7	51.6	66.3	19.0	39.2	14.9	50.6	50.6	50.6
D 195	DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS?	52.2	76.4	63.6	20.5	44.7	63.8	31.7	39.7	28.0	61.7	61.7	61.7
D 196	DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS?	44.0	66.3	24.5	9.0	19.5	63.8	28.6	36.7	13.1	34.6	34.6	34.6
D 197	DI-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS?	52.2	69.8	55.4	10.3	40.5	61.2	36.5	37.7	27.9	54.3	54.3	54.3
D 198	DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS?	32.4	65.3	37.0	3.0	18.9	40.3	11.1	19.1	6.5	19.8	19.8	19.8
D 199	DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS?	54.4	78.4	60.9	29.5	48.4	63.3	7.9	39.2	23.8	58.0	58.0	58.0
D 200	DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS SUCH AS: SINE OF ANGLE = OPPOSITE SIDE/HYPOTENUSE?	6.0	18.6	5.4	3.2	3.2	7.7	9.5	4.0	23.0	4.9	4.9	4.9
D 201	DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS?	9.9	29.6	9.2	6.4	4.2	7.7	7.9	5.0	4.8	4.9	4.9	4.9
D 202	DI-23 DO YOU USE OR REFER TO TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS?	31.3	40.2	27.2	12.0	16.8	23.5	12.7	14.1	11.9	24.7	24.7	24.7
D 203	DI-24 DO YOU USE OR REFER TO PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS?	13.2	26.1	11.4	5.1	12.6	15.0	7.9	9.5	7.1	14.8	14.8	14.8
D 204	DI-25 DO YOU USE OR REFER TO TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS?	34.6	45.7	30.4	12.0	18.4	24.0	9.5	16.1	9.5	27.2	27.2	27.2

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328
0 205	01-26 DO YOU USE OR REFER TO IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS?	11.0	22.1	8.7	3.2	8.9	10.2	3.2	7.0	6.0	6.0	6.0	6.2
0 206	01-27 DO YOU USE OR REFER TO APPARENT POWER (P SUB A) FOR SERIES RCL CIRCUITS?	12.1	17.1	14.1	5.8	10.5	14.8	4.8	7.5	5.4	8.6	8.6	8.6
0 207	01-28 DO YOU USE OR REFER TO TRUE POWER (P SUB T) FOR SERIES RCL CIRCUITS?	22.0	33.2	20.7	5.8	12.6	23.0	9.5	12.1	6.5	13.6	13.6	13.6
0 208	01-29 DO YOU USE OR REFER TO POWER FACTORS (PF) FOR SERIES RCL CIRCUITS?	14.3	23.1	16.3	5.1	10.5	19.4	6.3	11.1	6.0	8.6	8.6	8.6
0 209	01-30 DO YOU USE OR REFER TO TOTAL CURRENT FOR PARALLEL RCL CIRCUITS?	33.5	46.7	27.2	13.5	20.5	32.1	9.5	16.1	12.5	25.9	25.9	25.9
0 210	01-31 DO YOU USE OR REFER TO IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS?	10.4	18.6	7.6	1.9	9.5	8.7	6.3	8.0	4.8	8.6	8.6	8.6
0 211	01-32 DO YOU USE THE ASSUMED VOLTAGE METHOD FOR DETERMINING TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS?	11.0	25.1	14.1	6.4	8.9	9.7	4.8	9.0	4.2	8.6	8.6	8.6
0 212	01-33 DO YOU USE OHM'S LAW FOR DETERMINING TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS?	38.5	55.8	33.2	17.9	22.6	31.1	12.7	20.6	16.1	30.9	30.9	30.9
0 213	01-34 DO YOU CHECK CAPACITORS USING OHMMETERS?	54.9	69.8	65.2	38.5	46.8	65.8	19.0	37.7	36.9	59.3	59.3	59.3
0 214	01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION?	38.5	47.7	44.0	27.6	40.0	55.1	3.2	23.1	23.8	49.4	49.4	49.4
0 215	01-36 DO YOU CHECK INDUCTORS USING OHMMETERS?	50.5	67.3	58.2	28.8	44.7	59.7	15.9	32.2	26.8	55.6	55.6	55.6
0 216	01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION?	34.1	42.7	40.8	21.8	37.9	52.0	1.6	21.1	20.2	50.6	50.6	50.6
0 217	01-38 DO YOU CHECK RESISTORS USING OHMMETERS?	64.3	78.4	67.9	39.7	53.2	69.4	31.7	45.2	41.1	66.7	66.7	66.7
0 218	01-39 DO YOU CHECK RESISTORS USING SUBSTITUTION?	33.0	42.7	36.4	23.7	35.3	46.9	4.8	23.1	22.6	44.4	44.4	44.4
0 219	01-40 DO YOU USE OR REFER TO THE RULE THAT PHASE ANGLE (THETA) = 0, POWER FACTOR (PF) = 1, AND APPARENT POWER (P SUB A) = TRUE POWER (P SUB T) FOR RESONANT CIRCUITS?	6.0	18.6	8.7	1.9	5.3	7.7	3.2	5.5	4.2	2.5	2.5	2.5
0 220	01-41 DO YOU USE OR REFER TO RESONANT FREQUENCIES FOR RCL CIRCUITS?	47.8	65.3	51.6	14.1	37.4	50.5	19.0	30.7	20.2	45.7	45.7	45.7
0 221	01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS?	34.6	57.8	42.9	9.0	32.6	36.7	11.1	21.1	16.1	28.4	28.4	28.4

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328
D 222	01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS?	31.9	49.7	36.4	7.7	30.0	30.6	9.5	17.6	13.7	17.3	17.3	17.3	17.3	17.3
D 223	01-44 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 OF THE PEAK CURRENT VALUE?	37.4	58.3	31.0	11.5	20.5	56.1	19.0	33.2	17.3	30.9	30.9	30.9	30.9	30.9
D 224	01-45 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO THE QUALITY OF THE COIL (Q)?	19.8	44.2	23.4	3.8	16.3	23.5	7.9	15.6	8.9	12.3	12.3	12.3	12.3	12.3
D 225	01-46 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS?	24.2	41.2	22.3	7.7	18.9	28.1	12.7	15.1	11.9	25.9	25.9	25.9	25.9	25.9
D 226	02-1 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS? IF NO, GO TO ITEM 02-1. IF YES, CONTINUE.	25.3	50.3	26.6	19.9	14.7	35.7	12.7	19.6	12.5	23.5	23.5	23.5	23.5	23.5
D 227	02-2 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)?	18.7	40.2	20.1	13.5	10.0	19.4	4.8	11.1	7.1	13.6	13.6	13.6	13.6	13.6
D 228	02-3 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS?	11.0	23.1	11.4	6.4	5.3	15.0	3.2	7.5	2.4	11.1	11.1	11.1	11.1	11.1
D 229	02-4 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS?	12.6	29.6	13.0	5.1	7.4	14.8	6.3	7.0	3.0	9.9	9.9	9.9	9.9	9.9
D 230	02-5 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?	13.2	26.1	14.7	6.4	7.4	15.3	3.2	8.0	1.8	12.3	12.3	12.3	12.3	12.3
D 231	02-6 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES?	11.5	22.6	10.3	7.7	7.9	14.3	4.8	6.5	2.4	9.9	9.9	9.9	9.9	9.9
D 232	02-7 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?	12.1	26.6	16.8	7.7	8.4	10.7	1.6	9.5	1.8	11.1	11.1	11.1	11.1	11.1

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 17

D TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
D 233	D3-1 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM E1-1; IF YES, CONTINUE.	69.2	83.9	75.5	44.2	68.9	71.9	73.0	61.3	47.0	79.0	
D 234	D3-2 DO YOU INSPECT FILTER CIRCUITS?	62.1	71.4	70.7	40.4	61.6	68.9	33.3	50.8	39.1	67.9	
D 235	D3-3 DO YOU CLEAN FILTER CIRCUITS?	56.0	65.3	60.9	32.1	51.1	56.6	14.3	33.2	25.0	51.9	
D 236	D3-4 DO YOU ALIGN OR ADJUST FILTER CIRCUITS?	55.5	68.8	65.2	23.7	54.7	60.2	11.1	34.7	24.4	58.0	
D 237	D3-5 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL?	62.1	67.8	67.9	34.0	58.9	65.8	42.9	45.2	33.3	69.1	
D 238	D3-6 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS?	55.5	65.3	64.1	35.3	55.3	60.2	22.2	37.2	28.0	55.6	
D 239	D3-7 DO YOU WORK WITH LOW PASS FILTERS?	68.7	83.9	71.2	32.7	61.6	70.4	42.9	51.8	36.9	72.8	
D 240	D3-8 DO YOU WORK WITH HIGH PASS FILTERS?	68.1	82.4	67.9	27.6	57.9	69.9	42.9	50.3	36.3	71.6	
D 241	D3-9 DO YOU WORK WITH BANDPASS FILTERS?	69.8	86.9	75.5	17.9	66.3	71.4	65.1	58.8	32.1	60.2	
D 242	D3-10 DO YOU WORK WITH BAND-REJECT FILTERS?	62.6	73.4	57.6	12.8	45.8	58.2	34.9	47.2	19.6	63.0	
D 243	D3-11 DO YOU WORK WITH FILTERS BUT DON'T REMEMBER WHICH TYPE?	7.7	10.6	11.4	10.3	15.8	16.8	6.3	6.5	10.1	22.2	
D 244	D3-12 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS?	61.5	67.8	64.1	21.2	51.1	61.7	12.7	37.7	21.4	53.1	
D 245	D3-13 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS?	61.5	71.9	60.9	21.2	49.5	59.7	7.9	36.2	21.4	51.9	
D 246	D3-14 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS?	59.3	65.8	61.4	16.0	51.1	61.7	6.3	37.7	18.5	43.2	
D 247	D3-15 DO YOU WORK WITH YTTRIUM IRON GARNET (YIG) FILTERS?	3.3	4.5	2.7	.6	6.8	3.1	1.6	39.7	1.8	9.9	
D 248	D3-16 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS?	12.6	24.6	15.2	8.3	11.1	14.8	3.2	8.0	1.8	8.6	

E COUPLING (E1), SOLDERING OR SOLDERLESS CONNECTIONS(E2), RELAYS (E3)

E 249	E1-1 DO YOU WORK WITH COUPLING DEVICES OR CIRCUITRY IN YOUR PRESENT JOB? IF NO, GO TO ITEM E2-1; IF YES, CONTINUE.	50.9	60.9	70.1	29.5	64.7	68.9	34.9	43.2	30.4	67.9	
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D TSK	TITLES	304	304	305	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
E 250	E1-2 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING?	50.0	79.4	67.4	22.4	53.7	66.3	20.6	39.7	21.4	56.8		
E 251	E1-3 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING (MATCHING)?	60.4	81.4	70.7	24.4	62.6	67.3	19.0	41.2	21.4	63.0		
E 252	E1-4 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH OPTICAL COUPLING?	7.1	8.0	8.2	7.7	5.3	13.3	17.5	2.5	1.8	6.2		
E 253	E1-5 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING?	54.9	79.4	66.3	21.8	53.2	65.3	19.0	39.7	23.2	65.4		
E 254	E1-6 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING?	44.0	70.4	64.7	23.1	52.1	64.3	17.5	33.7	18.5	55.6		
E 255	E1-7 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING?	53.8	70.4	68.5	21.8	58.4	62.2	15.9	34.2	19.6	61.7		
E 256	E1-8 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING?	49.5	69.3	63.0	19.9	51.6	63.8	15.9	36.7	22.0	60.5		
E 257	E1-9 DO YOU WORK WITH DIRECT COUPLED CIRCUITS?	56.0	75.9	67.4	21.8	56.8	67.3	22.2	38.2	25.0	61.7		
E 258	E1-10 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS?	45.6	76.9	65.8	19.9	52.6	63.3	12.7	35.2	22.0	54.3		
E 259	E1-11 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS?	43.4	71.9	64.1	17.3	53.2	60.2	15.9	32.7	20.2	55.6		
E 260	E1-12 DO YOU WORK WITH OPTICAL COUPLING?	7.7	8.5	7.1	7.1	4.2	11.7	15.9	2.0	3.0	6.2		
E 261	E1-13 DO YOU WORK WITH OPTICAL COUPLING CIRCUITS?	6.6	8.0	6.5	6.4	3.7	12.2	12.7	3.0	2.1	6.2		
E 262	E1-14 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS?	54.4	79.4	64.7	20.5	53.7	65.3	19.0	38.7	23.8	65.4		
E 263	E2-1 IN YOUR PRESENT JOB, DO YOU CONNECT ELECTRONIC CIRCUITS USING SOLDERLESS CONNECTIONS OR SOLDERING TECHNIQUES? IF NO, GO TO ITEM E3-1; IF YES, CONTINUE.	81.9	82.4	81.0	76.9	88.4	89.3	47.6	81.9	75.0	87.7		
E 264	E2-2 DO YOU SOLDER CONNECTIONS?	84.1	81.9	81.0	80.1	91.6	91.8	47.6	85.4	75.0	85.2		
E 265	E2-3 DO YOU DESOLDER CONNECTIONS?	84.1	81.9	81.0	80.1	90.0	91.3	46.0	84.9	74.4	85.2		

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 20

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328
E 290	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS?	67.0	70.9	71.7	55.1	75.8	77.0	47.6	67.3	67.3	75.3	75.3	75.3
E 291	E3-15 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS?	64.8	75.9	67.9	51.3	73.7	75.0	49.2	65.8	63.1	75.3	75.3	75.3
E 292	E3-16 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS?	62.6	74.4	68.5	49.4	72.6	74.0	47.6	66.3	60.1	76.5	76.5	76.5
E 293	E3-17 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS?	56.6	71.9	65.8	49.4	64.2	70.9	41.3	57.3	53.0	72.8	72.8	72.8
E 294	E3-18 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE?	53.8	69.8	63.6	48.7	62.6	73.0	27.0	49.7	49.4	69.1	69.1	69.1

F MICROPHONES AND SENSING DEVICES (F1), SPEAKERS (F2), OSCILLOSCOPES (F3)

F 295	F1-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES OR OTHER SENSING DEVICES SUCH AS TRANSDUCERS? IF NO, GO TO ITEM F2-1; IF YES, CONTINUE.	33.0	26.1	70.1	11.5	86.8	23.5	25.4	14.6	17.9	63.0	63.0	63.0
F 296	F1-2 DO YOU CLEAN MICROPHONES?	25.3	25.6	67.9	5.1	78.4	18.9	9.5	10.6	3.2	59.3	59.3	59.3
F 297	F1-3 DO YOU OPERATE MICROPHONES?	23.1	20.6	57.6	4.5	62.6	15.8	6.3	8.0	2.4	39.5	39.5	39.5
F 298	F1-4 DO YOU TROUBLESHOOT MICROPHONES WIRE CONNECTIONS?	24.2	26.6	66.8	4.5	88.9	24.5	19.0	11.1	7.1	61.7	61.7	61.7
F 299	F1-5 DO YOU TROUBLESHOOT MICROPHONE COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	23.6	23.1	63.6	5.1	85.3	20.9	3.2	10.1	3.6	61.7	61.7	61.7
F 300	F1-6 DO YOU REMOVE AND REPLACE COMPLETE MICROPHONES?	16.5	11.6	46.2	3.2	42.1	9.7	1.6	4.0	1.8	44.4	44.4	44.4
F 301	F1-7 DO YOU REMOVE OR REPLACE MICROPHONE COMPONENT PARTS?	22.0	23.1	64.7	5.1	85.3	19.4	4.8	9.5	3.0	59.3	59.3	59.3
F 302	F1-8 DO YOU PERFORM TASKS ON CARBON MICROPHONES?	15.4	16.1	47.8	3.2	37.4	9.2	1.6	5.5	1.8	40.7	40.7	40.7
F 303	F1-9 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES?	15.9	18.1	65.8	3.2	69.5	10.2	3.2	5.5	1.2	45.7	45.7	45.7
F 304	F1-10 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES?	2.2	4.0	17.4	.6	11.1	1.5	1.6	2.0	1.2	13.6	13.6	13.6
F 305	F1-11 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES?	7.7	4.5	12.5	1.9	14.7	3.6	.0	2.0	1.2	12.3	12.3	12.3
F 306	F1-12 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES?	12.6	11.6	64.1	3.2	77.4	12.2	3.2	5.5	.6	51.9	51.9	51.9
F 307	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES?	2.2	1.0	4.3	.0	6.3	1.0	.0	.6	.6	3.7	3.7	3.7

TSM	TITLES	304		305		320		328		328		328		328	
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
308	F1-14 DO YOU PERFORM TASKS ON TRANSUCERS?	17.0	6.5	16.8	8.3	11.1	5.1	3.2	4.0	14.1	2.4	15.5	7.4	58.0	58.0
309	F2-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS? IF NO, GO TO ITEM F3-1; IF YES, CONTINUE.	43.4	24.6	66.3	9.0	78.4	28.6	4.8	14.1	14.1	2.4	15.5	7.4	58.0	58.0
310	F2-2 DO YOU INSPECT SPEAKERS?	39.6	23.6	66.3	9.6	75.0	21.4	3.2	9.0	9.0	1.2	56.8	56.8	35.8	35.8
311	F2-3 DO YOU CLEAN SPEAKERS?	34.1	20.6	60.3	9.0	58.4	17.3	1.6	7.5	7.5	0.6	56.8	56.8	35.8	35.8
312	F2-4 DO YOU OPERATE SPEAKERS?	36.8	21.6	64.1	7.7	79.5	28.6	3.2	10.6	10.6	2.4	56.8	56.8	35.8	35.8
313	F2-5 DO YOU TROUBLESHOOT SPEAKER WIRE CONNECTIONS?	42.3	23.1	65.2	9.0	79.5	23.0	1.6	11.6	11.6	1.2	43.0	43.0	35.0	35.0
314	F2-6 DO YOU TROUBLESHOOT SPEAKER COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	20.9	11.6	44.6	5.1	34.7	7.1	1.6	4.0	4.0	0.0	35.0	35.0	35.0	35.0
315	F2-7 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS?	39.6	21.1	64.1	9.6	76.8	21.4	0.0	9.5	9.5	1.8	61.7	61.7	27.2	27.2
316	F2-8 DO YOU REMOVE OR REPLACE SPEAKER PARTS?	15.9	8.0	34.2	3.2	29.5	6.1	0.0	2.0	2.0	0.6	27.2	27.2	7.4	7.4
317	F2-9 DO YOU PERFORM ANY TASKS ON CONE SPEAKER PARTS?	4.4	3.0	15.8	0.6	6.8	1.5	1.6	1.5	1.5	0.0	7.4	7.4	2.5	2.5
318	F2-10 DO YOU PERFORM ANY TASKS ON SPIDER SPEAKER PARTS?	2.7	1.5	6.0	0.6	9.7	1.0	0.0	1.0	1.0	0.0	2.5	2.5	0.9	0.9
319	F2-11 DO YOU PERFORM ANY TASKS ON FIELD COIL SPEAKER PARTS?	6.0	3.0	13.0	0.6	6.8	1.5	0.0	1.5	1.5	0.0	0.9	0.9	3.7	3.7
320	F2-12 DO YOU PERFORM ANY TASKS ON VOICE COIL SPEAKER PARTS?	6.0	4.0	19.0	0.6	9.4	1.5	0.0	1.5	1.5	0.0	3.7	3.7	0.9	0.9
321	F2-13 DO YOU PERFORM ANY TASKS ON PERMANENT MAGNET SPEAKER PARTS?	4.4	3.0	13.6	0.6	12.1	2.0	0.0	1.5	1.5	0.0	0.9	0.9	0.9	0.9
322	F2-14 DO YOU PERFORM ANY TASKS ON ELECTROMAGNET SPEAKER PARTS?	4.4	2.5	12.0	0.6	10.0	2.6	0.0	1.5	1.5	0.0	0.9	0.9	0.9	0.9
323	F2-15 DO YOU PERFORM ANY TASKS ON SOFT IRON CORE SPEAKER PARTS?	2.7	1.5	7.6	0.6	5.3	1.0	0.0	0.5	0.5	0.0	2.5	2.5	0.5	0.5
324	F3-1 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB? IF NO, GO TO ITEM 61-1; IF YES, CONTINUE.	82.4	86.9	77.7	89.7	74.7	84.2	63.5	87.4	75.0	86.4	86.4	86.4	86.4	86.4
325	F3-2 DO YOU PERFORM OPERATIONAL CHECKS USING OSCILLOSCOPES?	80.8	84.9	76.6	84.6	68.4	78.1	58.7	83.9	69.6	86.4	86.4	86.4	86.4	86.4
326	F3-3 DO YOU PERFORM ALIGNMENTS OR ADJUSTMENTS USING OSCILLOSCOPES?	79.7	80.4	72.8	82.1	70.0	78.6	55.6	76.9	64.3	86.4	86.4	86.4	86.4	86.4
327	F3-4 DO YOU TROUBLE SHOOT ELECTRONIC CIRCUITS USING OSCILLOSCOPES?	80.2	76.4	72.8	83.3	70.0	79.6	63.5	75.9	64.9	72.8	72.8	72.8	72.8	72.8
328	F3-5 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCIES?	68.7	80.9	65.8	82.1	60.0	81.6	54.0	78.4	69.0	81.5	81.5	81.5	81.5	81.5
329	F3-6 DO YOU USE OSCILLOSCOPES TO MEASURE TIME?	54.4	86.9	54.9	83.3	38.4	82.7	50.8	83.4	58.3	80.2	80.2	80.2	80.2	80.2

D TSN	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
F 330	F3-7 DO YOU USE OSCILLOSCOPES TO OBSERVE LISSAJOUS PATTERNS?	35.7	32.2	37.5	28.8	28.9	37.8	12.7	22.6	26.8	74.1				
F 331	F3-8 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES.	68.1	84.9	71.7	69.2	65.8	81.1	55.6	76.9	52.4	76.5				
F 332	F3-9 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS?	20.1	74.9	33.2	66.7	27.4	77.6	41.3	39.7	29.2	53.1				
F 333	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGES?	77.5	88.4	74.5	83.3	68.9	82.1	58.7	84.4	70.8	77.8				
F 334	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGES?	78.6	89.4	75.5	89.7	64.2	82.1	54.0	86.9	70.2	80.2				
F 335	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS?	52.2	77.4	50.5	54.5	44.7	68.4	27.0	54.8	44.6	67.9				
F 336	F3-13 DO YOU USE OSCILLOSCOPES TO OBSERVE DATA PATTERNS?	58.8	45.7	41.3	80.1	39.5	45.4	42.9	47.7	40.5	69.1				
F 337	F3-14 DO YOU USE OSCILLOSCOPES TO MEASURE RIPPLE VOLTAGES?	61.5	79.9	61.4	75.6	50.5	70.4	25.4	63.3	47.6	65.4				
F 338	F3-15 DO YOU USE OSCILLOSCOPES TO MEASURE PHASE JITTERS?	36.3	67.8	22.3	35.3	18.4	50.0	25.4	26.6	20.8	29.6				
F 339	F3-16 DO YOU USE OSCILLOSCOPES TO DISPLAY SWEEP GENERATOR PATTERNS?	47.3	72.9	34.8	54.5	34.7	73.5	34.9	54.8	36.9	63.0				
F 340	F3-17 DO YOU USE OSCILLOSCOPES TO OBSERVE PHASE RELATIONSHIPS?	51.6	79.4	50.0	66.7	51.1	78.6	42.9	55.3	53.0	55.6				
F 341	F3-18 DO YOU USE OSCILLOSCOPES TO OBSERVE SAMPLING DISPLAYS?	49.5	75.9	41.8	47.4	41.6	58.7	36.5	51.3	38.1	61.7				

6 SEMICONDUCTOR DIODES (61), TRANSISTORS (62), TRANSISTOR AMPLIFIERS (63)

6 342	61-1 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB? IF NO, GO TO ITEM 62-1; IF YES, CONTINUE.	80.2	85.4	79.9	80.1	63.2	76.0	31.7	58.8	56.5	74.1				
6 343	61-2 DO YOU INSPECT DIODES?	73.1	77.4	77.7	76.3	61.6	73.0	20.6	54.3	50.0	69.1				
6 344	61-3 DO YOU CHECK DIODES?	74.2	75.9	76.6	77.6	63.2	74.0	20.6	53.8	53.6	74.1				

ID TSK	TITLES	304	304	304	305	320	320	320	320	320	320	320	320	320	320	320	320	320
6 345	61-4 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES?	6.2	11.1	3.0	7.1	9.5	6.6	6.3	8.0	3.6	11.1							
6 346	61-5 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE?	19.2	26.1	15.0	13.5	11.6	14.0	6.3	11.6	6.0	16.0							
6 347	61-6 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES?	25.3	31.7	23.9	28.0	23.2	30.1	6.3	16.6	11.3	24.7							
6 348	61-7 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES?	59.3	70.9	57.6	59.0	43.2	62.0	23.8	42.2	31.5	53.1							
6 349	61-8 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE?	69.2	79.9	72.3	73.7	58.4	69.9	15.9	51.8	47.0	65.4							
6 350	61-9 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW?	20.3	19.6	14.1	9.0	8.9	12.2	6.3	11.1	6.0	13.6							
6 351	61-10 DO YOU MEASURE FORWARD BIAS RESISTANCE?	51.1	56.8	59.2	62.2	47.9	61.7	15.9	36.2	39.9	55.6							
6 352	61-11 DO YOU MEASURE REVERSE BIAS RESISTANCE?	51.1	56.8	59.8	62.8	47.4	62.2	17.5	36.2	39.3	54.3							
6 353	61-12 DO YOU READ DIODE COLOR CODING?	22.5	27.1	26.6	22.4	25.3	26.5	4.8	19.6	16.1	27.2							
6 354	61-13 DO YOU READ DIODE NUMBERING SYSTEM, SUCH AS IN 5307	58.2	65.3	66.3	59.6	51.1	63.8	7.9	41.7	33.3	63.0							
6 355	61-14 DO YOU USE THE SYMBOL ON DIODE WHICH INDICATES THE CATHODE END?	75.3	81.9	79.9	77.6	62.6	74.0	22.2	57.8	53.6	79.1							
6 356	61-15 DO YOU DETERMINE DIRECTION OF CURRENT THROUGH A DIODE?	74.2	80.9	77.2	76.3	60.0	71.9	25.4	55.3	48.0	63.0							
6 357	61-16 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON?	17.6	23.1	19.0	11.5	10.5	16.3	4.8	14.1	6.5	12.3							
6 358	61-17 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OR RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)?	34.6	49.7	32.6	26.9	26.3	38.8	9.5	27.6	19.0	38.6							
6 359	61-18 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)?	21.4	29.6	21.7	17.3	14.7	20.4	7.9	17.1	4.8	14.8							

Q TSM	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328	328		
6 375	61-34 DO YOU NEED AN UNDERSTANDING OF RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL?	29.1	29.1	28.3	12.8	12.6	18.4	6.3	21.6	6.5	18.5	29.1	29.1	28.3	12.8	12.6	18.4	6.3	21.6	6.5	18.5
6 376	61-35 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES?	43.4	40.7	52.7	39.7	46.3	65.3	6.3	29.1	23.8	51.9	43.4	40.7	52.7	39.7	46.3	65.3	6.3	29.1	23.8	51.9
6 377	61-36 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS?	10.4	11.1	10.3	3.8	6.8	9.2	1.6	5.5	2.4	8.6	10.4	11.1	10.3	3.8	6.8	9.2	1.6	5.5	2.4	8.6
6 378	61-37 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION?	39.0	41.2	45.7	41.0	32.6	37.8	9.8	21.1	13.7	37.0	39.0	41.2	45.7	41.0	32.6	37.8	9.8	21.1	13.7	37.0
6 379	61-38 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS?	21.4	29.1	29.9	17.9	18.4	17.3	3.2	16.6	10.7	19.8	21.4	29.1	29.9	17.9	18.4	17.3	3.2	16.6	10.7	19.8
6 380	61-39 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS?	17.6	21.6	23.9	14.7	13.2	13.3	4.8	14.1	10.7	9.9	17.6	21.6	23.9	14.7	13.2	13.3	4.8	14.1	10.7	9.9
6 381	61-40 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS?	21.4	26.6	27.2	18.6	15.8	15.8	4.8	15.1	10.1	16.0	21.4	26.6	27.2	18.6	15.8	15.8	4.8	15.1	10.1	16.0
6 382	61-41 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS?	23.6	31.7	38.6	22.4	19.5	23.0	4.8	25.1	12.5	22.2	23.6	31.7	38.6	22.4	19.5	23.0	4.8	25.1	12.5	22.2
6 383	62-1 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM G3-1; IF YES, CONTINUE.	79.1	85.4	78.8	80.1	65.3	74.5	39.7	81.8	89.4	77.8	79.1	85.4	78.8	80.1	65.3	74.5	39.7	81.8	89.4	77.8
6 388	62-2 DO YOU INSPECT TRANSISTORS?	75.8	75.4	78.3	71.8	63.7	71.4	25.4	56.3	92.9	71.8	75.8	75.4	78.3	71.8	63.7	71.4	25.4	56.3	92.9	71.8
6 385	62-3 DO YOU CHECK TRANSISTORS?	73.1	74.9	76.6	72.4	63.2	72.4	20.6	55.3	37.5	72.8	73.1	74.9	76.6	72.4	63.2	72.4	20.6	55.3	37.5	72.8
6 386	62-4 DO YOU NEED AN UNDERSTANDING OF EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS?	66.5	78.4	73.4	66.0	54.7	70.9	22.2	50.8	35.1	61.7	66.5	78.4	73.4	66.0	54.7	70.9	22.2	50.8	35.1	61.7
6 387	62-5 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS?	65.9	74.4	72.8	69.9	54.2	69.9	20.6	49.7	31.5	67.9	65.9	74.4	72.8	69.9	54.2	69.9	20.6	49.7	31.5	67.9
6 388	62-6 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS?	67.6	73.9	72.8	69.2	53.2	69.9	20.6	50.3	31.5	67.9	67.6	73.9	72.8	69.2	53.2	69.9	20.6	50.3	31.5	67.9
6 389	62-7 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION?	35.7	44.2	43.5	37.2	26.8	32.1	12.7	35.7	17.9	37.0	35.7	44.2	43.5	37.2	26.8	32.1	12.7	35.7	17.9	37.0
6 390	62-8 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION?	36.3	44.2	42.9	35.9	26.8	32.1	12.7	36.7	16.1	37.0	36.3	44.2	42.9	35.9	26.8	32.1	12.7	36.7	16.1	37.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 27

D TSM	TITLES	304	304	304	305	328	328	328	328	328	328	328	328
6 405	62-23 DO YOU USE OR REFER TO THE POWER GAIN FOR SPECIFIC TRANSISTORS BY MULTIPLYING THE CURRENT GAIN TIMES THE VOLTAGE GAIN (AP = AI X AV)?	13.7	15.1	16.3	7.7	8.4	10.7	3.2	10.6	3.6	6.2	6.2	6.2
6 406	62-24 DO YOU PERFORM TRANSISTOR MATCHING THROUGH THE USE OF CURVE TRACING?	6.6	9.0	10.3	8.3	5.3	4.6	3.2	4.0	3.6	9.9	9.9	9.9
6 407	63-1 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM H1-11. IF YES, CONTINUE.	63.7	73.9	72.3	34.6	60.0	60.2	27.0	45.7	35.1	79.0	79.0	79.0
6 408	63-2 DO YOU INSPECT TRANSISTOR AMPLIFIERS?	59.3	67.8	68.5	32.1	58.4	56.6	19.0	42.2	28.6	67.9	67.9	67.9
6 409	63-3 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS?	54.4	60.8	63.0	24.4	46.8	52.6	14.3	36.2	18.5	65.4	65.4	65.4
6 410	63-4 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL?	59.9	68.8	68.5	32.7	53.7	56.6	14.3	38.7	27.4	70.4	70.4	70.4
6 411	63-5 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS?	54.4	61.8	66.3	26.9	49.5	54.6	12.7	33.2	18.5	61.7	61.7	61.7
6 412	63-6 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER?	59.9	63.3	67.9	31.4	61.1	58.7	17.5	39.2	31.0	71.6	71.6	71.6
6 413	63-7 DO YOU REMOVE OR REPLACE AMPLIFIER CIRCUIT COMPONENTS?	54.4	57.8	65.8	27.6	44.8	53.1	7.9	30.2	19.0	60.5	60.5	60.5
6 414	63-8 DO YOU USE OR REFER TO THE CHANGE IN COLLECTOR CURRENT RESULTS FROM A CHANGE IN BASE CURRENT CONCERNING TRANSISTOR AMPLIFIERS?	33.5	44.2	35.9	17.9	25.8	30.1	15.9	22.6	13.1	37.0	37.0	37.0
6 415	63-9 DO YOU USE OR REFER TO THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT CONCERNING TRANSISTOR AMPLIFIERS?	20.3	19.6	16.8	10.3	12.6	14.3	9.5	11.6	4.2	19.8	19.8	19.8
6 416	63-10 DO YOU USE OR REFER TO THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT?	34.6	42.2	37.0	19.2	25.8	28.6	15.9	22.1	13.1	30.7	30.7	30.7
6 417	63-11 DO YOU USE OR REFER TO THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL CONCERNING TRANSISTOR AMPLIFIERS?	40.7	48.2	38.0	20.5	29.5	28.6	14.3	24.1	11.9	39.5	39.5	39.5
6 418	63-12 DO YOU USE OR REFER TO THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL CONCERNING TRANSISTOR AMPLIFIERS?	19.2	21.6	18.5	13.5	16.8	15.3	9.5	10.6	6.5	21.0	21.0	21.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

F.C.P.T.D.L. PAGE 28

D ISK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
6 419	63-11 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)?	6.6	6.0	4.9	2.6	5.3	4.1	3.2	4.0	1.8	6.2								
6 420	63-14 DO YOU USE OF REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR?	21.4	38.2	22.8	12.2	11.6	21.9	3.2	14.1	4.8	7.4								
6 421	63-15 DO YOU MEASURE VOLTAGE GAIN CONCERNING TRANSISTOR AMPLIFIERS?	44.9	49.2	50.5	20.5	41.1	44.9	12.7	29.6	17.9	53.1								
6 422	63-16 DO YOU MEASURE CURRENT GAIN CONCERNING TRANSISTOR AMPLIFIERS?	35.2	34.7	36.4	13.5	32.1	34.2	12.7	22.6	13.1	43.2								
6 423	63-17 DO YOU MEASURE POWER GAIN CONCERNING TRANSISTOR AMPLIFIERS?	42.9	41.2	46.2	12.6	35.3	38.3	19.0	25.6	11.9	51.9								
6 424	63-18 DO YOU USE OR REFER TO THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE OF THE BASE COLLECTOR VOLTAGE?	20.3	23.1	15.2	9.0	12.1	14.3	4.6	9.5	4.0	16.0								
6 425	63-19 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION?	29.1	38.2	41.8	16.7	34.7	37.8	7.9	22.1	11.9	42.0								
6 426	63-20 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION?	28.6	34.7	36.4	11.5	27.4	30.1	7.9	21.6	11.9	32.1								
6 427	63-21 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION?	28.6	36.7	35.9	13.5	32.6	35.2	9.5	22.6	10.1	33.3								
6 428	63-22 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION?	33.0	38.7	34.8	16.0	31.1	32.1	7.9	22.6	14.3	37.0								
6 429	63-23 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION?	32.9	34.7	34.2	15.4	31.6	33.2	7.9	22.1	14.9	34.6								

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
6 430	63-24 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION?	22.5	25.1	21.7	12.8	23.7	24.0	4.8	15.6	11.3	23.5					
6 431	63-25 DO YOU IDENTIFY OR TROUBLESHOOT AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS?	39.0	52.8	48.9	23.1	41.6	44.4	7.9	23.6	16.1	55.6					
6 432	63-26 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS?	34.6	43.2	44.6	19.2	37.9	41.3	11.1	22.6	15.5	49.4					
6 433	63-27 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS?	24.7	36.7	26.6	16.7	25.3	36.2	7.9	18.1	12.5	32.1					
6 434	63-28 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS?	24.7	29.6	32.6	12.8	20.5	21.4	6.3	13.6	7.7	30.9					
6 435	63-29 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS?	28.0	37.7	32.1	9.6	27.4	28.6	6.3	16.1	6.5	33.3					
6 436	63-30 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	16.5	17.6	27.2	9.5	24.2	39.3	4.8	15.1	7.1	21.0					
6 437	63-31 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS?	46.2	61.8	64.7	19.2	50.0	56.1	9.5	29.6	17.3	58.0					
6 438	63-32 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS?	19.8	28.1	35.9	4.5	26.3	34.7	3.2	20.1	8.9	34.6					
6 439	63-33 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS?	23.1	28.6	33.7	7.1	24.2	36.2	3.2	17.6	7.7	34.6					
6 440	63-34 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS?	25.8	45.7	45.7	10.9	30.0	53.1	3.2	25.1	13.1	38.3					
6 441	63-35 DO YOU TROUBLESHOOT OR REPAIR VOLTAGE MULTIPLIERS (DOUBLERS/TRIPLES)?	45.1	58.3	53.8	22.4	41.6	51.5	12.7	25.1	14.9	53.1					
6 442	63-36 DO YOU TROUBLESHOOT OR REPAIR RF AMPLIFIERS?	47.8	66.8	67.9	9.6	54.2	57.1	23.8	38.2	19.9	67.9					
6 443	63-37 DO YOU TROUBLESHOOT OR REPAIR WIDEBAND AMPLIFIERS (VIDEO AMPS)?	39.0	36.2	17.4	8.3	15.8	51.5	12.7	36.2	3.0	21.0					
6 444	63-38 DO YOU TROUBLESHOOT OR REPAIR AUDIO AMPLIFIERS?	50.0	54.8	70.1	8.3	57.9	55.6	3.2	28.1	16.7	71.6					
6 445	63-39 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL OR POWER AMPLIFIERS?	43.4	61.3	66.8	23.1	52.1	57.1	11.1	33.2	19.6	61.7					
6 446	63-40 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	14.3	18.1	27.2	4.5	24.7	40.3	7.9	17.1	6.0	19.8					

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 30

D TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
G 447	63-41 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY AMPLIFIERS?	26.1	32.1	4.5	24.2	34.7	6.3	18.6	7.7	37.0
G 448	63-42 DO YOU TROUBLESHOOT OR REPAIR IF AMPLIFIERS?	46.2	62.8	68.5	7.7	51.6	58.2	19.0	34.2	20.2
G 449	63-43 DO YOU TROUBLESHOOT OR REPAIR DIFFERENTIATING AMPLIFIERS (DIFF AMPS)?	36.8	55.8	27.5	23.7	22.6	40.8	9.5	26.1	17.3
G 450	63-44 DO YOU TROUBLESHOOT OR REPAIR OPERATIONAL AMPLIFIERS (OP AMPS)?	35.7	55.8	51.1	23.7	21.6	41.3	12.7	27.6	17.3
G 451	63-45 DO YOU TROUBLESHOOT OR REPAIR INTEGRATING AMPLIFIERS?	34.1	48.2	42.9	19.9	24.2	40.3	9.5	25.1	22.0
G 452	63-46 DO YOU TROUBLESHOOT OR REPAIR SUMMING AMPLIFIERS?	13.2	27.1	22.3	11.5	16.3	20.4	7.9	21.6	23.2

 W SOLID-STATE SPECIAL PURPOSE DEVICES (H1), POWER SUPPLIES (H2), OSCILLATORS (H3)

H 453	M1-1 DO YOU USE OR REFER TO VARACTORS/VAPICAP COMPONENTS?	52.2	41.2	67.9	17.3	51.6	48.0	15.9	39.2	8.3	71.6
H 454	M1-2 DO YOU USE OR REFER TO TUNNEL DIODE COMPONENTS?	53.3	58.8	37.0	9.6	24.2	31.6	7.9	39.2	6.0	51.9
H 455	M1-3 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTOR (FET) COMPONENTS?	38.5	76.9	61.4	39.1	30.0	59.7	9.5	46.2	19.0	69.1
H 456	M1-4 DO YOU USE OR REFER TO UNIUNCTION TRANSISTOR COMPONENTS?	39.6	77.9	54.3	27.6	37.9	69.9	6.3	42.2	19.6	54.3
H 457	M1-5 DO YOU USE OR REFER TO ZENER DIODE COMPONENTS?	73.1	85.9	80.4	76.3	66.8	79.5	41.3	58.3	54.2	76.5
H 458	M1-6 DO YOU USE OR REFER TO INTEGRATED CIRCUIT COMPONENTS?	67.6	81.4	73.4	71.2	56.8	76.5	66.7	68.3	60.1	70.4
H 459	M1-7 DO YOU USE OR REFER TO PIN DIODE COMPONENTS?	26.9	38.7	40.8	9.6	25.3	32.1	38.1	55.3	11.9	28.4
H 460	M1-8 DO YOU USE OR REFER TO LED'S/LCD'S COMPONENTS?	63.7	76.4	56.0	69.2	48.4	58.2	71.4	53.8	48.2	69.1
H 461	M1-9 DO YOU USE OR REFER TO FANTAIL TRANSISTOR COMPONENTS?	13.0	15.1	20.7	7.1	8.4	15.8	8.0	2.4	14.8	
H 462	M1-10 DO YOU USE OR REFER TO SILICON CONTROL RECTIFIER (SCR) COMPONENTS?	42.4	77.9	56.5	41.7	23.2	54.6	14.3	44.2	22.6	64.2
H 463	M1-11 DO YOU USE OR REFER TO TRIAC COMPONENTS?	17.6	39.7	25.0	12.8	11.1	14.3	7.9	12.6	7.1	28.4
H 464	M1-12 DO YOU USE OR REFER TO PROGRAMMABLE UNIUNCTION TRANSISTOR (PUT) COMPONENTS?	8.2	13.1	9.2	1.3	6.8	13.8	4.8	10.1	4.2	11.1

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTCI PAGE 31

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
H 465	M1-13 DO YOU USE OR REFER TO SILICON CONTROLLED SWITCH (SCS) COMPONENTS?	15.4	38.7	19.6	7.1	11.6	30.6	1.6	10.1	0.3	23.5							
H 466	M1-14 DO YOU USE OR REFER TO SILICON UNILATERAL SWITCH (SUS) COMPONENTS?	5.5	11.6	9.8	1.9	6.8	16.8	1.6	8.5	4.2	13.6							
H 467	M2-1 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	86.3	89.9	80.4	85.3	72.1	81.6	84.1	79.4	61.9	91.4							
H 468	M2-2 DO YOU INSPECT POWER SUPPLIES?	81.9	82.9	76.6	81.4	68.5	72.1	68.3	69.8	59.5	79.0							
H 469	M2-3 DO YOU CLEAN POWER SUPPLIES?	78.0	76.4	71.7	75.6	60.0	73.0	23.8	54.8	45.2	69.1							
H 470	M2-4 DO YOU ALIGN OR ADJUST POWER SUPPLIES?	82.4	83.4	70.7	79.5	61.1	72.6	34.9	67.3	52.4	84.0							
H 471	M2-5 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL?	75.3	79.9	75.5	71.8	61.6	76.0	50.8	59.3	51.8	77.8							
H 472	M2-6 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS?	70.3	77.4	71.2	64.7	53.2	62.4	30.2	41.7	41.7	67.9							
H 473	M2-7 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES?	78.0	77.4	73.4	79.5	72.6	80.6	81.0	76.4	60.7	86.4							
H 474	M2-8 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS?	70.3	73.9	69.0	60.9	52.1	69.9	14.3	41.7	40.5	67.9							
H 475	M2-9 DO YOU INSPECT OR SERVICE COOLANT LEVELS?	14.3	15.1	12.5	15.4	8.4	11.2	38.1	35.2	2.4	23.5							
H 476	M2-10 DO YOU WORK WITH HALF-WAVE RECTIFIERS?	64.3	81.4	69.0	57.7	60.5	70.9	17.5	47.7	36.9	69.1							
H 477	M2-11 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS?	59.3	83.4	70.1	60.3	60.0	71.4	25.4	50.8	38.7	65.4							
H 478	M2-12 DO YOU WORK WITH BRIDGE RECTIFIERS?	70.3	85.4	74.5	66.0	62.6	73.0	25.4	52.3	41.1	74.1							
H 479	M2-13 DO YOU WORK WITH IMPRECISE PHASE RECTIFIERS?	30.2	53.3	27.2	37.8	52.1	37.8	18.1	48.7	23.8	64.2							
H 480	M2-14 DO YOU USE OR REFER TO INPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	76.4	87.9	76.1	75.6	63.7	75.5	58.7	64.3	50.6	79.0							
H 481	M2-15 DO YOU USE OR REFER TO INPUT FREQUENCIES IN YOUR WORK WITH RECTIFIERS?	62.6	70.4	60.9	60.9	53.2	63.3	47.6	49.7	39.9	67.9							
H 482	M2-16 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	63.7	78.9	66.3	64.1	55.3	69.9	55.6	51.8	47.0	67.9							
H 483	M2-17 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	63.7	78.9	66.3	59.6	55.3	66.3	55.6	54.8	43.5	65.4							
H 484	M2-18 DO YOU USE OR REFER TO RIPPLE AMPLITUDE IN YOUR WORK WITH RECTIFIERS?	52.2	75.9	59.2	60.3	38.9	59.2	15.9	49.7	30.4	63.0							
H 485	M2-19 DO YOU USE OR REFER TO RIPPLE FREQUENCIES IN YOUR WORK WITH RECTIFIERS?	40.7	55.8	48.4	48.7	35.3	48.0	14.3	40.2	24.4	50.6							

D TSM	TITLES	304	304	305	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
M 504	H3-7 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS?	47.3	53.3	31.4	40.0	49.5	25.4	28.6	20.8	60.5			
M 505	H3-8 DO YOU USE OR REFER TO FEEDBACK (DEGENERATIVE OR REGENERATIVE)?	51.6	76.4	62.5	34.6	43.2	60.7	31.7	41.7	26.8	53.1		
M 506	H3-9 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (IFDD)?	47.3	66.3	58.7	35.9	43.2	53.6	28.6	36.2	19.0	53.1		
M 507	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY?	46.4	60.3	51.1	28.2	40.0	51.0	25.4	33.2	20.2	61.7		
M 508	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY?	57.1	70.4	62.5	35.3	48.9	56.1	42.9	43.7	25.0	69.1		
M 509	H3-12 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT (CRYSTAL OSCILLATIONS)?	34.6	62.3	39.7	29.5	31.6	47.4	28.6	14.6	13.1	50.6		
M 510	H3-13 DO YOU USE OR REFER TO HARMONIC DISTORTION?	48.9	64.8	63.0	13.5	41.1	53.6	41.3	36.2	16.7	56.8		
M 511	H3-14 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN DC TANK CIRCUITS?	37.9	61.3	48.9	25.0	35.8	52.6	9.5	31.7	13.7	48.1		
M 512	H3-15 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN RC NETWORKS?	47.3	71.9	53.8	27.6	41.1	60.2	9.5	35.2	19.6	54.3		
M 513	H3-16 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN CRYSTALS?	57.7	79.9	57.6	39.7	49.5	64.8	49.2	29.6	21.4	70.4		
M 514	H3-17 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN PHASE LOCK LOOPS (PLL)?	47.3	41.7	52.7	14.7	34.2	30.1	60.3	17.1	8.3	59.3		
M 515	H3-18 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN - DON'T KNOW WHICH TYPE OF FOOD?	18.1	15.1	14.7	12.2	9.5	14.3	7.9	16.6	11.3	21.0		
M 516	H3-19 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS?	20.9	63.3	38.6	19.9	33.2	50.5	8.8	25.6	8.9	49.4		
M 517	H3-20 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS?	17.0	38.2	33.7	17.9	31.6	49.5	4.8	23.1	8.9	39.5		
M 518	H3-21 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS?	19.8	51.8	42.4	17.3	33.2	44.4	3.2	22.6	7.7	40.7		
M 519	H3-22 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS?	9.9	21.1	16.3	5.1	12.6	15.8	3.2	9.5	4.8	13.6		
M 520	H3-23 DO YOU WORK WITH VOLTAGE CONTROL SINUSOIDAL OSCILLATORS?	47.8	41.2	44.6	14.1	35.3	52.6	36.5	35.7	12.5	46.9		
M 521	H3-24 DO YOU WORK WITH CRYSTAL SINUSOIDAL OSCILLATORS?	53.3	77.4	52.7	38.5	44.2	61.7	44.4	25.1	16.7	64.2		
M 522	H3-25 DO YOU WORK WITH VOLTAGE CONTROL OSCILLATORS (VCO) SINUSOIDAL OSCILLATORS?	53.3	41.7	51.5	14.1	43.7	52.6	54.0	43.7	8.9	54.3		

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTD1 PAGE 35

D TSK	TITLES	304		304		305		328		328		328		328		328	
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
I 530	11-10 DO YOU WORK WITH J-K FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	24.2	62.3	26.1	46.8	12.1	20.9	38.1	29.1	17.9	40.7						
I 539	11-11 DO YOU WORK WITH "O" FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	19.2	32.2	13.0	30.1	8.9	15.3	31.7	17.6	14.9	23.5						
I 540	12-1 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 13-1; IF YES, CONTINUE.	47.3	66.8	47.8	36.5	37.4	58.7	15.9	26.1	20.8	51.9						
I 541	12-2 DO YOU WORK WITH SERIES DIODE LIMITERS?	36.8	53.8	40.8	34.0	33.2	52.0	14.3	25.1	19.0	37.0						
I 542	12-3 DO YOU WORK WITH SHUNT DIODE LIMITERS?	36.8	52.8	38.0	33.3	32.6	52.6	7.9	23.6	18.5	38.3						
I 543	12-4 DO YOU WORK WITH LIMITERS WITH BIAS?	32.4	47.2	36.4	28.2	27.9	45.4	14.3	18.6	12.5	30.9						
I 544	12-5 DO YOU WORK WITH ZENER DIODE LIMITERS?	42.3	62.3	42.9	33.3	34.7	58.2	15.9	26.1	16.1	46.9						
I 545	12-6 DO YOU WORK WITH TRIODE LIMITERS?	41.2	52.8	41.3	26.3	31.1	53.1	11.1	21.1	13.7	44.4						
I 546	12-7 DO YOU WORK WITH TRIODE LIMITERS?	12.1	32.2	15.8	8.3	17.4	30.1	7.9	11.1	8.3	14.8						
I 547	12-8 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS?	30.2	57.3	30.4	30.8	22.1	47.9	11.1	18.6	11.7	32.1						
I 548	12-9 DO YOU WORK WITH BIAS DIODE CLAMPING CIRCUITS?	24.7	44.2	27.2	27.6	18.9	39.8	7.9	16.6	11.9	25.9						
I 549	12-10 DO YOU WORK WITH DC RESTORERS (DCR)?	12.6	19.6	11.4	13.5	12.1	23.0	7.9	7.0	8.3	18.5						
I 550	13-1 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS BASIC ELECTRON TUBES (FOR PURPOSES OF THIS QUESTION DO NOT CONSIDER HIGH-FREQUENCY DEVICES SUCH AS KLYSTRONS, TRAVELING WAVE TUBES, BACKWARD WAVE OSCILLATORS, OR MAGNETRONS AS ELECTRON TUBES)? IF NO, GO TO ITEM 11-1; IF YES, CONTINUE.	37.4	74.4	67.9	18.6	55.8	59.7	11.1	20.6	27.4	54.3						

I 551	13-2 DO YOU CHECK THE CONDITION OF ELECTRON TUBES?	33.0	66.3	63.6	17.3	47.9	54.1	9.5	28.1	25.6	43.2						
I 552	13-3 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES?	25.3	66.3	62.0	14.7	42.1	53.1	1.6	24.6	26.2	19.8						
I 553	13-4 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES?	25.8	63.8	45.7	10.9	36.3	49.5	7.9	20.6	20.2	39.5						
I 554	13-5 DO YOU USE SCOPES TO CHECK ELECTRON TUBES?	24.7	66.8	42.4	13.5	30.5	53.1	7.9	23.1	19.6	35.8						
I 555	13-6 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES?	30.8	66.8	63.6	14.1	50.5	52.6	4.8	26.1	25.6	49.4						
I 556	13-7 DO YOU USE OR REFER TO CUTOFF?	19.2	66.8	39.1	12.2	29.5	42.9	6.3	21.1	16.7	25.9						
I 557	13-8 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING?	10.4	25.6	19.0	6.4	16.8	23.5	4.8	11.1	7.1	14.8						
I 558	13-9 DO YOU USE OR REFER TO PEAK CURRENT RATING?	14.8	32.7	25.0	6.4	23.2	27.0	4.8	12.1	9.5	18.5						
I 559	13-10 DO YOU USE OR REFER TO TRANSIT TIME?	13.2	30.2	16.3	8.3	15.8	18.9	6.3	9.5	6.0	9.9						
I 560	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING?	8.2	23.1	25.5	3.2	14.7	16.8	4.8	9.0	4.8	9.9						

D ISM	TITLES	304 (M)	304 (M)	305 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)
I 582	13-33 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	24.7	51.3	40.2	7.1	31.6	42.9	6.3	15.6	16.7	42.0	
I 583	13-34 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	25.8	57.8	41.0	10.3	32.1	46.5	7.9	21.6	16.7	43.2	
I 584	13-35 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	7.7	22.1	15.2	3.2	10.5	13.3	7.9	7.0	3.6	7.4	
I 585	13-36 DO YOU USE OR REFER TO TUBE SOCKET NOTATION?	30.2	70.4	59.2	14.1	41.1	50.5	0	17.1	18.5	33.3	
I 586	13-37 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS?	34.1	76.9	66.3	15.4	48.9	56.6	3.2	22.1	19.6	44.4	
I 587	13-38 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS?	24.7	59.8	51.6	9.6	32.6	41.3	4.8	16.1	13.7	19.8	
I 588	13-39 DO YOU USE OR REFER TO ELECTRON TUBE DIODES?	17.0	61.3	34.2	5.1	19.5	40.3	3.2	13.6	12.5	16.0	

J ELECTRON TUBE AMPLIFIERS AND CIRCUITS (J1), SPECIAL PURPOSE ELECTRON TUBES (J2), METEODYNYING AND MODULATION - DEMODULATION (MODEMS) (J3)

J 589	J1-1 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM J2-1; IF YES, CONTINUE.	35.2	70.4	60.2	8.3	45.8	56.6	41.3	22.1	23.2	50.6	
J 590	J1-2 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS?	12.1	32.2	23.4	2.6	16.8	25.5	14.3	9.0	4.2	17.3	
J 591	J1-3 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	8.2	19.6	23.9	1.3	15.3	32.7	2.5	9.5	6.3	11.1	
J 592	J1-4 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS?	18.1	59.3	48.9	3.8	35.8	49.0	7.9	16.1	12.5	25.9	
J 593	J1-5 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS?	11.0	27.6	25.5	1.3	16.3	23.5	7.9	9.0	6.0	17.3	
J 594	J1-6 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS?	9.3	49.2	32.1	2.6	20.0	42.3	4.8	17.6	8.3	18.5	

NEESLEP ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 38

O YSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
J 595	J1-7 DO YOU TROUBLESHOOT OR REPAIR - DON'T KNOW WHICH TYPE OF AMPLIFIER?	12.6	21.6	16.8	2.6	14.7	18.9	20.6	5.5	11.9	23.5							
J 596	J2-1 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)?	15.4	68.8	27.2	6.4	24.7	46.9	22.2	19.6	15.5	18.5							
J 597	J2-2 DO YOU WORK WITH CATHODE-RAY TUBES (CRT)?	30.2	49.2	31.0	63.5	20.0	70.9	33.3	65.3	31.5	29.6							
J 598	J2-3 DO YOU WORK WITH BEAM POWER TUBES?	23.6	49.7	9.8	3.2	6.8	15.8	42.9	15.6	6.0	8.6							
J 599	J2-4 DO YOU WORK WITH THYRATONS?	3.3	51.8	2.7	5.1	8.9	54.1	1.6	12.1	7.1	1.2							
J 600	J2-5 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)?	26.9	16.1	16.3	41.0	5.8	54.1	39.1	41.7	13.7	12.3							
J 601	J2-6 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)?	19.8	15.6	15.2	37.8	5.3	53.6	31.7	40.2	10.1	9.9							
J 602	J2-7 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)?	12.6	13.1	13.6	29.5	4.2	49.0	17.5	33.2	7.7	9.9							
J 603	J2-8 DO YOU USE OR REFER TO PHOSPHOR SCREENS CONCERNING CRT'S?	15.4	18.6	16.3	42.3	8.9	39.3	12.7	38.7	17.3	13.6							
J 604	J2-9 DO YOU USE OR REFER TO AQUADAG COATINGS CONCERNING CRT'S?	8.2	10.6	10.3	30.1	3.2	31.1	4.8	35.7	17.3	4.9							
J 605	J2-10 DO YOU USE OR REFER TO ELECTRON OPTICS CONCERNING CRT'S?	11.0	7.0	7.6	16.7	2.6	16.3	11.1	14.1	10.7	4.9							
J 606	J2-11 DO YOU USE OR REFER TO PERSISTENCE CONCERNING CRT'S?	8.8	11.1	12.5	21.8	3.7	28.6	4.8	49.2	22.6	19.8							
J 607	J2-12 DO YOU USE OR REFER TO DECAY TIMES CONCERNING CRT'S?	9.9	14.1	10.9	20.5	2.6	24.0	9.5	24.6	14.3	7.4							
J 608	J2-13 DO YOU USE OR REFER TO FLOURESCENCE CONCERNING CRT'S?	11.5	13.6	12.5	23.7	4.7	31.6	7.9	32.2	16.1	11.1							
J 609	J2-14 DO YOU USE OR REFER TO PHOSPHORESCENCE CONCERNING CRT'S?	11.5	14.6	13.6	25.0	6.3	32.7	6.3	32.7	16.7	11.1							
J 610	J2-15 DO YOU USE OR REFER TO SHADOW MASK CONCERNING CRT'S?	8.2	9.5	7.1	10.3	4.2	16.3	3.2	12.6	12.5	6.2							
J 611	J3-1 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K1-1; IF YES, CONTINUE.	65.9	74.9	75.5	37.8	87.4	83.7	76.2	79.9	44.0	88.9							
J 612	J3-2 DO YOU PERFORM TASKS ON FREQUENCY CONVERTER SYSTEMS STAGES?	59.3	44.7	60.3	15.4	54.2	59.7	46.0	43.2	26.2	71.6							

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 39

D TSM	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
J 613	J3-3 DO YOU PERFORM TASKS ON FREQUENCY MIXER SYSTEMS STAGES?	58.2	53.8	66.3	10.3	61.1	64.8	52.4	45.2	38.1	75.3	328 (M)
J 614	J3-4 DO YOU PERFORM TASKS ON MODEM SYSTEMS STAGES?	48.9	8.5	23.9	34.6	34.2	8.2	6.3	11.6	2.4	76.5	328 (M)
J 615	J3-5 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS?	48.9	63.8	62.0	16.0	55.3	64.8	38.1	45.7	17.3	70.4	328 (M)
J 616	J3-6 DO YOU PERFORM TASKS ON REACTANCE MODULATOR SYSTEM STAGES?	24.2	19.6	31.5	6.4	23.7	25.5	6.3	9.0	6.5	39.5	328 (M)
J 617	J3-7 DO YOU PERFORM TASKS ON MODULATED OSCILLATOR SYSTEM STAGES?	50.5	46.7	40.6	14.1	44.7	50.5	20.6	36.7	23.2	63.0	328 (M)

 K A4 SYSTEMS (K1), FM SYSTEMS (K2), NUMBERING SYSTEMS (K3)

K 618	K1-1 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K2-1; IF YES, CONTINUE.	20.9	51.8	63.6	1.9	82.6	69.3	4.8	44.7	54.9	82.7	328 (M)
K 619	K1-2 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS?	15.9	48.2	63.6	1.9	82.6	62.2	3.2	41.2	4.2	75.3	328 (M)
K 620	K1-3 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS?	14.3	45.7	62.0	1.9	70.0	55.6	.0	37.2	3.0	64.2	328 (M)
K 621	K1-4 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS?	15.9	49.2	62.0	1.9	69.5	55.6	.0	37.2	4.2	81.5	328 (M)
K 622	K1-5 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS?	15.9	48.2	62.5	1.9	84.7	63.8	3.2	41.2	5.4	82.7	328 (M)
K 623	K1-6 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS?	14.3	46.7	62.0	.6	72.6	55.6	1.6	34.2	3.0	69.1	328 (M)
K 624	K1-7 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS?	15.4	43.7	60.3	1.9	83.7	62.8	.0	38.2	4.8	79.0	328 (M)
K 625	K1-8 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS?	13.7	44.2	61.4	.6	72.6	57.1	3.2	53.7	3.0	70.4	328 (M)
K 626	K1-9 DO YOU PERFORM TASKS ON RF OSCILLATORS/SYNTHESIZERS?	14.3	46.2	61.4	.6	58.4	48.0	3.2	31.7	3.0	64.2	328 (M)
K 627	K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS?	14.3	48.7	61.4	.6	61.1	51.0	3.2	34.7	3.6	66.7	328 (M)
K 628	K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	15.4	44.2	61.4	1.3	62.1	52.6	1.6	24.1	3.6	65.4	328 (M)
K 629	K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	14.3	48.7	57.6	1.3	61.1	49.0	3.2	32.7	2.4	69.1	328 (M)
K 630	K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS?	15.9	45.2	58.7	.6	56.8	53.6	3.2	33.7	3.0	59.6	328 (M)

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 40

D TSM	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
K 631	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	15.4	46.2	60.3	.0	61.6	52.6	3.2	30.2	3.6	64.2							
K 632	K1-15 DO YOU PERFORM TASKS ON DETECTORS?	16.5	47.7	58.7	1.3	57.9	51.0	3.2	34.7	3.0	61.7							
K 633	K1-16 DO YOU PERFORM TASKS ON MIXER AMPLIFIERS?	16.5	43.7	59.8	.0	57.4	51.5	3.2	27.1	4.2	60.5							
K 634	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS?	12.1	35.7	40.8	.0	49.5	35.2	3.2	17.6	3.6	48.1							
K 635	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS?	15.9	40.7	50.0	.6	62.1	40.8	3.2	20.6	3.6	60.5							
K 636	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS?	18.1	48.7	62.0	1.3	75.3	61.2	3.2	38.2	4.2	77.8							
K 637	K1-20 DO YOU USE OR REFER TO SELECTION OF RECEIVERS?	16.5	45.7	61.4	1.3	68.4	59.2	3.2	34.7	4.8	72.8							
K 638	K2-1 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K3-1; IF YES, CONTINUE.	64.3	50.3	33.2	4.5	52.1	57.3	19.0	53.3	20.8	90.1							
K 639	K2-2 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS?	59.3	46.7	29.3	4.5	42.5	67.3	14.3	49.7	18.5	81.5							
K 640	K2-3 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS?	54.9	44.7	27.2	4.5	40.0	59.7	4.8	43.7	16.1	67.9							
K 641	K2-4 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS?	60.4	46.2	26.6	3.8	35.3	60.2	9.5	43.2	15.5	87.7							
K 642	K2-5 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS?	59.3	46.2	27.2	4.5	50.0	69.9	15.9	48.2	19.6	87.7							
K 643	K2-6 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS?	52.2	45.2	26.1	3.8	37.4	62.2	14.3	40.7	16.1	74.1							
K 644	K2-7 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS?	54.4	43.2	27.2	4.5	48.9	69.4	9.5	46.2	18.5	82.7							
K 645	K2-8 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS?	52.7	44.7	26.1	4.5	35.8	63.3	14.3	40.7	17.9	75.3							
K 646	K2-9 DO YOU PERFORM LINK PERFORMANCE ASSESSMENTS?	53.8	11.1	9.2	2.6	17.4	17.9	4.8	14.6	7.1	72.8							
K 647	K2-10 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	51.6	41.2	26.6	1.3	30.5	53.1	3.2	22.6	13.7	64.2							
K 648	K2-11 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS?	54.4	44.2	24.5	1.3	28.4	57.1	11.1	27.1	12.5	66.7							
K 649	K2-12 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)?	52.2	43.2	25.0	3.2	27.9	54.6	14.3	32.2	11.3	70.4							
K 650	K2-13 DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	53.3	44.7	25.0	2.6	30.5	57.1	14.3	33.2	13.1	72.8							
K 651	K2-14 DO YOU PERFORM TASKS ON RF AMPLIFIERS?	56.0	44.2	26.6	.6	29.5	58.7	12.7	38.2	12.5	70.4							
K 652	K2-15 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS?	52.7	36.2	22.3	2.6	26.8	53.1	11.1	32.2	12.5	65.4							
K 653	K2-16 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	56.0	44.2	26.6	.6	29.5	59.2	12.7	32.2	15.1	65.4							

	304	304	304	305	328	328	328	328	328	328	328	328	328
D TSM	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
TITLES													
K 654	40.7	23.9	2.6	27.4	53.6	7.9	25.1	12.5	56.8				
K 655	43.2	23.9	3.2	28.4	54.1	6.3	30.7	13.7	60.5				
K 656	46.2	20.7	3.8	30.0	58.2	15.9	30.7	17.3	75.3				
K 657	40.7	22.8	3.8	30.5	61.7	14.3	39.2	16.7	75.3				
K 658	35.2	20.1	1.9	32.6	48.0	9.5	26.1	14.9	60.5				
K 659	9.5	5.4	.0	7.4	6.6	4.8	6.0	1.8	8.6				
K 660	22.6	9.2	64.1	13.2	19.9	98.4	39.2	36.9	22.2				
K 661	48.2	32.6	69.2	27.4	39.3	98.4	46.2	39.9	34.6				
K 662	10.1	6.5	49.4	12.6	5.6	17.5	18.6	14.9	13.6				
K 663	21.6	9.2	62.2	12.6	18.4	98.4	39.7	36.9	19.8				
K 664	21.1	9.8	62.8	13.2	16.8	98.4	38.7	29.8	19.8				
K 665	9.0	4.9	46.2	7.4	4.1	20.6	14.1	11.3	12.3				
K 666	48.2	30.4	66.7	27.4	37.8	95.2	44.7	42.2	34.8				
K 667	19.1	8.2	62.8	13.7	17.3	98.4	36.2	31.0	22.2				
K 668	9.0	6.0	47.4	8.9	4.6	19.0	17.6	11.9	11.1				
K 669	9.0	6.0	47.4	10.0	5.1	20.6	17.6	12.5	11.1				
K 670	9.0	4.3	45.5	7.9	4.1	19.0	14.1	11.3	12.3				
K 671	9.5	5.4	47.4	8.4	4.6	20.6	17.1	11.9	9.8				
K 672	43.2	28.8	59.0	24.7	37.2	77.8	35.2	32.7	33.3				
K 673	28.6	19.6	38.5	16.3	19.4	60.3	23.1	26.8	19.8				
K 674	34.7	22.8	48.1	20.5	24.5	66.7	28.6	26.2	23.5				
K 675	18.6	10.6	7.1	51.3	11.1	13.8	81.0	27.1	25.6				

D TSM

TITLES

K 654 M2-17 DO YOU PERFORM TASKS ON LIMITERS?
 K 655 M2-18 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS?
 K 656 M2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS?
 K 657 M2-20 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS?
 K 658 M2-21 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSCEIVERS?
 K 659 M2-22 DO YOU PLOT RECEIVE SIGNAL LEVEL CURVES (RSL)?
 K 660 M3-1 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS?
 K 661 M3-2 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS?
 K 662 M3-3 DO YOU CONVERT DECIMAL NUMBERS TO HEXADECIMAL (BASE 16) NUMBERS?
 K 663 M3-4 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS?
 K 664 M3-5 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS?
 K 665 M3-6 DO YOU CONVERT OCTAL NUMBERS TO HEXADECIMAL NUMBERS?
 K 666 M3-7 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS?
 K 667 M3-8 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS?
 K 668 M3-9 DO YOU CONVERT BINARY NUMBERS TO HEXADECIMAL NUMBERS?
 K 669 M3-10 DO YOU CONVERT HEXADECIMAL NUMBERS TO DECIMAL NUMBERS?
 K 670 M3-11 DO YOU CONVERT HEXADECIMAL NUMBERS TO OCTAL NUMBERS?
 K 671 M3-12 DO YOU CONVERT HEXADECIMAL NUMBERS TO BINARY NUMBERS?
 K 672 M3-13 DO YOU ADD BINARY NUMBERS?
 K 673 M3-14 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD?
 K 674 M3-15 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD?
 K 675 M3-16 DO YOU ADD OCTAL NUMBERS?

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
L 693	L1-9 DO YOU USE OR REFER TO TRUTH TABLES FOR 'EXCLUSIVE OR' LOGIC SYMBOLS?	29.1	54.3	26.1	57.1	19.5	25.0	50.8	29.1	25.0	42.0
L 694	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'AND' GATES?	39.0	65.3	35.9	77.6	26.8	47.4	66.7	37.7	31.0	44.9
L 695	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'OR' GATES?	39.0	65.8	35.9	77.6	27.9	47.4	66.7	37.7	31.0	44.9
L 696	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'NAND' OR 'MOR' GATES?	39.0	65.8	35.3	71.8	27.9	45.9	65.1	37.7	30.4	44.9
L 697	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'EXCLUSIVE OR' GATES?	34.6	61.8	29.9	69.9	27.9	36.7	66.7	36.2	29.8	44.9
L 698	L1-14 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR INHIBITED 'AND' GATES?	34.6	60.3	29.9	58.3	23.7	44.9	49.2	34.2	25.0	40.7
L 699	L1-15 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'B' BARS?	3.3	6.0	4.9	6.4	7.9	6.6	3.2	4.5	6.0	12.3
L 700	L1-16 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'M' BARS?	3.3	6.0	4.3	5.1	7.9	6.1	3.2	4.5	4.8	12.3
L 701	L1-17 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR COMBINERS?	17.0	19.6	12.5	14.1	9.5	8.7	17.5	19.6	4.5	24.7
L 702	L1-18 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS?	35.7	66.3	30.4	71.2	22.6	45.4	46.0	31.7	26.2	42.0
L 703	L1-19 DO YOU USE OR REFER TO ONE-SHOT MULTIVIBRATOR SYMBOLS?	34.1	64.3	29.9	71.2	17.4	45.4	46.0	32.2	22.0	42.0
L 704	L1-20 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT OR SCHEMATIC DIAGRAMS?	36.3	65.3	32.6	73.7	22.6	45.9	52.4	33.2	28.0	43.2
L 705	L1-21 DO YOU USE OR REFER TO ONE-SHOT CIRCUIT OR SCHEMATIC DIAGRAMS?	33.5	62.8	30.4	69.2	17.4	44.9	44.4	33.7	19.6	42.0
L 706	L1-22 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES?	28.6	54.3	28.3	55.1	17.4	27.6	44.4	26.6	20.2	35.8
L 707	L1-23 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS?	21.4	46.2	20.7	55.8	15.8	29.1	30.2	22.1	23.2	28.4
L 708	L1-24 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS?	21.4	46.2	20.7	53.8	15.8	29.1	30.2	22.1	22.6	27.2
L 709	L1-25 DO YOU USE OR REFER TO NONCOMPLEMENTED FLIP-FLOP LOGIC SYMBOLS?	18.7	38.7	19.6	48.7	14.2	25.0	30.2	19.6	19.6	24.7
L 710	L1-26 DO YOU CONSTRUCT TRUTH TABLES FOR 'B' BARS?	3.3	4.0	2.7	3.8	6.3	2.0	1.6	2.5	3.6	8.6
L 711	L1-27 DO YOU CONSTRUCT TRUTH TABLES FOR 'M' BARS?	3.3	4.0	2.7	3.2	6.3	2.0	1.6	2.5	3.0	8.6
L 712	L1-28 DO YOU CONSTRUCT TRUTH TABLES FOR COMBINERS?	9.3	10.1	4.3	6.4	8.4	4.1	4.8	5.0	4.2	11.1

D TSK	TITLES	304 (M)	304 (P)	304 (M)	305 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	355 (M)	355 (M)
L 729	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS?	8.2	18.6	12.5	27.6	10.0	9.7	19.0	11.6	8.9	16.0				
L 730	L3-1 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM MI-1; IF YES, CONTINUE.	33.5	64.8	30.4	65.4	26.3	37.2	55.6	38.7	32.7	53.1				
L 731	L3-2 DO YOU USE OR REFER TO UP-COUNTERS?	29.1	55.3	27.7	63.5	26.8	38.3	58.7	36.7	29.8	49.4				
L 732	L3-3 DO YOU USE OR REFER TO DOWN-COUNTERS?	28.6	50.8	25.5	62.2	25.8	35.2	58.7	36.7	27.4	44.4				
L 733	L3-4 DO YOU USE OR REFER TO SERIAL COUNTERS?	24.2	43.2	26.1	62.2	23.7	34.7	52.4	31.7	28.0	48.1				
L 734	L3-5 DO YOU USE OR REFER TO PARALLEL COUNTERS?	23.1	37.7	23.9	59.0	22.1	25.5	49.2	29.6	22.0	40.7				
L 735	L3-6 DO YOU USE OR REFER TO RING COUNTERS?	11.0	31.7	15.8	46.2	7.9	8.7	30.2	21.1	11.3	17.3				
L 736	L3-7 DO YOU USE OR REFER TO DECADE (MOD 10) COUNTERS?	22.5	56.3	17.9	34.6	16.3	12.8	31.7	25.6	14.3	23.5				
L 737	L3-8 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS?	18.7	47.7	19.6	58.3	13.2	17.3	38.1	24.6	19.0	32.1				
L 738	L3-9 DO YOU USE OR REFER TO DOWN CLOCKS?	26.9	61.3	27.2	60.9	23.2	31.1	57.1	35.2	26.8	44.4				
L 739	L3-10 DO YOU USE OR REFER TO UP CLOCKS?	26.9	60.8	26.6	60.9	22.6	31.1	57.1	35.2	26.8	44.4				
L 740	L3-11 DO YOU USE OR REFER TO OTHER MODULOUS COUNTERS?	18.1	26.6	12.5	34.6	9.5	13.3	30.2	20.6	13.7	25.9				
L 741	L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS?	26.4	46.2	26.1	60.9	14.2	30.1	44.4	27.6	16.1	43.2				
L 742	L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DOWN-COUNTERS?	26.4	43.7	23.9	59.0	13.7	28.6	44.4	27.1	16.1	38.3				
L 743	L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-DOWN COUNTERS?	20.9	35.2	20.1	50.0	10.5	20.9	38.1	25.1	14.1	37.0				
L 744	L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS?	22.0	47.7	17.9	34.6	10.5	12.2	23.8	23.6	11.9	27.2				
L 745	L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS?	11.5	26.1	13.6	40.4	4.7	7.7	22.2	18.6	7.1	16.0				
L 746	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF COUNTERS FEEDING STORAGE REGISTERS?	19.8	31.7	18.5	52.6	11.6	15.8	28.6	24.6	12.5	38.3				
L 747	L3-18 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS?	24.2	29.1	22.3	60.9	13.7	14.3	42.9	26.1	14.9	40.7				
L 748	L3-19 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS?	19.2	28.1	14.1	39.1	7.4	15.3	30.2	20.1	8.9	29.6				

D FSN	TITLES	204	304	305	328	328	328	328	328	328	328	328	328	328	328
(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
M 764	M2-1 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	66.7	77.9	80.4	38.5	70.0	75.5	57.1	72.9	51.2	77.8				
M 765	M2-2 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS?	67.0	72.9	78.0	35.3	68.4	74.0	54.0	67.8	50.6	74.1				
M 766	M2-3 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS?	58.8	59.3	60.9	27.6	53.2	57.7	33.3	47.2	38.7	66.7				
M 767	M2-4 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS?	50.5	51.8	60.9	27.6	54.7	58.2	42.9	47.2	39.9	58.0				
M 768	M2-5 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS?	36.8	43.7	54.3	23.7	45.2	48.4	11.1	24.6	21.4	43.2				
M 769	M2-6 DO YOU USE AUDIO SINE-WAVE GENERATORS?	52.2	55.8	67.4	19.2	63.2	55.1	6.3	18.1	36.9	75.3				
M 770	M2-7 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE?	28.0	35.2	28.3	17.9	25.3	41.3	9.5	24.6	14.3	54.3				
M 771	M2-8 DO YOU USE RF GENERATORS LESS THAN 1,000 MHZ?	48.4	56.8	65.2	10.9	60.5	59.2	27.0	42.2	19.6	65.4				
M 772	M2-9 DO YOU USE RF GENERATORS GREATER THAN 1,000 MHZ?	52.2	48.7	28.3	3.8	28.9	59.2	41.3	66.8	17.9	33.3				
M 773	M2-10 DO YOU USE WHITE NOISE GENERATORS?	23.1	4.5	7.6	11.5	4.2	3.1	4.8	21.6	7.1	17.3				
M 774	M2-11 DO YOU USE PATTERN GENERATORS?	22.5	8.5	8.7	20.5	8.4	12.2	3.2	11.1	3.0	27.2				
M 775	M2-12 DO YOU USE PSEUDO-RANDOM GENERATORS?	6.6	4.5	3.8	1.9	5.3	5.1	3.2	9.0	1.8	25.9				
M 776	M2-13 DO YOU USE TIME MARK GENERATORS?	14.8	37.7	10.9	6.4	6.8	30.1	9.5	18.6	5.4	30.9				
M 777	M2-14 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS?	27.5	44.2	17.9	16.7	17.4	43.9	27.0	35.2	15.5	44.4				
M 778	M3-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS, GENERATORS (SERVO), OR ALTERNATORS? IF NO, GO TO ITEM M1-1; IF YES, CONTINUE.	22.0	46.7	48.4	51.3	42.1	58.2	7.9	34.2	37.5	54.3				
M 779	M3-2 DO YOU INSPECT MOTORS?	19.2	47.2	46.7	49.4	40.0	56.6	4.8	32.7	32.7	45.7				
M 780	M3-3 DO YOU CLEAN OR LUBRICATE MOTORS?	17.6	43.7	44.0	45.5	36.3	50.0	3.2	27.6	23.2	37.0				
M 781	M3-4 DO YOU OPERATE MOTORS?	15.4	38.2	39.1	40.4	38.4	55.6	7.9	30.7	27.4	44.4				
M 782	M3-5 DO YOU REMOVE OR REPLACE COMPLETE MOTORS?	15.4	44.2	44.6	43.6	40.0	58.7	4.8	30.7	31.0	46.9				
M 783	M3-6 DO YOU REMOVE OR REPLACE MOTOR PARTS?	7.7	20.1	27.2	26.3	14.7	23.0	3.2	18.1	5.4	19.8				

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPID1 PAGE 48

D	TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328
			(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
M	784	M3-7 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS?	17.0	43.7	42.4	44.2	38.9	57.7	6.3	30.7	32.1	45.7						
M	785	M3-8 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS?	7.1	13.6	19.6	19.9	12.6	13.3	3.2	11.1	4.8	13.6						
M	786	M3-9 DO YOU PERFORM TASKS ON MOTOR FIELD COILS?	3.8	6.0	9.2	10.3	5.3	7.7	.0	2.5	3.6	7.4						
M	787	M3-10 DO YOU PERFORM ANY TASKS ON MOTOR ARMATURES?	7.7	9.5	12.0	13.5	7.4	11.2	.0	7.5	3.0	6.2						
M	788	M3-11 DO YOU PERFORM ANY TASKS ON MOTOR ROTORS?	7.1	9.0	11.4	14.7	6.8	12.0	.0	7.5	3.6	6.2						
M	789	M3-12 DO YOU PERFORM ANY TASKS ON MOTOR BRUSHES?	7.7	7.0	17.9	22.4	11.6	16.3	1.6	11.6	3.6	7.0						
M	790	M3-13 DO YOU PERFORM ANY TASKS ON MOTOR SLIP RINGS?	4.4	5.0	11.4	10.3	5.8	17.3	1.6	5.5	3.6	4.9						
M	791	M3-14 DO YOU PERFORM ANY TASKS ON MOTOR COMMUTATORS?	3.8	3.5	11.4	11.5	6.3	8.7	.0	5.5	1.8	3.7						
M	792	M3-15 DO YOU PERFORM ANY TASKS ON MOTOR POLE PIECES?	3.3	3.5	8.7	9.0	6.8	5.6	.0	2.0	1.2	3.7						
M	793	M3-16 DO YOU DETERMINE OR MEASURE FORCE OR TORQUE CREATED BY A MOTOR?	2.2	1.0	7.6	7.1	5.8	14.8	.0	4.0	2.4	2.5						
M	794	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR?	3.8	10.6	10.9	10.9	10.0	18.9	1.6	6.0	7.7	7.4						
M	795	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS?	2.7	6.0	6.5	8.3	6.3	14.3	.0	2.5	9.3	8.6						
M	796	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS?	8.8	15.6	23.4	23.7	15.3	48.5	.0	7.5	23.2	17.3						
M	797	M3-20 DO YOU WORK WITH INDUCTION MOTORS?	6.6	17.1	23.4	15.4	13.2	37.2	4.8	11.1	12.5	9.9						
M	798	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS?	7.7	21.1	12.5	10.9	8.9	34.2	1.6	6.5	10.1	7.4						
M	799	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS?	8.2	21.1	21.7	21.2	14.7	34.7	3.2	11.6	12.5	16.0						
M	800	M3-23 DO YOU WORK WITH SERVOES OR SYNCHROS MOTORS?	12.6	13.1	33.2	29.5	32.1	57.7	.0	12.6	36.3	45.7						
M	801	M3-24 DO YOU WORK WITH SHADED-POLE MOTORS?	1.6	2.5	1.6	4.5	3.2	4.1	.0	2.0	1.8	1.2						
M	802	M3-25 DO YOU INSPECT GENERATORS OR ALTERNATORS?	9.9	18.1	12.0	12.8	6.8	12.2	1.6	6.0	10.1	6.2						
M	803	M3-26 DO YOU CLEAN OR LUBRICATE GENERATORS OR ALTERNATORS?	6.6	8.5	8.2	11.5	5.3	9.7	1.6	5.0	5.4	6.2						
M	804	M3-27 DO YOU OPERATE GENERATORS OR ALTERNATORS?	11.0	20.6	12.0	8.3	7.4	12.2	1.6	7.0	8.3	6.2						
M	805	M3-28 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS OR ALTERNATORS?	3.8	5.0	6.0	6.4	6.8	10.2	1.6	4.0	9.5	4.9						
M	806	M3-29 DO YOU REMOVE OR REPLACE GENERATOR, ALTERNATOR, OR PARTS?	3.3	5.5	5.4	6.4	4.2	8.2	1.6	2.0	5.4	3.7						

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328
M 807	M3-30 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS OR ALTERNATORS?	5.5	9.0	6.2	6.3	6.3	10.2	1.6	6.0	10.1	9.9				
M 808	M3-31 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS OR ALTERNATORS?	2.2	3.0	4.3	3.0	2.1	6.1	1.6	1.5	.0	2.5				

N METER MOVEMENTS (N1), SATURABLE REACTORS AND MAGNETIC AMPLIFIERS (N2), WAVESHAPING CIRCUITS (N3)

N 809	N1-1 DO YOU WORK WITH METERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM N2-1; IF YES, CONTINUE.	80.8	84.9	79.9	74.4	85.8	85.7	68.3	83.9	79.2	81.5				
N 810	N1-2 DO YOU CONSIDER THE FUNCTIONS OF PERMANENT MAGNET INTERNAL METER PARTS?	16.5	26.1	23.9	12.8	15.8	30.1	9.8	18.1	14.1	21.0				
N 811	N1-3 DO YOU CONSIDER THE FUNCTIONS OF MOVING COIL INTERNAL METER PARTS?	23.1	34.2	26.1	19.2	14.7	36.7	9.5	17.1	16.1	23.5				
N 812	N1-4 DO YOU CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS INTERNAL METER PARTS?	15.9	25.1	20.1	17.9	13.7	24.0	11.1	14.1	14.9	16.0				
N 813	N1-5 DO YOU READ METER SCALES?	81.3	84.9	80.4	73.1	84.2	86.7	61.9	83.9	76.8	80.2				
N 814	N1-6 DO YOU EXTEND THE RANGE OF AMMETERS?	30.8	35.7	27.7	24.4	34.7	39.3	15.9	34.7	28.0	27.2				
N 815	N1-7 DO YOU EXTEND THE RANGE OF VOLTMETERS?	42.3	49.2	39.1	34.0	44.2	52.6	27.0	41.2	41.1	38.3				
N 816	N1-8 DO YOU ZERO OHMMETERS?	79.7	84.4	79.9	71.8	83.2	86.2	65.1	84.4	78.6	82.7				
N 817	N1-9 DO YOU ZERO AMMETERS?	41.0	51.8	41.8	32.1	45.8	50.5	33.3	40.7	37.5	46.9				
N 818	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)?	41.2	55.3	57.6	30.8	41.6	52.0	23.8	47.2	43.5	55.6				
N 819	N1-11 DO YOU CONSIDER BALLASTIC RESPONSE OF METER MOVEMENTS?	9.3	8.0	9.2	5.1	11.6	10.2	7.9	8.0	3.6	14.8				
N 820	N1-12 DO YOU CONSIDER OTHER METER MOVEMENTS?	28.0	34.7	29.9	24.4	30.0	36.7	25.4	33.7	22.6	42.0				
N 821	N2-1 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM N3-1; IF YES, CONTINUE.	8.8	33.7	9.2	10.9	6.8	15.3	1.6	15.1	9.5	1.2				

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 50

D	TASK	TITLES	304	304	305	328	328	328	328	328	328	328	328
			(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
N 822	N2-2	DO YOU INSPECT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	6.0	32.2	6.0	7.7	4.7	14.3	.0	12.6	7.7	.0	328
N 823	N2-3	DO YOU CLEAN SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	5.5	27.1	4.3	6.4	3.2	12.8	.0	10.1	5.4	.0	328
N 824	N2-4	DO YOU ADJUST SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	5.5	23.6	3.3	3.8	3.7	12.2	.0	8.0	3.6	.0	328
N 825	N2-5	DO YOU TROUBLESHOOT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	4.9	28.1	4.3	5.8	3.7	12.2	.0	11.1	7.1	.0	328
N 826	N2-6	DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS?	6.0	25.1	5.4	6.4	4.7	12.8	.0	10.1	7.7	.0	328
N 827	N2-7	DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS?	3.3	19.6	3.8	4.5	3.2	8.2	.0	6.0	3.6	.0	328
N 828	N2-8	DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS?	2.7	5.0	2.7	3.2	3.2	2.0	.0	3.5	3.0	.0	328
N 829	N2-9	DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	5.5	16.6	4.3	3.8	3.2	8.7	.0	7.5	3.0	.0	328
N 830	N2-10	DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	6.0	16.6	3.8	3.8	3.2	9.2	.0	8.5	5.4	.0	328
N 831	N2-11	DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS?	4.4	13.1	4.3	3.8	2.6	7.7	.0	6.5	3.0	.0	328
N 832	N2-12	DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS?	7.7	29.1	6.5	5.1	4.2	11.2	.0	12.6	6.0	.0	328
N 833	N3-1	DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 01-1; IF YES, CONTINUE.	39.0	78.4	26.6	55.1	22.1	63.3	66.7	51.3	29.8	39.5	328
N 834	N3-2	DO YOU USE OR REFER TO TRANSIENT INTERVALS, RISE TIME AND FALL TIME?	30.8	71.4	19.0	50.6	14.2	54.1	52.4	41.2	20.2	35.8	328
N 835	N3-3	DO YOU USE OR REFER TO PULSE WIDTH (PW)?	36.3	76.9	22.8	55.1	17.9	63.3	65.1	49.7	25.0	38.3	328
N 836	N3-4	DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)?	25.3	71.4	21.2	53.8	14.7	62.8	58.7	48.7	22.0	32.1	328
N 837	N3-5	DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)?	21.4	65.8	21.2	50.0	14.7	63.8	65.1	49.2	21.4	29.6	328
N 838	N3-6	DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS?	28.6	68.3	21.2	46.4	14.2	48.0	25.4	29.6	17.3	25.9	328

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 51

D TSM	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
N 839	M3-7 DO YOU USE OR REFER TO INTEGRATING CIRCUITS?	29.1	65.8	21.2	44.9	15.3	48.5	41.3	34.2	22.0	25.9							
N 840	M3-8 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT?	20.3	48.7	16.3	27.6	11.1	40.8	22.2	27.6	12.5	19.8							
N 841	M3-9 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION?	13.7	31.2	13.0	19.2	7.4	23.0	14.3	10.1	4.8	11.1							
N 842	M3-10 DO YOU WORK WITH SQUARE WAVE GENERATOR SOLID STATE CIRCUITS?	36.3	63.8	16.8	37.2	18.4	56.1	30.2	42.2	18.5	43.2							
N 843	M3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATOR SOLID STATE CIRCUITS?	20.9	45.2	9.2	21.2	11.6	43.9	11.1	28.1	10.7	24.7							
N 844	M3-12 DO YOU WORK WITH TRIANGULAR (SAWTOOTH) WAVE GENERATOR SOLID STATE CIRCUITS?	25.8	43.7	14.1	22.4	14.2	55.1	11.1	40.7	14.3	32.1							
N 845	M3-13 DO YOU WORK WITH RAMP (TRAPEZOIDAL) GENERATOR SOLID STATE CIRCUITS?	10.4	35.2	10.9	12.8	10.0	51.5	7.9	30.2	8.9	14.8							
N 846	M3-14 DO YOU WORK WITH FUNCTION GENERATOR SOLID STATE CIRCUITS?	18.7	31.2	10.9	21.8	11.1	30.6	11.1	21.1	13.7	27.2							
N 847	M3-15 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS?	30.2	62.3	16.8	39.1	12.6	52.0	17.5	28.1	14.3	27.2							
N 848	M3-16 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS?	28.6	61.8	16.3	36.5	12.6	54.1	19.0	34.7	13.7	28.4							
N 849	M3-17 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS?	15.9	46.2	12.0	23.7	8.4	39.3	14.3	25.1	9.5	21.0							
N 850	M3-18 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS?	29.7	60.3	15.2	38.5	13.2	52.6	31.7	33.2	14.9	27.2							
N 851	M3-19 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS?	27.5	53.3	15.2	33.3	10.0	44.9	19.0	21.1	11.9	23.5							
N 852	M3-20 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS?	28.6	54.3	16.3	32.1	13.2	51.0	30.2	30.2	16.7	25.9							
N 853	M3-21 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS?	25.8	51.8	15.2	32.1	9.5	44.4	14.3	18.6	10.7	24.7							

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 52

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328
0	SINGLE OR INDEPENDENT SIDEBAND SYSTEMS (01), PULSE MODULATION SYSTEMS (02), ANTENNAS (03)	50 (M)	51 (M)	54 (M)	54 (M)	50 (M)	51 (M)	52 (M)	53 (M)	54 (M)	54 (M)	55 (M)	55 (M)	55 (M)	55 (M)	55 (M)	55 (M)

0 054	01-1 DO YOU WORK ON SINGLE OR INDEPENDENT SIDEBAND SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 02-1; IF YES, CONTINUE.	33.5	29.1	54.3	1.9	72.1	12.8	12.7	14.6	13.1	13.1	39.5	39.5				
0 055	01-2 DO YOU INSPECT SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	31.9	27.1	53.3	.6	70.0	12.2	12.7	12.1	13.1	40.7	40.7					
0 056	01-3 DO YOU CLEAN SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	30.2	27.1	50.5	.6	61.6	10.7	4.8	10.6	11.3	32.1	32.1					
0 057	01-4 DO YOU ALIGN SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	31.9	27.6	49.5	.6	61.1	11.7	9.5	11.1	11.3	34.6	34.6					
0 058	01-5 DO YOU TROUBLESHOOT TO SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	31.9	26.6	51.1	.6	71.6	12.8	11.1	12.1	13.1	40.7	40.7					
0 059	01-6 DO YOU TROUBLESHOOT TO SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE COMPONENTS?	28.0	26.6	48.9	.6	64.2	11.7	11.1	10.1	11.3	30.9	30.9					
0 060	01-7 DO YOU REMOVE OR REPLACE SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	28.0	26.6	48.4	.6	71.1	12.8	11.1	12.6	13.1	37.0	37.0					
0 061	01-8 DO YOU REMOVE OR REPLACE SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE COMPONENTS?	28.6	26.1	50.0	.6	63.7	12.2	9.5	10.6	11.9	29.6	29.6					
0 062	01-9 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM AUDIO AMPLIFIER STAGE?	29.1	24.1	50.5	1.3	55.8	9.7	3.2	6.5	7.7	23.5	23.5					
0 063	01-10 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM BALANCED MODULATOR STAGE?	29.1	21.6	46.2	.0	51.1	8.7	3.2	4.5	8.9	19.8	19.8					
0 064	01-11 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM CARRIER OSCILLATOR STAGE?	28.6	24.1	45.1	1.9	44.7	8.7	6.3	6.0	7.1	18.5	18.5					
0 065	01-12 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM LC FILTER STAGE?	24.7	24.6	45.1	1.9	44.7	8.2	6.3	6.5	7.7	16.0	16.0					
0 066	01-13 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM CRYSTAL FILTER STAGE?	22.0	22.1	40.2	1.3	37.9	8.7	7.9	6.5	7.1	13.6	13.6					
0 067	01-14 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM MECHANICAL FILTER STAGE?	19.8	14.1	44.6	.6	45.8	6.6	6.3	5.0	6.0	14.8	14.8					
0 068	01-15 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM OSCILLATOR STAGE?	29.7	26.1	50.0	1.3	53.2	10.7	11.1	8.0	9.5	24.7	24.7					
0 069	01-16 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM MIXER STAGE?	29.7	25.1	49.5	.0	51.6	9.7	11.1	8.5	11.3	22.2	22.2					
0 070	01-17 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM DRIVER STAGE?	26.9	26.1	46.7	1.9	52.1	8.7	11.1	8.0	7.1	21.0	21.0					
0 071	01-18 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM POWER AMPLIFIER STAGES?	29.1	26.1	46.7	.6	56.3	10.2	11.1	9.5	10.1	23.5	23.5					
0 072	01-19 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM PF AMPLIFIER STAGE?	30.2	26.1	48.9	.6	55.3	10.2	11.1	10.1	8.3	24.7	24.7					
0 073	01-20 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM FREQUENCY CONVERTER STAGES?	27.5	21.6	44.6	1.3	45.8	10.2	9.5	8.5	8.3	22.2	22.2					
0 074	01-21 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM IF AMPLIFIER STAGE?	29.7	24.1	50.5	.0	54.2	10.7	9.5	8.5	13.7	22.2	22.2					
0 075	01-22 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM DEMODULATOR STAGE?	30.2	20.1	42.4	1.3	43.7	8.2	7.9	8.5	8.3	22.2	22.2					
0 076	01-23 DO YOU USE OR REFER TO SELECTIVE FADING WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	18.1	5.5	20.7	.0	19.5	4.1	1.6	1.5	2.4	9.9	9.9					

O TSM	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
0 961	03-38 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS?	4.4	14.1	18.5	.0	12.1	4.6	1.6	1.5	1.2	1.1	1.1	11.1
0 962	03-39 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS?	5.5	60.8	9.2	.0	3.2	14.8	4.8	6.5	6.5	2.5	2.5	2.5
0 963	03-40 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS?	8.2	64.8	7.1	.0	4.2	25.5	1.6	6.0	8.3	1.2	1.2	1.2
0 964	03-41 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN - DON'T KNOW WHAT KIND OF ELEMENT?	14.8	21.1	18.5	.0	43.7	42.9	39.7	38.2	23.2	38.3	38.3	38.3
0 965	03-42 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS?	29.7	61.3	25.5	.0	33.7	72.4	25.4	41.7	11.3	29.6	29.6	29.6
0 966	03-43 DO YOU WORK ON BIDIRECTIONAL ANTENNAS?	8.2	30.7	26.6	.0	24.2	67.9	4.8	23.1	13.7	33.3	33.3	33.3
0 967	03-44 DO YOU WORK ON OMNIDIRECTIONAL ANTENNAS?	2.7	76.9	45.7	.6	73.2	83.2	33.3	64.3	20.8	61.7	61.7	61.7
0 968	03-45 DO YOU WORK WITH ROTARY ANTENNA ARRAYS?	2.7	59.8	10.9	.0	27.9	61.2	73.0	6.0	17.3	8.6	8.6	8.6

P TRANSMISSION LINES (P1), WAVEGUIDES AND CAVITY RESONATORS (P2), MICROWAVE AMPLIFIERS AND OSCILLATORS (P3)

P 969 P1-1 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES? (DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES.) IF NO, GO TO ITEM P2-1; IF YES, CONTINUE.

P 970 P1-2 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE COPPER LOSS OR 'I SUB 2' R' LOSS IN TRANSMISSION LINES?

P 971 P1-3 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES?

P 972 P1-4 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE RADIATION LOSS?

P 973 P1-5 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE DIELECTRIC LOSS?

P 974 P1-6 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE LEAKAGE LOSSES?

P 975 P1-7 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE FARADAY SHIELD?

P 976 P1-8 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES?

P 977 P1-9 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES?

P 978 P1-10 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES?

P 979 P1-11 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES?

P 980 P1-12 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES?

P 981 P1-13 DO YOU TROUBLESHOOT TRANSMISSION LINES?

P 982 P1-14 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)?

P 983 P1-15 DO YOU SELECT APPROPRIATE TRANSMISSION LINE TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS?

33.0	57.8	33.7	7.1	68.4	45.4	54.0	44.7	16.7	50.6
8.8	13.1	8.2	2.6	6.8	7.7	4.8	9.0	3.6	2.5
8.8	17.1	10.9	1.9	13.7	16.3	9.5	12.1	3.0	4.9
13.7	32.2	17.4	1.3	30.0	23.0	31.7	26.1	5.4	16.0
13.2	20.1	9.8	2.6	13.7	16.8	19.0	14.6	4.2	7.4
16.5	25.1	13.6	2.6	27.4	21.9	25.4	23.6	6.5	16.0
6.0	8.5	3.8	.6	10.0	5.6	4.8	5.5	.6	1.2
20.3	13.6	12.5	2.6	12.6	10.7	17.5	14.1	1.2	13.6
16.5	16.6	11.4	3.8	8.4	10.2	6.3	9.5	1.8	3.7
11.0	10.6	8.2	.6	8.4	7.1	3.2	6.0	1.2	8.6
31.3	53.3	33.7	3.2	66.3	45.4	54.0	42.7	16.1	43.2
17.6	43.2	17.4	1.3	36.3	32.7	50.8	31.2	6.0	28.4
26.4	49.2	28.3	2.6	66.3	43.4	47.6	37.7	13.7	40.7
12.6	33.2	10.9	3.8	32.1	29.1	27.0	18.1	9.9	13.6
9.3	29.6	7.6	2.6	12.1	15.3	19.0	9.5	4.2	7.4

D TSK	TITLES	304 (M)	304 51 (M)	304 54 (M)	305 (M)	328 50 (M)	328 51 (M)	328 52 (M)	328 53 (M)	328 54 (M)	328 55 (M)
P1012	P2-13 DO YOU REMOVE OR INSTALL CHOKE JOINTS?	6.6	4.0	1.1	.0	.0	28.1	11.1	8.0	6.5	6.2
P1013	P2-14 DO YOU REMOVE OR INSTALL ROTATING JOINTS?	6.6	4.5	1.6	.0	.0	25.5	42.9	5.5	8.3	3.7
P1014	P2-15 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS?	26.9	22.6	6.5	.0	2.1	57.7	52.4	43.2	19.0	13.6
P1015	P2-16 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS?	12.1	19.1	1.1	.0	.5	44.4	25.4	17.1	7.1	7.4
P1016	P2-17 DO YOU REMOVE OR INSTALL DUPLEXERS OR MIXERS?	19.8	23.1	2.2	.0	1.1	57.7	31.7	25.1	16.1	11.1
P1017	P2-18 DO YOU REMOVE OR INSTALL WAVEGUIDE SHUTTERS?	14.3	4.5	.0	.0	.0	43.9	12.7	5.0	3.0	2.5
P1018	P2-19 DO YOU REMOVE OR INSTALL TRANSMIT (TR) OR ANTITRANSMIT (ATR) TUBES?	7.8	6.5	1.6	.0	1.6	52.0	4.8	8.5	11.3	6.2
P1019	P2-20 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES?	9.3	2.5	1.1	.0	.0	15.8	22.2	5.5	4.8	.0
P1020	P2-21 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES?	9.3	2.0	1.1	.0	.0	15.8	23.8	5.5	4.8	.0
P1021	P2-22 DO YOU USE OR REFER TO CUT OFF FREQUENCY OF WAVEGUIDES?	17.0	3.0	2.2	.6	.0	17.9	20.6	12.1	4.2	.0
P1022	P2-23 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES?	10.4	1.5	.5	.0	.0	17.3	17.5	6.0	4.8	.0
P1023	P2-24 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES?	9.3	1.0	.5	.0	.0	15.0	17.5	6.0	3.6	.0
P1024	P2-25 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS?	5.5	1.0	.5	.0	.0	8.7	11.1	3.0	1.8	.0
P1025	P2-26 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS?	4.9	1.0	.5	.0	.0	9.7	12.7	3.0	1.8	1.2
P1026	P2-27 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS?	4.4	4.5	.5	.0	.0	9.2	11.1	1.5	1.8	.0
P1027	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OR .7 WAVELENGTHS OF THE OPERATING FREQUENCY?	6.0	2.0	.5	.0	.0	9.7	7.9	6.0	3.0	.0
P1028	P2-29 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 AS AN AVERAGE?	6.6	2.0	.5	.0	.0	8.7	6.3	4.0	1.8	.0
P1029	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION?	8.2	1.0	.5	.0	.5	8.2	1.6	2.5	1.2	.0
P1030	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?	13.2	5.0	1.1	.0	.0	11.2	11.1	3.5	1.8	.0
P1031	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES?	2.2	2.0	1.1	.0	.0	4.6	4.8	.5	1.2	.0
P1032	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES?	1.6	2.0	.5	.0	.0	3.1	1.6	.5	1.2	.0
P1033	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES?	2.2	4.0	.5	.0	.0	3.1	3.2	.5	1.2	.0
P1034	P2-35 DO YOU WORK WITH HIGH POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	14.8	8.5	1.1	.0	.5	33.2	39.7	11.1	2.4	3.7
P1035	P2-36 DO YOU WORK WITH LOW POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	17.0	9.5	1.1	.0	1.1	30.6	20.6	8.0	3.6	2.5
P1036	P2-37 DO YOU WORK WITH LOOP ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	13.2	13.6	2.7	.0	.5	33.7	11.1	7.5	1.8	2.5
P1037	P2-38 DO YOU WORK WITH APERATURES (WINDOWS OR IRISES) ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	19.8	4.5	1.6	.0	.5	49.0	57.1	15.6	5.4	1.2
P1038	P2-39 DO YOU WORK WITH CHOKE JOINTS IN WAVEGUIDES OR CAVITY RESONATORS?	7.1	2.5	1.1	.0	.5	28.1	11.1	6.0	5.5	1.2

O TSK	TITLES	Z04 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
P1068	P3-25 DO YOU CLEAN PARAMETRIC AMPLIFIERS?	16.5	2.0	.0	.5	8.2	20.6	4.5	1.8	3.7						
P1069	P3-26 DO YOU ADJUST PARAMETRIC AMPLIFIERS?	15.4	2.5	.0	.5	8.7	17.5	5.0	1.8	4.9						
P1070	P3-27 DO YOU TUNE PARAMETRIC AMPLIFIERS?	15.4	2.5	.0	.5	8.7	15.9	5.0	1.8	3.7						
P1071	P3-28 DO YOU PERFORM OPERATIONAL CHECKS ON PARAMETRIC AMPLIFIERS?	16.5	2.5	1.1	.0	8.2	41.3	5.5	1.8	4.9						
P1072	P3-29 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS?	17.6	2.0	.5	.0	7.7	41.3	5.0	1.8	4.9						
P1073	P3-30 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER?	16.5	2.5	.5	.0	8.7	39.7	5.0	1.8	4.9						
P1074	P3-31 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS?	12.1	1.5	.0	.5	5.1	15.9	3.5	1.8	2.5						
P1075	P3-32 DO YOU INSPECT MAGNETRONS?	3.3	1.5	.5	.0	57.7	.0	21.6	12.5	.0						
P1076	P3-33 DO YOU CLEAN MAGNETRONS?	3.3	1.5	.0	.0	47.4	.0	17.6	9.5	.0						
P1077	P3-34 DO YOU ADJUST MAGNETRONS?	3.3	1.5	.0	.0	40.3	.0	17.6	12.5	.0						
P1078	P3-35 DO YOU TUNE MAGNETRONS?	3.3	1.0	.0	.0	41.8	.0	19.1	12.5	.0						
P1079	P3-36 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS?	3.3	1.5	.5	.0	61.2	.0	22.1	13.1	.0						
P1080	P3-37 DO YOU TROUBLESHOOT MAGNETRONS?	3.3	1.5	.0	.0	55.1	.0	20.1	13.7	.0						
P1081	P3-38 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON?	2.7	1.5	.0	.0	60.7	.0	22.6	13.1	.0						
P1082	P3-39 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS?	1.6	1.0	.0	.0	13.3	.0	6.0	3.0	.0						
P1083	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF COLLECTOR PLATE COMPONENTS OF TWO-CAVITY KLYSTRONS?	15.4	6.5	.5	.0	7.1	25.4	2.0	4.2	1.2						
P1084	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATCHER CAVITY COMPONENTS OF TWO-CAVITY KLYSTRONS?	13.7	5.5	.5	.0	5.1	12.7	2.0	2.4	1.2						
P1085	P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATCHER GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	14.3	5.0	.5	.0	4.6	15.9	1.5	2.4	.0						
P1086	P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FEEDBACK LOOP COMPONENTS OF TWO-CAVITY KLYSTRONS?	13.7	4.5	.5	.0	6.6	22.2	3.0	3.0	1.2						
P1087	P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF DRIFT SPACE COMPONENTS OF TWO-CAVITY KLYSTRONS?	13.2	4.0	.5	.0	4.6	14.3	2.0	1.2	.0						
P1088	P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF BUNCHER GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	14.8	4.0	.5	.0	3.6	9.5	1.5	1.2	1.2						
P1089	P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF BUNCHER CAVITY COMPONENTS OF TWO-CAVITY KLYSTRONS?	14.8	4.0	.5	.0	4.1	11.1	2.0	1.2	1.2						
P1090	P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CONTROL GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	15.9	7.0	.5	.0	8.2	22.2	2.5	3.0	1.2						
P1091	P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF TWO-CAVITY KLYSTRONS?	15.4	7.0	.5	.6	10.2	25.4	4.0	3.0	3.7						
P1092	P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REPELLER (REFLECTOR) PLATE COMPONENTS OF REFLEX KLYSTRONS?	21.4	3.5	1.1	.0	18.9	9.5	3.0	14.4	.0						
P1093	P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF GRID COMPONENTS OF REFLEX KLYSTRONS?	20.3	6.5	1.1	.0	17.9	19.0	3.5	11.3	1.2						
P1094	P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF GRID CAVITY GAP COMPONENTS OF REFLEX KLYSTRONS?	14.3	5.0	.5	.0	12.2	9.5	3.0	8.9	.0						
P1095	P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF RESONANT CAVITY COMPONENTS OF REFLEX KLYSTRONS?	18.7	7.0	1.1	.0	19.9	12.7	4.5	10.7	2.5						
P1096	P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MAGNETIC COUPLING LOOP COMPONENTS OF REFLEX KLYSTRONS?	13.7	4.5	1.1	.0	12.8	6.3	3.5	7.1	.0						
P1097	P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FILAMENT COMPONENTS OF REFLEX KLYSTRONS?	20.9	6.0	1.1	.0	19.9	17.5	5.5	10.7	1.2						

304	304	305	328	328	328	328	328	328	328	328	328	328	328
50	51	54	54	50	51	52	53	54	55				
(M)	(P)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)				

D TSK TITLES

Q REGISTERS (Q1), STORAGE DEVICES (Q2), DIGITAL-TO-ANALOG AND ANALOG-TO-DIGITAL CONVERTERS (Q3)

Q1121	Q1-1	00	YOU USE OR REFER TO STORAGE RESISTERS?	29.1	24.1	29.9	79.5	22.1	22.4	66.7	34.7	29.8	58.0
Q1122	Q1-2	00	YOU USE OR REFER TO SHIFT REGISTERS?	34.1	28.1	31.5	77.6	22.6	21.4	69.8	35.7	32.7	60.5
Q1123	Q1-3	00	YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS?	31.9	26.1	31.5	71.8	18.4	23.0	55.6	32.7	26.8	58.0
Q1124	Q1-4	00	YOU USE OR REFER TO LOGIC SYMBOLS OR STORAGE REGISTERS?	29.1	23.6	29.3	71.8	19.5	21.9	55.6	32.7	25.6	55.6
Q1125	Q1-5	00	YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTER CIRCUITS?	30.8	23.6	29.3	71.2	14.2	17.3	57.1	29.6	22.6	46.9
Q1126	Q1-6	00	YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPES OF REGISTER CIRCUITS?	23.1	21.1	26.6	69.9	13.7	17.3	49.2	25.1	19.0	44.4
Q1127	Q1-7	00	YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED?	28.6	21.6	22.8	57.7	14.7	19.9	39.7	26.6	20.2	44.4
Q1128	Q2-1	00	YOU WORK WITH STORAGE DEVICES IN YOUR PRESENT JOB? IF NO, GO TO ITEM Q3-1; IF YES, CONTINUE.	19.2	34.2	16.8	82.7	31.6	27.0	77.8	42.2	41.1	39.5
Q1129	Q2-2	00	YOU USE OR REFER TO DELAY LINES?	5.5	30.2	6.5	32.1	6.3	26.5	63.5	20.6	9.5	7.4
Q1130	Q2-3	00	YOU USE OR REFER TO MAGNETIC CORES OR BIMAGS?	2.2	8.0	4.3	64.1	23.2	5.6	42.9	11.1	23.2	8.6
Q1131	Q2-4	00	YOU USE OR REFER TO MAGNETIC DRUMS?	2.7	1.5	2.2	26.3	12.6	3.6	20.6	6.5	13.7	4.9
Q1132	Q2-5	00	YOU USE OR REFER TO MAGNETIC TAPES?	3.3	3.0	12.0	76.9	6.8	1.0	74.8	31.7	23.2	35.8
Q1133	Q2-6	00	YOU USE OR REFER TO ACCESS TIME OR SPEED OF MEMORY SYSTEMS?	6.0	7.5	4.9	55.8	8.4	6.1	54.0	22.1	18.5	15.5
Q1134	Q2-7	00	YOU USE OR REFER TO STORAGE CAPACITY OF MEMORY SYSTEMS?	12.1	11.6	7.1	74.4	15.3	5.1	69.4	26.1	25.0	30.9
Q1135	Q2-8	00	YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS?	5.5	6.5	3.3	64.7	11.1	2.6	71.4	16.1	21.4	28.4
Q1136	Q2-9	00	YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES?	6.6	18.1	6.0	35.9	5.3	14.3	50.8	13.1	11.3	8.6
Q1137	Q2-10	00	YOU USE OR REFER TO MAGNETIC DISKS?	1.6	.5	3.3	48.7	3.7	1.0	3.2	20.6	8.9	6.2
Q1138	Q2-11	00	YOU USE OR REFER TO THIN FILMS?	2.2	.5	2.2	10.9	3.2	.5	1.6	6.0	8.3	7.4
Q1139	Q2-12	00	YOU USE OR REFER TO SEMICONDUCTOR MEMORY (INTEGRATED) CIRCUITS?	15.9	15.6	7.1	55.8	16.8	14.3	49.2	27.1	28.6	14.8
Q1140	Q2-13	00	YOU USE OR REFER TO BUBBLE MEMORIES?	1.1	1.0	.5	2.6	3.2	1.5	.0	8.0	4.2	1.2
Q1141	Q2-14	00	YOU USE OR REFER TO PUNCH CARDS?	1.6	1.5	2.7	39.1	2.6	1.5	3.2	5.0	4.2	17.3
Q1142	Q2-15	00	YOU USE OR REFER TO PAPER TAPES?	4.4	10.1	2.7	28.8	3.2	2.0	60.3	28.6	10.7	19.8
Q1143	Q2-16	00	YOU USE OR REFER TO RANDOM ACCESS MEMORIES (RAM)?	15.9	12.1	6.5	60.9	10.0	5.1	79.4	34.2	26.8	25.9
Q1144	Q2-17	00	YOU USE OR REFER TO READ ONLY MEMORIES (ROM)?	14.8	12.6	8.2	57.7	12.1	4.6	81.0	36.7	26.2	29.6
Q1145	Q2-18	00	YOU USE OR REFER TO PROGRAMMABLE READ ONLY MEMORIES (PROM)?	14.8	5.5	6.5	42.3	7.9	2.0	76.2	35.2	23.8	19.8
Q1146	Q2-19	00	YOU USE OR REFER TO TRANSFORMER READ ONLY STORAGE (TROS)?	1.1	1.0	.5	7.1	1.6	1.0	3.2	1.0	5.4	6.2
Q1147	Q2-20	00	YOU USE OR REFER TO CAPACITY READ ONLY STORAGE (CROS)?	.5	2.0	.5	6.4	1.6	1.0	1.6	.5	4.2	3.7
Q1148	Q2-21	00	YOU INSPECT STORAGE DEVICES?	13.7	24.1	12.0	75.0	22.1	18.9	41.3	32.2	26.2	19.8
Q1149	Q2-22	00	YOU CLEAN STORAGE DEVICES?	12.6	22.1	10.9	72.4	15.8	16.8	22.2	27.6	20.2	21.0
Q1150	Q2-23	00	YOU ALIGN STORAGE DEVICES?	6.6	15.6	7.6	59.0	8.4	9.7	15.9	15.1	8.3	12.3
Q1151	Q2-24	00	YOU ADJUST STORAGE DEVICES?	6.0	17.1	7.6	59.6	8.4	9.7	19.0	15.1	9.9	13.6
Q1152	Q2-25	00	YOU TROUBLESHOOT MEMORY SYSTEM STORAGE DEVICES?	11.5	17.1	8.7	73.1	20.0	9.7	68.3	21.6	25.6	25.9
Q1153	Q2-26	00	YOU REMOVE OR REPLACE SUBASSEMBLIES OR COMPONENTS OF STORAGE DEVICES?	14.3	18.6	9.2	69.2	18.9	9.7	50.8	21.6	23.2	24.7

D TSK	TITLES	704	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
Q1176	Q3-22 ARE YOU ASSIGNED AGAINST A POSITION WHICH REQUIRES A "D" PREFIX?	0.5	1.0	0.0	0.6	0.5	1.0	0.8	1.0	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0

R PHANTASTRONS (R1), SCHMITT TRIGGERS (R2), CABLE FABRICATION (R3)

R1177	R1-1 DO YOU WORK WITH PHANTASTRON CIRCUITRY? IF NO, GO TO ITEM R2-1. IF YES, CONTINUE.	7.7	11.1	3.3	5.8	3.2	33.7	4.8	7.5	16.1	6.2							
R1178	R1-2 PHANTASTRON CIRCUITRY HAS VARIABLE-DELAY APPLICATIONS IN MY JOB.	4.9	8.0	1.1	3.2	1.6	18.9	1.6	2.0	3.6	4.9							
R1179	R1-3 PHANTASTRON CIRCUITRY HAS SEARCH-LOCK AUTOMATIC FREQUENCY CONTROLS (AFC) APPLICATIONS IN MY JOB.	7.1	4.5	2.2	0.6	2.1	30.1	0.0	3.5	8.3	2.5							
R1180	R1-4 PHANTASTRON CIRCUITRY HAS MONOSTABLE MULTIVIBRATORS APPLICATIONS IN MY JOB.	6.6	10.6	1.6	7.1	2.6	30.6	3.2	3.5	8.3	7.4							
R1181	R1-5 PHANTASTRON CIRCUITRY HAS BISTABLE MULTIVIBRATORS APPLICATIONS IN MY JOB.	7.1	10.6	1.6	7.1	2.1	30.1	1.6	4.0	11.9	7.4							
R1182	R1-6 PHANTASTRON CIRCUITRY HAS FREE-RUNNING MULTIVIBRATORS APPLICATIONS IN MY JOB.	7.1	10.1	1.6	6.4	2.1	29.1	4.8	4.0	17.7	6.2							
R1183	R2-1 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS? IF NO, GO TO ITEM R3-1; IF YES, CONTINUE.	44.0	67.3	31.0	48.1	7.4	33.7	6.3	21.1	27.4	30.9							
R1184	R2-2 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS?	37.4	62.8	22.3	41.0	5.3	26.5	4.8	18.1	20.8	25.9							
R1185	R2-3 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS?	37.4	62.3	27.7	46.2	3.7	27.0	4.8	16.6	20.2	25.9							
R1186	R3-1 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES?	37.9	45.2	62.5	32.1	76.3	68.4	28.6	70.4	47.0	53.1							
R1187	R3-2 DO YOU FABRICATE COAXIAL CABLES?	54.4	68.3	70.7	23.7	84.2	80.1	42.9	74.9	52.4	67.9							

S INPUT/OUTPUT (PERIPHERAL) DEVICES (S1), PHOTO SENSITIVE DEVICES (S2), SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) (S3)

S1188	S1-1 DO YOU WORK WITH INPUT OR OUTPUT DEVICES ON YOUR PRESENT JOB? IF NO, GO TO ITEM S2-1; IF YES, CONTINUE.	35.2	41.2	24.5	85.9	35.8	30.6	76.2	56.3	45.8	67.9							
S1189	S1-2 DO YOU USE OR REFER TO KEYBOARDS OR TELETYPEWRITERS?	13.7	17.1	15.2	79.5	18.4	2.6	66.7	39.7	24.4	63.0							
S1190	S1-3 DO YOU USE OR REFER TO TAPE DRIVES (UNITS)?	20.9	16.1	15.2	81.4	18.4	1.5	65.1	25.6	17.3	61.7							
S1191	S1-4 DO YOU USE OR REFER TO CARD READERS/CARD PUNCHES?	3.3	10.1	10.9	75.0	6.8	3.1	69.8	46.7	27.4	46.9							
S1192	S1-5 DO YOU USE OR REFER TO VIDEO DISPLAYS (CRT'S)?	2.7	3.5	4.9	39.1	1.6	2.0	9.5	10.6	1.8	30.9							
S1193	S1-6 DO YOU USE OR REFER TO MIXIE LIGHTS (TUBES)?	20.9	22.6	14.1	73.7	7.4	26.0	42.9	52.8	23.2	28.4							
S1194	S1-7 DO YOU USE OR REFER TO LCD'S?	3.8	30.7	9.2	14.1	2.6	7.1	4.8	19.6	8.3	19.8							
S1195	S1-8 DO YOU USE OR REFER TO LED'S?	30.8	29.1	17.9	57.7	23.7	17.9	57.1	42.7	31.0	55.6							
S1196	S1-9 DO YOU USE OR REFER TO INCANDESCENT DISPLAYS?	13.2	12.6	9.2	23.7	10.5	8.7	23.8	19.1	16.1	25.9							
S1197	S1-10 DO YOU USE OR REFER TO TOGGLE OR PUSH BUTTON SWITCH INPUTS?	10.4	19.1	10.9	26.9	9.5	10.7	31.7	19.6	19.6	21.0							
S1198	S1-11 DO YOU USE OR REFER TO INTERFACE ADAPTER UNITS?	26.4	28.6	18.5	71.8	27.4	26.0	68.3	45.7	43.5	49.4							
S1199	S1-12 DO YOU USE OR REFER TO INTERFACE ADAPTER UNITS?	14.3	12.1	8.7	48.7	15.8	14.8	71.4	33.7	17.9	39.5							

D TSM	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
S1200	S1-13 DO YOU USE OR REFER TO TAPE READERS?	3.3	10.1	8.2	37.2	2.6	3.6	58.7	42.7	24.4	49.4	320	320
S1201	S1-14 DO YOU USE OR REFER TO TAPE PUNCHES?	2.2	10.1	5.4	25.6	1.6	1.5	41.3	13.6	3.6	22.2	53	55
S1202	S2-1 DO YOU WORK WITH PHOTODIODE PHOTO SENSITIVE DEVICES?	7.1	10.1	7.6	30.1	2.1	6.6	7.9	5.5	4.2	9.9	(M)	(M)
S1203	S2-2 DO YOU WORK WITH PHOTOTRANSISTOR PHOTO SENSITIVE DEVICES?	5.5	7.0	5.4	18.6	1.6	8.7	7.9	4.5	3.6	7.4		
S1204	S2-3 DO YOU WORK WITH PHOTOTUBE PHOTO SENSITIVE DEVICES?	3.8	1.0	1.6	12.8	2.1	.0	1.6	1.5	1.2	1.2		
S1205	S2-4 DO YOU WORK WITH PHOTO-SCR PHOTO SENSITIVE DEVICES?	2.2	2.5	2.2	1.9	1.1	3.1	.0	1.0	1.2	2.5		
S1206	S2-5 DO YOU WORK WITH PHOTOCELL (PHOTOCONDUCTIVE OR PHOTOVOLTAIC) PHOTO SENSITIVE DEVICES?	6.6	13.1	15.8	36.5	1.6	6.1	6.3	8.0	7.7	9.9		
S1207	S3-1 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS? IF NO, GO TO ITEM T1-1; IF YES, CONTINUE.	1.6	14.6	10.9	4.5	28.4	21.9	6.3	8.5	13.7	16.0		
S1208	S3-2 DO YOU USE OR REFER TO EXCITATION FREQUENCY CHOPPER COIL ITEMS?	1.6	8.0	4.9	3.2	14.7	13.8	6.3	6.0	10.7	7.4		
S1209	S3-3 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIP CHOPPER COIL ITEMS?	2.7	5.5	9.2	3.2	18.4	15.8	4.8	6.0	8.9	11.1		
S1210	S3-4 DO YOU MEASURE EXCITATION FREQUENCY CHOPPER COIL ITEMS?	1.6	5.0	2.7	1.9	8.9	10.7	1.6	4.5	7.1	6.2		
S1211	S3-5 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIP CHOPPER COIL ITEMS?	2.2	4.5	4.3	3.2	12.1	13.3	1.6	3.0	6.0	7.4		
S1212	S3-6 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	1.6	3.5	9.8	2.6	25.3	20.9	.0	5.0	7.7	9.9		
S1213	S3-7 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	2.2	7.0	8.7	2.6	22.1	18.4	1.6	6.0	8.3	9.9		
S1214	S3-8 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	2.2	4.5	10.9	3.8	24.7	21.4	1.6	5.0	9.5	14.8		
S1215	S3-9 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	2.2	8.5	8.7	3.8	21.1	20.4	1.6	5.5	8.3	14.8		

T INFRARED (T1), LASERS (T2), DISPLAY TUBES (T3), TELEVISION (T4)

T1216	T1-1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS? IF NO, GO TO ITEM T2-1; IF YES, CONTINUE.	2.7	.0	.5	2.6	.0	.0	.0	5.5	3.0	2.5		
T1217	T1-2 DO YOU INSPECT INFRARED SYSTEMS?	1.6	.0	.5	1.9	.0	.0	.0	4.0	1.2	2.5		
T1218	T1-3 DO YOU CLEAN INFRARED SYSTEMS?	1.6	.0	.5	1.9	.0	.0	.0	3.5	1.8	1.2		
T1219	T1-4 DO YOU SERVICE INFRARED SYSTEMS?	1.6	.0	.5	1.9	.0	.0	.0	4.5	1.2	1.2		
T1220	T1-5 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS?	1.6	.0	.0	1.3	.0	.0	.0	1.5	1.2	1.2		
T1221	T1-6 DO YOU OPERATE INFRARED SYSTEMS?	1.6	.0	.0	1.3	.0	.0	.0	3.0	1.8	2.5		
T1222	T1-7 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS?	1.6	.0	.0	1.9	.0	.0	.0	3.5	1.2	2.5		
T1223	T1-8 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS?	1.6	.0	.0	1.3	.0	.0	.0	2.5	1.2	2.5		
T1224	T1-9 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS?	1.1	.0	.0	.6	.0	.0	.0	1.5	.6	2.5		
T1225	T1-10 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS?	1.6	.0	.0	1.3	.0	.0	.0	2.5	1.2	1.2		

D TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
T1260	T2-25 DO YOU WORK WITH HALF SILVERED 192R REFLECTIVE MIRRORS?	.0	.0	1.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1269	T2-26 DO YOU WORK WITH HELICAL FLASHTUBES?	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1270	T2-27 DO YOU WORK WITH RUBY MATERIALS?	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1271	T2-28 DO YOU WORK WITH HELIUM-NEON MATERIALS?	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1272	T2-29 DO YOU WORK WITH HELIUM-XENON MATERIALS?	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1273	T2-30 DO YOU WORK WITH XENON MATERIALS?	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1274	T2-31 DO YOU WORK WITH CESIUM-HELIUM MATERIALS?	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1275	T2-32 DO YOU WORK WITH ARGON MATERIALS?	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1276	T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS MATERIALS?	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1277	T2-34 DO YOU WORK WITH GALLIUM ARSENIDE MATERIALS?	1.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1278	T3-1 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE TUBES (DVST), MULTIPLE MODE STORAGE TUBES (HMST), OR SCAN CONVERTER TUBES (SCT)? IF NO, GO TO ITEM T4-1; IF YES, CONTINUE.	2.7	1.0	1.1	4.5	2.1	22.4	1.6	.5	4.2	.5	4.2	.5	4.2	.5	4.2	.5	4.2	.5	4.2
T1279	T3-2 DO YOU INSPECT DVST OR HMST?	1.1	.5	1.1	3.8	.5	20.4	1.6	.5	1.8	.5	1.8	.5	1.8	.5	1.8	.5	1.8	.5	1.8
T1280	T3-3 DO YOU CLEAN DVST OR HMST?	1.6	.5	1.1	3.8	.5	19.4	1.6	.5	1.8	.5	1.8	.5	1.8	.5	1.8	.5	1.8	.5	1.8
T1281	T3-4 DO YOU ADJUST OR CALIBRATE DVST OR HMST?	.5	.5	1.1	3.2	.0	18.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1282	T3-5 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR HMST?	1.1	.5	.0	2.6	1.1	23.0	1.6	.5	3.0	.5	3.0	.5	3.0	.5	3.0	.5	3.0	.5	3.0
T1283	T3-6 DO YOU TROUBLESHOOT DVST OR HMST CIRCUITS?	.5	.5	.0	2.6	.5	17.9	1.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1284	T3-7 DO YOU REMOVE OR REPLACE DVST OR HMST TUBES FROM MAJOR ASSEMBLIES OR UNITS?	.5	.5	.0	2.6	.5	20.4	1.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1285	T3-8 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF DVST?	.5	.5	.0	1.3	.0	16.8	.0	.0	1.2	.0	1.2	.0	1.2	.0	1.2	.0	1.2	.0	1.2
T1286	T3-9 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF HMST?	.5	.5	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1287	T3-10 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF SCT?	.5	1.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
T1288	T3-11 DO YOU PERFORM TASKS ON FLOOD GUNS?	.5	.0	.0	1.9	.0	12.2	.0	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1289	T3-12 DO YOU PERFORM TASKS ON WRITE GUNS?	.0	.0	.0	.6	.0	7.7	.0	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1290	T3-13 DO YOU PERFORM TASKS ON READ GUNS?	.5	.0	.0	.0	.0	2.0	.0	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1291	T3-14 DO YOU PERFORM TASKS ON ATTACK GUNS?	.5	.0	.0	.0	.0	1.0	.0	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1292	T3-15 DO YOU PERFORM TASKS ON ERASE GUNS?	.5	.0	.0	.6	.0	10.2	.0	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1293	T3-16 DO YOU PERFORM TASKS ON STORAGE GRIDS?	.5	.0	.0	.6	.0	7.7	.0	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6	.0	.6
T1294	T4-1 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS DEALING WITH TELEVISION SYSTEMS INCLUDING LOW LIGHT TELEVISION? IF NO, GO TO ITEM U1-1; IF YES, CONTINUE.	19.8	1.5	3.8	3.2	2.1	.5	4.8	1.5	3.6	1.5	3.6	1.5	3.6	1.5	3.6	1.5	3.6	1.5	3.6
T1295	T4-2 DO YOU INSPECT TELEVISION SYSTEMS?	19.2	1.0	3.3	3.2	1.6	.5	1.6	1.5	1.2	1.5	1.2	1.5	1.2	1.5	1.2	1.5	1.2	1.5	1.2
T1296	T4-3 DO YOU CLEAN TELEVISION SYSTEMS?	19.2	.5	3.3	3.2	1.6	.5	1.6	1.5	1.2	1.5	1.2	1.5	1.2	1.5	1.2	1.5	1.2	1.5	1.2
T1297	T4-4 DO YOU ADJUST OR CALIBRATE TELEVISION SYSTEMS?	19.2	.5	2.7	3.2	2.1	.5	4.8	1.5	3.0	1.5	3.0	1.5	3.0	1.5	3.0	1.5	3.0	1.5	3.0
T1298	T4-5 DO YOU OPERATE TELEVISION SYSTEMS?	15.9	1.0	2.7	3.2	2.1	.0	.0	.5	1.8	.5	1.8	.5	1.8	.5	1.8	.5	1.8	.5	1.8
T1299	T4-6 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF TV SYSTEMS?	18.1	.5	2.7	3.2	2.1	.5	.5	.5	1.0	.5	1.0	.5	1.0	.5	1.0	.5	1.0	.5	1.0
T1300	T4-7 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF TV SYSTEMS?	18.1	.5	2.2	3.2	.5	.5	.0	1.0	1.2	.0	1.2	.0	1.2	.0	1.2	.0	1.2	.0	1.2
T1301	T4-8 DO YOU TROUBLESHOOT DOWN TO TV SYSTEM COMPONENT PARTS?	17.6	.0	1.6	3.2	.5	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	1.0	.0	.0	.0	.0
T1302	T4-9 DO YOU REMOVE OR REPLACE TV SYSTEM MAJOR ASSEMBLIES?	18.7	.5	2.7	3.2	.5	.5	.0	1.0	1.2	.5	1.2	.5	1.2	.5	1.2	.5	1.2	.5	1.2
T1303	T4-10 DO YOU REMOVE OR REPLACE TV SYSTEM COMPONENT PARTS?	18.1	.5	1.6	3.2	.5	.0	.0	1.0	.5	.0	1.0	.5	.0	.5	1.0	.5	.0	.5	.0

D TSM	TITLES	304 (M)	304 (M)	305 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)	320 (M)
U1340	U1-37 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER MONITOR SECTIONS?	3.3	4.5	4.3	48.1	2.1	3.6	42.9	12.1	16.1	9.9	9.9	320
U1341	U1-38 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER TRANSMIT SECTIONS?	3.8	6.0	2.7	46.2	3.2	3.1	36.5	11.1	13.1	9.9	9.9	320
U1342	U1-39 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER RECEIVE SECTIONS?	3.8	6.0	3.3	45.5	3.2	3.6	36.5	11.6	13.7	9.9	9.9	320
U1343	U1-40 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER INPUT DEVICES?	6.6	8.5	4.3	69.2	3.7	3.6	49.2	16.1	23.2	12.3	12.3	320
U1344	U1-41 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER STORAGE DEVICES?	7.1	8.5	3.3	64.7	2.6	3.6	49.2	16.1	21.4	12.3	12.3	320
U1345	U1-42 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER OUTPUT DEVICES?	6.6	8.5	3.8	68.6	3.2	3.6	49.2	16.1	23.8	12.3	12.3	320
U1346	U1-43 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER POWER DEVICES?	3.8	4.5	3.3	59.6	2.6	3.6	44.4	11.1	16.1	8.6	8.6	320
U1347	U1-44 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER MONITOR DEVICES?	4.9	5.5	3.8	54.5	2.6	2.0	42.9	12.1	16.7	8.6	8.6	320
U1348	U1-45 DO YOU USE FORTRAN PROGRAMMING LANGUAGE?	.0	1.0	1.1	9.0	.5	.5	3.2	4.0	.6	.0	.0	320
U1349	U1-46 DO YOU USE COBOL PROGRAMMING LANGUAGE?	.0	1.5	2.2	1.9	.0	.5	1.6	1.0	.6	.0	.0	320
U1350	U1-47 DO YOU USE RPG PROGRAMMING LANGUAGE?	.0	.0	.0	1.3	.5	.5	1.6	1.0	.0	.0	.0	320
U1351	U1-48 DO YOU USE OR PERFORM TASKS ON MICROPROCESSOR BASED EQUIPMENT?	8.2	5.0	2.2	30.8	1.6	2.6	36.5	18.6	10.1	9.9	9.9	320
U1352	U1-49 DO YOU USE INPUT PORT LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	8.8	1.5	1.6	17.9	1.1	.0	31.7	7.5	6.0	2.5	2.5	320
U1353	U1-50 DO YOU USE OUTPUT PORT LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	8.8	1.0	1.1	17.9	1.1	.0	31.7	7.5	6.5	2.5	2.5	320
U1354	U1-51 DO YOU USE RAM MEMORY CIRCUITS (STATIC OR DYNAMIC) IN CONJUNCTION WITH THE MICROPROCESSOR?	11.0	5.5	3.3	34.0	1.6	.5	42.9	19.6	10.1	12.3	12.3	320
U1355	U1-52 DO YOU USE ROM MEMORY CIRCUITS (INCLUDES PROM, EPROM, ETC.) IN CONJUNCTION WITH THE MICROPROCESSOR?	11.0	5.5	3.3	32.7	1.1	1.0	44.4	19.1	9.5	11.1	11.1	320
U1356	U1-53 DO YOU USE TRI-STATE CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	4.4	1.0	.0	11.5	.0	.0	22.2	6.5	5.4	1.2	1.2	320
U1357	U1-54 DO YOU USE CLOCK GENERATOR CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	10.4	5.0	3.3	32.7	1.6	4.1	44.4	15.1	10.1	7.4	7.4	320
U1358	U1-55 DO YOU USE STATUS LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	4.4	1.0	1.1	19.9	1.1	.0	27.0	8.5	7.1	2.5	2.5	320
U1359	U1-56 DO YOU USE BIDIRECTIONAL BUFFER CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	6.6	1.5	1.6	26.3	.5	1.5	30.2	10.6	6.5	6.2	6.2	320
U1360	U1-57 DO YOU USE ENCODER/DECODER CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	10.4	5.5	2.7	31.4	1.6	4.1	36.5	16.6	10.1	9.9	9.9	320
U1361	U2-1 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION?	70.9	69.8	72.3	19.9	66.8	73.0	71.4	73.4	25.0	87.7	87.7	320
U1362	U2-2 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS?	35.2	22.1	16.8	1.9	13.2	18.4	23.8	18.6	3.0	14.8	14.8	320
U1363	U2-3 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS?	31.9	21.1	16.8	1.9	11.6	19.4	23.8	18.1	3.0	14.8	14.8	320
U1364	U2-4 DO YOU USE VTVM (DB METERS) TO CHECK FOR NOISE OR SIGNAL LEVEL?	66.7	59.8	74.5	22.4	67.9	67.9	44.4	45.2	26.8	82.7	82.7	320
U1365	U2-5 DO YOU USE VTVM (V METERS) TO CHECK OR ADJUST AUDIO AMPLIFIERS?	61.0	49.7	72.3	12.2	66.8	60.2	19.0	22.6	18.5	75.3	75.3	320

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT01 PAGE 70

304	304	305	328	328	328	328	328	328	328
50	51	54	50	51	52	53	54	55	
(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)

TITLES

U1366 U2-6 DO YOU USE A HP3550 OR 344A TEST SET TO ALIGN AUDIO EQUIPMENT?

KEESLER EPI CAREER LADDERS, ELECTRONIC PRINCIPLES INVENTORY (EPI) DATA ARE PRESENTED BELOW EACH DUTY TITLE. DATA FOR THIS PRINTOUT WERE COLLECTED FROM CAREER LADDER INCURBENTS DURING THE PERIOD DLCEMBER 1982 THROUGH JULY 1983.

USE OF EPI PRINTOUT: THE PERCENT OF VARIOUS CAREER LADDER GROUPS RESPONDING TO EPI QUESTIONS IS LISTED TO THE RIGHT OF EACH EPI ITEM. THUS, THE APPROPRIATE SAMPLE CRITERION GROUPS CAN BE IDENTIFIED WITH THE COLUMN HEADINGS AT THE TOP RIGHT OF EACH PRINTOUT PAGE. THEN THE PERCENT OF THAT GROUP USING THE CONCEPT OR PIECE OF EQUIPMENT CAN BE IDENTIFIED.

USE OF EPI DATA: THESE DATA MAY BE USED IN HELPING TO IDENTIFY, DELINEATE, AND VALIDATE ELECTRONIC PRINCIPLES ITEMS IN THE SYS. CRITERIA LISTED IN ATRC 52-22 FOR ABR TRAINING MAY BE USEFUL IN HELPING DEVELOP ENTRY-LEVEL ELECTRONIC PRINCIPLE COURSES. ALSO, CDC WRITERS MAY USE EPI DATA TO HELP DETERMINE AREAS TO EMPHASIZE IN 5- AND 7-SKILL LEVEL CDS, CONSISTENT WITH SYS CODES.

FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/DHYO, AUTOVON 487-5811.

VECTOR TYPE CODES:

- (T) = % TIME SPENT BY ALL MEMBERS
- (M) = % MEMBERS PERFORMING
- (F) = TASK FACTOR
- (D) = DICHOTOMOUS SET
- (B) = % TIME SPENT BY MEMBERS PERFORMING
- (-) = PROGRAM GENERATED VECTOR

NO	TYPE	VECTOR	MEMBERS/		DESCRIPTION	FACTOR #
			MEAN	SD		
1	M	205 50	192		DAFSC 20550 AIRMEN	29
2	M	307 50	177		DAFSC 30750 AIRMEN	39

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

KEESLER EPI CAREER LADDERS, ELECTRONIC PRINCIPLES INVENTORY (EPI) DATA ARE PRESENTED BELOW EACH DUTY TITLE. DATA FOR THIS PRINTOUT WERE COLLECTED FROM CAREER LADDER INCUMBENTS DURING THE PERIOD DECEMBER 1982 THROUGH JULY 1983.

USE OF EPI PRINTOUT: THE PERCENT OF VARIOUS CAREER LADDER GROUPS RESPONDING TO EPI QUESTIONS IS LISTED TO THE RIGHT OF EACH EPI ITEM. THUS, THE APPROPRIATE SAMPLE CRITERION GROUPS CAN BE IDENTIFIED WITH THE COLUMN HEADINGS AT THE TOP RIGHT OF EACH PRINTOUT PAGE. THEN THE PERCENT OF THAT GROUP USING THE CONCEPT OR PIECE OF EQUIPMENT CAN BE IDENTIFIED.

USE OF EPI DATA: THESE DATA MAY BE USED IN HELPING TO IDENTIFY, DELINEATE, AND VALIDATE ELECTRONIC PRINCIPLES ITEMS IN THE STS. CRITERIA LISTED IN ATCR 52-22 FOR ABR TRAINING MAY BE USEFUL IN HELPING DEVELOP ENTRY-LEVEL ELECTRONIC PRINCIPLE COURSES. ALSO, CDC WRITERS MAY USE EPI DATA TO HELP DETERMINE AREAS TO EMPHASIZE IN 5- AND 7-SKILL LEVEL CDS, CONSISTENT WITH STS CODES.

FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/DMYD, AUTOVON #67-5811.

D TSK	TITLES	205	307
		50	50
		(M)	(M)

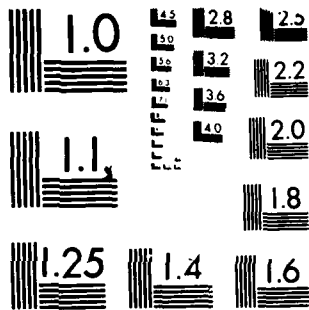
MATHEMATICS (A1), DIRECT CURRENT (A2), RESISTANCE AND RESISTIVE CIRCUITS (A3)

A 1	A1-1 IN YOUR PRESENT JOB, 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?	39.6	67.8
A 2	A1-2 DO YOU USE PUBLICATIONS, SUCH AS 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?	28.5	41.8
A 3	A1-3 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS?	40.1	41.2
A 4	A1-4 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY?	14.6	10.7
A 5	A1-5 DO YOU SOLVE FOR UNKNOWN QUANTITIES SUCH AS SOLVING FOR X IN THE EQUATION $x + 6 = 8$?	22.4	32.8
A 6	A1-6 DO YOU USE LOGARITHM TABLES?	10.4	37.9
A 7	A1-7 DO YOU SOLVE QUADRATIC EQUATIONS SUCH AS SOLVING FOR X IN THE EQUATION $x^2 + 4x + 4 = 0$?	7.8	9.6
A 8	A1-8 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES?	6.8	5.6
A 9	A1-9 DO YOU USE TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT?	13.5	6.8
A 10	A1-10 DO YOU SOLVE OR USE PROPORTIONS? AN EXAMPLE OF A PROPORTION IS 2 : 5 :: 4 : 10. ANOTHER WAY TO EXPRESS THE SAME RELATIONSHIP IS $2/5 = 4/10$. SOMETIMES, ONE OF THE QUANTITIES IS UNKNOWN AND HAS TO BE SOLVED FOR, SUCH AS 2 : X :: 4 : 10 (X IN THIS CASE IS UNKNOWN).	20.3	18.1
A 11	A1-11 DO YOU USE MATHEMATICAL EXPONENTS OR SUBSCRIPTS IN OTHER THAN POWERS OF 10?	17.2	15.3
A 12	A2-1 DO YOU USE (PERHAPS IN TECHNICAL ORDERS) THE TERM VOLTAGE OR VOLT (V)?	46.9	87.0

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSK	TITLES	Z05	307
		50	50
		(M)	(P)
A 13	A2-2 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM ELECTROMOTIVE FORCE (EMF)?	7.8	10.7
A 14	A2-3 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM OHM?	17.2	84.7
A 15	A2-4 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM ION?	2.1	9.6
A 16	A2-5 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM DYNE?	2.1	5.6
A 17	A2-6 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM AMPERE?	18.8	70.6
A 18	A2-7 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM NEUTRON?	2.6	6.2
A 19	A2-8 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM COULOMB?	2.1	3.4
A 20	A2-9 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM PROTON?	3.1	7.9
A 21	A2-10 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM ELECTRON?	7.8	16.9
A 22	A2-11 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM CURRENT?	23.4	75.1
A 23	A2-12 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM VOLTAGE?	20.8	59.3
A 24	A2-13 DO YOU DETERMINE IF TWO OR MORE BATTERIES MUST BE CONNECTED IN SERIES OR PARALLEL TO ACHIEVE A SPECIFIC VOLTAGE AND/OR CURRENT?	2.1	18.1
A 25	A3-1 DO YOU WORK WITH RESISTORS OR RESISTIVE CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM B1-1; IF YES, CONTINUE.	3.6	28.2
A 26	A3-2 DO YOU INSPECT RESISTORS?	.0	7.9
A 27	A3-3 DO YOU CLEAN RESISTORS?	.0	1.7
A 28	A3-4 DO YOU ADJUST RESISTORS?	.0	9.6

Q TSK	TITLES	205	307
		(M)	(M)
A 29	A3-5 DO YOU MEASURE RESISTORS?	1.0	18.6
A 30	A3-6 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASK YOU PERFORM?	.0	3.4
A 31	A3-7 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY CARBON?	.5	5.1
A 32	A3-8 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED WIRE?	.5	11.3
A 33	A3-9 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY SLIDE TAP?	.5	8.5
A 34	A3-10 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY RHEOSTAT?	.5	10.2
A 35	A3-11 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY POTENTIOMETER?	1.0	18.6
A 36	A3-12 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED FILM?	.5	1.1
A 37	A3-13 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE?	.5	11.3
A 38	A3-14 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE?	.5	10.7
A 39	A3-15 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE?	.5	5.6
A 40	A3-16 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES?	2.1	19.8
A 41	A3-17 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR SERIES RESISTIVE CIRCUIT?	2.1	19.2
A 42	A3-18 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	1.6	15.3
A 43	A3-19 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	1.6	11.9



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

205 307
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D TSM TITLES

A 44	A3-20 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	1.6	10.2
A 45	A3-21 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	2.6	19.2
A 46	A3-22 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	1.6	16.4
A 47	A3-23 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	1.6	11.3
A 48	A3-24 DO YOU USE OR REFER TO INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	1.6	9.0
A 49	A3-25 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	2.1	11.3
A 50	A3-26 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	2.6	15.8
A 51	A3-27 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	1.6	13.6
A 52	A3-28 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	1.6	9.0
A 53	A3-29 DO YOU USE OR REFER TO INDIVIDUAL BRANCH CURRENT PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	1.6	7.9
A 54	A3-30 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	1.6	9.0
A 55	A3-31 DO YOU CALCULATE TOTAL RESISTANCE PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?	1.6	13.6
A 56	A3-32 DO YOU CALCULATE TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?	.5	11.3
A 57	A3-33 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?	.5	7.3

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 6

205 307
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(M) (M)

0 TSK TITLES

A 58 A3-34 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?
A 59 A3-35 DO YOU CALCULATE POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?

B METERS/MULTIMETERS (B1), ALTERNATING CURRENT (AC) (B2), INDUCTORS AND INDUCTIVE REACTANCE (B3)

B 60 B1-1 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE RESISTANCE? 1.6 48.6
B 61 B1-2 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE VOLTAGE? 9.9 77.4
B 62 B1-3 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE CURRENT? 3.6 58.2
B 63 B1-4 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE POWER? 7.8 53.7
B 64 B1-5 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE FREQUENCY? 26.6 80.8
B 65 B1-6 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE TEMPERATURE? 3.1 8.5
B 66 B1-7 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE PRESSURE? 1.6 3.4
B 67 B1-8 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE LIGHT LEVELS? 1.0 2.8
B 68 B2-1 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM EFFECTIVE VOLTAGE (RMS) IN YOUR PRESENT JOB? 12.0 49.7

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

205 307
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(M) (M)

Q TSM	TITLES	205	307
0 69	02-2 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PEAK TO PEAK VOLTAGE IN YOUR PRESENT JOB?	22.1	57.1
0 70	02-3 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM AVERAGE VOLTAGE (RMS) IN YOUR PRESENT JOB?	16.1	52.0
0 71	02-4 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM WAVE LENGTH IN YOUR PRESENT JOB?	37.0	45.2
0 72	02-5 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM FREQUENCY IN YOUR PRESENT JOB?	66.8	84.7
0 73	02-6 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM INSTANTANEOUS VALUE IN YOUR PRESENT JOB?	7.3	18.1
0 74	02-7 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PHASE RELATIONSHIPS IN YOUR PRESENT JOB?	22.6	64.4
0 75	03-1 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C1-1; IF YES, CONTINUE.	3.1	9.5
0 76	03-2 DO YOU INSPECT INDUCTORS?	.5	2.3
0 77	03-3 DO YOU CLEAN INDUCTORS?	.0	1.1
0 78	03-4 DO YOU ADJUST INDUCTORS?	.0	1.7
0 79	03-5 DO YOU MEASURE INDUCTORS?	.5	2.3
0 80	03-6 DO YOU USE OR REFER TO INDUCTANCE?	2.1	3.4
0 81	03-7 DO YOU USE OR REFER TO HENRIES?	1.6	2.3
0 82	03-8 DO YOU USE OR REFER TO INDUCTIVE REACTANCE?	1.6	3.4
0 83	03-9 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS?	.0	1.1
0 84	03-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS?	.0	1.1
0 85	03-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS?	.0	.6
0 86	03-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL?	1.6	2.3

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 8

205 307
50 50
(M) (P)

D TSK TITLES

B 07	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?	.5	1.1
B 08	B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH?	.5	2.3
B 09	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?	.5	1.7
B 90	B3-16 DO YOU CALCULATE INDUCTANCE IN ELECTRICAL/ELECTRONIC CIRCUITS?	1.6	2.8
B 91	B3-17 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS?	1.0	3.4
B 92	B3-18 DO YOU CALCULATE INDUCTIVE REACTANCE?	2.1	2.3
B 93	B3-19 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY?	1.0	3.4
B 94	B3-20 DO YOU WORK WITH POWER INDUCTORS?	1.6	2.3
B 95	B3-21 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS?	2.1	4.0
B 96	B3-22 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS?	2.6	2.8

C	CAPACITORS AND CAPACITIVE REACTANCE (C1), TRANSFORMERS (C2), MAGNETISM (C3)		

C 97	C1-1 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C2-1; IF YES, CONTINUE.	3.6	11.9
C 98	C1-2 DO YOU INSPECT CAPACITORS?	.5	1.7
C 99	C1-3 DO YOU CLEAN CAPACITORS?	.5	.6

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSK	TITLES	205 50 (M)	307 50 (P)
C 100	CI-4 DO YOU ADJUST CAPACITORS?	.5	2.3
C 101	CI-5 DO YOU TEST CAPACITORS?	.5	4.5
C 102	CI-6 DO YOU DISCHARGE CAPACITORS?	.5	2.8
C 103	CI-7 DO YOU MEASURE CAPACITORS?	1.0	2.8
C 104	CI-8 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE?	.5	1.7
C 105	CI-9 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC?	.5	1.1
C 106	CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS?	1.6	6.0
C 107	CI-11 DO YOU USE OR REFER TO CAPACITANCE?	2.6	9.6
C 108	CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT?	1.0	4.5
C 109	CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS?	.5	4.0
C 110	CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE?	1.0	4.5
C 111	CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES?	.5	3.4
C 112	CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS?	2.6	11.3
C 113	CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS?	2.6	8.5
C 114	CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC?	3.1	8.5
C 115	CI-19 DO YOU CALCULATE CAPACITANCE IN ELECTRICAL/ELECTRONIC CIRCUITS?	1.6	4.0
C 116	CI-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT?	1.0	4.5
C 117	CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS?	1.6	2.3
C 118	CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO	1.0	4.0

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTCZ PAGE 10

D	TSK	TITLES	205	307
			(M)	(M)
C 119	C1-23	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS?	1.0	4.0
C 120	C1-24	DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY?	1.6	4.0
C 121	C1-25	DO YOU CALCULATE CAPACITIVE REACTANCE?	1.0	4.0
C 122	C1-26	DO YOU WORK WITH VARIABLE CAPACITORS?	.0	8.5
C 123	C1-27	DO YOU WORK WITH TRIMMER CAPACITORS?	.5	2.8
C 124	C1-28	DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS?	.5	6.2
C 125	C1-29	DO YOU WORK WITH OTHER FIXED CAPACITORS?	1.0	5.1
C 126	C2-1	DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C3-1; IF YES, CONTINUE.	1.0	14.1
C 127	C2-2	DO YOU INSPECT TRANSFORMERS?	.5	4.5
C 128	C2-3	DO YOU CLEAN TRANSFORMERS?	.5	.0
C 129	C2-4	DO YOU ADJUST TRANSFORMERS?	.5	2.3
C 130	C2-5	DO YOU TROUBLESHOOT TRANSFORMERS?	.5	4.5
C 131	C2-6	DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)?	.5	1.1
C 132	C2-7	DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M?	.5	.6
C 133	C2-8	DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS?	.5	2.3
C 134	C2-9	DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS?	.5	.6
C 135	C2-10	DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS?	.5	5.6
C 136	C2-11	DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS?	.5	4.0
C 137	C2-12	DO YOU WORK WITH AUTOTRANSFORMERS?	.0	1.1
C 138	C2-13	DO YOU WORK WITH POWER TRANSFORMERS?	.0	5.6
C 139	C2-14	DO YOU WORK WITH AUDIO TRANSFORMERS?	.5	9.6
C 140	C2-15	DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS?	.5	4.0

205	307
50	50
(M)	(M)

D TSM	TITLES
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C 141	C2-16 DO YOU WORK WITH SATURABLE CORE TRANSFORMERS?	.0	.0
C 142	C2-17 DO YOU WORK WITH SENSING TRANSFORMERS?	.0	1.1
C 143	C2-18 DO YOU WORK WITH CONTROL TRANSFORMERS?	.0	2.8
C 144	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE?	.0	5.1
C 145	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE?	.0	3.4
C 146	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES?	.0	5.1
C 147	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO?	.0	1.1
C 148	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO?	.0	1.7
C 149	C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS?	.0	6.2
C 150	C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	4.5
C 151	C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	4.5
C 152	C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	5.1
C 153	C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	2.3
C 154	C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	2.3
C 155	C2-30 DO YOU REFER TO VARIABLE TRANSFORMER SCHEMATIC SYMBOLS?	.0	2.8
C 156	C2-31 DO YOU REFER TO COMBINATIONS OF SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	3.4

O TSK	TITLES	205 50 (M)	307 50 (M)
C 157	C2-32 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS?	.0	1.1
C 158	C2-33 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH?	.5	1.7
C 159	C2-34 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO?	.5	1.7
C 160	C2-35 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS?	.5	3.4
C 161	C2-36 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	.5	.6
C 162	C2-37 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	.5	.6
C 163	C2-38 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS?	.5	.0
C 164	C2-39 DO YOU INSPECT THREE PHASE TRANSFORMERS?	.5	.0
C 165	C2-40 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS?	.5	.0
C 166	C2-41 DO YOU ADJUST THREE PHASE TRANSFORMERS?	.5	.0
C 167	C2-42 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS?	.5	.0
C 168	C3-1 DO YOU USE OR REFER TO PERMANENT MAGNETS?	4.7	2.3
C 169	C3-2 DO YOU USE OR REFER TO TEMPORARY MAGNETS?	3.6	2.8
C 170	C3-3 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS?	5.2	.6
C 171	C3-4 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS?	3.6	1.1
C 172	C3-5 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS?	5.2	1.1
C 173	C3-6 DO YOU USE OR REFER TO RESIDUAL MAGNETISM?	5.2	3.4
C 174	C3-7 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX?	6.8	5.6

205 307
50 50
(M) (M)

D YSM TITLES

C 175 C3-8 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM?
C 176 C3-9 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM?
C 177 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION?
C 178 C3-11 DO YOU USE OR REFER TO FLUX DENSITY?
C 179 C3-12 DO YOU USE OR REFER TO SATURABLE REACTANCE?

D RCL CIRCUITS (D1), TIME CONSTANTS (D2), FILTERS (D3)

D 180 D1-1 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM D2-1; IF YES, CONTINUE.
D 181 D1-2 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS?
D 182 D1-3 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS?
D 183 D1-4 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS?
D 184 D1-5 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS?
D 185 D1-6 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS?
D 186 D1-7 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS?
D 187 D1-8 DO YOU USE OR REFER TO TRUE POWER (P SUB T) WHEN WORKING WITH RCL CIRCUITS?
D 188 D1-9 DO YOU USE OR REFER TO MAXIMUM POWER (P SUB M) WHEN WORKING WITH RCL CIRCUITS?
D 189 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (P SUB AVE) WHEN WORKING WITH RCL CIRCUITS?

5.2 0.5
1.6 2.3
1.6 1.7
3.1 4.0
3.1 3.9
3.1 2.8
3.1 7.9
3.1 4.0
3.1 3.4
4.2 3.4

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 14

D TSM	TITLES	205 50 (M)	307 50 (M)
0 190	01-11 DO YOU USE OR REFER TO APPARENT POWER (P SUB A) WHEN WORKING WITH RCL CIRCUITS?	2.1	2.3
0 191	01-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS?	1.6	2.8
0 192	01-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS?	1.6	6.2
0 193	01-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS?	5.7	10.7
0 194	01-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS?	4.7	7.9
0 195	01-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS?	2.6	8.5
0 196	01-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS?	2.6	5.1
0 197	01-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS?	3.6	7.3
0 198	01-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS?	.0	4.5
0 199	01-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS?	1.0	4.0
0 200	01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS SUCH AS: SINE OF AND ANGLE = OPPOSITE SIDE/HYPOTENUSE?	2.1	1.1
0 201	01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS?	.5	2.8
0 202	01-23 DO YOU USE OR REFER TO TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS?	2.1	5.6
0 203	01-24 DO YOU USE OR REFER TO PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS?	1.0	2.3
0 204	01-25 DO YOU USE OR REFER TO TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS?	2.1	4.5

D. YSM	TITLES	205 (M)	307 (M)
D 205	D1-26 DO YOU USE OR REFER TO IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS?	.5	3.9
D 206	D1-27 DO YOU USE OR REFER TO APPARENT POWER (P SUB A) FOR SERIES RCL CIRCUITS?	.5	2.3
D 207	D1-28 DO YOU USE OR REFER TO TRUE POWER (P SUB T) FOR SERIES RCL CIRCUITS?	1.6	3.9
D 208	D1-29 DO YOU USE OR REFER TO POWER FACTORS (PF) FOR SERIES RCL CIRCUITS?	.5	1.7
D 209	D1-30 DO YOU USE OR REFER TO TOTAL CURRENT FOR PARALLEL RCL CIRCUITS?	1.6	2.3
D 210	D1-31 DO YOU USE OR REFER TO IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS?	1.0	3.9
D 211	D1-32 DO YOU USE THE ASSUMED VOLTAGE METHOD FOR DETERMINING TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS?	1.0	2.1
D 212	D1-33 DO YOU USE OHM'S LAW FOR DETERMINING TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS?	2.1	5.6
D 213	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS?	.5	3.9
D 214	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION?	.5	1.1
D 215	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS?	.5	4.0
D 216	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION?	.5	.6
D 217	D1-38 DO YOU CHECK RESISTORS USING OHMMETERS?	.5	5.6
D 218	D1-39 DO YOU CHECK RESISTORS USING SUBSTITUTION?	.5	2.3
D 219	D1-40 DO YOU USE OR REFER TO THE RULE THAT PHASE ANGLE (THETA) = 0, POWER FACTOR (PF) = 1, AND APPARENT POWER (P SUB A) = TRUE POWER (P SUB T) FOR RESONANT CIRCUITS?	1.0	1.1
D 220	D1-41 DO YOU USE OR REFER TO RESONANT FREQUENCIES FOR RCL CIRCUITS?	2.6	9.5
D 221	D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS?	1.0	9.5

D TSK	TITLES	205	307	50	50	(M)	(M)
D 222	D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS?	1.0	2.8				
D 223	D1-44 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 OF THE PEAK CURRENT VALUE?	4.2	4.5				
D 224	D1-45 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO THE QUALITY OF THE COIL (Q)?	1.0	1.7				
D 225	D1-46 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS?	1.0	3.4				
D 226	D2-1 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS? IF NO, GO TO ITEM D3-1; IF YES, CONTINUE.	2.6	2.3				
D 227	D2-2 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)?	.5	1.7				
D 228	D2-3 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS?	1.0	2.8				
D 229	D2-4 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS?	.5	.6				
D 230	D2-5 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?	.5	.6				
D 231	D2-6 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES?	1.0	1.7				
D 232	D2-7 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OP ZERO) AFTER FIVE (5) TIME CONSTANTS?	.5	1.1				

O TSK	TITLES	205 (M)	307 (M)
D 233	D3-1 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM E1-1; IF YES, CONTINUE.	26.6	20.3
D 234	D3-2 DO YOU INSPECT FILTER CIRCUITS?	1.0	2.8
D 235	D3-3 DO YOU CLEAN FILTER CIRCUITS?	1.6	.0
D 236	D3-4 DO YOU ALIGN OR ADJUST FILTER CIRCUITS?	2.6	4.5
D 237	D3-5 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL?	.5	12.4
D 238	D3-6 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS?	.5	4.0
D 239	D3-7 DO YOU WORK WITH LOW PASS FILTERS?	26.0	15.3
D 240	D3-8 DO YOU WORK WITH HIGH PASS FILTERS?	24.0	14.7
D 241	D3-9 DO YOU WORK WITH BANDPASS FILTERS?	22.4	19.8
D 242	D3-10 DO YOU WORK WITH BAND-REJECT FILTERS?	18.2	13.6
D 243	D3-11 DO YOU WORK WITH FILTERS BUT DON'T REMEMBER WHICH TYPE?	2.6	3.4
D 244	D3-12 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS?	.5	2.8
D 245	D3-13 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS?	1.0	2.3
D 246	D3-14 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS?	.5	1.7
D 247	D3-15 DO YOU WORK WITH YTTRIUM IRON GARNET (YIG) FILTERS?	.5	.0
D 248	D3-16 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS?	1.0	3.4

E COUPLING (E1), SOLDERING OR SOLDERLESS CONNECTIONS(E2), RELAYS (E3)

E 249 E1-1 DO YOU WORK WITH COUPLING DEVICES OR CIRCUITRY IN YOUR PRESENT JOB? IF NO, GO TO ITEM E2-1; IF YES, CONTINUE.

2.1	10.7
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D TSK	TITLES	205	307
		50	50
		(M)	(M)
E 250	E1-2 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING?	1.0	4.5
E 251	E1-3 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING (MATCHING)?	.5	9.6
E 252	E1-4 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH OPTICAL COUPLING?	.5	2.8
E 253	E1-5 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING?	.0	6.2
E 254	E1-6 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING?	.0	3.4
E 255	E1-7 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING?	.0	8.5
E 256	E1-8 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING?	.0	4.5
E 257	E1-9 DO YOU WORK WITH DIRECT COUPLED CIRCUITS?	.5	5.1
E 258	E1-10 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS?	.0	4.5
E 259	E1-11 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS?	.0	4.0
E 260	E1-12 DO YOU WORK WITH OPTICAL COUPLING?	.5	2.3
E 261	E1-13 DO YOU WORK WITH OPTICAL COUPLING CIRCUITS?	.0	1.7
E 262	E1-14 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS?	.0	4.5
E 263	E2-1 IN YOUR PRESENT JOB, DO YOU CONNECT ELECTRONIC CIRCUITS USING SOLDERLESS CONNECTIONS OR SOLDERING TECHNIQUES? IF NO, GO TO ITEM E3-1; IF YES, CONTINUE.	1.6	19.8
E 264	E2-2 DO YOU SOLDER CONNECTIONS?	.0	16.4
E 265	E2-3 DO YOU DESOLDER CONNECTIONS?	.0	16.9

D TSN	TITLES	205	307	50	(M)
E 266	E2-4 DO YOU PERFORM HIGH RELIABILITY SOLDERING?	.0	7.3		
E 267	E2-5 DO YOU INSPECT SOLDERED CONNECTIONS?	.0	15.3		
E 268	E2-6 DO YOU CLEAN OR TIN CONNECTIONS?	.5	12.4		
E 269	E2-7 DO YOU MAKE HARDWIRE CONNECTIONS?	.0	16.4		
E 270	E2-8 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS?	.5	4.0		
E 271	E2-9 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS?	.0	5.1		
E 272	E2-10 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS?	.0	3.4		
E 273	E2-11 DO YOU SOLDER ACTIVE COMPONENTS, SUCH AS INTEGRATED CIRCUITS?	.0	1.7		
E 274	E2-12 DO YOU PERFORM WIRE WRAPPING IN LIEU OF SOLDERING?	.0	14.1		
E 275	E2-13 DO YOU PERFORM CRIMPING IN LIEU OF SOLDERING?	.0	6.2		
E 276	E2-14 DO YOU PERFORM WIRE CONNECTIONS USING A 714 PUNCH-ON TOOL IN LIEU OF SOLDERING?	.0	7.9		
E 277	E3-1 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB? IF NO, GO TO ITEM F1-1; IF YES, CONTINUE.	.5	28.2		
E 278	E3-2 DO YOU ADJUST RELAYS?	.0	6.8		
E 279	E3-3 DO YOU CLEAN RELAYS?	.0	2.3		
E 280	E3-4 DO YOU INSPECT RELAYS?	.0	5.6		
E 281	E3-5 DO YOU TROUBLESHOOT RELAYS?	.0	17.5		
E 282	E3-6 DO YOU MONITOR BIAS OUTPUT ON RELAYS?	.0	16.4		
E 283	E3-7 DO YOU REMOVE OR REPLACE RELAYS?	.0	10.2		
E 284	E3-8 DO YOU PERFORM TASKS ON CONTACTS OF RELAYS?	.0	3.4		
E 285	E3-9 DO YOU PERFORM TASKS ON CORES OF RELAYS?	.0	.0		
E 286	E3-10 DO YOU PERFORM TASKS ON COILS OF RELAYS?	.0	.0		
E 287	E3-11 DO YOU PERFORM TASKS ON ARMATURES OF RELAYS?	.0	1.1		
E 288	E3-12 DO YOU PERFORM TASKS ON SPRINGS OF RELAYS?	.0	.6		
E 289	E3-13 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS?	.0	4.0		

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSK	TITLES	205 (M)	307 (M)
E 290 E3-14	DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMAL CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS?	.0	4.0
E 291 E3-15	DO YOU REFER TO SINGLE POLE, DOUBLE THROW (SPDT) BOLS FOR RELAYS?	.0	4.5
E 292 E3-16	DO YOU REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SYMBOLS FOR RELAYS?	.0	4.0
E 293 E3-17	DO YOU REFER TO OTHER RELAY SYMBOLS?	.0	3.4
E 294 E3-18	DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE?	.0	5.6

F MICROPHONES AND SENSING DEVICES (F1), SPEAKERS (F2), OSCILLOSCOPES (F3)

F 295 F1-1	DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES OR OTHER SENSING DEVICES SUCH AS TRANSDUCERS? IF NO, GO TO ITEM F2-1; IF YES, CONTINUE.	15.1	15.8
F 296 F1-2	DO YOU INSPECT MICROPHONES?	.5	5.1
F 297 F1-3	DO YOU CLEAN MICROPHONES?	.5	2.3
F 298 F1-4	DO YOU OPERATE MICROPHONES?	14.1	16.9
F 299 F1-5	DO YOU TROUBLESHOOT MICROPHONES WIRE CONNECTIONS?	.5	5.1
F 300 F1-6	DO YOU TROUBLESHOOT MICROPHONE COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	.5	2.3
F 301 F1-7	DO YOU REMOVE AND REPLACE COMPLETE MICROPHONES?	1.6	5.6
F 302 F1-8	DO YOU REMOVE OR REPLACE MICROPHONE COMPONENT PARTS?	.0	2.3
F 303 F1-9	DO YOU PERFORM TASKS ON CARBON MICROPHONES?	2.1	2.3
F 304 F1-10	DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES?	.5	.0
F 305 F1-11	DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES?	1.0	.6
F 306 F1-12	DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES?	4.7	3.4
F 307 F1-13	DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES?	.0	.0

Q TSK	TITLES	205 (M)	307 (M)
F 308	F1-14 DO YOU PERFORM TASKS ON TRANSDUCERS?	1.0	.6
F 309	F2-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS? IF NO, GO TO ITEM F3-1; IF YES, CONTINUE.	15.6	45.2
F 310	F2-2 DO YOU INSPECT SPEAKERS?	1.0	5.6
F 311	F2-3 DO YOU CLEAN SPEAKERS?	1.0	2.8
F 312	F2-4 DO YOU OPERATE SPEAKERS?	14.1	43.5
F 313	F2-5 DO YOU TROUBLESHOOT SPEAKER WIRE CONNECTIONS?	2.1	14.1
F 314	F2-6 DO YOU TROUBLESHOOT SPEAKER COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	.5	3.4
F 315	F2-7 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS?	1.6	7.9
F 316	F2-8 DO YOU REMOVE OR REPLACE SPEAKER PARTS?	.0	1.1
F 317	F2-9 DO YOU PERFORM ANY TASKS ON CONE SPEAKER PARTS?	.0	.0
F 318	F2-10 DO YOU PERFORM ANY TASKS ON SPIDER SPEAKER PARTS?	.0	.0
F 319	F2-11 DO YOU PERFORM ANY TASKS ON FIELD COIL SPEAKER PARTS?	.0	.0
F 320	F2-12 DO YOU PERFORM ANY TASKS ON VOICE COIL SPEAKER PARTS?	.5	.0
F 321	F2-13 DO YOU PERFORM ANY TASKS ON PERMANENT MAGNET SPEAKER PARTS?	.0	.0
F 322	F2-14 DO YOU PERFORM ANY TASKS ON ELECTROMAGNET SPEAKER PARTS?	.0	.0
F 323	F2-15 DO YOU PERFORM ANY TASKS ON SOFT IRON CORE SPEAKER PARTS?	.0	.0
F 324	F3-1 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB? IF NO, GO TO ITEM 61-1; IF YES, CONTINUE.	46.4	78.0
F 325	F3-2 DO YOU PERFORM OPERATIONAL CHECKS USING OSCILLOSCOPES?	29.7	67.2
F 326	F3-3 DO YOU PERFORM ALIGNMENTS OR ADJUSTMENTS USING OSCILLOSCOPES?	13.5	30.5
F 327	F3-4 DO YOU TROUBLESHOOT ELECTRONIC CIRCUITS USING OSCILLOSCOPES?	.5	58.2
F 328	F3-5 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCIES?	46.9	53.1
F 329	F3-6 DO YOU USE OSCILLOSCOPES TO MEASURE TIME?	45.8	45.8

D TSN	TITLES	205 (M)	307 50 (M)
F 330	F3-7 DO YOU USE OSCILLOSCOPES TO OBSERVE LISSAJOUS PATTERNS?	26.6	11.9
F 331	F3-8 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES.	19.8	23.2
F 332	F3-9 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS?	39.6	23.2
F 333	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGES?	22.9	44.1
F 334	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGES?	22.9	57.1
F 335	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS?	31.0	31.6
F 336	F3-13 DO YOU USE OSCILLOSCOPES TO OBSERVE DATA PATTERNS?	34.9	68.4
F 337	F3-14 DO YOU USE OSCILLOSCOPES TO MEASURE RIPPLE VOLTAGES?	5.7	26.0
F 338	F3-15 DO YOU USE OSCILLOSCOPES TO MEASURE PHASE JITTERS?	22.4	49.2
F 339	F3-16 DO YOU USE OSCILLOSCOPES TO DISPLAY SWEEP GENERATOR PATTERNS?	16.1	35.0
F 340	F3-17 DO YOU USE OSCILLOSCOPES TO OBSERVE PHASE RELATIONSHIPS?	27.6	52.5
F 341	F3-18 DO YOU USE OSCILLOSCOPES TO OBSERVE SAMPLING DISPLAYS?	21.4	32.2

6	SEMICONDUCTOR DIODES (G1), TRANSISTORS (G2), TRANSISTOR AMPLIFIERS (G3)		

6	342 61-1 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB? IF NO, GO TO ITEM G2-1; IF YES, CONTINUE.	.5	3.4
6	343 61-2 DO YOU INSPECT DIODES?	.0	.6
6	344 61-3 DO YOU CHECK DIODES?	.0	.6

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

Q TSM	TITLES	205 50 (M)	307 50 (M)
6 345	61-4 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES?	.0	.6
6 346	61-5 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE?	.0	.6
6 347	61-6 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES?	.0	.6
6 348	61-7 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES?	.0	1.7
6 349	61-8 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE?	.0	.6
6 350	61-9 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW?	.0	.0
6 351	61-10 DO YOU MEASURE FORWARD BIAS RESISTANCE?	.0	.0
6 352	61-11 DO YOU MEASURE REVERSE BIAS RESISTANCE?	.0	.6
6 353	61-12 DO YOU READ DIODE COLOR CODING?	.0	.6
6 354	61-13 DO YOU READ DIODE NUMBERING SYSTEM, SUCH AS IN 538?	.0	1.7
6 355	61-14 DO YOU USE THE SYMBOL DN DIODE WHICH INDICATES THE CATHODE END?	.0	1.7
6 356	61-15 DO YOU DETERMINE DIRECTION OF CURRENT THROUGH A DIODE?	.0	.6
6 357	61-16 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON?	.0	.6
6 358	61-17 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OR RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)?	.0	.6
6 359	61-18 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)?	.0	.6

D TSM	TITLS	205	307
		50	50
		(M)	(M)
6 360	61-19 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS?	.0	1.7
6 361	61-20 DO YOU NEED AN UNDERSTANDING OF VALENCE BAND IN SEMICONDUCTOR MATERIALS?	.0	1.1
6 362	61-21 DO YOU NEED AN UNDERSTANDING OF FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS?	.0	1.1
6 363	61-22 DO YOU NEED AN UNDERSTANDING OF CONDUCTION BAND IN SEMICONDUCTOR MATERIALS?	.0	.6
6 364	61-23 DO YOU NEED AN UNDERSTANDING OF COVALENT BONDING IN SEMICONDUCTOR MATERIALS?	.0	1.1
6 365	61-24 DO YOU NEED AN UNDERSTANDING OF ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS?	.0	.6
6 366	61-25 DO YOU NEED AN UNDERSTANDING OF ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS?	.0	.6
6 367	61-26 DO YOU NEED AN UNDERSTANDING OF DONOR IMPURITY IN SEMICONDUCTORS?	.0	.6
6 368	61-27 DO YOU NEED AN UNDERSTANDING OF ACCEPTOR IMPURITY IN SEMICONDUCTORS?	.0	.6
6 369	61-28 DO YOU NEED AN UNDERSTANDING OF P-TYPE SEMICONDUCTOR MATERIAL?	.0	.6
6 370	61-29 DO YOU NEED AN UNDERSTANDING OF N-TYPE SEMICONDUCTOR MATERIAL?	.0	.6
6 371	61-30 DO YOU NEED AN UNDERSTANDING OF MAJORITY CARRIERS IN SEMICONDUCTORS?	.0	.6
6 372	61-31 DO YOU NEED AN UNDERSTANDING OF MINORITY CARRIERS IN SEMICONDUCTORS?	.0	.6
6 373	61-32 DO YOU NEED AN UNDERSTANDING OF JUNCTION RECOMBINATION IN SEMICONDUCTORS?	.0	1.1
6 374	61-33 DO YOU NEED AN UNDERSTANDING OF DEPLETION REGION IN SEMICONDUCTORS?	.0	1.1

D TSK	TITLES	205 50 (M)	307 50 (M)
6 375	61-34 DO YOU NEED AN UNDERSTANDING OF RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL?	.0	1.1
6 376	61-35 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES?	.0	.6
6 377	61-36 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS?	.0	.6
6 378	61-37 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION?	.0	.6
6 379	61-38 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS?	.0	.6
6 380	61-39 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS?	.0	1.1
6 381	61-40 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS?	.0	.6
6 382	61-41 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS?	.0	1.1
6 383	62-1 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM G3-1; IF YES, CONTINUE.	1.0	1.7
6 384	62-2 DO YOU INSPECT TRANSISTORS?	.0	.0
6 385	62-3 DO YOU CHECK TRANSISTORS?	.0	.6
6 386	62-4 DO YOU NEED AN UNDERSTANDING OF EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS?	.0	.6
6 387	62-5 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS?	.0	.6
6 388	62-6 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS?	.0	.6
6 389	62-7 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION?	.0	.6
6 390	62-8 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION?	.0	.6

D TSM	TITLES	205 (M)	307 (M)
6 391	62-9 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE, AND EMITTER)?	.0	.6
6 392	62-10 DO YOU USE OR REFER TO LEAKAGE CURRENT (I SUB C80) IN A TRANSISTOR?	.0	.0
6 393	62-11 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS?	.0	1.1
6 394	62-12 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, A2, A3, ETC.?	.0	1.1
6 395	62-13 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION?	.0	.6
6 396	62-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT (I SUB B) IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT (I SUB E) USUALLY (I SUB B) BEING 2 TO 8 PERCENT OF (I SUB E)?	.0	.6
6 397	62-15 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS?	.0	1.1
6 398	62-16 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (I SUB C80) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES?	.0	.0
6 399	62-17 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES?	.0	.6
6 400	62-18 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS?	.0	.0
6 401	62-19 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS?	.0	.0
6 402	62-20 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS?	.0	.0
6 403	62-21 DO YOU USE OR REFER TO THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE BASE - EMITTER VOLTAGE INTO THE BASE COLLECTOR VOLTAGE (AV = VCB/VBE)?	.0	.6
6 404	62-22 DO YOU USE OR REFER TO THE CURRENT GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT (AI = IC/IB)?	.0	.0

205 307
50 50
(M) (M)

.0 .6
.0 .0
1.6 22.0
.0 6.2
.0 19.2
.0 18.1
.0 5.6
.5 16.9
.5 1.1
.0 1.1
.0 .0
.5 1.1
.0 2.8
.0 1.1

D TSM TITLES

- 6 405 62-23 DO YOU USE OR REFER TO THE POWER GAIN FOR SPECIFIC TRANSISTORS BY MULTIPLYING THE CURRENT GAIN TIMES THE VOLTAGE GAIN (AP = AI X AV)?
- 6 406 62-24 DO YOU PERFORM TRANSISTOR MATCHING THROUGH THE USE OF CURVE TRACING?
- 6 407 63-1 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 41-1; IF YES, CONTINUE.
- 6 408 63-2 DO YOU INSPECT TRANSISTOR AMPLIFIERS?
- 6 409 63-3 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS?
- 6 410 63-4 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL?
- 6 411 63-5 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS?
- 6 412 63-6 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER?
- 6 413 63-7 DO YOU REMOVE OR REPLACE AMPLIFIER CIRCUIT COMPONENTS?
- 6 414 63-8 DO YOU USE OR REFER TO THE CHANGE IN COLLECTOR CURRENT RESULTS FROM A CHANGE IN BASE CURRENT CONCERNING TRANSISTOR AMPLIFIERS?
- 6 415 63-9 DO YOU USE OR REFER TO THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT CONCERNING TRANSISTOR AMPLIFIERS?
- 6 416 63-10 DO YOU USE OR REFER TO THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT?
- 6 417 63-11 DO YOU USE OR REFER TO THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL CONCERNING TRANSISTOR AMPLIFIERS?
- 6 418 63-12 DO YOU USE OR REFER TO THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL CONCERNING TRANSISTOR AMPLIFIERS?

0 TSK	TITLES	205 50 (M)	307 50 (P)
6 419	63-13 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)?	.0	.0
6 420	63-14 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR?	.0	.6
6 421	63-15 DO YOU MEASURE VOLTAGE GAIN CONCERNING TRANSISTOR AMPLIFIERS?	1.0	7.9
6 422	63-16 DO YOU MEASURE CURRENT GAIN CONCERNING TRANSISTOR AMPLIFIERS?	.5	5.1
6 423	63-17 DO YOU MEASURE POWER GAIN CONCERNING TRANSISTOR AMPLIFIERS?	.5	13.0
6 424	63-18 DO YOU USE OR REFER TO THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE OF THE BASE COLLECTOR VOLTAGE?	.0	.6
6 425	63-19 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION?	.0	1.1
6 426	63-20 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION?	.0	1.7
6 427	63-21 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION?	.0	.6
6 428	63-22 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION?	.0	1.1
6 429	63-23 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION?	.0	.6

D TSK	TITLES	205 (M)	307 50 (M)
6 430	63-24 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION?	.0	.6
6 431	63-25 DO YOU IDENTIFY OR TROUBLESHOOT AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS?	1.0	12.4
6 432	63-26 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS?	1.6	11.9
6 433	63-27 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS?	1.0	11.9
6 434	63-28 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS?	1.0	4.5
6 435	63-29 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS?	.5	2.0
6 436	63-30 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	.5	.0
6 437	63-31 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS?	.5	2.8
6 438	63-32 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS?	.5	.6
6 439	63-33 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS?	.5	.6
6 440	63-34 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS?	.5	.6
6 441	63-35 DO YOU TROUBLESHOOT OR REPAIR VOLTAGE MULTIPLIERS (DOUBLERS/TRIPLERS)?	.5	1.7
6 442	63-36 DO YOU TROUBLESHOOT OR REPAIR RF AMPLIFIERS?	.5	4.5
6 443	63-37 DO YOU TROUBLESHOOT OR REPAIR WIDEBAND AMPLIFIERS (VIDEO AMPS)?	.5	4.0
6 444	63-38 DO YOU TROUBLESHOOT OR REPAIR AUDIO AMPLIFIER?	.5	13.0
6 445	63-39 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL OR POWER AMPLIFIERS?	.5	3.4
6 446	63-40 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	.5	.0

D TSK	TITLES	205 (M)	307 (M)
G 007	G3-01 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY AMPLIFIERS?	.5	.6
G 008	G3-02 DO YOU TROUBLESHOOT OR REPAIR IF AMPLIFIERS?	.5	3.4
G 009	G3-03 DO YOU TROUBLESHOOT OR REPAIR DIFFERENTIATING AMPLIFIERS (DIFF AMPS)?	.5	.6
G 050	G3-04 DO YOU TROUBLESHOOT OR REPAIR OPERATIONAL AMPLIFIERS (OP AMPS)?	.5	1.7
G 051	G3-05 DO YOU TROUBLESHOOT OR REPAIR INTEGRATING AMPLIFIERS?	.5	1.7
G 052	G3-06 DO YOU TROUBLESHOOT OR REPAIR SUMMING AMPLIFIERS?	.5	.6

H	SOLID-STATE SPECIAL PURPOSE DEVICES (H1), POWER SUPPLIES (H2), OSCILLATORS (H3)		

H 053	H1-1 DO YOU USE OR REFER TO VARACTORS/VARICAP COMPONENTS?	.5	3.4
H 054	H1-2 DO YOU USE OR REFER TO TUNNEL DIODE COMPONENTS?	1.0	2.8
H 055	H1-3 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTOR (FET) COMPONENTS?	1.0	3.4
H 056	H1-4 DO YOU USE OR REFER TO UNIUNCTION TRANSISTOR COMPONENTS?	.5	1.1
H 057	H1-5 DO YOU USE OR REFER TO ZENER DIODE COMPONENTS?	.5	6.8
H 058	H1-6 DO YOU USE OR REFER TO INTEGRATED CIRCUIT COMPONENTS?	6.3	14.7
H 059	H1-7 DO YOU USE OR REFER TO PIN DIODE COMPONENTS?	.5	2.3
H 060	H1-8 DO YOU USE OR REFER TO LED'S/LCD'S COMPONENTS?	17.7	31.6
H 061	H1-9 DO YOU USE OR REFER TO FANTAIL TRANSISTOR COMPONENTS? (SCR) COMPONENTS?	.5	.6
H 062	H1-10 DO YOU USE OR REFER TO SILICON CONTROL RECTIFIER (SCR) COMPONENTS?	.5	2.3
H 063	H1-11 DO YOU USE OR REFER TO TRIAC COMPONENTS?	.5	1.1
H 064	H1-12 DO YOU USE OR REFER TO PROGRAMMABLE UNIUNCTION TRANSISTOR (PUT) COMPONENTS?	.5	.6

D. IFSK	TITLES	205	307	50	50	(M)	(M)
H 465	H1-13 DO YOU USE OR REFER TO SILICON CONTROLLED SWITCH (SCS) COMPONENTS?	1.0	.0				
H 466	H1-14 DO YOU USE OR REFER TO SILICON UNILATERAL SWITCH (SUS) COMPONENTS?	.5	.6				
H 467	H2-1 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES? IF NO, GO TO ITEM H3-1; IF YES, CONTINUE.	4.7	26.6				
H 468	H2-2 DO YOU INSPECT POWER SUPPLIES?	1.0	10.7				
H 469	H2-3 DO YOU CLEAN POWER SUPPLIES?	.5	2.8				
H 470	H2-4 DO YOU ALIGN OR ADJUST POWER SUPPLIES?	1.0	6.2				
H 471	H2-5 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL?	.5	15.8				
H 472	H2-6 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS?	.5	2.3				
H 473	H2-7 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES?	.5	9.0				
H 474	H2-8 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS?	.5	.6				
H 475	H2-9 DO YOU INSPECT OR SERVICE COOLANT LEVELS?	.5	.0				
H 476	H2-10 DO YOU WORK WITH HALF-WAVE RECTIFIERS?	.5	2.8				
H 477	H2-11 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS?	.5	3.4				
H 478	H2-12 DO YOU WORK WITH BRIDGE RECTIFIERS?	.5	5.1				
H 479	H2-13 DO YOU WORK WITH THREE-PHASE RECTIFIERS?	.5	.6				
H 480	H2-14 DO YOU USE OR REFER TO INPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	2.6	14.1				
H 481	H2-15 DO YOU USE OR REFER TO INPUT FREQUENCIES IN YOUR WORK WITH RECTIFIERS?	3.6	11.3				
H 482	H2-16 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	3.1	12.4				
H 483	H2-17 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	2.6	7.9				
H 484	H2-18 DO YOU USE OR REFER TO RIPPLE AMPLITUDE IN YOUR WORK WITH RECTIFIERS?	.5	4.5				
H 485	H2-19 DO YOU USE OR REFER TO RIPPLE FREQUENCIES IN YOUR WORK WITH RECTIFIERS?	.0	4.5				

D TSK	TITLES	205 50 (M)	307 50 (M)
H 486	H2-20 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGES IN YOUR WORK WITH RECTIFIERS?	.5	4.0
H 487	H2-21 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS IN YOUR WORK WITH RECTIFIERS?	2.1	9.6
H 488	H2-22 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	2.6	9.0
H 489	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS?	1.0	4.0
H 490	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS?	1.6	2.8
H 491	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS?	1.0	1.7
H 492	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS?	.5	2.3
H 493	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS?	.5	2.3
H 494	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS?	.5	1.7
H 495	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER?	1.0	.0
H 496	H2-30 DO YOU WORK WITH POWER SUPPLY REGULATOR CIRCUITS OTHER THAN SOLID-STATE?	.5	4.0
H 497	H2-31 DO YOU WORK WITH SOLID-STATE POWER SUPPLY REGULATOR CIRCUITS?	2.1	6.2
H 498	H3-1 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 11-1; IF YES, CONTINUE.	15.6	58.8
H 499	H3-2 DO YOU INSPECT OSCILLATORS?	.5	13.6
H 500	H3-3 DO YOU ALIGN OR ADJUST OSCILLATORS?	2.6	27.7
H 501	H3-4 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS?	1.6	12.4
H 502	H3-5 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS?	.0	.6
H 503	H3-6 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL?	.5	15.8

D TSK	TITLES	205	307
		50	50
		(M)	(M)
M 504	H3-7 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS?	.0	2.3
M 505	H3-8 DO YOU USE OR REFER TO FEEDBACK (DEGENERATIVE OR REGENERATIVE)?	4.2	22.6
M 506	H3-9 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)?	7.3	23.7
M 507	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY?	9.4	35.0
M 508	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY?	12.0	40.7
M 509	H3-12 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT (CRYSTAL OSCILLATIONS)?	3.1	2.8
M 510	H3-13 DO YOU USE OR REFER TO HARMONIC DISTORTION?	6.3	52.5
M 511	H3-14 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN DC TANK CIRCUITS?	.5	2.8
M 512	H3-15 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN RC NETWORKS?	1.0	4.0
M 513	H3-16 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN CRYSTALS?	4.2	6.8
M 514	H3-17 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN PHASE LOCK LOOPS (PLL)?	5.2	4.0
M 515	H3-18 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN - DON'T KNOW WHICH TYPE OF FDD?	7.3	31.6
M 516	H3-19 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS?	.5	2.3
M 517	H3-20 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS?	.5	2.3
M 518	H3-21 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS?	.5	.6
M 519	H3-22 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS?	.0	.0
M 520	H3-23 DO YOU WORK WITH VOLTAGE CONTROL SINUSOIDAL OSCILLATORS?	3.1	1.7
M 521	H3-24 DO YOU WORK WITH CRYSTAL SINUSOIDAL OSCILLATORS?	3.6	4.5
M 522	H3-25 DO YOU WORK WITH VOLTAGE CONTROL OSCILLATORS (VCO) SINUSOIDAL OSCILLATORS?	5.7	2.3

D TSK	TITLES	205 50 (M)	307 50 (M)
M 523 H3-26	DO YOU WORK WITH WIEN BRIDGE OSCILLATORS SINUSOIDAL OSCILLATORS?	.5	2.0
M 524 H3-27	DO YOU WORK WITH - DON'T KNOW WHICH TYPE OF SINUSOIDAL OSCILLATOR?	7.0	33.3
M 525 H3-28	DO YOU WORK WITH PULSE GENERATING CIRCUITS?	7.0	14.1
M 526 H3-29	DO YOU WORK WITH BLOCKING OSCILLATORS?	.5	.6
M 527 H3-30	DO YOU WORK WITH BURST GENERATORS?	1.6	1.1
M 528 H3-31	DO YOU WORK WITH BLOCKED OSCILLATORS?	.5	.6

I MULTIVIBRATORS (11), LIMITERS AND CLAMPERS (12), ELECTRON TUBES (13)

I 529 I1-1	DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM I2-1; IF YES, CONTINUE.	1.6	2.8
I 530 I1-2	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUIT FREQUENCY DETERMINING DEVICES (FDD)?	.0	.6
I 531 I1-3	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORK FREQUENCY DETERMINING DEVICES (FDD)?	.5	1.1
I 532 I1-4	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTAL FREQUENCY DETERMINING DEVICES (FDD)?	1.0	1.1
I 533 I1-5	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN - DON'T KNOW WHICH TYPE OF FDD?	.5	1.1
I 534 I1-6	DO YOU WORK WITH A STABLE (FREE RUNNING) MULTIVIBRATORS?	.5	2.3
I 535 I1-7	DO YOU WORK WITH MONOSTABLE (ONE SHOT) MULTIVIBRATORS?	.5	2.3
I 536 I1-8	DO YOU WORK WITH BISTABLE (FLIP FLOP) MULTIVIBRATORS?	.5	2.3
I 537 I1-9	DO YOU WORK WITH R-S FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	.0	.0

D TSM	TITLES	205 SC (M)	307 SC (M)
I 538	11-10 DO YOU WORK WITH J-K FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	.5	.0
I 539	11-11 DO YOU WORK WITH "D" FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	.5	.0
I 540	12-1 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 13-1; IF YES, CONTINUE.	2.1	2.3
I 541	12-2 DO YOU WORK WITH SERIES DIODE LIMITERS?	.5	1.7
I 542	12-3 DO YOU WORK WITH SHUNT DIODE LIMITERS?	.5	1.7
I 543	12-4 DO YOU WORK WITH LIMITERS WITH BIAS?	1.0	1.1
I 544	12-5 DO YOU WORK WITH ZENER DIODE LIMITERS?	.5	1.7
I 545	12-6 DO YOU WORK WITH TRANSISTOR LIMITERS?	1.0	1.7
I 546	12-7 DO YOU WORK WITH TRIODE LIMITERS?	.5	.6
I 547	12-8 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS?	.0	1.1
I 548	12-9 DO YOU WORK WITH BIAS DIODE CLAMPING CIRCUITS?	.5	1.1
I 549	12-10 DO YOU WORK WITH DC RESTORERS (DCR)?	.5	.6
I 550	13-1 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS BASIC ELECTRON TUBES (FOR PURPOSES OF THIS QUESTION DO NOT CONSIDER HIGH-FREQUENCY DEVICES SUCH AS KLYSTRONS, TRAVELING WAVE TUBES, BACKWARD WAVE OSCILLATORS, OR MAGNETRONS AS ELECTRON TUBES)? IF NO, GO TO ITEM J1-1; IF YES, CONTINUE.	4.7	1.7
I 551	13-2 DO YOU CHECK THE CONDITION OF ELECTRON TUBES?	.5	.6
I 552	13-3 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES?	.5	.0
I 553	13-4 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES?	.5	1.7
I 554	13-5 DO YOU USE SCOPES TO CHECK ELECTRON TUBES?	1.0	1.7
I 555	13-6 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES?	.5	1.1
I 556	13-7 DO YOU USE OR REFER TO CUTOFF?	1.6	1.1
I 557	13-8 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING?	1.0	1.7
I 558	13-9 DO YOU USE OR REFER TO PEAK CURRENT RATING?	1.0	2.3
I 559	13-10 DO YOU USE OR REFER TO TRANSIT TIME?	.5	1.7
I 560	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING?	.5	1.1

D TSM	TITLES	205 (M)	307 50 (M)
I 561	13-12 DO YOU USE OR REFER TO SATURATION?	1.6	2.3
I 562	13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE?	.5	1.1
I 563	13-14 DO YOU USE OR REFER TO PLATE VOLTAGE?	.5	1.7
I 564	13-15 DO YOU USE OR REFER TO PLATE CURRENT?	.5	1.7
I 565	13-16 DO YOU USE OR REFER TO GRID VOLTAGE?	1.6	2.3
I 566	13-17 DO YOU USE OR REFER TO GRID CURRENT?	.5	1.7
I 567	13-18 DO YOU USE OR REFER TO CATHODE VOLTAGE?	1.0	1.7
I 568	13-19 DO YOU USE OR REFER TO CATHODE CURRENT?	1.0	1.7
I 569	13-20 DO YOU USE OR REFER TO FILAMENT VOLTAGE?	.5	1.7
I 570	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)?	.5	1.1
I 571	13-22 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC.) AMPLIFICATION FACTORS?	.5	.6
I 572	13-23 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)?	.5	.6
I 573	13-24 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE?	.5	.6
I 574	13-25 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE?	.5	1.1
I 575	13-26 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES?	.5	1.1
I 576	13-27 DO YOU USE OR REFER TO PLATE VOLTAGE FOR A SPECIFIED BIAS?	.5	1.1
I 577	13-28 DO YOU USE OR REFER TO PLATE CURRENT FOR A SPECIFIED BIAS?	.5	1.1
I 578	13-29 DO YOU USE OR REFER TO BIAS REQUIRED FOR CUTOFF?	1.0	1.7
I 579	13-30 DO YOU USE OR REFER TO BIAS REQUIRED FOR SATURATION?	1.0	1.7
I 580	13-31 DO YOU USE OR REFER TO GAIN?	2.6	3.4
I 581	13-32 DO YOU USE OR REFER TO EFFICIENCY?	.5	3.4

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

205 307
50 50
(M) (M)

D TSK TITLES

- I 582 I3-33 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN? .5 2.8
- I 583 I3-34 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN? 1.0 2.8
- I 584 I3-35 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN? 1.0 1.7
- I 585 I3-36 DO YOU USE OR REFER TO TUBE SOCKET NOTATION? .5 1.1
- I 586 I3-37 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS? .5 1.7
- I 587 I3-38 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS? .5 1.7
- I 588 I3-39 DO YOU USE OR REFER TO ELECTRON TUBE DIODES? .5 1.7

J ELECTRON TUBE AMPLIFIERS AND CIRCUITS (J1), SPECIAL PURPOSE ELECTRON TUBES (J2), METEODYNYING AND MODULATION - DEMODULATION (MODEMS) (J3)

- J 589 J1-1 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM J2-1; IF YES, CONTINUE. 2.6 4.0
- J 590 J1-2 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS? .5 1.7
- J 591 J1-3 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS? .0 1.1
- J 592 J1-4 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS? .5 1.7
- J 593 J1-5 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS? .0 1.1
- J 594 J1-6 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS? .0 .0

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 38

D TSK	TITLES	205 (M)	307 50 (M)
J 595	J1-7 DO YOU TROUBLESHOOT OR REPAIR - DON'T KNOW WHICH TYPE OF AMPLIFIER?	1.0	1.1
J 596	J2-1 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)?	1.6	1.7
J 597	J2-2 DO YOU WORK WITH CATHODE-RAY TUBES (CRT)?	63.5	33.3
J 598	J2-3 DO YOU WORK WITH BEAM POWER TUBES?	2.1	2.3
J 599	J2-4 DO YOU WORK WITH THYRATRON?	.5	1.1
J 600	J2-5 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)?	14.6	4.0
J 601	J2-6 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)?	9.9	2.8
J 602	J2-7 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)?	6.8	2.3
J 603	J2-8 DO YOU USE OR REFER TO PHOSPHOR SCREENS CONCERNING CRT'S?	28.1	5.6
J 604	J2-9 DO YOU USE OR REFER TO AQUADAG COATINGS CONCERNING CRT'S?	9.4	1.7
J 605	J2-10 DO YOU USE OR REFER TO ELECTRON OPTICS CONCERNING CRT'S?	5.7	1.7
J 606	J2-11 DO YOU USE OR REFER TO PERSISTENCE CONCERNING CRT'S?	18.2	3.4
J 607	J2-12 DO YOU USE OR REFER TO DECAY TIMES CONCERNING CRT'S?	15.1	4.0
J 608	J2-13 DO YOU USE OR REFER TO FLOURESCENCE CONCERNING CRT'S?	14.6	4.0
J 609	J2-14 DO YOU USE OR REFER TO PHOSPHORESCENCE CONCERNING CRT'S?	17.7	5.6
J 610	J2-15 DO YOU USE OR REFER TO SHADOW MASK CONCERNING CRT'S?	2.1	1.7
J 611	J3-1 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K1-1; IF YES, CONTINUE.	16.1	58.2
J 612	J3-2 DO YOU PERFORM TASKS ON FREQUENCY CONVERTER SYSTEMS STAGES?	6.3	30.5

D TSK	TITLES	205	307
		50	50
		(M)	(M)
J 613 J3-3	DO YOU PERFORM TASKS ON FREQUENCY MIXER SYSTEMS STAGES?	4.7	19.0
J 614 J3-4	DO YOU PERFORM TASKS ON MODEM SYSTEMS STAGES?	3.6	54.0
J 615 J3-5	DO YOU USE OR REFER TO THE METERDYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS?	10.4	20.3
J 616 J3-6	DO YOU PERFORM TASKS ON REACTANCE MODULATOR SYSTEM STAGES?	2.1	2.3
J 617 J3-7	DO YOU PERFORM TASKS ON MODULATED OSCILLATOR SYSTEM STAGES?	4.2	10.7

 K AM SYSTEMS (K1), FM SYSTEMS (K2), NUMBERING SYSTEMS (K3)

K 618 K1-1	DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K2-1; IF YES, CONTINUE.	15.1	16.9
K 619 K1-2	DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS?	3.1	6.2
K 620 K1-3	DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS?	1.0	.0
K 621 K1-4	DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS?	3.1	3.4
K 622 K1-5	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS?	1.0	16.9
K 623 K1-6	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS?	.5	11.9
K 624 K1-7	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS?	1.0	2.3
K 625 K1-8	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS?	1.0	2.3
K 626 K1-9	DO YOU PERFORM TASKS ON RF OSCILLATORS/SYNTHESIZERS?	7.3	4.0
K 627 K1-10	DO YOU PERFORM TASKS ON RF AMPLIFIERS?	8.3	6.2
K 628 K1-11	DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	8.3	9.0
K 629 K1-12	DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	5.2	6.8
K 630 K1-13	DO YOU PERFORM TASKS ON LOCAL OSCILLATORS?	7.3	5.6

RESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 40

D TSK	TITLES	205 (M)	307 EO (M)
K 631	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	7.3	4.5
K 632	K1-15 DO YOU PERFORM TASKS ON DETECTORS?	4.2	2.8
K 633	K1-16 DO YOU PERFORM TASKS ON MIXER AMPLIFIERS?	3.6	2.0
K 634	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS?	5.7	5.1
K 635	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS?	6.3	7.3
K 636	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS?	10.4	11.3
K 637	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS?	9.9	9.6
K 638	K2-1 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K3-1; IF YES, CONTINUE.	14.1	35.0
K 639	K2-2 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS?	2.6	11.3
K 640	K2-3 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS?	.5	.6
K 641	K2-4 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS?	1.6	4.0
K 642	K2-5 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS?	.5	34.5
K 643	K2-6 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS?	.0	13.6
K 644	K2-7 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS?	.5	3.4
K 645	K2-8 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS?	.0	1.1
K 646	K2-9 DO YOU PERFORM LINK PERFORMANCE ASSESSMENTS?	.5	31.1
K 647	K2-10 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	8.9	15.3
K 648	K2-11 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS?	6.3	6.8
K 649	K2-12 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)?	4.7	3.4
K 650	K2-13 DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	5.7	7.3
K 651	K2-14 DO YOU PERFORM TASKS ON RF AMPLIFIERS?	8.3	6.2
K 652	K2-15 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS?	5.2	7.9
K 653	K2-16 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	7.3	5.1

D TSK	TITLES	205 (M)	307 50 (M)
K 654	K2-17 DO YOU PERFORM TASKS ON LIMITERS?	3.6	4.5
K 655	K2-18 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS?	5.2	2.8
K 656	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS?	.5	7.3
K 657	K2-20 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS?	1.0	7.3
K 658	K2-21 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSCIEVERS?	.5	5.6
K 659	K2-22 DO YOU PLOT RECEIVE SIGNAL LEVEL CURVES (RSL)?	.5	12.4
K 660	K3-1 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS?	15.1	9.6
K 661	K3-2 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS?	25.0	15.3
K 662	K3-3 DO YOU CONVERT DECIMAL NUMBERS TO HEXADECIMAL (BASE 16) NUMBERS?	10.9	3.4
K 663	K3-4 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS?	16.1	8.5
K 664	K3-5 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS?	13.0	9.0
K 665	K3-6 DO YOU CONVERT OCTAL NUMBERS TO HEXADECIMAL NUMBERS?	9.4	2.8
K 666	K3-7 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS?	24.5	11.9
K 667	K3-8 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS?	13.5	7.9
K 668	K3-9 DO YOU CONVERT BINARY NUMBERS TO HEXADECIMAL NUMBERS?	10.9	2.8
K 669	K3-10 DO YOU CONVERT HEXADECIMAL NUMBERS TO DECIMAL NUMBERS?	12.0	4.0
K 670	K3-11 DO YOU CONVERT HEXADECIMAL NUMBERS TO OCTAL NUMBERS?	9.4	2.8
K 671	K3-12 DO YOU CONVERT HEXADECIMAL NUMBERS TO BINARY NUMBERS?	10.9	2.8
K 672	K3-13 DO YOU ADD BINARY NUMBERS?	19.8	10.7
K 673	K3-14 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD?	4.2	6.2
K 674	K3-15 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD?	7.8	9.0
K 675	K3-16 DO YOU ADD OCTAL NUMBERS?	6.3	4.5

D TSK	TITLES	205 (M)	307 50 (P)
K 676	K3-17 DO YOU SUBTRACT OCTAL NUMBERS?	6.8	4.5
K 677	K3-18 DO YOU ADD HEXADECIMAL NUMBERS?	6.3	2.3
K 678	K3-19 DO YOU SUBTRACT HEXADECIMAL NUMBERS?	5.7	2.3
K 679	K3-20 DO YOU DIVIDE BINARY NUMBERS?	6.3	5.1
K 680	K3-21 DO YOU MULTIPLY BINARY NUMBERS?	7.3	5.1
K 681	K3-22 DO YOU USE OR REFER TO BINARY CODED DECIMAL (BCD)?	12.0	7.9
K 682	K3-23 DO YOU USE OR REFER TO GRAY CODE?	1.0	2.3
K 683	K3-24 DO YOU USE OR REFER TO ICAO CODE?	2.1	1.1
K 684	K3-25 DO YOU USE OR REFER TO EXCESS-3 CODE?	1.0	.6

L LOGIC FUNCTIONS (L1), BOOLEAN EQUATIONS (L2), COUNTERS (L3)

L 685	L1-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS? IF NO, GO TO ITEM L2-1; IF YES, CONTINUE.	1.6	1.1
L 686	L1-2 DO YOU CONSTRUCT TRUTH TABLES FOR 'AND' LOGIC SYMBOLS OR GATES?	1.0	.6
L 687	L1-3 DO YOU CONSTRUCT TRUTH TABLES FOR 'OR' LOGIC SYMBOLS OR GATES?	1.0	.6
L 688	L1-4 DO YOU CONSTRUCT TRUTH TABLES FOR 'AND' OR 'OR' LOGIC SYMBOLS WITH STATE INDICATORS?	1.0	.6
L 689	L1-5 DO YOU CONSTRUCT TRUTH TABLES FOR 'EXCLUSIVE OR' LOGIC SYMBOLS OR GATES?	1.0	.6
L 690	L1-6 DO YOU USE OR REFER TO TRUTH TABLES FOR 'AND' LOGIC SYMBOLS OR GATES?	1.0	.6
L 691	L1-7 DO YOU USE OR REFER TO TRUTH TABLES FOR 'OR' LOGIC SYMBOLS OR GATES?	1.0	.6
L 692	L1-8 DO YOU USE OR REFER TO TRUTH TABLES FOR 'AND' OR 'OR' LOGIC SYMBOLS WITH STATE INDICATORS?	1.0	.6

D TSK	TITLES	205 SQ (M)	3D7 SQ (P)
L 693	LI-9 DO YOU USE OR REFER TO TRUTH TABLES FOR 'EXCLUSIVE OR' LOGIC SYMBOLS?	1.0	.6
L 694	LI-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'AND' GATES?	1.0	1.1
L 695	LI-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'OR' GATES?	1.0	1.1
L 696	LI-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'NAND' OR 'NOR' GATES?	.5	1.1
L 697	LI-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'EXCLUSIVE OR' GATES?	1.0	1.1
L 698	LI-14 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR INHIBITED 'AND' GATES?	.5	.6
L 699	LI-15 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR "B" BARS?	.5	.0
L 700	LI-16 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR "M" BARS?	.5	.0
L 701	LI-17 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR COMBINERS?	.5	.6
L 702	LI-18 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS?	1.0	.6
L 703	LI-19 DO YOU USE OR REFER TO ONE-SHOT MULTIVIBRATOR SYMBOLS?	.5	.6
L 704	LI-20 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT OR SCHEMATIC DIAGRAMS?	.5	.6
L 705	LI-21 DO YOU USE OR REFER TO ONE-SHOT CIRCUIT OR SCHEMATIC DIAGRAMS?	.5	.6
L 706	LI-22 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES?	.5	.6
L 707	LI-23 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS?	.5	.6
L 708	LI-24 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS?	.0	.6
L 709	LI-25 DO YOU USE OR REFER TO NONCOMPLEMENTED FLIP-FLOP LOGIC SYMBOLS?	.0	.6
L 710	LI-26 DO YOU CONSTRUCT TRUTH TABLES FOR "B" BARS?	.5	.0
L 711	LI-27 DO YOU CONSTRUCT TRUTH TABLES FOR "M" BARS?	.5	.0
L 712	LI-28 DO YOU CONSTRUCT TRUTH TABLES FOR COMBINERS?	.5	.6

D TSK	TITLES	205 (M)	307 50 (M)
L 713	L1-29 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS?	1.0	J.1
L 714	L1-30 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS?	.5	.0
L 715	L1-31 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS?	1.0	.6
L 716	L1-32 DO YOU TRACE DATA FLOW THROUGH NONCOMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS?	1.0	.0
L 717	L1-33 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS?	.0	.0
L 718	L2-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS? IF NO, GO TO ITEM L3-1; IF YES, CONTINUE.	.5	.6
L 719	L2-2 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS?	.5	.0
L 720	L2-3 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS?	.0	.0
L 721	L2-4 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS?	.0	.6
L 722	L2-5 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES?	.5	.6
L 723	L2-6 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS?	.5	.6
L 724	L2-7 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA?	.0	.6
L 725	L2-8 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES?	.5	.0
L 726	L2-9 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS?	.0	.0
L 727	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE?	.5	.0
L 728	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS?	.5	1.1

D TSK	TITLES	205 (M)	307 50 (M)
L 729	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS?	.5	.6
L 730	L3-1 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM MI-1; IF YES, CONTINUE.	16.2	11.3
L 731	L3-2 DO YOU USE OR REFER TO UP-COUNTERS?	6.8	4.5
L 732	L3-3 DO YOU USE OR REFER TO DOWN-COUNTERS?	4.2	3.4
L 733	L3-4 DO YOU USE OR REFER TO SERIAL COUNTERS?	3.1	2.8
L 734	L3-5 DO YOU USE OR REFER TO PARALLEL COUNTERS?	2.1	4.5
L 735	L3-6 DO YOU USE OR REFER TO RING COUNTERS?	1.6	.6
L 736	L3-7 DO YOU USE OR REFER TO DECADE (MOD 10) COUNTERS?	2.6	1.1
L 737	L3-8 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS?	3.6	5.1
L 738	L3-9 DO YOU USE OR REFER TO DOWN CLOCKS?	3.1	3.4
L 739	L3-10 DO YOU USE OR REFER TO UP CLOCKS?	5.7	2.8
L 740	L3-11 DO YOU USE OR REFER TO OTHER MODULOUS COUNTERS?	5.2	3.4
L 741	L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS?	1.0	1.1
L 742	L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DOWN-COUNTERS?	1.0	1.1
L 743	L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-DOWN COUNTERS?	.5	1.1
L 744	L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS?	.5	1.1
L 745	L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS?	.5	.6
L 746	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF COUNTERS FEEDING STORAGE REGISTERS?	1.6	.6
L 747	L3-18 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS?	1.0	.6
L 748	L3-19 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS?	2.1	2.3

D TSK	TITLES	205 (M)	307 (M)
L 749	L3-20 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS?	5.5	6.6
L 750	L3-21 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES?	0.0	0.0
L 751	L3-22 DO YOU DETERMINE THE APPROPRIATE 'AND' GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT?	3.1	0.0

M TIMING CIRCUITS (M1), USE OF SIGNAL GENERATORS (M2), MOTORS AND GENERATORS (M3)

M 752	M1-1 DO YOU WORK WITH SAWTOOTH WAVE GENERATOR TIMING CIRCUITS?	16.1	6.0
M 753	M1-2 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATOR TIMING CIRCUITS?	1.6	3.4
M 754	M1-3 DO YOU WORK WITH PULSED OSCILLATOR TIMING CIRCUITS?	13.0	10.2
M 755	M1-4 DO YOU WORK WITH BLOCKING OSCILLATOR TIMING CIRCUITS?	2.1	5.1
M 756	M1-5 DO YOU WORK WITH MASTER STATION TIMING CIRCUITS?	3.6	33.9
M 757	M1-6 DO YOU USE OR REFER TO RISE TIME?	28.1	7.9
M 758	M1-7 DO YOU USE OR REFER TO FALL OR FLYBACK TIME?	26.6	5.1
M 759	M1-8 DO YOU USE OR REFER TO SWEEP TIME?	26.6	18.1
M 760	M1-9 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS?	9.4	5.6
M 761	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS?	8.9	5.1
M 762	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS?	6.8	2.8
M 763	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS?	6.8	3.4

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSK	TITLES	205 SO (M)	307 50 (P)
M 764	M2-1 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	18.2	75.7
M 765	M2-2 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS?	9.4	66.7
M 766	M2-3 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS?	1.0	21.5
M 767	M2-4 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS?	.5	16.9
M 768	M2-5 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS?	.0	3.4
M 769	M2-6 DO YOU USE AUDIO SINE-WAVE GENERATORS?	8.9	61.6
M 770	M2-7 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE?	10.9	13.6
M 771	M2-8 DO YOU USE RF GENERATORS LESS THAN 1,000 MHZ?	9.9	17.5
M 772	M2-9 DO YOU USE RF GENERATORS GREATER THAN 1,000 MHZ?	8.9	5.6
M 773	M2-10 DO YOU USE WHITE NOISE GENERATORS?	2.1	6.8
M 774	M2-11 DO YOU USE PATTERN GENERATORS?	2.6	66.1
M 775	M2-12 DO YOU USE PSEUDO-RANDOM GENERATORS?	3.1	23.7
M 776	M2-13 DO YOU USE TIME MARK GENERATORS?	10.9	9.0
M 777	M2-14 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS?	0.3	20.3
M 778	M3-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS, GENERATORS (SERVO), OR ALTERNATORS? IF NO, GO TO ITEM M1-1; IF YES, CONTINUE.	1.6	.6
M 779	M3-2 DO YOU INSPECT MOTORS?	.0	.6
M 780	M3-3 DO YOU CLEAN OR LUBRICATE MOTORS?	.5	.0
M 781	M3-4 DO YOU OPERATE MOTORS?	1.0	.6
M 782	M3-5 DO YOU REMOVE OR REPLACE COMPLETE MOTORS?	.5	.0
M 783	M3-6 DO YOU REMOVE OR REPLACE MOTOR PARTS?	.5	.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 48

D	TSK	TITLES	205	307
			(M)	(M)
	M 784	M3-7 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS?	.5	.0
	M 785	M3-8 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS?	.0	.0
	M 786	M3-9 DO YOU PERFORM TASKS ON MOTOR FIELD COILS?	.5	.0
	M 787	M3-10 DO YOU PERFORM ANY TASKS ON MOTOR ARMATURES?	.5	.0
	M 788	M3-11 DO YOU PERFORM ANY TASKS ON MOTOR ROTORS?	.5	.0
	M 789	M3-12 DO YOU PERFORM ANY TASKS ON MOTOR BRUSHES?	.5	.0
	M 790	M3-13 DO YOU PERFORM ANY TASKS ON MOTOR SLIP RINGS?	.0	.0
	M 791	M3-14 DO YOU PERFORM ANY TASKS ON MOTOR COMMUTATORS?	.0	.0
	M 792	M3-15 DO YOU PERFORM ANY TASKS ON MOTOR POLE PIECES?	.5	.0
	M 793	M3-16 DO YOU DETERMINE OR MEASURE FORCE OR TORQUE CREATED BY A MOTOR?	.5	.0
	M 794	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR?	.5	.0
	M 795	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS?	.5	.0
	M 796	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS?	.0	.6
	M 797	M3-20 DO YOU WORK WITH INDUCTION MOTORS?	.5	.0
	M 798	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS?	.5	.6
	M 799	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS?	1.0	.6
	M 800	M3-23 DO YOU WORK WITH SERVO OR SYNCHROS MOTORS?	1.0	.0
	M 801	M3-24 DO YOU WORK WITH SHADED-POLE MOTORS?	.5	.0
	M 802	M3-25 DO YOU INSPECT GENERATORS OR ALTERNATORS?	.5	.6
	M 803	M3-26 DO YOU CLEAN OR LUBRICATE GENERATORS OR ALTERNATORS?	.5	.0
	M 804	M3-27 DO YOU OPERATE GENERATORS OR ALTERNATORS?	1.0	.6
	M 805	M3-28 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS OR ALTERNATORS?	.5	.0
	M 806	M3-29 DO YOU REMOVE OR REPLACE GENERATOR, ALTERNATOR, OR PARTS?	.5	.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 49

205 307
50 50
(M) (P)

O TSM TITLES

M 807 M3-30 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS OR ALTERNATORS?
M 808 M3-31 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS OR ALTERNATORS?

M METER MOVEMENTS (N1), SATURABLE REACTORS AND MAGNETIC AMPLIFIERS (N2), WAVESHAPING CIRCUITS (N3)

M 809 N1-1 DO YOU WORK WITH METERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM N2-1; IF YES, CONTINUE.
M 810 N1-2 DO YOU CONSIDER THE JUNCTIONS OF PERMANENT MAGNET INTERNAL METER PARTS?
M 811 N1-3 DO YOU CONSIDER THE FUNCTIONS OF MOVING COIL INTERNAL METER PARTS?

M 812 N1-4 DO YOU CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS INTERNAL METER PARTS?
M 813 N1-5 DO YOU READ METER SCALES?
M 814 N1-6 DO YOU EXTEND THE RANGE OF AMMETERS?
M 815 N1-7 DO YOU EXTEND THE RANGE OF VOLTMETERS?
M 816 N1-8 DO YOU ZERO OHMMETERS?
M 817 N1-9 DO YOU ZERO AMMETERS?
M 818 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOL)??

M 819 N1-11 DO YOU CONSIDER BALLASTIC RESPONSE OF METER MOVEMENTS?
M 820 N1-12 DO YOU CONSIDER OTHER METER MOVEMENTS?
M 821 J2-1 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM N3-1; IF YES, CONTINUE.

6.3 73.4
.5 5.1
.5 5.1
.0 4.0
5.7 71.8
.5 17.5
.5 25.4
1.0 41.8
1.0 19.8
1.0 15.8
1.0 4.0
2.1 23.2
1.0 .0

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT102 PAGE 50

D TSM	TITLES	205	307
		(M)	(P)
N 022	N2-2 DO YOU INSPECT SATURABLE PEACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 023	N2-3 DO YOU CLEAN SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 024	N2-4 DO YOU ADJUST SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 025	N2-5 DO YOU TROUBLESHOOT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 026	N2-6 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS?	.0	.0
N 027	N2-7 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS?	.0	.0
N 028	N2-8 DO YOU USE OR REFER TO HISTERESIS CURVES OR LOOPS?	.0	.0
N 029	N2-9 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	.0	.0
N 030	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	.0	.0
N 031	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS?	.0	.0
N 032	N2-12 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS?	.0	.0
N 033	N3-1 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 01-1; IF YES, CONTINUE.	30.2	10.2
N 034	N3-2 DO YOU USE OR REFER TO TRANSIENT INTERVALS (RISE TIME AND FALL TIME)?	24.5	5.6
N 035	N3-3 DO YOU USE OR REFER TO PULSE WIDTH (PW)?	31.8	7.3
N 036	N3-4 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)?	29.2	6.2
N 037	N3-5 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)?	31.3	6.2
N 038	N3-6 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS?	2.1	2.0

D	TSK	TITLES	205	3C7
			SO	SO
			(M)	(M)
N 839	N3-7	DO YOU USE OR REFER TO INTEGRATING CIRCUITS?	2.1	5.1
N 840	N3-8	DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT?	3.1	4.5
N 841	N3-9	DO YOU DETERMINE WHETHER AN LP OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION?	.0	1.7
N 842	N3-10	DO YOU WORK WITH SQUARE WAVE GENERATOR SOLID STATE CIRCUITS?	9.9	9.0
N 843	N3-11	DO YOU WORK WITH RECTANGULAR WAVE GENERATOR SOLID STATE CIRCUITS?	3.6	4.5
N 844	N3-12	DO YOU WORK WITH TRIANGULAR (SAWTOOTH) WAVE GENERATOR SOLID STATE CIRCUITS?	11.5	2.8
N 845	N3-13	DO YOU WORK WITH RAMP (TRAPEZOIDAL) GENERATOR SOLID STATE CIRCUITS?	1.0	1.7
N 846	N3-14	DO YOU WORK WITH FUNCTION GENERATOR SOLID STATE CIRCUITS?	4.2	5.1
N 847	N3-15	DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS?	1.0	2.3
N 848	N3-16	DO YOU ALIGN OF ADJUST WAVE GENERATING OR SHAPING CIRCUITS?	.5	1.1
N 849	N3-17	DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS?	1.0	.6
N 850	N3-18	DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS?	.0	3.4
N 851	N3-19	DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS?	.0	2.3
N 852	N3-20	DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS?	.0	1.1
N 853	N3-21	DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS?	.0	.0

205 307
50 50
(M) (M)

D TSK TITLES

0	SINGLE OR INDEPENDENT SIDEBAND SYSTEMS (01), PULSE MODULATION SYSTEMS (02), ANTENNAS (03)		
0 854	01-1 DO YOU WORK ON SINGLE OR INDEPENDENT SIDEBAND SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 02-1; IF YES, CONTINUE.	6.0	26.0
0 855	01-2 DO YOU INSPECT SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	1.6	9.6
0 856	01-3 DO YOU CLEAN SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.5	.0
0 857	01-4 DO YOU ALIGN SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.5	4.0
0 858	01-5 DO YOU TROUBLESHOOT TO SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	24.9
0 859	01-6 DO YOU TROUBLESHOOT TO SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE COMPONENTS?	.0	6.2
0 860	01-7 DO YOU REMOVE OR REPLACE SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	3.4
0 861	01-8 DO YOU REMOVE OR REPLACE SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE COMPONENTS?	.0	.6
0 862	01-9 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, AUDIO, AMPLIFIER, STAGE?	2.1	6.8
0 863	01-10 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, BALANCED MODULATOR STAGE?	1.0	3.4
0 864	01-11 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, CARRIER OSCILLATOR STAGE?	2.1	2.3
0 865	01-12 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, LC FILTER STAGE?	1.0	1.7
0 866	01-13 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, CRYSTAL FILTER STAGE?	.5	.0
0 867	01-14 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, MECHANICAL FILTER STAGE?	1.0	.0
0 868	01-15 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, OSCILLATOR STAGE?	3.1	5.6
0 869	01-16 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, MIXER STAGE?	2.1	2.8
0 870	01-17 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, DRIVER STAGE?	1.0	1.1
0 871	01-18 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, POWER AMPLIFIER STAGES?	1.0	2.8
0 872	01-19 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, RF AMPLIFIER STAGE?	3.6	4.0
0 873	01-20 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, FREQUENCY CONVERTER STAGES?	3.1	4.0
0 874	01-21 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, IF AMPLIFIER STAGE?	2.1	3.4
0 875	01-22 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM, DEMODULATOR STAGE?	4.2	5.6
0 876	01-23 DO YOU USE OR REFER TO SELECTIVE FADING WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	1.6	10.7

O TSK	TITLES	205	307
		(M)	(P)
0 877	01-24 DO YOU USE OR REFER TO PEAK POWER WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	1.6	12.4
0 878	01-25 DO YOU USE OR REFER TO FREQUENCY STABILITY WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	3.1	11.3
0 879	01-26 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	1.6	7.9
0 880	01-27 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB OR ISB TRANSMITTERS?	1.0	4.0
0 881	01-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB OR ISB TRANSMITTER SCHEMATIC DIAGRAMS?	.5	2.0
0 882	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB OR ISB RECEIVER SCHEMATIC DIAGRAMS?	.5	3.4
0 883	01-30 DO YOU PERFORM AERONAUTIC STATION ASSESSMENT PROGRAMS (ASAP)?	.0	4.5
0 884	02-1 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 03-1; IF YES, CONTINUE.	15.6	20.9
0 885	02-2 DO YOU INSPECT PULSE MODULATION SYSTEMS?	.5	4.5
0 886	02-3 DO YOU CLEAN PULSE MODULATION SYSTEMS?	.0	.0
0 887	02-4 DO YOU ALIGN PULSE MODULATION SYSTEMS?	.5	2.3
0 888	02-5 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS?	.0	18.6
0 889	02-6 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS?	.0	6.2
0 890	02-7 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS?	.0	2.3
0 891	02-8 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS?	.0	.6
0 892	02-9 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) PULSE MODULATION SYSTEMS?	12.5	9.6
0 893	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) PULSE MODULATION SYSTEMS?	11.5	2.3
0 894	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) PULSE MODULATION SYSTEMS?	13.0	3.4
0 895	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) PULSE MODULATION SYSTEMS?	12.5	19.2
0 896	02-13 DO YOU WORK ON LINE PULSING MODULATION PULSE MODULATION SYSTEMS?	.5	.6
0 897	02-14 DO YOU WORK ON TIME DIVISION MULTIPLEXING (TDM) PULSE MODULATION SYSTEMS?	9.4	20.3
0 898	02-15 DO YOU WORK ON - DON'T KNOW WHICH TYPE OF MODULATION SYSTEM?	3.1	1.1
0 899	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLY STAGE?	2.1	.6
0 900	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODE STAGE?	.5	.0
0 901	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORK STAGE?	1.0	.6
0 902	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMER STAGE?	3.1	1.1
0 903	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRON STAGE?	.5	.0

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE

54

0 TSK	TITLES	205	307
		50	50
		(M)	(M)
0 904	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMER STAGE?	.5	.6
0 905	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBE STAGE?	.5	.6
0 906	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIER STAGE?	4.7	.6
0 907	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTER STAGE?	4.7	2.8
0 908	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIER STAGE?	4.2	1.1
0 909	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTOR STAGE?	4.2	1.1
0 910	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIER STAGE?	4.7	.0
0 911	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIER STAGE?	3.1	.6
0 912	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	17.7	2.8
0 913	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	15.1	2.8
0 914	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	17.7	5.6
0 915	02-32 DO YOU USE OR REFER TO PULSE SHAPE WHEN WORKING WITH PULSE MODULATION SYSTEMS?	12.0	3.4
0 916	02-33 DO YOU USE OR REFER TO PEAK POWER WHEN WORKING WITH PULSE MODULATION SYSTEMS?	7.8	4.5
0 917	02-34 DO YOU USE OR REFER TO AVERAGE POWER WHEN WORKING WITH PULSE MODULATION SYSTEMS?	7.3	4.5
0 918	02-35 DO YOU USE OR REFER TO DUTY CYCLE (DC) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	6.8	2.3
0 919	02-36 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)?	14.1	1.1
0 920	02-37 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)?	14.1	1.1
0 921	02-38 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS?	4.2	2.3
0 922	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS?	1.0	2.3
0 923	02-40 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS?	1.0	2.3
0 924	03-1 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB? IF NO, GO TO ITEM PI-1; IF YES, CONTINUE.	22.4	13.6
0 925	03-2 DO YOU INSPECT ANTENNAS?	1.6	1.1
0 926	03-3 DO YOU CLEAN ANTENNAS?	.5	.6
0 927	03-4 DO YOU PHYSICALLY ALIGN ANTENNAS?	.5	1.1
0 928	03-5 DO YOU ELECTRICALLY ALIGN ANTENNAS?	1.6	1.7
0 929	03-6 DO YOU TROUBLESHOOT TO ANTENNAS?	.0	9.6
0 930	03-7 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS?	.0	.0
0 931	03-8 DO YOU REMOVE OR INSTALL ANTENNAS?	1.0	1.7

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT02 PAGE 55

0 TSK	TITLES	205 50 (M)	307 50 (M)
0 932	03-9 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS?	.5	.0
0 933	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES?	3.1	1.7
0 934	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES?	3.1	1.7
0 935	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS?	3.6	1.1
0 936	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS RESISTIVE LOADS TO THE GENERATOR?	.5	1.7
0 937	03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR?	.5	1.1
0 938	03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR?	.5	.6
0 939	03-16 DO YOU WORK WITH HERTZ BASIC ANTENNAS?	1.0	.6
0 940	03-17 DO YOU WORK WITH MARCONI BASIC ANTENNAS?	1.0	1.1
0 941	03-18 DO YOU WORK WITH RHOMBIC BASIC ANTENNAS?	2.6	8.5
0 942	03-19 DO YOU WORK WITH DIPOLE BASIC ANTENNAS?	5.7	8.5
0 943	03-20 DO YOU WORK WITH SCIMITAR BASIC ANTENNAS?	.5	.0
0 944	03-21 DO YOU WORK WITH PARABOLIC BASIC ANTENNAS?	15.6	10.2
0 945	03-22 DO YOU WORK WITH GROUND PLANE BASIC ANTENNAS?	2.6	3.4
0 946	03-23 DO YOU WORK WITH FOLDED DIPOLE BASIC ANTENNAS?	3.6	2.3
0 947	03-24 DO YOU WORK WITH BROADSIDE ARRAYS?	2.6	.6
0 948	03-25 DO YOU WORK WITH END-FIRE ARRAYS?	2.1	.6
0 949	03-26 DO YOU WORK WITH CARDIOID ARRAYS?	2.6	.0
0 950	03-27 DO YOU WORK WITH COLLINEAR ARRAYS?	3.1	.0
0 951	03-28 DO YOU WORK WITH PHASE ARRAYS?	6.3	1.1
0 952	03-29 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS?	3.1	1.7
0 953	03-30 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS?	1.6	.0
0 954	03-31 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS?	7.3	1.7
0 955	03-32 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS?	2.6	.0
0 956	03-33 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION?	2.6	.0
0 957	03-34 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD?	2.1	.0
0 958	03-35 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED?	8.9	1.7
0 959	03-36 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED?	6.3	.6
0 960	03-37 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON?	7.3	.0

O TSK	TITLES	205	307	50	50	(M)	(M)
0 961	03-38 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS?	1.6	1.1				
0 962	03-39 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS?	4.2	1.1				
0 963	03-40 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS?	3.1	1.1				
0 964	03-41 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN - DON'T KNOW WHAT KIND OF ELEMENT?	9.9	6.2				
0 965	03-42 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS?	12.5	10.7				
0 966	03-43 DO YOU WORK ON BIDIRECTIONAL ANTENNAS?	5.7	3.4				
0 967	03-44 DO YOU WORK ON OMNIDIRECTIONAL ANTENNAS?	10.4	7.3				
0 968	03-45 DO YOU WORK WITH ROTARY ANTENNA ARRAYS?	6.3	2.8				
P	TRANSMISSION LINES (P1), WAVEGUIDES AND CAVITY RESONATORS (P2), MICROWAVE AMPLIFIERS AND OSCILLATORS (P3)						
P 969	P1-1 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES? (DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES.) IF NO, GO TO ITEM P2-1; IF YES, CONTINUE.	3.1	42.9				
P 970	P1-2 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE COPPER LOSS OR π SUB 2 R ² LOSS IN TRANSMISSION LINES?	.0	2.8				
P 971	P1-3 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES?	.0	2.8				
P 972	P1-4 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE RADIATION LOSS?	1.0	8.5				
P 973	P1-5 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE DIELECTRIC LOSS?	.5	6.2				
P 974	P1-6 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE LEAKAGE LOSSES?	.5	8.5				
P 975	P1-7 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE FARADAY SHIELD?	.0	.6				
P 976	P1-8 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES?	.5	27.1				
P 977	P1-9 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES?	.0	15.8				
P 978	P1-10 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES?	.0	16.4				
P 979	P1-11 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES?	1.6	27.1				
P 980	P1-12 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES?	1.0	10.7				
P 981	P1-13 DO YOU TROUBLESHOOT TRANSMISSION LINES?	.5	42.9				
P 982	P1-14 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)?	.0	24.3				
P 983	P1-15 DO YOU SELECT APPROPRIATE TRANSMISSION LINE TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS?	1.0	12.4				

D TSK	TITLES	205 (M)	307 (P)
P 984	PI-16 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS?	.0	8.5
P 985	PI-17 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES?	.0	2.3
P 986	PI-18 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES?	.5	1.7
P 987	PI-19 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS?	.5	2.8
P 988	PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS?	.0	14.7
P 989	PI-21 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING?	.0	1.1
P 990	PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES?	1.6	10.7
P 991	PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES?	.5	6.2
P 992	PI-24 DO YOU USE OR REFER TO THE TERM CUT OFF FREQUENCY OF TRANSMISSION LINES?	1.0	9.6
P 993	PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES?	1.0	1.1
P 994	PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES?	.5	2.8
P 995	PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTHS FOR GIVEN FREQUENCIES?	.0	1.7
P 996	PI-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	6.2
P 997	PI-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES?	.0	7.9
P 998	PI-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES?	.0	11.3
P 999	PI-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING?	.0	3.4
P1000	P2-1 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM P3-1; IF YES, CONTINUE.	1.0	1.1
P1001	P2-2 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1002	P2-3 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1003	P2-4 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1004	P2-5 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1005	P2-6 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS?	.0	.6
P1006	P2-7 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES?	.0	.0
P1007	P2-8 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS?	.0	.0
P1008	P2-9 DO YOU REMOVE OR INSTALL DUMMY LOADS?	.0	.0
P1009	P2-10 DO YOU REMOVE OR INSTALL BENDS?	.0	.0
P1010	P2-11 DO YOU REMOVE OR INSTALL OTHER BENDS?	.0	.0
P1011	P2-12 DO YOU REMOVE OR INSTALL OTHER BENDS?	.0	.0

D TSK	TITLES	205 (M)	307 50 (M)
P1012	P2-13 DO YOU REMOVE OR INSTALL CHOKES JOINTS?	.0	.0
P1013	P2-14 DO YOU REMOVE OR INSTALL ROTATING JOINTS?	.0	.0
P1014	P2-15 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS?	.0	.0
P1015	P2-16 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS?	.0	.0
P1016	P2-17 DO YOU REMOVE OR INSTALL DUPLEXERS OR MIXERS?	.0	.0
P1017	P2-18 DO YOU REMOVE OR INSTALL WAVEGUIDE SHUTTERS?	.0	.0
P1018	P2-19 DO YOU REMOVE OR INSTALL TRANSMIT (TR) OR ANTI-TRANSMIT (ATR) TUBES?	.0	.0
P1019	P2-20 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES?	.0	.0
P1020	P2-21 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES?	.0	.0
P1021	P2-22 DO YOU USE OR REFER TO CUT OFF FREQUENCY OF WAVEGUIDES?	.0	.0
P1022	P2-23 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES?	.0	.0
P1023	P2-24 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES?	.0	.0
P1024	P2-25 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS?	.0	.0
P1025	P2-26 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS?	.0	.0
P1026	P2-27 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS?	.0	.0
P1027	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OR .7 WAVELENGTHS OF THE OPERATING FREQUENCY?	.0	.0
P1028	P2-29 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 AS AN AVERAGE?	.0	.0
P1029	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION?	.0	.0
P1030	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
P1031	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES?	.0	.0
P1032	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES?	.0	.0
P1033	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES?	.0	.0
P1034	P2-35 DO YOU WORK WITH HIGH POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1035	P2-36 DO YOU WORK WITH LOW POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1036	P2-37 DO YOU WORK WITH LOOP ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1037	P2-38 DO YOU WORK WITH APERTURES (WINDOWS OR IRISES) ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1038	P2-39 DO YOU WORK WITH CHOKES JOINTS IN WAVEGUIDES OR CAVITY RESONATORS?	.0	.0

D TSK	TITLES	205 (M)	307 (P)
P1039	P2-40 DO YOU WORK WITH ROTATING JOINTS IN WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1040	P2-41 DO YOU WORK WITH JOINTS IN WAVEGUIDES OR CAVITY RESONATORS BUT DON'T KNOW WHICH KIND?	.0	.6
P1041	P2-42 DO YOU TUNE CAVITY RESONATORS USING ELECTRICAL METHODS?	.0	.0
P1042	P2-43 DO YOU TUNE CAVITY RESONATORS USING MECHANICAL METHODS?	.0	.0
P1043	P2-44 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS?	.0	.0
P1044	P3-1 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS? IF NO, GO TO ITEM 01-1; IF YES, CONTINUE.	2.1	2.3
P1045	P3-2 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	.0	.6
P1046	P3-3 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	.0	.6
P1047	P3-4 DO YOU USE OR REFER TO LEAD INDUCTANCE FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	.5	.6
P1048	P3-5 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	.5	.6
P1049	P3-6 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION?	.0	1.1
P1050	P3-7 DO YOU USE OR REFER TO ELECTRON BUNCHING?	.0	1.1
P1051	P3-8 DO YOU WORK WITH TWO-CAVITY KLYSTRONS?	.0	1.1
P1052	P3-9 DO YOU WORK WITH THREE-CAVITY KLYSTRONS?	.0	1.1
P1053	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS?	.0	1.7
P1054	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)?	.5	1.7
P1055	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS?	.0	.6
P1056	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS?	.5	1.7
P1057	P3-14 DO YOU WORK WITH MAGNETRONS?	1.0	1.1
P1058	P3-15 DO YOU WORK WITH BACKWARD WAVE OSCILLATORS (BWO)?	.0	.6
P1059	P3-16 DO YOU INSPECT KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	.0
P1060	P3-17 DO YOU CLEAN KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	.0
P1061	P3-18 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY?	.0	.0
P1062	P3-19 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY?	.0	.6
P1063	P3-20 DO YOU PERFORM OPERATIONAL CHECKS ON KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	.6
P1064	P3-21 DO YOU TROUBLESHOOT KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	1.1
P1065	P3-22 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRONS OR TWT'S?	.0	.0
P1066	P3-23 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS?	.0	.6
P1067	P3-24 DO YOU INSPECT PARAMETRIC AMPLIFIERS?	.0	.0

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSM	TITLES	205	307
		(M)	(M)
P1060	P3-25 DO YOU CLEAN PARAMETRIC AMPLIFIERS?	.0	.0
P1069	P3-26 DO YOU ADJUST PARAMETRIC AMPLIFIERS?	.0	.6
P1070	P3-27 DO YOU TUNE PARAMETRIC AMPLIFIERS?	.0	.6
P1071	P3-28 DO YOU PERFORM OPERATIONAL CHECKS ON PARAMETRIC AMPLIFIERS?	.0	.6
P1072	P3-29 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS?	.0	1.1
P1073	P3-30 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIERS?	.0	.6
P1074	P3-31 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS?	.0	.6
P1075	P3-32 DO YOU INSPECT MAGNETRONS?	.0	.0
P1076	P3-33 DO YOU CLEAN MAGNETRONS?	.0	.0
P1077	P3-34 DO YOU ADJUST MAGNETRONS?	.0	.6
P1078	P3-35 DO YOU TUNE MAGNETRONS?	.0	.6
P1079	P3-36 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS?	.0	.6
P1080	P3-37 DO YOU TROUBLESHOOT MAGNETRONS?	.0	.6
P1081	P3-38 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRONS?	.0	.0
P1082	P3-39 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS?	.0	.0
P1083	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF COLLECTOR PLATE COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1084	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATCHER CAVITY COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1085	P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATCHER GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1086	P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FEEDBACK LOOP COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1087	P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF DRIFT SPACE COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1088	P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF BUNCHER GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1089	P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF BUNCHER CAVITY COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1090	P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CONTROL GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1091	P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.6
P1092	P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REPELLER (REFLECTOR) PLATE COMPONENTS OF REFLEX KLYSTRONS?	.0	.0
P1093	P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF GRID COMPONENTS OF REFLEX KLYSTRONS?	.0	.6
P1094	P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF GRID CAVITY GAP COMPONENTS OF REFLEX KLYSTRONS?	.0	.6
P1095	P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF RESONANT CAVITY COMPONENTS OF REFLEX KLYSTRONS?	.0	.6
P1096	P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MAGNETIC COUPLING LOOP COMPONENTS OF REFLEX KLYSTRONS?	.0	.6
P1097	P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FILAMENT COMPONENTS OF REFLEX KLYSTRONS?	.0	.6

D TSK	TITLES	205	3C7
		(M)	(P)
P1098	P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF REFLEX KLYSTRONS?	.0	.6
P1099	P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF OUTPUT LEAD COMPONENTS OF REFLEX KLYSTRONS?	.0	.6
P1100	P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FILAMENT COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1101	P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1102	P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MODULATOR GRID COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1103	P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF ANODE COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1104	P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF HELIX COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1105	P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF COLLECTOR COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1106	P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MAGNET COMPONENTS OF TRAVELING-WAVE TUBES?	.0	1.1
P1107	P3-64 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF ATTENUATOR COMPONENTS OF TRAVELING-WAVE TUBES?	.0	.6
P1108	P3-65 DO YOU PERFORM TASKS ON FERRITE CIRCULATOR COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.6
P1109	P3-66 DO YOU PERFORM TASKS ON SIGNAL CAVITY COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.6
P1110	P3-67 DO YOU PERFORM TASKS ON IDLER CAVITY COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.6
P1111	P3-68 DO YOU PERFORM TASKS ON VARACTOR DIODE COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.6
P1112	P3-69 DO YOU PERFORM TASKS ON FERRITE ISOLATOR COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.6
P1113	P3-70 DO YOU PERFORM TASKS ON REVERSE-BIAS BATTERY COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.6
P1114	P3-71 DO YOU PERFORM TASKS ON ANODE COMPONENTS OF MAGNETRONS?	.0	.0
P1115	P3-72 DO YOU PERFORM TASKS ON ANODE COOLING PIN COMPONENTS OF MAGNETRONS?	.0	.0
P1116	P3-73 DO YOU PERFORM TASKS ON COUPLING LOOP COMPONENTS OF MAGNETRONS?	.0	.0
P1117	P3-74 DO YOU PERFORM TASKS ON HEATER LEAD COMPONENTS OF MAGNETRONS?	.0	.0
P1118	P3-75 DO YOU PERFORM TASKS ON RESONANT CAVITY COMPONENTS OF MAGNETRONS?	.0	.0
P1119	P3-76 DO YOU PERFORM TASKS ON CATHODE COMPONENTS OF MAGNETRONS?	.0	.0
P1120	P3-77 DO YOU PERFORM TASKS ON MAGNET COMPONENTS OF MAGNETRONS?	.0	.0

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D TSM TITLES

Q REGISTERS (Q1), STORAGE DEVICES (Q2), DIGITAL-TO-ANALOG AND
ANALOG-TO-DIGITAL CONVERTERS (Q3)

Q1121	Q1-1	DO YOU USE OR REFER TO STORAGE RESISTERS?	3.1	2.3
Q1122	Q1-2	DO YOU USE OR REFER TO SHIFT REGISTERS?	3.1	2.8
Q1123	Q1-3	DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS?	2.1	1.1
Q1124	Q1-4	DO YOU USE OR REFER TO LOGIC SYMBOLS OR STORAGE REGISTERS?	2.1	1.1
Q1125	Q1-5	DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTER CIRCUITS?	1.6	.0
Q1126	Q1-6	DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPES OF REGISTER CIRCUITS?	1.0	.0
Q1127	Q1-7	DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED?	1.0	.0
Q1128	Q2-1	DO YOU WORK WITH STORAGE DEVICES IN YOUR PRESENT JOB? IF NO, GO TO ITEM Q3-1; IF YES, CONTINUE.	48.4	10.7
Q1129	Q2-2	DO YOU USE OR REFER TO DELAY LINES?	.0	1.1
Q1130	Q2-3	DO YOU USE OR REFER TO MAGNETIC CORES OR BIMAGS?	2.6	3.4
Q1131	Q2-4	DO YOU USE OR REFER TO MAGNETIC DRUMS?	8.3	7.9
Q1132	Q2-5	DO YOU USE OR REFER TO MAGNETIC TAPES?	44.3	9.0
Q1133	Q2-6	DO YOU USE OR REFER TO ACCESS TIME OR SPEED OF MEMORY SYSTEMS?	13.0	6.2
Q1134	Q2-7	DO YOU USE OR REFER TO STORAGE CAPACITY OF MEMORY SYSTEMS?	23.4	7.3
Q1135	Q2-8	DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS?	5.2	2.8
Q1136	Q2-9	DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES?	.0	.6
Q1137	Q2-10	DO YOU USE OR REFER TO MAGNETIC DISKS?	37.0	7.3
Q1138	Q2-11	DO YOU USE OR REFER TO THIN FILMS?	4.2	1.7
Q1139	Q2-12	DO YOU USE OR REFER TO SEMICONDUCTOR MEMORY (INTEGRATED) CIRCUITS?	6.3	3.4
Q1140	Q2-13	DO YOU USE OR REFER TO BUBBLE MEMORIES?	.5	1.1
Q1141	Q2-14	DO YOU USE OR REFER TO PUNCH CARDS?	17.2	9.0
Q1142	Q2-15	DO YOU USE OR REFER TO PAPER TAPES?	19.3	9.0
Q1143	Q2-16	DO YOU USE OR REFER TO RANDOM ACCESS MEMORIES (RAM)?	20.3	6.8
Q1144	Q2-17	DO YOU USE OR REFER TO READ ONLY MEMORIES (ROM)?	18.8	4.5
Q1145	Q2-18	DO YOU USE OR REFER TO PROGRAMMABLE READ ONLY MEMORIES (PROM)?	10.4	3.4
Q1146	Q2-19	DO YOU USE OR REFER TO TRANSFORMER READ ONLY STORAGE (TROS)?	.5	2.3
Q1147	Q2-20	DO YOU USE OR REFER TO CAPACITY READ ONLY STORAGE (CROS)?	.5	1.7
Q1148	Q2-21	DO YOU INSPECT STORAGE DEVICES?	8.9	.6
Q1149	Q2-22	DO YOU CLEAN STORAGE DEVICES?	9.4	1.1
Q1150	Q2-23	DO YOU ALIGN STORAGE DEVICES?	1.6	.0
Q1151	Q2-24	DO YOU ADJUST STORAGE DEVICES?	2.1	.0
Q1152	Q2-25	DO YOU TROUBLESHOOT MEMORY SYSTEM STORAGE DEVICES?	1.0	.6
Q1153	Q2-26	DO YOU REMOVE OR REPLACE ASSEMBLIES OR COMPONENTS OF STORAGE DEVICES?	1.0	.0

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Q1154	Q2-27 DO YOU TRACE SIGNAL FLOW IN STORAGE DEVICES USING LOGIC DIAGRAMS OR SCHEMATICS?	2.1	.6
Q1155	Q3-1 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS OR ANALOG-TO-DIGITAL (A/D) CONVERTERS? IF NO, GO TO ITEM R1-1; IF YES, CONTINUE.	20.8	38.4
Q1156	Q3-2 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES?	.5	2.0
Q1157	Q3-3 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?	.5	2.3
Q1158	Q3-4 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS?	1.6	.6
Q1159	Q3-5 DO YOU PERFORM TASKS ON SAMPLE FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	3.1	1.7
Q1160	Q3-6 DO YOU PERFORM TASKS ON HOLD FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	1.6	.0
Q1161	Q3-7 DO YOU PERFORM TASKS ON COMPARE FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	1.6	1.1
Q1162	Q3-8 DO YOU PERFORM TASKS ON DIGITIZE FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	5.7	1.7
Q1163	Q3-9 DO YOU PERFORM TASKS ON PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS BUT DON'T KNOW WHICH FUNCTION?	2.1	7.3
Q1164	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS?	3.6	1.7
Q1165	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS?	1.6	.0
Q1166	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS?	2.1	1.7
Q1167	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS?	4.2	3.4
Q1168	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS?	3.1	5.1
Q1169	Q3-15 DO YOU PERFORM ANY TASKS ON ELECTRONIC A/D CONVERTERS?	7.0	9.0
Q1170	Q3-16 DO YOU PERFORM ANY TASKS ON DIGITAL-TO-ANALOG (D/A) CONVERTERS?	3.6	11.9
Q1171	Q3-17 DO YOU OPERATE COMPUTER KEYBOARDS?	20.3	11.3
Q1172	Q3-18 DO YOU WORK AT OR WITH COMPUTER TERMINALS?	19.8	18.6
Q1173	Q3-19 HAVE YOU BEEN SENT TO FACTORY TRAINING OR TO ANY OTHER SCHOOL FOR THE SPECIFIC PURPOSE OF RECEIVING COMPUTER OR LOGIC CIRCUIT RELATED TRAINING?	2.6	1.7
Q1174	Q3-20 DO YOU HAVE MICROPROCESSORS OR COMPUTER EQUIPMENT LOCATED AT YOUR WORK STATION WHICH IS OPERATED OR MAINTAINED BY CONTRACTOR PERSONNEL?	17.2	12.4
Q1175	Q3-21 WAS THE COMPUTER OR LOGIC CIRCUIT TRAINING YOU RECEIVED IN YOUR 3-LEVEL AWARDING COURSE ADEQUATE IN TERMS OF YOUR PRESENT DUTIES?	2.6	10.2

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Q1176 03-22 ARE YOU ASSIGNED AGAINST A POSITION WHICH REQUIRES A
"0" PREFIX? .5 .6

R PHANTASTRONS (R1), SCHMITT TRIGGERS (R2), CABLE
FABRICATION (P3)

R1177 R1-1 DO YOU WORK WITH PHANTASTRON CIRCUITRY? IF NO, GO TO
ITEM R2-1. IF YES, CONTINUE. 1.0 .6

R1178 R1-2 PHANTASTRON CIRCUITRY HAS VARIABLE-DELAY APPLICATIONS
IN MY JOB. .0 .0

R1179 R1-3 PHANTASTRON CIRCUITRY HAS SEARCH-LOCK AUTOMATIC
FREQUENCY CONTROLS (AFC) APPLICATIONS IN MY JOB. .5 .6

R1180 R1-4 PHANTASTRON CIRCUITRY HAS MONOSTABLE MULTIVIBRATORS
APPLICATIONS IN MY JOB. .0 .0

R1181 R1-5 PHANTASTRON CIRCUITRY HAS BISTABLE MULTIVIBRATORS
APPLICATIONS IN MY JOB. .0 .0

R1182 R1-6 PHANTASTRON CIRCUITRY HAS FREE-RUNNING MULTIVIBRATORS
APPLICATIONS IN MY JOB. .0 .0

R1183 R2-1 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER
CIRCUITS? IF NO, GO TO ITEM R3-1; IF YES, CONTINUE. 2.6 .6

R1184 R2-2 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER
SCHEMATIC DIAGRAMS? .5 .0

R1185 R2-3 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS?
R1186 R3-1 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR
CABLES? .5 .0

R1187 R3-2 DO YOU FABRICATE COAXIAL CABLES? 1.0 4.0

S INPUT/OUTPUT (PERIPHERAL) DEVICES (S1), PHOTO SENSITIVE
DEVICES (S2), SYNCHRONOUS VIBRATIONS (CHOPPER
CIRCUITS) (S3)

S1188 S1-1 DO YOU WORK WITH INPUT OR OUTPUT DEVICES ON YOUR
PRESENT JOB? IF NO, GO TO ITEM S2-1; IF YES, CONTINUE. 75.5 73.4

S1189 S1-2 DO YOU USE OR REFER TO KEYBOARDS OR TELETYPEWRITERS?
S1190 S1-3 DO YOU USE OR REFER TO PRINTERS? 71.9 75.1

S1191 S1-4 DO YOU USE OR REFER TO TAPE DRIVES (UNITS)? 65.6 66.7

S1192 S1-5 DO YOU USE OR REFER TO CAPD READERS/CAPD PUNCHES?
S1193 S1-6 DO YOU USE OR REFER TO VIDEO DISPLAYS (CRT'S)? 55.2 24.9

S1194 S1-7 DO YOU USE OR REFER TO NIXIE LIGHTS (TUBES)? 26.0 24.9

S1195 S1-8 DO YOU USE OR REFER TO LCD'S? 70.8 42.4

S1196 S1-9 DO YOU USE OR REFER TO LED'S? 10.4 9.0

S1197 S1-10 DO YOU USE OR REFER TO INCANDESCENT DISPLAYS?
S1198 S1-11 DO YOU USE OR REFER TO TOGGLE OR PUSH BUTTON SWITCH
INPUTS? 28.6 41.2

S1199 S1-12 DO YOU USE OR REFER TO INTERFACE ADAPTER UNITS? 17.2 13.6

41.1 39.0

16.1 22.0

D TSM	TITLES	205 (M)	307 50 (M)
S1200	S1-13 DO YOU USE OR REFER TO TAPE READERS?	34.9	44.1
S1201	S1-14 DO YOU USE OR REFER TO TAPE PUNCHES?	27.6	45.8
S1202	S2-1 DO YOU WORK WITH PHOTODIODE PHOTO SENSITIVE DEVICES?	1.0	.6
S1203	S2-2 DO YOU WORK WITH PHOTOTRANSISTOR PHOTO SENSITIVE DEVICES?	.5	.6
S1204	S2-3 DO YOU WORK WITH PHOTOTUBE PHOTO SENSITIVE DEVICES?	1.0	.6
S1205	S2-4 DO YOU WORK WITH PHOTO-SCR PHOTO SENSITIVE DEVICES?	1.0	.6
S1206	S2-5 DO YOU WORK WITH PHOTOCCELL (PHOTOCONDUCTIVE OR PHOTOVOLTAIC) PHOTO SENSITIVE DEVICES?	1.0	2.3
S1207	S3-1 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS? IF NO, GO TO ITEM T1-11. IF YES, CONTINUE.	1.6	.0
S1208	S3-2 DO YOU USE OR REFER TO EXCITATION FREQUENCY CHOPPER COIL ITEMS?	.0	.0
S1209	S3-3 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIP CHOPPER COIL ITEMS?	.5	.0
S1210	S3-4 DO YOU MEASURE EXCITATION FREQUENCY CHOPPER COIL ITEMS?	.0	.0
S1211	S3-5 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIP CHOPPER COIL ITEMS?	.0	.0
S1212	S3-6 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
S1213	S3-7 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
S1214	S3-8 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
S1215	S3-9 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
T	----- INFRARED (T1), LASERS (T2), DISPLAY TUBES (T3), TELEVISION (T4) -----		
T1216	T1-1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS? IF NO, GO TO ITEM T2-1; IF YES, CONTINUE.	1.0	.0
T1217	T1-2 DO YOU INSPECT INFRARED SYSTEMS?	.0	.0
T1218	T1-3 DO YOU CLEAN INFRARED SYSTEMS?	.0	.0
T1219	T1-4 DO YOU SERVICE INFRARED SYSTEMS?	.0	.0
T1220	T1-5 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS?	.0	.0
T1221	T1-6 DO YOU OPERATE INFRARED SYSTEMS?	.0	.0
T1222	T1-7 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS?	.0	.0
T1223	T1-8 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS?	.0	.0
T1224	T1-9 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS?	.0	.0
T1225	T1-10 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS?	.0	.0

O TSK	TITLES	205	307
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T1226	T1-11 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS?	.0	.0
T1227	T1-12 DO YOU USE OR REFER TO FAR REGIONS?	1.0	.0
T1228	T1-13 DO YOU USE OR REFER TO INTERMEDIATE REGIONS?	1.0	.0
T1229	T1-14 DO YOU USE OR REFER TO NEAR REGIONS?	1.0	.0
T1230	T1-15 DO YOU USE OR REFER TO MICRONS (M)?	.5	.0
T1231	T1-16 DO YOU USE OR REFER TO GRAY BODIES?	.5	.0
T1232	T1-17 DO YOU USE OR REFER TO BLACK BODIES?	.5	.0
T1233	T1-18 DO YOU USE OR REFER TO ABSORPTION?	.5	.6
T1234	T1-19 DO YOU USE OR REFER TO SCATTERING?	.5	.6
T1235	T1-20 DO YOU USE OR REFER TO ABSOLUTE ZERO?	.0	.0
T1236	T1-21 DO YOU PERFORM TASKS ON BLITZ?	.0	.0
T1237	T1-22 DO YOU PERFORM TASKS ON TARGET BUTTONS?	.0	.0
T1238	T1-23 DO YOU PERFORM TASKS ON ERECTOR LENSES?	.0	.0
T1239	T1-24 DO YOU PERFORM TASKS ON OCULAR LENSES?	.0	.0
T1240	T1-25 DO YOU PERFORM TASKS ON CORRECTION LENSES?	.0	.0
T1241	T1-26 DO YOU PERFORM TASKS ON FILTERS?	.0	.0
T1242	T1-27 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS?	.0	.0
T1243	T1-28 DO YOU PERFORM TASKS ON PLANE MIRRORS?	.0	.0
T1244	T2-1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS? IF NO, GO TO ITEM T3-1; IF YES, CONTINUE.	1.0	.6
T1245	T2-2 DO YOU INSPECT LASER SYSTEMS?	.0	.0
T1246	T2-3 DO YOU CLEAN LASER SYSTEMS?	.0	.0
T1247	T2-4 DO YOU SERVICE LASER SYSTEMS?	.0	.0
T1248	T2-5 DO YOU OPERATE LASER SYSTEMS?	.0	.0
T1249	T2-6 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS?	.0	.0
T1250	T2-7 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS?	.0	.6
T1251	T2-8 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS?	.0	.0
T1252	T2-9 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS?	.0	.0
T1253	T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS?	.0	.0
T1254	T2-11 DO YOU USE OR REFER TO ANGISTROMS (A)?	.5	.0
T1255	T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS?	.0	.0
T1256	T2-13 DO YOU USE OR REFER TO GROUND STATE?	.5	.0
T1257	T2-14 DO YOU USE OR REFER TO EXCITED STATE?	.5	.0
T1258	T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION?	.0	.0
T1259	T2-16 DO YOU USE OR REFER TO PHOTONS?	.5	.0
T1260	T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSIONS?	.5	.0
T1261	T2-18 DO YOU USE OR REFER TO STIMULATED EMISSIONS?	.5	.0
T1262	T2-19 DO YOU USE OR REFER TO COHERENCE OR INCORNERCE?	.5	.0
T1263	T2-20 DO YOU USE OR REFER TO INVERSION LEVELS?	.0	.0
T1264	T2-21 DO YOU USE OR REFER TO MONOCHROMATIC?	.5	.0
T1265	T2-22 DO YOU WORK WITH ACTIVE MATERIALS?	.0	.0
T1266	T2-23 DO YOU WORK WITH PUMPING SOURCES?	.0	.0
T1267	T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS?	.0	.0

205 307
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0 TSM TITLES

11268	12-25	00	YOU WORK WITH HALF SILVERED 192R REFLECTIVE MIRRORS?	.0	.0
11269	12-26	00	YOU WORK WITH HELICAL FLASHTUBES?	.0	.0
11270	12-27	00	YOU WORK WITH RUBY MATERIALS?	.0	.0
11271	12-28	00	YOU WORK WITH HELIUM-NEON MATERIALS?	.0	.0
11272	12-29	00	YOU WORK WITH HELIUM-XENON MATERIALS?	.0	.0
11273	12-30	00	YOU WORK WITH XENON MATERIALS?	.0	.0
11274	12-31	00	YOU WORK WITH CESIUM-HELIUM MATERIALS?	.0	.0
11275	12-32	00	YOU WORK WITH ARGON MATERIALS?	.0	.0
11276	12-33	00	YOU WORK WITH NEODYMIUM IN GLASS MATERIALS?	.0	.0
11277	12-34	00	YOU WORK WITH GALLIUM ARSENIDE MATERIALS?	.0	.0
11278	13-1	00	IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE TUBES (DVST), MULTIPLE MODE STORAGE TUBES (MMST), OR SCAN CONVERTER TUBES (SCT)? IF NO, GO TO ITEM 14-12. IF YES, CONTINUE.	.5	1.1
11279	13-2	00	DO YOU INSPECT DVST OR MMST?	.0	.0
11280	13-3	00	DO YOU CLEAN DVST OR MMST?	.0	.0
11281	13-4	00	DO YOU ADJUST OR CALIBRATE DVST OR MMST?	.0	.0
11282	13-5	00	DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST?	.0	.0
11283	13-6	00	DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS?	.0	.0
11284	13-7	00	DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS?	.0	.0
11285	13-8	00	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF DVST?	.0	.0
11286	13-9	00	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF MMST?	.0	.0
11287	13-10	00	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF SCT?	.0	.0
11288	13-11	00	DO YOU PERFORM TASKS ON FLOOD GUNS?	.0	.0
11289	13-12	00	DO YOU PERFORM TASKS ON WRITE GUNS?	.0	.0
11290	13-13	00	DO YOU PERFORM TASKS ON READ GUNS?	.0	.0
11291	13-14	00	DO YOU PERFORM TASKS ON ATTACK GUNS?	.0	.0
11292	13-15	00	DO YOU PERFORM TASKS ON ERASE GUNS?	.0	.0
11293	13-16	00	DO YOU PERFORM TASKS ON STORAGE GRIDS?	.0	.0
11294	14-1	00	IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS DEALING WITH TELEVISION SYSTEMS INCLUDING LOW LIGHT TELEVISION? IF NO, GO TO ITEM 14-12. IF YES, CONTINUE.	3.6	2.8
11295	14-2	00	DO YOU INSPECT TELEVISION SYSTEMS?	.5	.0
11296	14-3	00	DO YOU CLEAN TELEVISION SYSTEMS?	.5	.6
11297	14-4	00	DO YOU ADJUST OR CALIBRATE TELEVISION SYSTEMS?	.5	1.1
11298	14-5	00	DO YOU OPERATE TELEVISION SYSTEMS?	3.1	2.8
11299	14-6	00	DO YOU TROUBLESHOOT WIRE CONNECTIONS OF TV SYSTEMS?	.5	.6
11300	14-7	00	DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF TV SYSTEMS?	.5	.0
11301	14-8	00	DO YOU TROUBLESHOOT DOWN TO TV SYSTEM COMPONENT PARTS?	.0	.0
11302	14-9	00	DO YOU REMOVE OR REPLACE TV SYSTEM MAJOR ASSEMBLIES?	.0	.0
11303	14-10	00	DO YOU REMOVE OR REPLACE TV SYSTEM COMPONENT PARTS?	.0	.0

205 307
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0 TSM TITLES

U COMPUTERS, MICROPROCESSORS, AND PROGRAMMING (U1), DB AND POWER RATIOS (U2)

U1304 U1-1 IN YOUR PRESENT JOB, DO YOU PERFORM MAINTENANCE ROUTINES OR PROGRAMMING TASKS? IF NO, GO TO ITEM U2-1; IF YES, CONTINUE.

12.5 2.3

U1305 U1-2 DO YOU USE OR REFER TO DECIMAL SYSTEMS?

6.8 1.1

U1306 U1-3 DO YOU USE OR REFER TO OCTAL SYSTEMS?

5.2 1.1

U1307 U1-4 DO YOU USE OR REFER TO PARITY DETECTORS/GENERATORS?

3.6 1.7

U1308 U1-5 DO YOU USE OR REFER TO HEXADECIMAL SYSTEMS?

4.7 .6

U1309 U1-6 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS?

1.6 .0

U1310 U1-7 DO YOU USE OR REFER TO FOUR SYSTEMS?

1.0 .0

U1311 U1-8 DO YOU USE OR REFER TO BINARY SYSTEMS?

6.3 2.3

U1312 U1-9 DO YOU USE OR REFER TO TIME-SHARING (MULTI-SEQUENCING)?

6.8 1.1

U1313 U1-10 DO YOU USE OR REFER TO DATA WORDS?

6.8 2.3

U1314 U1-11 DO YOU USE OR REFER TO ADDRESS WORDS?

6.8 2.3

U1315 U1-12 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS?

6.8 1.1

U1316 U1-13 DO YOU USE OR REFER TO STEERING/INFORMATION?

2.1 .0

U1317 U1-14 DO YOU USE OR REFER TO INSTRUCTION WORDS?

5.2 2.3

U1318 U1-15 DO YOU USE OR REFER TO DAP-16?

.5 .6

U1319 U1-16 DO YOU USE OR REFER TO BINARY CODED DECIMAL (BCD)?

3.6 .6

U1320 U1-17 DO YOU USE OR REFER TO CONTROL WORDS?

6.3 1.1

U1321 U1-18 DO YOU USE OR REFER TO RESPONSE WORDS?

5.2 1.1

U1322 U1-19 DO YOU USE OR REFER TO WRAPAROUND WORDS?

1.6 .0

U1323 U1-20 DO YOU USE OR REFER TO TEST OR DIAGNOSTIC PROGRAMS?

3.6 1.1

U1324 U1-21 DO YOU USE OR REFER TO RELIABILITY PROGRAMS?

2.6 .0

U1325 U1-22 DO YOU USE OR REFER TO COMPILERS?

3.1 .0

U1326 U1-23 DO YOU USE OR REFER TO ASSEMBLERS?

3.6 .0

U1327 U1-24 DO YOU USE OR REFER TO MACHINE LANGUAGE?

4.2 1.1

U1328 U1-25 DO YOU USE OR REFER TO MNEMONICS?

4.2 1.1

U1329 U1-26 DO YOU USE OR REFER TO ROUTINES OR SUBROUTINES?

6.3 1.1

U1330 U1-27 DO YOU USE OR REFER TO FLOW CHARTS OR DIAGRAMS?

6.8 1.1

U1331 U1-28 DO YOU USE OR REFER TO 'ATLAS'?

1.6 .0

U1332 U1-29 DO YOU USE OR REFER TO 'ELAN'?

.5 .0

U1333 U1-30 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING SYSTEMS?

2.6 .6

U1334 U1-31 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING SYSTEMS?

2.1 .6

U1335 U1-32 DO YOU WRITE PROGRAMS FOR TROUBLESHOOTING OF SPECIFIC CIRCUITS?

.5 .6

U1336 U1-33 DO YOU USE PROGRAMS FOR TROUBLESHOOTING OF SPECIFIC CIRCUITS?

1.6 .6

U1337 U1-34 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER CONTROL SECTIONS?

3.1 .6

U1338 U1-35 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER INPUT SECTIONS?

5.7 1.1

U1339 U1-36 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER OUTPUT SECTIONS?

4.7 1.1

D TSK	TITLES	205 (M)	307 EO (M)
U1340	U1-37 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER MONITOR SECTIONS?	3.1	1.7
U1341	U1-38 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER TRANSMIT SECTIONS?	3.1	.6
U1342	U1-39 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER RECEIVE SECTIONS?	2.1	1.1
U1343	U1-40 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER INPUT DEVICES?	6.9	1.7
U1344	U1-41 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER STORAGE DEVICES?	7.3	1.7
U1345	U1-42 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER OUTPUT DEVICES?	7.8	1.7
U1346	U1-43 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER POWER DEVICES?	4.2	.6
U1347	U1-44 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER MONITOR DEVICES?	6.3	2.3
U1348	U1-45 DO YOU USE FORTRAN PROGRAMMING LANGUAGE?	5.2	.6
U1349	U1-46 DO YOU USE COBOL PROGRAMMING LANGUAGE?	1.6	.0
U1350	U1-47 DO YOU USE RPG PROGRAMMING LANGUAGE?	1.0	.0
U1351	U1-48 DO YOU USE OR PERFORM TASKS ON MICROPROCESSOR BASED EQUIPMENT?	2.6	1.1
U1352	U1-49 DO YOU USE INPUT PORT LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	.6
U1353	U1-50 DO YOU USE OUTPUT PORT LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	.6
U1354	U1-51 DO YOU USE RAM MEMORY CIRCUITS (STATIC OR DYNAMIC) IN CONJUNCTION WITH THE MICROPROCESSOR?	2.1	.6
U1355	U1-52 DO YOU USE ROM MEMORY CIRCUITS (INCLUDES PROM, EPROM, ETC.) IN CONJUNCTION WITH THE MICROPROCESSOR?	2.6	.6
U1356	U1-53 DO YOU USE TRI-STATE CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	.0
U1357	U1-54 DO YOU USE CLOCK GENERATOR CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	1.6	.6
U1358	U1-55 DO YOU USE STATUS LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	.6
U1359	U1-56 DO YOU USE BIDIRECTIONAL BUFFER CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	1.0	.0
U1360	U1-57 DO YOU USE ENCODER/DECODER CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	2.1	.6
U1361	U2-1 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION?	29.7	88.1
U1362	U2-2 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS?	8.3	40.7
U1363	U2-3 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS?	8.3	37.9
U1364	U2-4 DO YOU USE VTVM (DB METERS) TO CHECK FOR NOISE OR SIGNAL LEVEL?	5.2	85.3
U1365	U2-5 DO YOU USE VTVM (DB METERS) TO CHECK OR ADJUST AUDIO AMPLIFIERS?	2.6	68.9

KESSLER ELECTRONIC PPINCIPLES INVENTORY DATA

205 307
50 50
(M) (M)

D TSK TITLES

U1366 U2-6 DO YOU USE A HP3550 OR 344A TEST SET TO ALIGN AUDIO
EQUIPMENT?

.5 36.7

HEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

HEESLER EPI CAREER LADDERS, ELECTRONIC PRINCIPLES INVENTORY (EPI) DATA ARE PRESENTED BELOW EACH DUTY TITLE. DATA FOR THIS PRINTOUT WERE COLLECTED FROM CAREER LADDER INCUMBENTS DURING THE PERIOD DECEMBER 1982 THROUGH JULY 1983.

USE OF EPI PRINTOUT: THE PERCENT OF VARIOUS CAREER LADDER GROUPS RESPONDING TO EPI QUESTIONS IS LISTED TO THE RIGHT OF EACH EPI ITEM. THUS, THE APPROPRIATE SAMPLE CRITERION GROUPS CAN BE IDENTIFIED WITH THE COLUMN HEADINGS AT THE TOP RIGHT OF EACH PRINTOUT PAGE. THEN THE PERCENT OF THAT GROUP USING THE CONCEPT OR PIECE OF EQUIPMENT CAN BE IDENTIFIED.

USE OF EPI DATA: THESE DATA MAY BE USED IN HELPING TO IDENTIFY, DELINEATE, AND VALIDATE ELECTRONIC PRINCIPLES ITEMS IN THE STS. CRITERIA LISTED IN ATCN 52-22 FOR ABR TRAINING MAY BE USEFUL IN HELPING DEVELOP ENTRY-LEVEL ELECTRONIC PRINCIPLE COURSES. ALSO, CDC WRITERS MAY USE EPI DATA TO HELP DETERMINE AREAS TO EMPHASIZE IN 5- AND 7-SKILL LEVEL CDS, CONSISTENT WITH STS CODES.

FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/DOMO, AUTOVON 487-5811.

VECTOR TYPE CODES:

- (T) = 2 TIME SPENT BY ALL MEMBERS
- (M) = 3 MEMBERS PERFORMING
- (F) = TASK FACTOR
- (D) = DICHOTOMOUS SET
- (B) = 3 TIME SPENT BY MEMBERS PERFORMING
- (-) = PROGRAM GENERATED VECTOR

NO	TYPE	VECTOR	MEAN	SD	DESCRIPTION	MEMBERS	FACTOR
1	M	304 70	123		DAFSC 30470 AIRMEN	123	32
2	M	304 71	122		DAFSC 30471 AIRMEN	122	34
3	M	304 74	126		DAFSC 30474 AIRMEN	126	36
4	M	305 74	136		DAFSC 30574 AIRMEN	136	38
5	M	328 70	143		DAFSC 32870 AIRMEN	143	42
6	M	328 71	142		DAFSC 32871 AIRMEN	142	44
7	M	328 72	43		DAFSC 32872 AIRMEN	43	46
8	M	328 73	142		DAFSC 32873 AIRMEN	142	48
9	M	328 74	164		DAFSC 32874 AIRMEN	164	50
10	M	328 75	87		DAFSC 32875 AIRMEN	87	52

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 4

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
A 29	A3-5 DO YOU MEASURE RESISTORS?	67.5	68.0	66.7	56.6	76.9	73.9	39.5	66.2	66.5	77.0							
A 30	A3-6 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASK YOU PERFORM?	29.3	32.0	34.9	13.2	28.0	26.8	11.6	25.4	25.0	18.4							
A 31	A3-7 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY CARBON?	49.6	57.4	54.2	42.6	60.8	53.5	23.3	44.4	43.9	51.7							
A 32	A3-8 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED WIRE?	53.7	60.7	54.0	44.1	63.6	60.6	16.3	53.5	44.5	59.8							
A 33	A3-9 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY SLIDE TAP?	43.9	57.4	48.4	37.5	49.7	44.4	14.0	38.0	27.4	65.5							
A 34	A3-10 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY RHEOSTAT?	61.0	65.6	58.7	50.0	72.0	68.3	27.9	62.7	52.4	74.7							
A 35	A3-11 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY POTENTIOMETER?	68.3	72.1	66.7	59.6	76.2	74.6	41.9	71.1	67.1	78.2							
A 36	A3-12 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED FILM?	40.7	41.0	44.4	24.3	30.1	30.3	9.3	35.9	20.1	28.7							
A 37	A3-13 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE?	69.9	73.0	70.6	60.3	77.6	76.8	27.9	67.6	64.0	72.4							
A 38	A3-14 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE?	69.1	72.1	65.1	52.9	76.2	73.9	25.6	60.6	59.8	66.7							
A 39	A3-15 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE?	14.6	16.4	18.3	17.6	24.5	18.3	9.3	12.0	11.0	26.4							
A 40	A3-16 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES?	74.8	72.1	68.3	63.2	76.2	79.6	67.4	74.6	73.8	80.5							
A 41	A3-17 DO YOU USE OR REFER TO L RESISTANCE PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	60.2	69.7	57.1	39.0	60.1	53.5	23.3	52.1	46.3	51.7							
A 42	A3-18 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	57.7	63.9	54.0	36.0	53.1	50.0	25.6	50.0	39.0	48.3							
A 43	A3-19 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	56.9	64.8	55.6	42.6	53.8	54.2	20.9	50.7	46.3	52.9							

Q	TASK	TITLES	304 70 (M)	304 71 (M)	304 74 (M)	305 74 (M)	328 70 (M)	328 71 (M)	328 72 (M)	328 73 (M)	328 74 (M)	328 75 (M)
A	44	A3-20 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE CIRCUITS?	55.3	56.6	50.0	30.1	45.5	40.8	18.6	45.1	27.4	42.5
A	45	A3-21 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	56.1	68.9	56.3	39.7	56.6	55.6	18.6	52.8	46.3	49.4
A	46	A3-22 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	53.7	62.3	52.4	37.5	51.7	50.0	16.3	52.1	40.2	46.0
A	47	A3-23 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	56.1	63.1	55.6	41.9	51.0	51.4	11.6	50.0	45.1	47.1
A	48	A3-24 DO YOU USE OR REFER TO INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	48.8	59.0	47.6	33.1	44.8	45.1	11.6	43.0	32.9	41.4
A	49	A3-25 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS?	51.2	54.1	49.2	29.4	43.4	38.0	14.0	42.3	28.0	37.9
A	50	A3-26 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	56.1	66.4	55.6	37.5	56.6	53.5	14.0	51.4	45.1	49.4
A	51	A3-27 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	52.8	62.3	51.6	33.8	49.7	47.9	16.3	49.3	39.0	46.0
A	52	A3-28 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	52.8	63.1	53.2	37.5	48.3	47.9	9.3	47.9	43.3	48.3
A	53	A3-29 DO YOU USE OR REFER TO INDIVIDUAL BRANCH CURRENT PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	45.5	59.0	45.2	27.9	42.0	40.8	9.3	41.5	28.7	44.8
A	54	A3-30 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS?	48.8	54.1	46.8	26.5	42.0	35.9	11.6	40.1	26.8	39.1
A	55	A3-31 DO YOU CALCULATE TOTAL RESISTANCE PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?	52.0	62.3	50.0	33.8	43.4	45.1	11.6	45.8	37.8	44.8
A	56	A3-32 DO YOU CALCULATE TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?	48.0	56.6	45.2	30.1	38.5	41.5	11.6	43.0	32.3	42.5
A	57	A3-33 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?	47.2	58.2	50.0	33.8	40.6	43.0	7.0	42.3	35.4	42.5

304	304	304	305	328	328	328	328	328	328	328	328	328	328
70	71	74	74	70	71	72	73	74	75	(M)	(M)	(M)	(M)

43.1	54.1	43.7	26.5	34.3	38.0	7.0	36.6	25.6	41.4
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43.9	50.0	43.7	21.3	32.9	33.1	9.3	32.4	22.0	35.6
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A 58 A3-34 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?

A 59 A3-35 DO YOU CALCULATE POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?

B METERS/MULTIMETERS (B1), ALTERNATING CURRENT (AC) (B2), INDUCTORS AND INDUCTIVE REACTANCE (B3)

B 60 B1-1 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE RESISTANCE?

B 61 B1-2 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE VOLTAGE?

B 62 B1-3 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE CURRENT?

B 63 B1-4 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE POWER?

B 64 B1-5 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE FREQUENCY?

B 65 B1-6 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE TEMPERATURE?

B 66 B1-7 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE PRESSURE?

B 67 B1-8 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE LIGHT LEVELS?

B 68 B2-1 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM EFFECTIVE VOLTAGE (RMS) IN YOUR PRESENT JOB?

74.0	73.0	69.8	66.9	88.8	88.7	72.1	76.1	87.8	80.5
78.0	75.4	74.6	71.3	89.5	89.4	65.1	78.2	87.8	83.9
66.7	66.4	65.9	56.6	65.0	81.7	34.9	65.5	57.9	64.4
71.5	74.6	62.7	33.1	84.6	83.8	44.2	70.4	37.2	80.5
71.5	74.6	71.4	55.1	74.8	79.6	44.2	70.4	65.9	83.9
20.3	32.0	14.3	31.6	10.5	10.6	27.9	43.0	11.6	48.3
25.2	13.1	15.9	20.6	36.4	52.8	34.9	31.7	24.4	57.5
4.9	4.1	4.0	5.9	3.5	5.6	.0	4.9	4.9	5.7
78.9	74.6	77.8	50.0	80.4	76.8	44.2	67.6	68.9	88.5

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
B 69	82-2 00 YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PEAK TO PEAK VOLTAGE IN YOUR PRESENT JOB?	79.7	82.8	83.3	71.3	76.2	83.1	46.5	75.4	70.1	87.4							
B 70	82-3 00 YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM AVERAGE VOLTAGE (DC) IN YOUR PRESENT JOB?	70.7	75.4	73.0	54.4	73.4	80.3	51.2	66.2	62.8	79.3							
B 71	82-4 00 YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM WAVE LENGTH IN YOUR PRESENT JOB?	65.0	72.1	57.1	35.3	55.2	49.3	46.5	56.3	37.8	59.8							
B 72	82-5 00 YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM FREQUENCY IN YOUR PRESENT JOB?	87.8	83.6	89.7	73.5	86.0	87.3	79.1	89.4	80.5	90.8							
B 73	82-6 00 YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM INSTANTANEOUS VALUE IN YOUR PRESENT JOB?	39.8	36.9	27.8	16.9	22.4	27.5	9.3	28.2	15.9	36.8							
B 74	82-7 00 YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PHASE RELATIONSHIPS IN YOUR PRESENT JOB?	61.0	74.6	61.9	58.1	62.9	78.2	62.8	71.1	61.6	70.1							
B 75	83-1 00 YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C1-1; IF YES, CONTINUE.	56.9	60.7	61.1	31.6	57.3	59.2	16.3	44.4	33.5	69.0							
B 76	83-2 00 YOU INSPECT INDUCTORS?	53.7	64.8	61.9	30.9	65.7	69.0	16.3	45.8	39.0	67.8							
B 77	83-3 00 YOU CLEAN INDUCTORS?	43.1	52.5	51.6	23.5	51.0	42.3	2.3	31.0	25.0	43.7							
B 78	83-4 00 YOU ADJUST INDUCTORS?	56.1	63.1	56.3	20.6	60.8	60.6	11.6	33.1	29.3	59.8							
B 79	83-5 00 YOU MEASURE INDUCTORS?	33.3	41.0	46.8	16.9	41.3	40.1	4.7	31.0	22.6	43.4							
B 80	83-6 00 YOU USE OR REFER TO INDUCTANCE?	56.1	64.8	62.7	28.7	58.0	59.2	14.0	43.7	30.5	63.2							
B 81	83-7 00 YOU USE OR REFER TO HENRIEST?	43.1	48.4	50.0	22.1	44.8	40.8	9.3	33.8	21.3	43.7							
B 82	83-8 00 YOU USE OR REFER TO INDUCTIVE REACTANCE?	49.6	52.5	49.2	18.4	45.5	40.1	11.6	26.8	23.2	49.4							
B 83	83-9 00 YOU USE OR REFER TO COPPER LOSS IN INDUCTORS?	10.6	9.0	11.9	2.9	9.8	9.9	4.7	14.8	5.5	10.3							
B 84	83-10 00 YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS?	12.2	9.0	19.0	8.1	14.7	12.0	7.0	16.9	7.9	11.5							
B 85	83-11 00 YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS?	12.2	9.8	17.5	7.4	11.9	14.8	2.3	13.4	5.5	14.9							
B 86	83-12 00 YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL?	15.4	12.3	19.8	8.1	11.2	9.2	4.7	7.0	6.1	12.6							

D TSK	TITLES	304 (M)	304 (P)	304 (M)	304 (M)	304 (M)	304 (M)	304 (M)	304 (M)	304 (M)	304 (M)	304 (M)	304 (M)
C 175	C3-8 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM?	4.9	3.3	10.3	4.4	2.1	4.9	.0	8.9	1.8	1.1	1.8	1.1
C 176	C3-9 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM?	5.7	4.1	9.5	4.4	.7	4.9	.0	4.9	3.7	2.3	3.7	2.3
C 177	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION?	22.8	14.8	25.4	25.0	16.8	22.5	7.0	19.0	19.5	10.3	19.5	10.3
C 178	C3-11 DO YOU USE OR REFER TO FLUX DENSITY?	12.2	8.2	20.6	19.1	8.4	9.2	2.3	16.9	10.4	5.7	16.9	10.4
C 179	C3-12 DO YOU USE OR REFER TO SATURABLE REACTANCE?	13.0	28.7	23.8	14.7	12.6	18.3	7.0	17.6	17.7	8.0	17.6	17.7

D RCL CIRCUITS (D1), TIME CONSTANTS (D2), FILTERS (D3)

D 180	D1-1 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM D2-1; IF YES, CONTINUE.	54.5	57.4	47.6	26.5	54.5	53.5	18.6	43.0	29.3	52.9	29.3	52.9
D 181	D1-2 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS?	13.8	35.2	18.3	5.1	13.3	11.3	9.3	8.5	15.2	16.1	15.2	16.1
D 182	D1-3 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS?	12.2	21.3	12.7	2.9	7.0	9.2	2.3	7.7	11.6	10.3	11.6	10.3
D 183	D1-4 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS?	13.8	25.4	19.8	3.7	8.4	18.3	9.3	9.2	23.8	16.1	23.8	16.1
D 184	D1-5 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS?	13.8	25.4	17.5	2.2	7.0	18.3	9.3	9.2	23.8	13.8	23.8	13.8
D 185	D1-6 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS?	13.8	23.0	15.1	2.2	7.0	14.8	4.7	8.5	19.5	16.1	19.5	16.1
D 186	D1-7 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS?	43.1	53.3	41.3	14.7	54.5	43.0	11.6	29.2	19.5	47.1	29.2	47.1
D 187	D1-8 DO YOU USE OR REFER TO TRUE POWER (P SUB T) WHEN WORKING WITH RCL CIRCUITS?	26.0	32.8	31.0	5.9	27.3	31.0	7.0	17.6	12.8	31.0	17.6	12.8
D 188	D1-9 DO YOU USE OR REFER TO MAXIMUM POWER (P SUB M) WHEN WORKING WITH RCL CIRCUITS?	33.3	38.5	30.2	5.9	33.6	35.9	9.3	21.1	15.9	37.9	21.1	15.9
D 189	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (P SUB AVE) WHEN WORKING WITH RCL CIRCUITS?	36.6	46.7	33.3	5.9	35.0	42.3	18.6	23.2	18.3	33.3	23.2	18.3

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPI03 PAGE 16

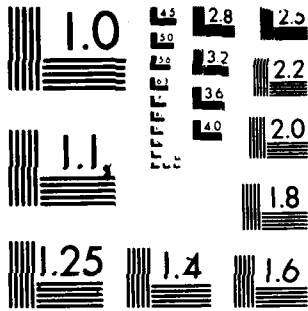
D TSM	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328
D 222	01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS?	70 (M)	71 (M)	74 (M)	74 (M)	70 (M)	71 (M)	72 (M)	73 (M)	74 (M)	74 (M)	75 (M)	75 (M)	75 (M)
D 223	01-44 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 OF THE PEAK CURRENT VALUE?	32.5	37.7	39.7	3.7	30.8	26.8	4.7	11.3	9.1	23.0			
D 224	01-45 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO THE QUALITY OF THE COIL (Q)?	35.0	45.1	33.3	5.9	25.2	51.4	11.6	30.3	14.6	33.3			
D 225	01-46 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS?	22.8	32.0	31.0	4.4	18.2	21.1	4.7	11.3	6.1	19.5			
D 226	02-1 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS? IF NO, GO TO ITEM D3-1; IF YES, CONTINUE.	20.3	32.8	24.6	6.6	18.2	20.4	7.0	9.2	7.3	23.0			
D 227	02-2 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)?	22.0	43.4	33.3	16.2	12.6	33.8	9.3	19.0	11.0	27.6			
D 228	02-3 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS?	14.6	27.0	21.4	8.1	10.5	20.4	7.0	12.7	9.8	19.5			
D 229	02-4 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS?	9.8	17.2	10.3	5.1	4.9	9.9	4.7	7.0	2.4	8.0			
D 230	02-5 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?	10.6	20.5	11.1	8.1	4.9	11.3	2.3	4.9	3.7	11.5			
D 231	02-6 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES?	12.2	19.7	14.3	5.9	4.2	12.0	2.3	5.6	5.5	12.6			
D 232	02-7 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?	10.6	22.1	14.3	5.9	5.6	9.9	2.3	5.6	3.7	12.6			
		13.0	22.1	18.3	5.9	7.0	17.6	2.3	9.2	5.5	14.9			

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328
E 290	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS?	70	71	74	74	70	71	72	73	74	74	75	74	75
E 291	E3-15 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS?	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
E 292	E3-16 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS?	52.0	64.8	57.9	42.6	72.7	71.8	37.2	58.5	70.1	73.6			
E 293	E3-17 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS?	49.6	60.7	55.6	38.2	72.7	69.7	34.9	57.0	67.7	74.7			
E 294	E3-18 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE?	50.4	60.7	55.6	36.8	72.7	68.3	30.2	54.9	66.5	74.7			
		44.7	59.8	50.8	36.0	65.7	67.6	39.5	54.9	62.8	69.0			
		44.7	58.2	54.0	34.6	68.5	64.1	14.0	51.4	57.9	54.4			

 F MICROPHONES AND SENSING DEVICES (F1), SPEAKERS (F2), OSCILLOSCOPES (F3)

F 295	F1-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES OR OTHER SENSING DEVICES SUCH AS TRANSDUCERS? IF NO, GO TO ITEM F2-1; IF YES, CONTINUE.	26.0	27.9	54.0	15.4	81.8	23.2	18.6	20.4	11.6	65.5			
F 296	F1-2 DO YOU INSPECT MICROPHONES?	22.0	23.8	54.0	5.9	71.3	18.3	9.7	16.2	3.7	57.5			
F 297	F1-3 DO YOU CLEAN MICROPHONES?	19.5	19.7	43.7	3.7	51.0	10.6	2.3	12.0	1.2	39.1			
F 298	F1-4 DO YOU OPERATE MICROPHONES?	22.0	25.4	50.8	8.8	83.9	22.5	16.3	16.9	7.3	65.5			
F 299	F1-5 DO YOU TROUBLESHOOT MICROPHONES WIRE CONNECTIONS?	22.0	23.0	52.4	5.9	76.9	20.4	2.3	16.9	4.9	59.8			
F 300	F1-6 DO YOU TROUBLESHOOT MICROPHONE COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	14.6	16.4	38.9	3.7	40.6	8.5	.0	7.0	2.4	34.5			
F 301	F1-7 DO YOU REMOVE AND REPLACE COMPLETE MICROPHONES?	22.0	22.1	51.6	5.9	75.5	18.3	2.3	16.9	7.9	57.5			
F 302	F1-8 DO YOU REMOVE OR REPLACE MICROPHONE COMPONENT PARTS?	14.6	13.9	40.5	3.7	32.9	6.3	.0	5.6	1.2	32.2			
F 303	F1-9 DO YOU PERFORM TASKS ON CARBON MICROPHONES?	10.5	18.9	50.0	3.7	58.7	16.9	.0	9.9	3.0	49.4			
F 304	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES?	8.9	4.9	16.7	2.2	10.5	2.8	.0	4.9	.6	18.4			
F 305	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES?	7.3	7.4	16.7	.7	11.2	4.9	.0	4.2	.6	16.1			
F 306	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES?	10.6	12.3	51.6	1.5	77.6	15.5	2.3	8.5	.6	58.6			
F 307	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES?	1.6	.8	4.8	.7	1.4	.0	.0	.7	.6	1.1			

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
M 486	H2-20 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGES IN YOUR WORK WITH RECTIFIERS?	28.5	29.5	36.5	19.1	27.3	31.7	11.6	29.6	14.0	32.2							
M 487	H2-21 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS IN YOUR WORK WITH RECTIFIERS?	44.0	59.0	49.2	46.3	44.1	57.7	25.6	47.2	35.4	54.0							
M 488	H2-22 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	53.7	55.7	54.0	48.5	48.3	56.3	27.9	52.1	35.4	52.9							
M 489	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS?	57.7	67.2	58.7	47.1	52.4	65.5	20.9	48.6	40.2	60.9							
M 490	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS?	54.5	66.4	56.3	34.6	52.4	62.0	23.3	43.7	36.0	60.9							
M 491	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS?	46.3	56.6	55.6	24.3	46.2	59.9	11.6	42.3	28.7	56.3							
M 492	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS?	44.7	53.3	54.0	22.1	45.5	55.6	11.6	40.8	25.0	56.3							
M 493	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS?	46.3	54.9	53.2	19.1	46.2	51.4	14.0	38.7	21.3	49.4							
M 494	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS?	44.7	52.5	50.0	20.6	44.8	54.2	11.6	41.5	25.0	49.4							
M 495	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER?	4.9	4.9	4.8	.0	5.6	2.8	4.7	4.9	.6	2.3							
M 496	H2-30 DO YOU WORK WITH POWER SUPPLY REGULATOR CIRCUITS OTHER THAN SOLID-STATE?	26.0	61.5	30.2	15.4	26.6	38.0	9.3	26.1	26.8	25.3							
M 497	H2-31 DO YOU WORK WITH SOLID-STATE POWER SUPPLY REGULATOR CIRCUITS?	58.5	63.1	55.6	45.6	57.3	65.5	46.5	52.1	39.0	60.9							
M 498	H3-1 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM H-1; IF YES, CONTINUE.	56.9	67.2	54.8	36.8	59.4	58.5	60.5	56.3	32.9	69.0							
M 499	H3-2 DO YOU INSPECT OSCILLATORS?	50.4	64.8	54.0	27.9	58.0	53.5	30.2	48.6	28.0	59.8							
M 500	H3-3 DO YOU ALIGN OR ADJUST OSCILLATORS?	53.7	66.4	52.4	24.3	58.0	51.4	23.3	42.3	24.4	59.8							
M 501	H3-4 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS?	45.5	53.3	49.2	30.9	54.5	47.2	27.9	47.9	25.0	59.8							
M 502	H3-5 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS?	36.6	54.9	46.0	19.9	44.8	40.8	11.6	26.1	18.3	47.1							
M 503	H3-6 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL?	43.9	59.0	51.6	27.9	52.4	46.5	46.5	36.6	25.6	55.2							



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPI01 PAGE 35

D TSM	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	375 (M)	375 (M)
I 530	11-10 DO YOU WORK WITH J-K FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	22.0	53.3	30.2	31.6	19.0	25.4	41.9	33.8	19.0	37.9		
I 539	11-11 DO YOU WORK WITH "D" FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	15.4	20.7	11.9	25.7	8.4	19.1	27.9	22.5	11.0	19.9		
I 540	12-1 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 13-1; IF YES, CONTINUE.	39.0	50.8	44.4	29.4	38.5	43.7	18.6	28.9	21.3	46.0		
I 541	12-2 DO YOU WORK WITH SHUNT DIODE LIMITERS?	34.1	44.3	34.1	26.5	37.8	40.8	14.0	28.2	18.6	43.7		
I 542	12-3 DO YOU WORK WITH SERIES DIODE LIMITERS?	33.3	48.4	34.1	23.5	36.4	40.1	14.0	28.2	14.6	42.5		
I 543	12-4 DO YOU WORK WITH LIMITERS WITH BIAS?	34.1	41.0	29.4	19.1	30.1	37.1	16.3	22.5	11.0	36.8		
I 544	12-5 DO YOU WORK WITH ZENER DIODE LIMITERS?	36.6	54.1	39.7	25.7	39.9	45.1	16.3	29.6	10.3	47.1		
I 545	12-6 DO YOU WORK WITH TRANSISTOR LIMITERS?	37.4	47.5	35.7	17.6	37.1	43.0	14.0	28.2	18.5	41.9		
I 546	12-7 DO YOU WORK WITH TRIODE LIMITERS?	17.9	28.7	15.1	5.1	16.8	27.5	4.7	14.1	4.9	17.2		
I 547	12-8 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS?	31.7	51.6	34.1	25.7	28.7	38.7	16.3	25.4	12.8	32.2		
I 548	12-9 DO YOU WORK WITH BIAS DIODE CLAMPING CIRCUITS?	28.5	38.5	27.0	18.4	23.8	35.2	16.3	19.7	11.0	27.6		
I 549	12-10 DO YOU WORK WITH DC RESTORERS (DCRT)?	14.6	15.6	11.1	5.1	11.2	17.6	7.0	9.2	9.8	17.2		
I 550	13-1 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS BASIC ELECTRON TUBES (FOR PURPOSES OF THIS QUESTION DO NOT CONSIDER HIGH-FREQUENCY DEVICES SUCH AS KLYSTRONS, TRAVELING WAVE TUBES, BACKWARD WAVE OSCILLATORS, OR MAGNETRONS AS ELECTRON TUBES)? IF NO, GO TO ITEM 11-1; IF YES, CONTINUE.	35.0	61.5	52.4	16.2	52.4	50.7	4.7	29.6	28.7	52.9		

I 551	13-2 DO YOU CHECK THE CONDITION OF ELECTRON TUBES?	30.9	59.0	50.0	11.8	46.9	45.1	.0	24.6	26.2	36.8		
I 552	13-3 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES?	24.4	59.0	42.9	8.8	44.8	43.7	.0	23.9	24.4	18.4		
I 553	13-4 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES?	23.6	53.3	45.2	6.6	39.9	38.0	.0	20.4	22.0	31.0		
I 554	13-5 DO YOU USE SCOPES TO CHECK ELECTRON TUBES?	24.4	59.7	45.2	8.1	42.0	43.7	.0	21.1	22.6	28.7		
I 555	13-6 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES?	31.7	52.5	50.0	13.2	51.0	43.7	.0	23.2	24.4	41.4		
I 556	13-7 DO YOU USE OR REFER TO CUTOFF?	22.8	51.6	32.5	4.4	30.1	36.6	.0	16.9	15.9	17.2		
I 557	13-8 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING?	12.2	18.0	23.8	.0	17.5	17.6	.0	6.3	6.7	11.5		
I 558	13-9 DO YOU USE OR REFER TO PEAK CURRENT RATING?	14.6	20.5	25.4	2.2	18.9	19.0	.0	9.2	9.1	13.8		
I 559	13-10 DO YOU USE OR REFER TO TRANSIT TIME?	12.2	22.1	15.1	2.9	14.0	15.5	.0	5.6	7.3	12.6		
I 560	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING?	12.2	19.7	19.0	.0	17.5	9.9	.0	5.6	7.3	11.5		

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 37

D TSN	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328
		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
I 582	I3-33 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	18.7	92.6	34.9	3.7	35.7	30.3	.0	16.9	13.4	28.7						
I 583	I3-34 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	21.1	51.6	93.7	5.1	33.6	90.1	.0	19.0	15.2	26.4						
I 584	I3-35 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	7.3	10.7	7.1	.7	7.0	8.5	.0	4.2	3.0	5.7						
I 585	I3-36 DO YOU USE OR REFER TO TUBE SOCKET NOTATION?	25.2	59.0	99.2	10.3	94.1	80.8	.0	22.5	23.2	39.1						
I 586	I3-37 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS?	27.6	61.5	52.4	11.8	49.7	45.8	.0	22.5	25.6	41.4						
I 587	I3-38 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS?	22.0	50.8	91.3	5.1	32.2	28.9	.0	16.9	16.5	23.0						
I 588	I3-39 DO YOU USE OR REFER TO ELECTRON TUBE DIODES?	20.3	50.8	39.9	2.9	28.7	35.9	.0	14.1	15.2	12.6						

J ELECTRON TUBE AMPLIFIERS AND CIRCUITS (J1), SPECIAL PURPOSE ELECTRON TUBES (J2), METODYNING AND MODULATION - DEMODULATION (MODENS) (J3)

J 589	J1-1 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM J2-1; IF YES, CONTINUE.	39.0	58.2	99.2	8.8	95.5	95.1	16.3	26.1	25.0	92.5						
J 590	J1-2 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS?	13.8	27.0	20.6	1.5	9.8	14.8	4.7	7.0	6.1	8.0						
J 591	J1-3 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	12.2	21.3	12.7	.7	20.3	29.6	2.3	9.9	7.9	11.5						
J 592	J1-4 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS?	24.4	52.5	43.7	2.9	39.2	38.7	2.3	14.8	14.0	18.4						
J 593	J1-5 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS?	16.3	27.9	22.2	.7	23.8	23.2	2.3	12.0	7.9	17.2						
J 594	J1-6 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS?	17.9	49.2	34.1	2.2	21.0	35.2	4.7	17.6	9.8	17.2						

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSM	TITLES	304 (M)	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
J 613 J3-3	DO YOU PERFORM TASKS ON FREQUENCY MIXER SYSTEMS STAGES?	55.3	45.9	57.1	3.7	55.9	52.1	37.2	42.3	28.0	63.2				
J 614 J3-4	DO YOU PERFORM TASKS ON MODEM SYSTEMS STAGES?	48.8	5.7	22.2	19.9	34.3	7.0	4.7	22.5	3.7	64.4				
J 615 J3-5	DO YOU USE OR REFER TO THE METEORODYMING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS?	52.0	45.1	48.4	9.6	58.7	52.8	32.6	39.4	14.6	58.6				
J 616 J3-6	DO YOU PERFORM TASKS ON REACTANCE MODULATOR SYSTEM STAGES?	35.0	11.5	25.4	.7	21.7	23.9	2.3	9.2	4.9	28.7				
J 617 J3-7	DO YOU PERFORM TASKS ON MODULATED OSCILLATOR SYSTEM STAGES?	43.9	30.3	35.7	5.1	35.0	44.4	14.0	24.6	14.0	43.7				

AM SYSTEMS (K1), FM SYSTEMS (K2), NUMBERING SYSTEMS (K3)

K 618 K1-1	DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K2-1; IF YES, CONTINUE.	23.6	43.4	58.7	1.5	63.2	50.7	11.6	43.0	5.5	72.4				
K 619 K1-2	DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS?	18.7	43.4	59.5	.7	81.2	48.6	7.0	91.5	4.3	70.1				
K 620 K1-3	DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS?	13.8	36.1	47.6	.0	67.1	39.4	2.3	36.6	3.0	54.0				
K 621 K1-4	DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS?	18.7	44.3	54.8	.7	66.4	41.5	7.0	38.0	1.8	49.0				
K 622 K1-5	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS?	19.5	43.4	51.6	.7	79.0	48.6	9.3	39.4	3.0	69.0				
K 623 K1-6	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS?	17.1	43.4	52.4	.7	67.1	41.5	7.0	34.5	2.4	65.5				
K 624 K1-7	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS?	17.1	39.3	46.8	.7	79.0	47.9	9.3	39.4	3.7	66.7				
K 625 K1-8	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS?	15.4	40.2	49.2	.7	67.1	40.8	4.7	33.8	2.4	63.2				
K 626 K1-9	DO YOU PERFORM TASKS ON RF OSCILLATORS/SYNTHESIZERS?	18.7	41.8	53.2	.0	58.7	37.3	9.3	33.1	3.0	55.2				
K 627 K1-10	DO YOU PERFORM TASKS ON RF AMPLIFIERS?	18.7	41.8	54.0	.0	60.1	38.7	11.6	36.6	3.0	56.3				
K 628 K1-11	DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	18.7	39.3	55.6	.7	62.9	37.3	.0	24.8	2.4	52.9				
K 629 K1-12	DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	19.5	41.0	51.6	.0	61.5	37.3	11.6	31.0	3.0	58.6				
K 630 K1-13	DO YOU PERFORM TASKS ON LOCAL OSCILLATORS?	19.5	39.3	51.6	.7	60.1	37.3	14.0	33.8	3.0	48.3				

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 40

O TSK	TITLES	304 (M)	304 71 (M)	304 74 (M)	305 74 (M)	328 70 (M)	328 71 (M)	328 72 (M)	328 73 (M)	328 74 (M)	328 75 (M)
K 631	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	18.7	41.8	54.0	.0	60.1	38.7	14.0	34.5	3.0	52.9
K 632	K1-15 DO YOU PERFORM TASKS ON DETECTORS?	19.5	41.0	51.6	.7	58.7	38.7	14.0	33.8	3.0	49.4
K 633	K1-16 DO YOU PERFORM TASKS ON MIXER AMPLIFIERS?	18.7	37.7	50.8	.0	59.4	38.0	14.0	31.7	3.0	51.7
K 634	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS?	13.8	33.6	34.1	.7	50.3	22.5	4.7	19.0	1.8	41.4
K 635	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS?	18.7	40.2	44.4	.7	61.5	31.0	11.6	22.5	1.4	56.3
K 636	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS?	21.1	42.6	59.5	.7	74.8	47.2	14.0	40.8	2.4	66.7
K 637	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS?	20.3	38.5	54.8	.0	70.6	44.4	14.0	36.6	3.0	62.1
K 638	K2-1 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K3-1; IF YES, CONTINUE.	57.7	37.7	30.2	3.7	46.2	52.1	23.3	50.0	20.1	78.2
K 639	K2-2 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS?	54.5	36.1	28.6	2.9	42.7	48.6	16.3	48.6	19.5	75.9
K 640	K2-3 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS?	46.3	29.5	23.0	2.2	33.6	41.5	2.3	39.4	15.9	57.5
K 641	K2-4 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS?	53.7	36.9	23.0	2.2	32.2	45.1	9.3	38.0	14.6	73.6
K 642	K2-5 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS?	52.0	35.2	23.8	2.2	39.9	48.6	16.3	42.3	17.7	72.4
K 643	K2-6 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS?	48.0	35.2	23.8	2.2	30.1	43.0	9.3	35.9	15.2	71.3
K 644	K2-7 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS?	43.1	32.8	23.0	1.5	37.8	48.6	16.3	40.8	17.1	70.1
K 645	K2-8 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS?	42.0	32.0	22.2	2.2	29.4	43.0	4.7	35.2	15.2	69.0
K 646	K2-9 DO YOU PERFORM LINK PERFORMANCE ASSESSMENTS?	50.4	9.8	9.5	1.5	14.7	12.0	4.7	14.1	4.9	62.1
K 647	K2-10 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	49.6	33.6	23.8	2.2	24.5	38.0	.0	25.4	15.2	52.9
K 648	K2-11 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS?	50.4	35.2	22.2	2.2	24.5	38.0	16.3	23.9	11.0	51.0
K 649	K2-12 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)?	43.1	35.2	22.2	2.2	24.5	38.7	18.6	28.2	12.8	60.9
K 650	K2-13 DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	43.9	36.9	21.4	1.5	25.2	38.7	18.6	27.5	14.0	64.4
K 651	K2-14 DO YOU PERFORM TASKS ON RF AMPLIFIER?	49.6	36.1	25.4	.7	25.2	41.5	16.3	35.2	14.6	60.9
K 652	K2-15 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS?	48.8	28.7	23.0	2.2	24.5	37.3	14.0	26.8	11.6	51.7
K 653	K2-16 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	50.4	34.4	23.8	.7	25.2	41.5	16.3	30.3	15.9	57.5

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328
K 654	K2-17 DO YOU PERFORM TASKS ON LIMITERS?	47.2	32.8	24.6	2.2	23.1	39.4	14.0	28.2	9.1	49.4				
K 655	K2-18 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS?	47.2	33.6	24.6	2.2	23.1	38.7	16.3	30.3	9.1	54.0				
K 656	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS?	56.1	34.4	17.5	2.9	26.6	40.8	14.0	20.4	15.2	59.8				
K 657	K2-20 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS?	56.1	31.1	23.0	2.9	28.7	44.4	16.3	39.4	15.2	58.6				
K 658	K2-21 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSCIEVERS?	53.1	24.6	20.6	2.9	26.6	37.3	9.3	17.6	14.6	47.1				
K 659	K2-22 DO YOU PLOT RECEIVE SIGNAL LEVEL CURVES (RSL)?	51.2	9.8	6.3	.7	3.5	2.8	4.7	4.2	1.2	10.3				
K 660	K3-1 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS?	10.6	17.2	14.3	55.1	11.9	21.1	88.4	47.9	39.6	37.9				
K 661	K3-2 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS?	22.0	36.1	34.1	61.0	23.1	38.0	81.4	46.5	46.3	47.1				
K 662	K3-3 DO YOU CONVERT DECIMAL NUMBERS TO HEXADECIMAL (BASE 16) NUMBERS?	6.5	8.2	11.9	51.5	7.0	10.6	25.6	28.9	13.4	26.4				
K 663	K3-4 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS?	9.8	14.8	13.5	52.2	11.9	20.4	88.4	46.5	42.1	39.1				
K 664	K3-5 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS?	9.8	15.6	15.1	58.1	10.5	20.4	88.4	47.2	40.2	36.8				
K 665	K3-6 DO YOU CONVERT OCTAL NUMBERS TO HEXADECIMAL NUMBERS?	6.5	7.4	7.9	39.7	4.2	9.2	20.9	26.8	11.6	21.8				
K 666	K3-7 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS?	22.8	35.2	34.9	61.8	25.2	37.3	83.7	45.1	43.3	47.1				
K 667	K3-8 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS?	9.8	14.8	11.9	56.6	9.1	21.8	86.0	44.4	38.4	35.6				
K 668	K3-9 DO YOU CONVERT BINARY NUMBERS TO HEXADECIMAL NUMBERS?	6.5	8.2	11.9	47.1	5.6	10.6	18.6	27.5	11.6	24.1				
K 669	K3-10 DO YOU CONVERT HEXADECIMAL NUMBERS TO DECIMAL NUMBERS?	6.5	9.0	11.1	50.7	5.6	10.6	25.6	28.2	11.0	25.3				
K 670	K3-11 DO YOU CONVERT HEXADECIMAL NUMBERS TO OCTAL NUMBERS?	6.5	7.4	7.9	38.2	4.2	9.9	16.3	26.1	11.0	19.5				
K 671	K3-12 DO YOU CONVERT HEXADECIMAL NUMBERS TO BINARY NUMBERS?	6.5	9.0	10.3	47.1	5.6	9.9	18.6	27.5	11.6	21.8				
K 672	K3-13 DO YOU ADD BINARY NUMBERS?	19.5	32.0	35.7	55.9	18.9	32.4	67.4	34.5	34.8	37.9				
K 673	K3-14 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD?	15.4	20.5	27.8	39.0	11.9	23.2	51.2	28.2	23.8	32.2				
K 674	K3-15 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD?	17.9	26.2	28.6	41.9	15.4	25.4	58.1	31.0	29.9	32.2				
K 675	K3-16 DO YOU ADD OCTAL NUMBERS?	8.9	11.5	11.1	46.3	7.0	19.0	67.4	30.3	32.3	25.3				

O TSK	TITLES	304	304	305	328	328	328	328	328	328	328	328	328
L 749	L3-20 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS?	70	71	74	70	71	72	73	74	75	(M)	(M)	(M)
L 750	L3-21 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES?	4.9	13.9	10.3	4.9	6.3	14.0	9.9	4.9	13.8			
L 751	L3-22 DO YOU DETERMINE THE APPROPRIATE 'AND' GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT?	7.3	17.2	15.1	23.5	7.0	12.0	14.0	19.7	8.5	16.1		

M	TIMING CIRCUITS (M1), USE OF SIGNAL GENERATORS (M2), MOTORS AND GENERATORS (M3)												

M 752	M1-1 DO YOU WORK WITH SAWTOOTH WAVE GENERATOR TIMING CIRCUITS?	24.4	42.6	33.3	20.6	26.6	55.6	14.0	47.2	18.9	36.8		
M 753	M1-2 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATOR TIMING CIRCUITS?	14.6	28.7	13.5	9.6	15.4	51.4	7.0	26.1	8.5	14.9		
M 754	M1-3 DO YOU WORK WITH PULSED OSCILLATOR TIMING CIRCUITS?	21.1	43.4	22.2	24.3	20.3	54.9	27.9	42.3	17.1	35.6		
M 755	M1-4 DO YOU WORK WITH BLOCKING OSCILLATOR TIMING CIRCUITS?	19.5	39.3	17.5	16.2	20.3	58.5	9.3	30.3	16.5	19.5		
M 756	M1-5 DO YOU WORK WITH MASTER SLAVION TIMING CIRCUITS?	22.8	21.3	20.6	31.6	11.9	26.8	14.0	16.2	9.8	25.3		
M 757	M1-6 DO YOU USE OR REFER TO RISE TIME?	26.0	63.1	41.3	58.1	17.5	59.9	37.2	47.2	21.3	44.8		
M 758	M1-7 DO YOU USE OR REFER TO FALL OR FLYBACK TIME?	24.4	56.6	33.3	47.1	16.8	50.0	32.6	45.8	19.5	35.6		
M 759	M1-8 DO YOU USE OR REFER TO SWEEP TIME?	33.3	55.7	40.5	44.9	18.2	59.9	25.6	56.3	29.9	42.5		
M 760	M1-9 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS?	19.5	31.1	25.4	14.7	16.1	57.7	11.6	33.8	16.5	28.7		
M 761	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS?	17.9	27.9	22.2	15.4	14.0	54.9	7.0	35.9	17.7	21.8		
M 762	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS?	19.5	29.5	20.6	14.7	11.9	46.5	14.0	31.7	14.0	21.8		
M 763	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS?	19.5	31.1	20.6	14.0	11.2	50.0	11.6	26.1	16.5	20.7		

O YSK TITLES

M 764	M2-1 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	61.0	63.9	62.7	36.8	72.0	64.1	32.6	66.2	45.1	72.4
M 765	M2-2 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS?	61.0	62.3	64.3	31.6	70.6	62.7	30.2	64.0	43.3	71.3
M 766	M2-3 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS?	48.0	50.0	50.8	27.9	58.0	47.9	23.3	40.6	30.5	59.0
M 767	M2-4 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS?	43.1	43.4	48.4	24.3	58.0	43.7	25.6	45.8	31.7	50.6
M 768	M2-5 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS?	36.6	31.1	43.7	23.5	47.6	38.0	9.3	31.0	17.1	34.5
M 769	M2-6 DO YOU USE AUDIO SINE-WAVE GENERATORS?	59.3	47.5	59.5	21.3	68.5	47.9	4.7	31.0	38.4	70.1
M 770	M2-7 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE?	35.0	31.1	31.0	14.7	26.6	38.7	4.7	35.9	15.2	51.7
M 771	M2-8 DO YOU USE RF GENERATORS LESS THAN 1,000 MHZ?	49.6	50.8	58.7	8.8	67.1	50.0	11.6	47.9	18.3	64.4
M 772	M2-9 DO YOU USE RF GENERATORS GREATER THAN 1,000 MHZ?	52.0	50.0	27.0	5.9	28.0	53.5	30.2	43.4	17.7	39.5
M 773	M2-10 DO YOU USE WHITE NOISE GENERATORS?	35.8	9.8	11.1	6.6	1.4	2.8	.0	17.6	6.1	20.7
M 774	M2-11 DO YOU USE PATTERN GENERATORS?	22.8	9.8	14.3	13.2	3.5	12.7	2.3	14.8	.6	25.3
M 775	M2-12 DO YOU USE PSEUDO-RANDOM GENERATORS?	10.6	9.8	7.9	2.2	1.4	2.8	2.3	9.2	.6	21.8
M 776	M2-13 DO YOU USE TIME MARK GENERATORS?	17.1	44.3	10.3	5.9	2.8	29.6	4.7	20.4	2.4	25.3
M 777	M2-14 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS?	30.1	43.4	24.6	12.5	15.4	42.3	11.6	45.	17.7	32.2
M 778	M3-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS, GENERATORS (SERVO), OR ALTERNATORS? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	26.0	53.3	36.5	36.8	32.2	48.6	11.6	31.7	45.1	42.5
M 779	M3-2 DO YOU INSPECT MOTORS?	23.6	52.5	34.1	33.8	29.4	45.0	9.3	28.2	37.8	43.7
M 780	M3-3 DO YOU CLEAN OR LUBRICATE MOTORS?	22.0	44.3	32.5	32.4	26.6	34.5	4.7	23.2	21.3	31.0
M 781	M3-4 DO YOU OPERATE MOTORS?	23.6	43.4	30.2	28.7	28.0	39.4	11.6	23.9	30.5	34.5
M 782	M3-5 DO YOU REMOVE OR REPLACE COMPLETE MOTORS?	22.0	48.4	34.1	31.6	30.1	40.1	4.7	25.4	36.0	36.8
M 783	M3-6 DO YOU REMOVE OR REPLACE MOTOR PARTS?	15.4	23.0	25.4	25.7	12.6	12.7	.0	9.9	4.9	9.2

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 48

D TSK	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
M 784	M3-7 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIPE CONNECTIONS OF MOTORS?	22.2	50.0	33.3	33.8	31.5	40.1	4.7	26.1	37.2	37.9							
M 785	M3-8 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS?	14.6	14.8	18.3	20.6	7.0	9.9	.0	9.2	6.1	6.9							
M 786	M3-9 DO YOU PERFORM TASKS ON MOTOR FIELD COILS?	9.8	8.2	7.9	4.4	2.1	4.9	.0	2.1	2.4	2.3							
M 787	M3-10 DO YOU PERFORM ANY TASKS ON MOTOR ARMATURES?	11.4	10.7	12.7	8.8	4.2	5.6	.0	4.2	2.4	4.6							
M 788	M3-11 DO YOU PERFORM ANY TASKS ON MOTOR ROTORS?	8.9	10.7	10.3	8.8	3.5	4.9	.0	5.6	3.0	2.3							
M 789	M3-12 DO YOU PERFORM ANY TASKS ON MOTOR BRUSHES?	14.6	17.2	18.3	22.1	10.5	8.5	2.3	9.9	2.4	8.0							
M 790	M3-13 DO YOU PERFORM ANY TASKS ON MOTOR SLIP RINGS?	8.1	8.2	12.7	10.3	4.2	8.5	2.3	6.3	3.0	3.4							
M 791	M3-14 DO YOU PERFORM ANY TASKS ON MOTOR COMMUTATORS?	8.1	9.8	11.9	9.6	4.9	6.3	.0	4.9	1.2	2.4							
M 792	M3-15 DO YOU PERFORM ANY TASKS ON MOTOR POLE PIECES?	5.7	7.4	7.9	4.4	2.1	4.2	.0	2.8	1.2	2.3							
M 793	M3-16 DO YOU DETERMINE OR MEASURE FORCE OR TORQUE CREATED BY A MOTOR?	1.6	3.3	11.1	2.2	4.9	11.3	.0	4.9	3.0	2.3							
M 794	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR?	2.4	14.8	13.5	5.1	5.6	17.6	.0	6.3	7.3	3.4							
M 795	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS?	1.6	9.0	5.6	3.7	2.1	9.2	2.3	4.9	3.7	1.1							
M 796	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS?	11.4	26.2	25.4	14.7	17.5	37.3	7.0	14.8	26.8	19.5							
M 797	M3-20 DO YOU WORK WITH INDUCTION MOTORS?	13.8	28.7	22.2	18.4	12.6	33.8	4.7	15.5	12.8	16.1							
M 798	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS?	9.8	22.1	12.7	8.8	7.0	24.6	4.7	7.7	6.7	14.9							
M 799	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS?	13.8	25.4	18.3	15.4	14.7	31.0	4.7	13.4	15.2	20.7							
M 800	M3-23 DO YOU WORK WITH SERVOS OR SYNCHROS MOTORS?	12.2	23.0	27.0	19.1	23.8	46.5	9.3	14.8	40.2	34.5							
M 801	M3-24 DO YOU WORK WITH SHADED-POLE MOTOR?	4.1	3.3	5.6	5.9	1.4	5.6	2.3	4.2	1.8	2.3							
M 802	M3-25 DO YOU INSPECT GENERATORS OR ALTERNATORS?	9.8	21.3	14.3	11.8	5.6	13.4	2.3	7.7	9.8	3.4							
M 803	M3-26 DO YOU CLEAN OR LUBRICATE GENERATORS OR ALTERNATORS?	7.3	10.7	11.1	11.8	4.2	7.7	.0	2.8	6.1	3.4							
M 804	M3-27 DO YOU OPERATE GENERATORS OR ALTERNATORS?	11.4	22.1	14.3	9.6	6.3	11.3	2.3	8.5	7.3	5.7							
M 805	M3-28 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS OR ALTERNATORS?	6.5	7.4	11.9	4.4	3.5	7.0	.0	2.8	7.9	1.1							
M 806	M3-29 DO YOU REMOVE OR REPLACE GENERATOR, ALTERNATOR, OR PARTS?	5.7	5.7	7.1	5.9	1.4	3.5	.0	.7	.6	2.3							

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 49

D TSK	TITLES	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328	328	
M 007	M3-30 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS OR ALTERNATORS?	70	71	74	74	70	71	72	73	74	75	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	
M 008	M3-31 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS OR ALTERNATORS?	8.9	15.6	11.9	8.1	5.6	9.2	2.3	4.2	10.4	2.3	5.7	2.5	4.8	4.4	2.1	2.1	.0	.7	1.2	1.1

M METER MOVEMENTS (M1), SATURABLE REACTORS AND MAGNETIC AMPLIFIERS (M2), WAVESHAPING CIRCUITS (M3)

M 009	M1-1 DO YOU WORK WITH METERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M2-1; IF YES, CONTINUE.	64.2	68.9	63.5	56.6	81.6	76.1	60.5	66.9	74.4	75.9
M 010	M1-2 DO YOU CONSIDER THE FUNCTIONS OF PERMANENT MAGNET INTERNAL METER PARTS?	21.1	31.6	22.2	10.3	18.2	27.5	9.3	15.5	19.0	18.4
M 011	M1-3 DO YOU CONSIDER THE FUNCTIONS OF MOVING COIL INTERNAL METER PARTS?	22.8	34.4	25.4	14.7	23.8	31.7	11.6	21.1	20.7	23.0
M 012	M1-4 DO YOU CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS INTERNAL METER PARTS?	17.9	23.8	20.6	13.2	17.5	21.8	7.0	18.3	12.8	12.6
M 013	M1-5 DO YOU READ METER SCALES?	65.9	72.1	64.3	52.9	81.1	75.4	58.1	66.9	72.0	75.9
M 014	M1-6 DO YOU EXTEND THE RANGE OF AMMETERS?	22.8	31.1	31.0	15.4	28.7	32.4	11.6	25.4	22.0	27.6
M 015	M1-7 DO YOU EXTEND THE RANGE OF VOLTMETERS?	35.8	39.3	40.5	19.1	41.3	44.4	18.6	35.9	33.5	31.0
M 016	M1-8 DO YOU ZERO OHMMETERS?	65.0	67.2	62.7	52.2	80.4	76.1	55.8	66.2	73.8	73.6
M 017	M1-9 DO YOU ZERO AMMETERS?	32.5	41.0	38.1	25.0	42.0	52.1	14.0	38.0	24.4	40.2
M 018	M1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)?	40.7	50.8	50.8	22.8	48.3	52.1	23.3	42.3	46.3	47.1
M 019	M1-11 DO YOU CONSIDER BALLASTIC RESPONSE OF METER MOVEMENTS?	8.9	7.4	11.9	5.1	5.6	9.2	2.3	3.5	6.7	8.0
M 020	M1-12 DO YOU CONSIDER OTHER METER MOVEMENTS?	25.2	27.0	26.2	13.2	16.8	22.5	11.6	19.0	19.5	23.0
M 021	M2-1 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	10.6	33.6	11.1	8.1	7.7	14.8	4.7	12.7	6.1	4.6

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 50

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
M 022	M2-2 DO YOU INSPECT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	6.5	32.0	7.9	6.6	5.6	9.2	2.3	10.6	4.9	1.1							
M 023	M2-3 DO YOU CLEAN SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	4.9	27.9	6.3	4.4	4.9	7.0	.0	6.3	3.7	1.1							
M 024	M2-4 DO YOU ADJUST SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	4.1	23.8	6.3	2.2	4.2	5.6	2.3	4.9	3.7	.0							
M 025	M2-5 DO YOU TROUBLESHOOT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	5.7	29.5	7.9	5.9	7.0	9.9	4.7	8.5	4.3	1.1							
M 026	M2-6 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS?	6.5	27.9	7.1	6.6	5.6	9.9	2.3	8.5	4.9	1.1							
M 027	M2-7 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS?	2.4	16.4	4.0	3.7	4.2	7.0	.0	3.5	1.2	.0							
M 028	M2-8 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS?	1.6	9.8	4.0	2.2	1.4	2.8	2.3	6.3	3.0	2.3							
M 029	M2-9 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	2.4	16.4	7.1	2.2	3.5	8.5	2.3	7.7	1.8	1.1							
M 030	M2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	3.3	15.6	5.6	5.9	2.8	7.7	.0	9.2	1.8	1.1							
M 031	M2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS?	4.1	13.9	5.6	2.2	2.1	7.0	.0	6.3	1.8	1.1							
M 032	M2-12 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS?	8.1	24.6	10.3	5.9	4.9	10.6	4.7	11.3	4.9	1.1							
M 033	M3-1 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 01-1; IF YES, CONTINUE.	30.9	62.3	28.6	38.2	11.9	54.9	58.1	47.2	26.8	26.4							
M 034	M3-2 DO YOU USE OR REFER TO TRANSIENT INTERVALS (RISE TIME AND FALL TIME)?	21.1	59.0	23.8	30.9	9.1	43.0	34.9	35.9	17.7	20.7							
M 035	M3-3 DO YOU USE OR REFER TO PULSE WIDTH (PW)?	26.0	61.5	23.8	36.8	10.5	54.9	55.8	46.5	23.2	24.1							
M 036	M3-4 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)?	19.5	53.3	20.6	36.0	9.1	51.4	58.1	46.5	21.3	19.5							
M 037	M3-5 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)?	20.3	54.1	23.0	33.8	9.1	54.9	58.1	46.5	23.2	18.4							
M 038	M3-6 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS?	27.6	50.8	25.4	29.4	9.8	45.1	16.3	32.4	16.5	21.8							

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPID3 PAGE 51

D TSK	TITLES	304 (M)	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
N 839	M3-7 DO YOU USE OR REFER TO INTEGRATING CIRCUITS?	26.8	52.5	23.0	29.4	9.8	43.0	25.6	35.2	20.1	20.7							
N 840	M3-8 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT?	17.9	39.3	22.2	18.4	5.6	40.8	9.3	23.9	9.1	14.9							
N 841	M3-9 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION?	11.4	31.1	16.7	9.6	3.5	27.5	9.3	14.1	7.3	9.2							
N 842	M3-10 DO YOU WORK WITH SQUARE WAVE GENERATOR. SOLID STATE CIRCUITS?	22.0	48.4	22.2	26.5	10.5	50.0	18.4	38.7	10.3	26.4							
N 843	M3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATOR SOLID STATE CIRCUITS?	17.1	34.4	11.9	13.2	6.3	38.7	9.3	28.9	9.1	16.1							
N 844	M3-12 DO YOU WORK WITH TRIANGULAR (SAWTOOTH) WAVE GENERATOR SOLID STATE CIRCUITS?	18.7	35.2	16.7	12.5	6.3	44.4	11.6	34.5	10.4	21.8							
N 845	M3-13 DO YOU WORK WITH RAMP (TRAPEZOIDAL) GENERATOR. SOLID STATE CIRCUITS?	8.1	28.7	9.5	8.8	5.6	43.0	4.7	29.6	7.3	8.0							
N 846	M3-14 DO YOU WORK WITH FUNCTION GENERATOR SOLID STATE CIRCUITS?	15.4	26.2	17.5	12.5	5.6	20.4	7.0	30.3	10.4	20.7							
N 847	M3-15 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS?	17.9	52.5	18.3	21.3	7.7	43.7	16.3	27.5	15.2	19.5							
N 848	M3-16 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS?	17.9	50.8	19.8	21.3	5.6	45.1	14.0	30.3	12.2	20.7							
N 849	M3-17 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS?	12.2	38.5	15.1	14.0	2.8	34.5	11.6	23.2	9.8	13.8							
N 850	M3-18 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS?	15.4	50.0	19.0	20.6	7.0	43.0	25.6	26.1	15.2	14.9							
N 851	M3-19 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS?	15.4	48.4	19.0	22.8	5.6	39.4	7.0	19.0	8.5	14.9							
N 852	M3-20 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS?	16.3	43.4	16.7	22.1	7.0	42.3	16.3	25.4	13.4	16.1							
N 853	M3-21 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS?	13.8	45.1	16.7	21.3	4.9	37.3	7.0	17.6	9.1	16.1							

D TSK	TITLES	304	304	304	305	328	328	328	328	328	328	328	328	328	328	328	328	328
0 961	03-38 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS?	7.3	12.3	25.4	.7	8.4	4.2	2.3	2.1	.6	6.9							
0 962	03-39 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS?	8.9	50.8	20.6	.7	4.2	22.5	11.6	9.9	3.7	3.4							
0 963	03-40 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS?	11.4	54.1	19.0	.7	3.5	26.1	4.7	6.3	5.5	4.6							
0 964	03-41 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN - DON'T KNOW WHAT KIND OF ELEMENT?	7.3	6.6	7.1	.7	29.4	28.2	30.2	30.3	25.0	23.0							
0 965	03-42 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS?	37.4	46.7	21.4	1.5	30.1	60.6	53.5	44.4	15.2	28.7							
0 966	03-43 DO YOU WORK ON BIDIRECTIONAL ANTENNAS?	5.7	27.0	26.2	.7	14.7	49.3	7.0	25.4	22.6	19.5							
0 967	03-44 DO YOU WORK ON OMNIDIRECTIONAL ANTENNAS?	12.2	67.2	41.3	.7	74.1	75.4	9.3	60.6	15.2	60.9							
0 968	03-45 DO YOU WORK WITH ROTARY ANTENNA ARRAYS?	2.4	50.0	15.9	.7	18.2	50.7	60.5	11.3	22.0	8.0							

P TRANSMISSION LINES (P1), WAVEGUIDES AND CAVITY RESONATORS (P2), MICROWAVE AMPLIFIERS AND OSCILLATORS (P3)

P 969	P1-1 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES? DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES. IF NO, GO TO ITEM P2-1; IF YES, CONTINUE.	28.5	50.0	35.7	7.4	66.4	42.3	39.5	40.1	11.0	55.2							
P 970	P1-2 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE COPPER LOSS OR 'I SUB 2 R' LOSS IN TRANSMISSION LINES?	7.3	14.8	9.5	.0	7.7	4.9	2.3	7.7	1.2	6.9							
P 971	P1-3 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES?	10.6	18.0	9.5	.0	11.9	7.0	4.7	10.6	1.2	10.3							
P 972	P1-4 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE RADIATION LOSS?	17.1	29.5	16.7	2.9	19.6	16.9	9.3	18.3	4.3	19.5							
P 973	P1-5 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE DIELECTRIC LOSS?	11.4	22.1	9.5	.7	13.3	9.2	4.7	14.1	3.0	11.5							
P 974	P1-6 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE LEAKAGE LOSSES?	9.8	18.9	11.9	1.5	18.2	10.6	14.0	16.2	3.7	14.9							
P 975	P1-7 WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE FARADAY SHIELD?	5.7	8.2	3.2	.0	1.4	2.1	.0	4.2	.0	4.6							
P 976	P1-8 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES?	17.1	9.0	9.5	5.9	9.1	10.6	7.0	15.5	3.0	12.6							
P 977	P1-9 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES?	14.6	9.8	9.5	.7	5.6	4.9	.0	8.5	1.2	10.3							
P 978	P1-10 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES?	5.7	5.7	3.2	2.2	4.9	4.2	.0	7.7	.0	6.9							
P 979	P1-11 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES?	27.6	51.6	32.5	5.1	66.4	41.5	41.9	40.1	9.8	50.6							
P 980	P1-12 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES?	19.5	37.7	12.7	1.5	34.3	26.1	41.9	30.3	3.7	26.4							
P 981	P1-13 DO YOU TROUBLESHOOT TRANSMISSION LINES?	22.0	47.5	28.6	2.9	57.3	35.2	18.6	35.2	7.9	51.7							
P 982	P1-14 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)?	8.9	23.0	14.3	2.2	19.6	12.7	4.7	15.5	4.9	12.6							
P 983	P1-15 DO YOU SELECT APPROPRIATE TRANSMISSION LINE TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS?	9.6	19.7	10.3	1.5	7.7	5.6	4.7	8.5	.0	8.0							

O TSM	TITLES	304 (M)	304 (M)	305 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)	328 (M)
P1012	P2-13 DO YOU REMOVE OR INSTALL CHOKE JOINTS?	10.6	2.5	.0	.0	13.4	2.3	4.2	4.2	9.1	5.7				
P1013	P2-14 DO YOU REMOVE OR INSTALL ROTATING JOINTS?	5.7	2.5	.0	.0	15.5	16.3	4.2	4.2	13.4	6.9				
P1014	P2-15 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS?	30.9	18.9	3.2	.0	38.7	20.9	27.5	27.5	19.5	13.8				
P1015	P2-16 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS?	17.1	18.9	.8	.0	24.6	16.3	16.2	16.2	8.5	8.0				
P1016	P2-17 DO YOU REMOVE OR INSTALL DUPLEXERS OR MIXERS?	22.8	19.7	.0	.0	40.1	14.0	16.2	16.2	19.5	10.3				
P1017	P2-18 DO YOU REMOVE OR INSTALL WAVEGUIDE SHUTTERS?	17.1	1.6	.0	.0	25.4	.0	.7	.7	3.7	4.6				
P1018	P2-19 DO YOU REMOVE OR INSTALL TRANSMIT (TR) OR ANTI-TRANSMIT (ATR) TUBES?	4.1	5.7	.0	.0	40.1	4.7	4.2	4.2	18.3	2.3				
P1019	P2-20 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES?	7.3	2.5	.0	.7	5.6	11.6	2.1	2.1	2.4	3.4				
P1020	P2-21 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES?	7.3	2.5	.0	.7	5.6	11.6	2.1	2.1	2.4	3.4				
P1021	P2-22 DO YOU USE OR REFER TO CUT OFF FREQUENCY OF WAVEGUIDES?	15.4	4.9	.0	.7	4.2	9.3	4.2	4.2	2.4	3.4				
P1022	P2-23 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES?	8.9	2.5	.0	.7	3.5	11.6	3.5	3.5	.6	3.4				
P1023	P2-24 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES?	7.3	2.5	.0	.7	2.8	11.6	3.5	3.5	1.2	3.4				
P1024	P2-25 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS?	8.1	2.5	.0	.7	2.8	4.7	.7	.7	.6	3.4				
P1025	P2-26 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS?	8.1	2.5	.0	.7	2.8	4.7	.7	.7	.6	3.4				
P1026	P2-27 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS?	5.7	3.3	.0	.7	4.2	4.7	.7	.7	1.2	2.3				
P1027	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OR .7 WAVELENGTHS OF THE OPERATING FREQUENCY?	8.9	2.5	.0	.7	7.0	7.0	2.1	2.1	1.2	2.3				
P1028	P2-29 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 AS AN AVERAGE?	7.3	2.5	.0	.7	5.6	7.0	2.1	2.1	.0	2.3				
P1029	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION?	4.9	3.3	.0	.7	2.8	.0	.0	.0	1.2	.0				
P1030	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?	8.9	4.1	.0	.7	6.3	11.6	.7	1.8	2.3					
P1031	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES?	7.3	3.3	.0	.7	3.5	7.0	1.4	1.4	1.2	2.3				
P1032	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES?	4.1	3.3	.0	.7	2.8	4.7	.0	.0	.0	1.1				
P1033	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES?	4.1	3.3	.0	.7	2.8	4.7	.7	.7	.6	2.3				
P1034	P2-35 DO YOU WORK WITH HIGH POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	14.6	9.0	.8	.7	21.1	37.2	13.4	13.4	3.7	8.0				
P1035	P2-36 DO YOU WORK WITH LOW POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	22.0	12.3	.8	.7	22.5	14.0	12.0	12.0	6.7	3.4				
P1036	P2-37 DO YOU WORK WITH LOOP ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	24.4	17.2	.8	.7	24.6	18.6	4.9	4.9	1.2	4.6				
P1037	P2-38 DO YOU WORK WITH APERTURES (WINDOWS OR IRISES) ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	29.3	3.3	1.6	.7	38.7	55.8	14.1	14.1	7.9	3.4				
P1038	P2-39 DO YOU WORK WITH CHOKE JOINTS IN WAVEGUIDES OR CAVITY RESONATORS?	17.9	2.5	.8	.7	21.8	16.3	7.7	7.7	9.8	1.1				

304	304	304	305	328	328	328	328	328	328	328	328	328
70	71	74	74	70	71	72	73	74	75			
(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)

O TSK TITLES

Q1176 03-22 ARE YOU ASSIGNED AGAINST A POSITION WHICH REQUIRES A "0" PREFIX?

.0	.8	1.6	.7	.0	2.1	.0	.0	.6	.0
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R PHANTASTRONS (R1), SCHMITT TRIGGERS (R2), CABLE FABRICATION (R3)

R1177 R1-1 DO YOU WORK WITH PHANTASTRON CIRCUITRY? IF NO, GO TO ITEM R2-1. IF YES, CONTINUE.

4.1	2.2	4.0	1.5	.7	28.2	9.3	4.2	13.4	4.6
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R1178 R1-2 PHANTASTRON CIRCUITRY HAS VARIABLE-DELAY APPLICATIONS IN MY JOB.

3.3	4.1	.8	.0	.0	16.9	4.7	2.8	3.7	4.6
-----	-----	----	----	----	------	-----	-----	-----	-----

R1179 R1-3 PHANTASTRON CIRCUITRY HAS SEARCH-LOCK AUTOMATIC FREQUENCY CONTROLS (AFC) APPLICATIONS IN MY JOB.

3.3	1.6	2.4	.0	.7	25.1	4.7	2.8	8.5	3.4
-----	-----	-----	----	----	------	-----	-----	-----	-----

R1180 R1-4 PHANTASTRON CIRCUITRY HAS MONOSTABLE MULTIVIBRATORS APPLICATIONS IN MY JOB.

3.3	6.6	1.6	.7	.0	21.1	7.0	3.5	7.9	4.6
-----	-----	-----	----	----	------	-----	-----	-----	-----

R1181 R1-5 PHANTASTRON CIRCUITRY HAS BISTABLE MULTIVIBRATORS APPLICATIONS IN MY JOB.

3.3	6.6	1.6	.7	.0	22.5	7.0	3.5	6.7	4.6
-----	-----	-----	----	----	------	-----	-----	-----	-----

R1182 R1-6 PHANTASTRON CIRCUITRY HAS FREE-RUNNING MULTIVIBRATORS APPLICATIONS IN MY JOB.

3.3	5.7	1.6	.7	.0	25.4	7.0	3.5	6.7	4.6
-----	-----	-----	----	----	------	-----	-----	-----	-----

R1183 R2-1 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS? IF NO, GO TO ITEM R3-1; IF YES, CONTINUE.

30.9	50.0	30.2	35.3	8.4	25.4	16.3	20.4	21.3	27.6
------	------	------	------	-----	------	------	------	------	------

R1184 R2-2 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS?

28.5	46.7	28.6	30.1	6.3	24.6	11.6	17.6	15.9	23.0
------	------	------	------	-----	------	------	------	------	------

R1185 R2-3 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS?

30.1	46.7	30.2	33.8	7.0	20.4	14.0	18.3	14.6	23.0
------	------	------	------	-----	------	------	------	------	------

R1186 R3-1 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES?

42.3	42.6	48.4	22.1	63.6	67.6	25.6	64.8	56.7	58.6
------	------	------	------	------	------	------	------	------	------

R1187 R3-2 DO YOU FABRICATE COAXIAL CABLES?

56.9	59.0	53.2	23.5	76.9	69.7	27.9	64.8	54.3	65.5
------	------	------	------	------	------	------	------	------	------

S INPUT/OUTPUT (PERIPHERAL) DEVICES (S1), PHOTO SENSITIVE DEVICES (S2), SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) (S3)

S1188 S1-1 DO YOU WORK WITH INPUT OR OUTPUT DEVICES ON YOUR PRESENT JOB? IF NO, GO TO ITEM S2-1; IF YES, CONTINUE.

26.8	36.1	31.7	75.0	28.7	25.4	69.8	54.2	48.8	69.0
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S1189 S1-2 DO YOU USE OR REFER TO KEYBOARDS OR TELETYPEWRITERS?

20.3	22.1	23.8	67.6	20.3	4.2	62.8	47.2	25.0	64.4
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S1190 S1-3 DO YOU USE OR REFER TO PRINTERS?

17.9	19.7	26.2	72.8	17.5	4.2	44.2	32.4	18.3	64.4
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S1191 S1-4 DO YOU USE OR REFER TO TAPE DRIVES (UNITS)?

4.1	7.4	11.9	60.3	11.9	4.2	60.5	47.2	28.7	54.0
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S1192 S1-5 DO YOU USE OR REFER TO CARD READERS/CARD PUNCHES?

4.1	6.6	8.7	39.0	3.5	1.4	4.7	6.3	3.7	33.3
-----	-----	-----	------	-----	-----	-----	-----	-----	------

S1193 S1-6 DO YOU USE OR REFER TO VIDEO DISPLAYS (CRT'S)?

15.4	23.8	22.2	68.4	11.2	23.2	30.2	51.4	19.5	29.9
------	------	------	------	------	------	------	------	------	------

S1194 S1-7 DO YOU USE OR REFER TO MIXIE LIGHTS (TUBES)?

10.6	27.9	9.5	14.0	5.6	7.7	9.3	28.2	18.9	27.6
------	------	-----	------	-----	-----	-----	------	------	------

S1195 S1-8 DO YOU USE OR REFER TO LED'S?

17.9	25.4	22.2	53.7	21.0	15.5	48.8	47.2	33.5	51.7
------	------	------	------	------	------	------	------	------	------

S1196 S1-9 DO YOU USE OR REFER TO LCD'S?

8.1	13.9	15.9	25.7	6.3	9.9	18.6	24.6	11.6	28.7
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S1197 S1-10 DO YOU USE OR REFER TO INCANDESCENT DISPLAYS?

6.5	18.9	14.3	26.5	9.1	9.9	27.9	19.7	19.5	32.2
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S1198 S1-11 DO YOU USE OR REFER TO TOGGLE OR PUSH BUTTON SWITCH INPUTS?

14.6	22.1	21.4	66.9	23.1	22.5	65.1	47.2	38.4	52.9
------	------	------	------	------	------	------	------	------	------

S1199 S1-12 DO YOU USE OR REFER TO INTERFACE ADAPTER UNITS?

10.6	9.8	16.7	52.9	15.4	12.0	58.1	40.1	21.3	44.8
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304	304	304	305	320	320	320	320	320	320	320	320	320	320	320	320
70	71	74	74	70	71	72	73	74	75	(M)	(M)	(M)	(M)	(M)	(M)

D TSM TITLES

U COMPUTERS, MICROPROCESSORS, AND PROGRAMMING (U1), DB AND POWER RATIOS (U2)

U1304	U1-1	IN YOUR PRESENT JOB, DO YOU PERFORM MAINTENANCE ROUTINES OR PROGRAMMING TASKS? IF NO, GO TO ITEM U2-1: IF YES, CONTINUE.	6.5	9.8	12.7	54.4	6.3	3.5	55.0	36.6	39.6	32.2
U1305	U1-2	DO YOU USE OR REFER TO DECIMAL SYSTEMS?	3.3	7.4	9.5	39.0	4.9	4.2	41.9	28.2	25.6	20.7
U1306	U1-3	DO YOU USE OR REFER TO DECIMAL SYSTEMS?	2.4	5.7	4.8	43.4	2.8	3.5	55.0	31.7	26.8	18.4
U1307	U1-4	DO YOU USE OR REFER TO PARITY DETECTORS/GENERATORS?	3.3	4.9	6.3	47.8	2.8	2.1	44.2	18.3	19.5	20.7
U1308	U1-5	DO YOU USE OR REFER TO HEXADECIMAL SYSTEMS?	3.3	2.5	4.8	38.2	2.8	1.4	16.3	19.0	11.6	18.4
U1309	U1-6	DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS?	1.6	.0	2.4	23.5	1.4	.7	9.3	7.7	5.5	4.6
U1310	U1-7	DO YOU USE OR REFER TO FOUR SYSTEMS?	.0	.0	1.6	7.4	.0	.7	.0	4.2	3.0	.0
U1311	U1-8	DO YOU USE OR REFER TO BINARY SYSTEMS?	4.9	7.4	8.7	47.8	4.9	4.2	55.0	27.5	28.0	23.0
U1312	U1-9	DO YOU USE OR REFER TO TIME-SHARING (MULTI-SEQUENCING)?	3.3	4.1	6.3	26.5	3.5	3.5	34.9	19.0	11.6	17.2
U1313	U1-10	DO YOU USE OR REFER TO DATA WORDS?	4.9	8.2	8.7	50.0	4.9	3.5	53.5	30.3	31.1	24.1
U1314	U1-11	DO YOU USE OR REFER TO ADDRESS WORDS?	4.9	8.2	9.5	50.7	5.6	3.5	55.0	32.4	30.5	27.6
U1315	U1-12	DO YOU USE OR REFER TO ADDRESS/SUBADDRESS?	3.3	8.2	7.1	48.5	6.3	3.5	41.9	26.8	25.6	26.4
U1316	U1-13	DO YOU USE OR REFER TO STEERING/INFORMATION?	.8	3.3	4.0	17.6	1.4	2.8	32.6	12.0	20.7	16.1
U1317	U1-14	DO YOU USE OR REFER TO INSTRUCTION WORDS?	4.1	7.4	4.8	49.3	2.1	3.5	48.0	28.2	25.0	17.2
U1318	U1-15	DO YOU USE OR REFER TO DAP-16?	.0	.0	.8	2.2	.0	.0	.0	2.1	1.8	1.1
U1319	U1-16	DO YOU USE OR REFER TO BINARY CODED DECIMAL (BCD)?	3.3	6.6	11.1	30.9	4.9	2.8	37.2	28.2	18.3	16.1
U1320	U1-17	DO YOU USE OR REFER TO CONTROL WORDS?	4.1	8.2	7.1	36.0	4.2	2.8	53.5	19.7	12.2	23.0
U1321	U1-18	DO YOU USE OR REFER TO RESPONSE WORDS?	1.6	.8	5.6	25.0	4.2	2.8	53.5	16.9	9.1	21.8
U1322	U1-19	DO YOU USE OR REFER TO WRAPAROUND WORDS?	1.6	.8	.8	11.8	.7	.0	55.8	5.6	5.5	5.7
U1323	U1-20	DO YOU USE OR REFER TO TEST OR DIAGNOSTIC PROGRAMS?	3.3	4.9	9.5	51.5	4.9	3.5	53.5	32.4	29.9	27.6
U1324	U1-21	DO YOU USE OR REFER TO RELIABILITY PROGRAMS?	1.6	.0	7.1	44.1	.7	1.4	18.6	16.2	16.5	11.5
U1325	U1-22	DO YOU USE OR REFER TO COMPILERS?	1.6	2.5	4.0	14.0	.0	.7	2.3	9.2	4.3	4.6
U1326	U1-23	DO YOU USE OR REFER TO ASSEMBLERS?	.8	1.6	4.0	16.9	.0	.7	9.3	9.2	4.3	4.6
U1327	U1-24	DO YOU USE OR REFER TO MACHINE LANGUAGE?	1.6	3.3	4.0	41.9	.7	1.4	16.3	14.1	5.5	8.0
U1328	U1-25	DO YOU USE OR REFER TO MNEMONICS?	2.4	4.1	5.6	39.7	2.1	1.4	46.5	21.1	9.8	20.7
U1329	U1-26	DO YOU USE OR REFER TO ROUTINES OR SUBROUTINES?	2.4	4.9	6.3	45.6	2.8	1.4	48.0	23.2	15.2	14.9
U1330	U1-27	DO YOU USE OR REFER TO FLOW CHARTS OR DIAGRAMS?	2.4	6.6	9.5	49.3	4.9	2.1	48.0	26.1	22.0	23.0
U1331	U1-28	DO YOU USE OR REFER TO 'ATLAS'?	.8	.0	.8	.7	.0	.0	2.3	1.4	.6	1.1
U1332	U1-29	DO YOU USE OR REFER TO 'ELAN'?	.0	.0	.8	.7	.0	.0	.0	.7	.6	1.1
U1333	U1-30	DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING SYSTEMS?	.8	1.6	4.0	18.4	2.8	1.4	16.3	14.1	14.6	9.2
U1334	U1-31	DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING SYSTEMS?	.8	1.6	1.6	9.6	.7	2.8	14.0	6.3	7.3	6.9
U1335	U1-32	DO YOU WRITE PROGRAMS FOR TROUBLESHOOTING OF SPECIFIC CIRCUITS?	.0	.8	2.4	26.5	.0	.0	16.3	4.2	.6	1.1
U1336	U1-33	DO YOU USE PROGRAMS FOR TROUBLESHOOTING OF SPECIFIC CIRCUITS?	1.6	6.6	6.3	41.9	2.8	1.4	51.2	27.5	18.9	12.6
U1337	U1-34	DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER CONTROL SECTIONS?	2.4	5.7	1.6	46.3	2.8	1.4	34.9	16.9	15.9	17.2
U1338	U1-35	DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER INPUT SECTIONS?	3.3	7.4	3.2	50.0	2.8	1.4	44.2	19.0	16.5	17.2
U1339	U1-36	DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER OUTPUT SECTIONS?	2.4	7.4	2.4	49.3	2.8	1.4	44.2	19.0	15.9	17.2

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT03 PAGE 70

D TSM	TITLES	304	304	304	305	320	320	320	320	320	320	320	320	320	320	320	320	320	320
70		71	74	74	70	71	72	72	73	74	75								
(M)		(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)

U1366 U2-6 DO YOU USE A MP3550 OR 30NA TEST SET TO ALIGN AUDIO EQUIPMENT?

KEESLER EPI CAREER LADDERS, ELECTRONIC PRINCIPLES INVENTORY (EPI) DATA ARE PRESENTED BELOW EACH DUTY TITLE. DATA FOR THIS PRINTOUT WERE COLLECTED FROM CAREER LADDER INCUMBENTS DURING THE PERIOD DECEMBER 1982 THROUGH JULY 1983.

USE OF EPI PRINTOUT: THE PERCENT OF VARIOUS CAREER LADDER GROUPS RESPONDING TO EPI QUESTIONS IS LISTED TO THE RIGHT OF EACH EPI ITEM. THUS, THE APPROPRIATE SAMPLE CRITERION GROUPS CAN BE IDENTIFIED WITH THE COLUMN HEADINGS AT THE TOP RIGHT OF EACH PRINTOUT PAGE. THEN THE PERCENT OF THAT GROUP USING THE CONCEPT OR PIECE OF EQUIPMENT CAN BE IDENTIFIED.

USE OF EPI DATA: THESE DATA MAY BE USED IN HELPING TO IDENTIFY, DELINEATE, AND VALIDATE ELECTRONIC PRINCIPLES ITEMS IN THE STS. CRITERIA LISTED IN ATRC 52-22 FOR ABR TRAINING MAY BE USEFUL IN HELPING DEVELOP ENTRY-LEVEL ELECTRONIC PRINCIPLE COURSES. ALSO, CDC WRITERS MAY USE EPI DATA TO HELP DETERMINE AREAS TO EMPHASIZE IN 5- AND 7-SKILL LEVEL CDS, CONSISTENT WITH STS CODES.

FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/OMYO, AUTOVON 487-5811.

VECTOR TYPE CODES:

- (T) = X TIME SPENT BY ALL MEMBERS
- (M) = X MEMBERS PERFORMING
- (F) = TASK FACTOR
- (D) = DICHOTOMOUS SET
- (B) = X TIME SPENT BY MEMBERS PERFORMING
- (-) = PROGRAM GENERATED VECTOR

NO	TYPE	VECTOR	MEAN	SD	DESCRIPTION	MEMBERS/	FACTOR #
1	M	205 70	89		DAFSC 20570 AIRMEN		30
2	M	307 70	143		DAFSC 30770 AIRMEN		40

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FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/DMDY, AUTOVON 987-5811.

D TSK	TITLES	205	307
		70	70
		(M)	(M)

A MATHEMATICS (A1), DIRECT CURRENT (A2), RESISTANCE AND RESISTIVE CIRCUITS (A3)

A 1	A1-1 IN YOUR PRESENT JOB, 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?	20.2	64.3
A 2	A1-2 DO YOU USE PUBLICATIONS, SUCH AS TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY OR 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?	27.0	44.1
A 3	A1-3 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS?	40.4	46.9
A 4	A1-4 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY?	27.0	20.3
A 5	A1-5 DO YOU SOLVE FOR UNKNOWN QUANTITIES SUCH AS SOLVING FOR X IN THE EQUATION $x + 6 = 8$?	44.9	39.2
A 6	A1-6 DO YOU USE LOGARITHM TABLES?	22.5	43.4
A 7	A1-7 DO YOU SOLVE QUADRATIC EQUATIONS SUCH AS SOLVING FOR X IN THE EQUATION $x^2 + 4x + 4 = 0$?	19.1	12.6
A 8	A1-8 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES?	23.6	11.2
A 9	A1-9 DO YOU USE TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT?	30.3	12.6
A 10	A1-10 DO YOU SOLVE OR USE PROPORTIONS? AN EXAMPLE OF A PROPORTION IS 2 : 5 :: 4 : 10. ANOTHER WAY TO EXPRESS THE SAME RELATIONSHIP IS $2/5 = 4/10$. SOMETIMES, ONE OF THE QUANTITIES IS UNKNOWN AND HAS TO BE SOLVED FOR, SUCH AS 2 : X :: 4 : 10 OR IN THIS CASE IS UNKNOWN).	38.2	28.7
A 11	A1-11 DO YOU USE MATHEMATICAL EXPONENTS OR SUBSCRIPTS IN OTHER THAN POWERS OF 10?	36.0	23.8
A 12	A2-1 DO YOU USE (PERHAPS IN TECHNICAL ORDERS) THE TERM VOLTAGE OR VOLT (V)?	42.3	48.8

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

KEESLER EPI CAREER LADDERS, ELECTRONIC PRINCIPLES INVENTORY (EPI) DATA ARE PRESENTED BELOW EACH DUTY TITLE. DATA FOR THIS PRINTOUT WERE COLLECTED FROM CAREER LADDER INCUMBENTS DURING THE PERIOD DECEMBER 1982 THROUGH JULY 1983.

USE OF EPI PRINTOUT: THE PERCENT OF VARIOUS CAREER LADDER GROUPS RESPONDING TO EPI QUESTIONS IS LISTED TO THE RIGHT OF EACH EPI ITEM. THUS, THE APPROPRIATE SAMPLE CRITERION GROUPS CAN BE IDENTIFIED WITH THE COLUMN HEADINGS AT THE TOP RIGHT OF EACH PRINTOUT PAGE. THEN THE PERCENT OF THAT GROUP USING THE CONCEPT OR PIECE OF EQUIPMENT CAN BE IDENTIFIED.

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FOR ASSISTANCE IN USING PRINTOUTS PHONE USAFOMC/DHYO, AUTOVON 987-5811.

205 307
70 70
(M) (M)

D TSK TITLES

A MATHEMATICS (A1), DIRECT CURRENT (A2), RESISTANCE AND RESISTIVE CIRCUITS (A3)

- | | | | | |
|------|-------|--|------|------|
| A 1 | A1-1 | IN YOUR PRESENT JOB, 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? | 29.2 | 64.3 |
| A 2 | A1-2 | DO YOU USE PUBLICATIONS, SUCH AS 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? | 27.0 | 44.1 |
| A 3 | A1-3 | DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS? | 40.4 | 46.9 |
| A 4 | A1-4 | DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY? | 27.0 | 20.3 |
| A 5 | A1-5 | DO YOU SOLVE FOR UNKNOWN QUANTITIES SUCH AS SOLVING FOR X IN THE EQUATION $X + 6 = 8?$ | 44.9 | 39.2 |
| A 6 | A1-6 | DO YOU USE LOGARITHM TABLES? | 22.5 | 43.4 |
| A 7 | A1-7 | DO YOU SOLVE QUADRATIC EQUATIONS SUCH AS SOLVING FOR X IN THE EQUATION $X^2 + 4X + 4 = 0?$ | 19.1 | 12.6 |
| A 8 | A1-8 | DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES? | 23.6 | 11.2 |
| A 9 | A1-9 | DO YOU USE TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT? | 30.3 | 12.6 |
| A 10 | A1-10 | DO YOU SOLVE OR USE PROPORTIONS? AN EXAMPLE OF A PROPORTION IS $2 : 5 :: 4 : 10$. ANOTHER WAY TO EXPRESS THE SAME RELATIONSHIP IS $2/5 = 4/10$. SOMETIMES, ONE OF THE QUANTITIES IS UNKNOWN AND HAS TO BE SOLVED FOR, SUCH AS $2 : X :: 4 : 10$ (X IN THIS CASE IS UNKNOWN). | 38.2 | 28.7 |
| A 11 | A1-11 | DO YOU USE MATHEMATICAL EXPONENTS OR SUBSCRIPTS IN OTHER THAN POWERS OF 10? | 36.0 | 23.8 |
| A 12 | A2-1 | DO YOU USE (PERHAPS IN TECHNICAL ORDERS) THE TERM VOLTAGE OR VOLT (V)? | 42.3 | 48.8 |

Q TSK	TITLES	205	307
		70	70
		(M)	(M)
A 13	A2-2 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM ELECTROMOTIVE FORCE (EMF)?	11.2	15.4
A 14	A2-3 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM OHM?	25.8	80.4
A 15	A2-4 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM ION?	7.9	5.6
A 16	A2-5 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM DYNE?	1.1	1.4
A 17	A2-6 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM AMPERE?	25.8	77.6
A 18	A2-7 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM NEUTRON?	5.6	5.6
A 19	A2-8 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM COULOMB?	5.6	6.3
A 20	A2-9 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM PROTON?	4.5	5.6
A 21	A2-10 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM ELECTRON?	22.5	28.7
A 22	A2-11 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM CURRENT?	31.5	82.5
A 23	A2-12 DO YOU USE (PERHAPS IN TECHNICAL ORDERS OR ELSEWHERE) THE TERM WATTAGE?	39.3	72.0
A 24	A2-13 DO YOU DETERMINE IF TWO OR MORE BATTERIES MUST BE CONNECTED IN SERIES OR PARALLEL TO ACHIEVE A SPECIFIC VOLTAGE AND/OR CURRENT?	1.1	21.0
A 25	A3-1 DO YOU WORK WITH RESISTORS OR RESISTIVE CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM B1-1; IF YES, CONTINUE.	2.2	40.6
A 26	A3-2 DO YOU INSPECT RESISTORS?	.0	15.4
A 27	A3-3 DO YOU CLEAN RESISTORS?	.0	5.6
A 28	A3-4 DO YOU ADJUST RESISTORS?	.0	18.9

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE

4

205 307
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0 TSK TITLES

- A 29 A3-5 DO YOU MEASURE RESISTORS?
- A 30 A3-6 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASK YOU PERFORM?
- A 31 A3-7 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY CARBON?
- A 32 A3-8 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED WIRE?
- A 33 A3-9 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY SLIDE TAP?
- A 34 A3-10 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY RHEOSTAT?
- A 35 A3-11 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY POTENTIOMETER?
- A 36 A3-12 DO YOU USE OR REFER TO SYMBOLS THAT IDENTIFY OR CLASSIFY FIXED FILM?
- A 37 A3-13 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE?
- A 38 A3-14 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE?
- A 39 A3-15 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE?
- A 40 A3-16 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES?
- A 41 A3-17 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR SERIES RESISTIVE CIRCUITS?
- A 42 A3-18 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE CIRCUITS?
- A 43 A3-19 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE CIRCUITS?

.0 31.5
.0 2.8
.0 9.8
.0 17.5
.0 11.2
.0 17.5
.0 23.1
.0 7.0
.0 16.9
.0 16.1
.0 2.8
1.1 35.7
2.2 27.3
2.2 23.1
2.2 21.0

205 307
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(M) (M)

D TSK TITLES

- A 44 A3-20 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE CIRCUITS? 2.2 23.1
- A 45 A3-21 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS? 1.1 20.7
- A 46 A3-22 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS? 1.1 23.1
- A 47 A3-23 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS? 1.1 10.2
- A 48 A3-24 DO YOU USE OR REFER TO INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS? 1.1 17.5
- A 49 A3-25 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR SERIES PARALLEL RESISTIVE CIRCUITS? 1.1 21.0
- A 50 A3-26 DO YOU USE OR REFER TO TOTAL RESISTANCE PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS? 1.1 25.2
- A 51 A3-27 DO YOU USE OR REFER TO TOTAL CURRENT PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS? 1.1 21.7
- A 52 A3-28 DO YOU USE OR REFER TO INDIVIDUAL VOLTAGE DROP PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS? 1.1 17.5
- A 53 A3-29 DO YOU USE OR REFER TO INDIVIDUAL BRANCH CURRENT PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS? 1.1 16.8
- A 54 A3-30 DO YOU USE OR REFER TO POWER DISSIPATION PARAMETERS FOR PARALLEL RESISTIVE CIRCUITS? 1.1 19.6
- A 55 A3-31 DO YOU CALCULATE TOTAL RESISTANCE PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS? 1.1 23.1
- A 56 A3-32 DO YOU CALCULATE TOTAL CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS? 1.1 19.6
- A 57 A3-33 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROP PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS? 1.1 17.5

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 6

205 307
70 70
(M) (M)

D TSM TITLES

A 58 A3-34 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENT PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?

1.1 16.8

A 59 A3-35 DO YOU CALCULATE POWER DISSIPATION PARAMETERS FOR SERIES RESISTIVE, SERIES PARALLEL RESISTIVE, OR PARALLEL RESISTIVE CIRCUITS?

1.1 18.2

B METERS/MULTIMETERS (B1), ALTERNATING CURRENT (AC) (B2), INDUCTORS AND INDUCTIVE REACTANCE (B3)

B 60 B1-1 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE RESISTANCE?

4.5 57.3

B 61 B1-2 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE VOLTAGE?

16.9 72.0

B 62 B1-3 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE CURRENT?

4.5 62.9

B 63 B1-4 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE POWER?

9.0 51.0

B 64 B1-5 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE FREQUENCY?

21.3 74.8

B 65 B1-6 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE TEMPERATURE?

6.7 9.1

B 66 B1-7 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE PRESSURE?

2.2 2.8

B 67 B1-8 DO YOU USE METERS OR MULTIMETERS IN YOUR PRESENT JOB TO MEASURE LIGHT LEVELS?

2.2 .7

B 68 B2-1 DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM EFFECTIVE VOLTAGE (RMS) IN YOUR PRESENT JOB?

29.2 58.0

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

205 307
70 70
(M) (M)

D TSM TITLES

B 69	B2-2	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PEAK TO PEAK VOLTAGE IN YOUR PRESENT JOB?	34.0	63.6
B 70	B2-3	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM AVERAGE VOLTAGE (DC) IN YOUR PRESENT JOB?	30.3	55.9
B 71	B2-4	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM WAVE LENGTH IN YOUR PRESENT JOB?	49.4	46.9
B 72	B2-5	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM FREQUENCY IN YOUR PRESENT JOB?	70.8	82.5
B 73	B2-6	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM INSTANTANEOUS VALUE IN YOUR PRESENT JOB?	27.0	23.8
B 74	B2-7	DO YOU USE OR REFER TO THE ALTERNATING CURRENT (AC) TERM PHASE RELATIONSHIPS IN YOUR PRESENT JOB?	48.3	60.1
B 75	B3-1	DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKO COILS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C1-1; IF YES, CONTINUE.	4.5	14.0
B 76	B3-2	DO YOU INSPECT INDUCTORS?	.0	4.2
B 77	B3-3	DO YOU CLEAN INDUCTORS?	.0	.7
B 78	B3-4	DO YOU ADJUST INDUCTORS?	.0	4.2
B 79	B3-5	DO YOU MEASURE INDUCTORS?	.0	5.6
B 80	B3-6	DO YOU USE OR REFER TO INDUCTANCE?	2.2	11.9
B 81	B3-7	DO YOU USE OR REFER TO HENRIES?	.0	7.0
B 82	B3-8	DO YOU USE OR REFER TO INDUCTIVE REACTANCE?	2.2	11.2
B 83	B3-9	DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS?	.0	1.4
B 84	B3-10	DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS?	.0	2.8
B 85	B3-11	DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS?	1.1	2.8
B 86	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	2.1

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 8

205 3C7
70 70
(M) (M)

D TSK TITLES

B 87 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?

B 88 B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH?

B 89 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?

B 90 B3-16 DO YOU CALCULATE INDUCTANCE IN ELECTRICAL/ELECTRONIC CIRCUITS?

B 91 B3-17 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS?

B 92 B3-18 DO YOU CALCULATE INDUCTIVE REACTANCE?

B 93 B3-19 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY?

B 94 B3-20 DO YOU WORK WITH POWER INDUCTORS?

B 95 B3-21 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS?

B 96 B3-22 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS?

C CAPACITORS AND CAPACITIVE REACTANCE (C1), TRANSFORMERS (C2), MAGNETISM (C3)

C 97 C1-1 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C2-1: IF YES, CONTINUE.

C 98 C1-2 DO YOU INSPECT CAPACITORS?

C 99 C1-3 DO YOU CLEAN CAPACITORS?

.0 2.1

.0 2.8

.0 2.1

.0 4.2

.0 7.0

.0 5.6

.0 8.4

.0 .7

.0 9.8

.0 6.3

4.5 20.3

.0 4.9

.0 1.4

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 9

O TSM	TITLES	205	307
		(M)	(M)
C 100	CI-4 DO YOU ADJUST CAPACITORS?	.0	3.5
C 101	CI-5 DO YOU TEST CAPACITORS?	.0	4.9
C 102	CI-6 DO YOU DISCHARGE CAPACITORS?	.0	2.8
C 103	CI-7 DO YOU MEASURE CAPACITORS?	.0	2.8
C 104	CI-8 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE?	.0	5.6
C 105	CI-9 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC?	.0	.0
C 106	CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS?	1.1	12.6
C 107	CI-11 DO YOU USE OR REFER TO CAPACITANCE?	1.1	16.1
C 108	CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT?	1.1	7.0
C 109	CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS?	.0	6.3
C 110	CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE?	1.1	9.1
C 111	CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES?	.0	2.8
C 112	CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS?	.0	15.4
C 113	CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS?	1.1	16.1
C 114	CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC?	.0	11.2
C 115	CI-19 DO YOU CALCULATE CAPACITANCE IN ELECTRICAL/ELECTRONIC CIRCUITS?	.0	3.5
C 116	CI-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT?	1.1	3.5
C 117	CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS?	.0	1.4
C 118	CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO?	1.1	2.8

D TSM	TITLES	205 (M)	307 70 (M)
C 119	C1-23 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS?	1.1	5.6
C 120	C1-24 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY?	1.1	6.3
C 121	C1-25 DO YOU CALCULATE CAPACITIVE REACTANCE?	.0	3.5
C 122	C1-26 DO YOU WORK WITH VARIABLE CAPACITORS?	.0	9.1
C 123	C1-27 DO YOU WORK WITH TRIMMER CAPACITORS?	.0	3.5
C 124	C1-28 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS?	.0	8.4
C 125	C1-29 DO YOU WORK WITH OTHER FIXED CAPACITORS?	1.1	8.4
C 126	C2-1 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM C3-1; IF YES, CONTINUE.	3.4	24.5
C 127	C2-2 DO YOU INSPECT TRANSFORMERS?	.0	8.4
C 128	C2-3 DO YOU CLEAN TRANSFORMERS?	.0	2.8
C 129	C2-4 DO YOU ADJUST TRANSFORMERS?	.0	8.9
C 130	C2-5 DO YOU TROUBLESHOOT TRANSFORMERS?	.0	6.3
C 131	C2-6 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)?	.0	.0
C 132	C2-7 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M?	.0	.7
C 133	C2-8 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS?	.0	3.5
C 134	C2-9 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS?	.0	3.5
C 135	C2-10 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS?	.0	9.1
C 136	C2-11 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS?	.0	5.6
C 137	C2-12 DO YOU WORK WITH AUTOTRANSFORMERS?	.0	2.1
C 138	C2-13 DO YOU WORK WITH POWER TRANSFORMERS?	1.1	5.6
C 139	C2-14 DO YOU WORK WITH AUDIO TRANSFORMERS?	.0	20.3
C 140	C2-15 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS?	.0	7.7

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTD4 PAGE 11

D TSK	TITLES	205 70 (M)	307 70 (M)
C 141	C2-16 DO YOU WORK WITH SATURABLE CORE TRANSFORMERS?	.0	1.4
C 142	C2-17 DO YOU WORK WITH SENSING TRANSFORMERS?	.0	.0
C 143	C2-18 DO YOU WORK WITH CONTROL TRANSFORMERS?	.0	1.4
C 144	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE?	.0	7.0
C 145	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE?	.0	6.3
C 146	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES?	.0	3.5
C 147	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO?	.0	3.5
C 148	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO?	.0	2.8
C 149	C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS?	.0	13.3
C 150	C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	7.7
C 151	C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	9.8
C 152	C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	11.2
C 153	C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	4.2
C 154	C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	4.9
C 155	C2-30 DO YOU REFER TO VARIABLE TRANSFORMER SCHEMATIC SYMBOLS?	.0	7.7
C 156	C2-31 DO YOU REFER TO COMBINATIONS OF SCHEMATIC SYMBOLS FOR TRANSFORMERS?	.0	9.8

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 12

O TSM	TITLES	205 70 (M)	307 70 (M)
C 157	C2-32 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS?	.0	1.4
C 158	C2-33 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH?	.0	1.4
C 159	C2-34 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO?	.0	4.2
C 160	C2-35 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS?	1.1	8.4
C 161	C2-36 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	.0	4.2
C 162	C2-37 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	.0	2.1
C 163	C2-38 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS?	.0	2.1
C 164	C2-39 DO YOU INSPECT THREE PHASE TRANSFORMERS?	.0	.0
C 165	C2-40 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS?	.0	.0
C 166	C2-41 DO YOU ADJUST THREE PHASE TRANSFORMERS?	.0	.0
C 167	C2-42 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS?	.0	.0
C 168	C3-1 DO YOU USE OR REFER TO PERMANENT MAGNETS?	5.6	4.2
C 169	C3-2 DO YOU USE OR REFER TO TEMPORARY MAGNETS?	7.9	2.1
C 170	C3-3 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS?	9.0	.7
C 171	C3-4 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS?	6.7	.7
C 172	C3-5 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS?	7.9	.7
C 173	C3-6 DO YOU USE OR REFER TO RESIDUAL MAGNETISM?	7.9	2.1
C 174	C3-7 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX?	13.5	5.6

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

205	307
70	70
(M)	(P)

D TSM TITLES

- C 175 C3-8 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM?
- C 176 C3-9 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM?
- C 177 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION?
- C 178 C3-11 DO YOU USE OR REFER TO FLUX DENSITY?
- C 179 C3-12 DO YOU USE OR REFER TO SATURABLE REACTANCE?

 D RCL CIRCUITS (01), TIME CONSTANTS (02), FILTERS (03)

- D 180 D1-1 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM D2-1; IF YES, CONTINUE.
- D 181 D1-2 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS?
- D 182 D1-3 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS?
- D 183 D1-4 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS?
- D 184 D1-5 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS?
- D 185 D1-6 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS?
- D 186 D1-7 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS?
- D 187 D1-8 DO YOU USE OR REFER TO TRUE POWER (P SUB T) WHEN WORKING WITH RCL CIRCUITS?
- D 188 D1-9 DO YOU USE OR REFER TO MAXIMUM POWER (P SUB M) WHEN WORKING WITH RCL CIRCUITS?
- D 189 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (P SUB AVE) WHEN WORKING WITH RCL CIRCUITS?

6.7	11.9
2.2	2.8
1.1	3.5
3.4	4.2
2.2	3.5
3.4	3.5
5.6	9.1
4.5	7.0
5.6	7.0
5.6	7.7

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 14

D TSK	TITLES	205	307
0 190	01-11 DO YOU USE OR REFER TO APPARENT POWER (P SUB A) WHEN WORKING WITH RCL CIRCUITS?	70 (P)	70 (P)
0 191	01-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS?	3.4	4.2
0 192	01-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS?	2.2	4.9
0 193	01-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS?	2.2	7.7
0 194	01-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS?	5.6	14.0
0 195	01-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS?	4.5	10.5
0 196	01-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS?	3.4	10.5
0 197	01-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS?	4.5	4.9
0 198	01-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS?	4.5	12.6
0 199	01-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS?	1.1	4.9
0 200	01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS SUCH AS: SINE OF AND ANGLE = OPPOSITE SIDE / HYPOTENUSE?	2.2	4.9
0 201	01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS?	2.2	2.1
0 202	01-23 DO YOU USE OR REFER TO TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS?	.0	3.5
0 203	01-24 DO YOU USE OR REFER TO PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS?	.0	7.0
0 204	01-25 DO YOU USE OR REFER TO TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS?	1.1	2.1
		.0	9.1

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 15

D TSK	TITLES	205	307	70	(M)	(P)
D 205	01-26 DO YOU USE OR REFER TO IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS?	.0	2.1			
D 206	01-27 DO YOU USE OR REFER TO APPARENT POWER (P SUB A) FOR SERIES RCL CIRCUITS?	1.1	3.5			
D 207	01-28 DO YOU USE OR REFER TO TRUE POWER (P SUB T) FOR SERIES RCL CIRCUITS?	1.1	4.9			
D 208	01-29 DO YOU USE OR REFER TO POWER FACTORS (PF) FOR SERIES RCL CIRCUITS?	.0	4.2			
D 209	01-30 DO YOU USE OR REFER TO TOTAL CURRENT FOR PARALLEL RCL CIRCUITS?	.0	4.9			
D 210	01-31 DO YOU USE OR REFER TO IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS?	.0	3.5			
D 211	01-32 DO YOU USE THE ASSUMED VOLTAGE METHOD FOR DETERMINING TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS?	.0	1.4			
D 212	01-33 DO YOU USE OHM'S LAW FOR DETERMINING TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS?	.0	4.9			
D 213	01-34 DO YOU CHECK CAPACITORS USING OHMMETERS?	.0	3.5			
D 214	01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION?	.0	2.1			
D 215	01-36 DO YOU CHECK INDUCTORS USING OHMMETERS?	.0	4.2			
D 216	01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION?	.0	2.1			
D 217	01-38 DO YOU CHECK RESISTORS USING OHMMETERS?	.0	7.7			
D 218	01-39 DO YOU CHECK RESISTORS USING SUBSTITUTION?	.0	2.1			
D 219	01-40 DO YOU USE OR REFER TO THE RULE THAT PHASE ANGLE (THETA) = 0, POWER FACTOR (PF) = 1, AND APPARENT POWER (P SUB A) = TRUE POWER (P SUB T) FOR RESONANT CIRCUITS?	1.1	1.4			
D 220	01-41 DO YOU USE OR REFER TO RESONANT FREQUENCIES FOR RCL CIRCUITS?	1.1	5.6			
D 221	01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS?	1.1	6.3			

D TSM	TITLES	205 70 (M)	307 70 (M)
D 222	D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS?	1.1	6.3
D 223	D1-44 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 OF THE PEAK CURRENT VALUE?	2.2	6.3
D 224	D1-45 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO THE QUALITY OF THE COIL (Q)?	1.1	2.8
D 225	D1-46 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS?	1.1	4.9
D 226	D2-1 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS? IF NO, GO TO ITEM D3-1; IF YES, CONTINUE.	5.6	1.4
D 227	D2-2 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)?	.0	.7
D 228	D2-3 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS?	3.4	.7
D 229	D2-4 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS?	.0	.7
D 230	D2-5 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	.7
D 231	D2-6 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES?	.0	.7
D 232	D2-7 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	.7

205 307
70 70 (M)
(M) (M)

D TSK TITLES

D 233 03-1 00 YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM E1-1; IF YES, CONTINUE.

D 234 03-2 00 YOU INSPECT FILTER CIRCUITS?
21.3 28.7

D 235 03-3 00 YOU CLEAN FILTER CIRCUITS?
.0 7.7

D 236 03-4 00 YOU ALIGN OR ADJUST FILTER CIRCUITS?
.0 2.1

D 237 03-5 00 YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL?
2.2 9.8

D 238 03-6 00 YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS?
.0 14.7

D 239 03-7 00 YOU WORK WITH LOW PASS FILTERS?
.0 5.6

D 240 03-8 00 YOU WORK WITH HIGH PASS FILTERS?
22.5 22.4

D 241 03-9 00 YOU WORK WITH BANDPASS FILTERS?
21.3 21.7

D 242 03-10 00 YOU WORK WITH BAND-REJECT FILTERS?
20.2 27.3

D 243 03-11 00 YOU WORK WITH FILTERS, BUT DON'T REMEMBER WHICH TYPE?
19.1 21.0

D 244 03-12 00 YOU WORK WITH L-SECTION FILTER CONFIGURATIONS?
3.4 .7

D 245 03-13 00 YOU WORK WITH T-SECTION FILTER CONFIGURATIONS?
.0 7.0

D 246 03-14 00 YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS?
.0 7.7

D 247 03-15 00 YOU WORK WITH YTTRIUM IRON GARNET (YIG) FILTERS?
.0 5.6

D 248 03-16 00 YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS?
3.4 .7

D 249 03-17 00 YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS?
.0 1.4

E COUPLING (E1), SOLDERING OR SOLDERLESS CONNECTIONS(E2), RELAYS (E3)

E 249 E1-1 DO YOU WORK WITH COUPLING DEVICES OR CIRCUITRY IN YOUR PRESENT JOB? IF NO, GO TO ITEM E2-1; IF YES, CONTINUE.

6.7 18.2

O TSK	TITLES	205 70 (M)	307 70 (M)
E 250	E1-2 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING?	1.1	4.2
E 251	E1-3 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING (MATCHING)?	2.2	14.7
E 252	E1-4 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH OPTICAL COUPLING?	.0	.7
E 253	E1-5 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING?	.0	12.6
E 254	E1-6 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING?	1.1	4.9
E 255	E1-7 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING?	.0	14.0
E 256	E1-8 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING?	.0	12.6
E 257	E1-9 DO YOU WORK WITH DIRECT COUPLED CIRCUITS?	3.4	7.7
E 258	E1-10 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS?	1.1	5.6
E 259	E1-11 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS?	1.1	4.9
E 260	E1-12 DO YOU WORK WITH OPTICAL COUPLING?	.0	.7
E 261	E1-13 DO YOU WORK WITH OPTICAL COUPLING CIRCUITS?	.0	.7
E 262	E1-14 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS?	1.1	13.3
E 263	E2-1 IN YOUR PRESENT JOB, DO YOU CONNECT ELECTRONIC CIRCUITS USING SOLDERLESS CONNECTIONS OR SOLDERING TECHNIQUES? IF NO, GO TO ITEM E3-1; IF YES, CONTINUE.	1.1	27.3
E 264	E2-2 DO YOU SOLDER CONNECTIONS?	1.1	20.3
E 265	E2-3 DO YOU DESOLDER CONNECTIONS?	1.1	19.6

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 19

D TSK	TITLES	205	307	70	70	(M)	(M)
E 266	E2-4 DO YOU PERFORM HIGH RELIABILITY SOLDERING?	.0	7.0				
E 267	E2-5 DO YOU INSPECT SOLDERED CONNECTIONS?	.0	20.3				
E 268	E2-6 DO YOU CLEAN OR TIN CONNECTIONS?	1.1	18.2				
E 269	E2-7 DO YOU MAKE HARDWIRE CONNECTIONS?	1.1	22.4				
E 270	E2-8 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS?	.0	8.4				
E 271	E2-9 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS?	.0	8.4				
E 272	E2-10 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS?	.0	6.3				
E 273	E2-11 DO YOU SOLDER ACTIVE COMPONENTS, SUCH AS INTEGRATED CIRCUITS?	.0	4.9				
E 274	E2-12 DO YOU PERFORM WIRE WRAPPING IN LIEU OF SOLDERING?	.0	18.9				
E 275	E2-13 DO YOU PERFORM CHIMING IN LIEU OF SOLDERING?	.0	11.9				
E 276	E2-14 DO YOU PERFORM WIRE CONNECTIONS USING A 714 PUNCH-ON TOOL IN LIEU OF SOLDERING?	.0	6.3				
E 277	E3-1 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB? IF NO, GO TO ITEM F1-1; IF YES, CONTINUE.	1.1	28.0				
E 278	E3-2 DO YOU ADJUST RELAYS?	.0	9.1				
E 279	E3-3 DO YOU CLEAN RELAYS?	.0	2.8				
E 280	E3-4 DO YOU INSPECT RELAYS?	.0	6.3				
E 281	E3-5 DO YOU TROUBLESHOOT RELAYS?	.0	21.7				
E 282	E3-6 DO YOU MONITOR BIAS OUTPUT ON RELAYS?	.0	18.9				
E 283	E3-7 DO YOU REMOVE OR REPLACE RELAYS?	.0	9.8				
E 284	E3-8 DO YOU PERFORM TASKS ON CONTACTS OF RELAYS?	.0	2.8				
E 285	E3-9 DO YOU PERFORM TASKS ON COILS OF RELAYS?	.0	.0				
E 286	E3-10 DO YOU PERFORM TASKS ON CORES OF RELAYS?	.0	.7				
E 287	E3-11 DO YOU PERFORM TASKS ON ARMATURES OF RELAYS?	.0	2.8				
E 288	E3-12 DO YOU PERFORM TASKS ON SPRINGS OF RELAYS?	.0	2.1				
E 289	E3-13 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS?	.0	6.3				

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCCPT04 PAGE 20

D TSK	TITLES	205	307
		(M)	(M)
E 290	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS?	.0	6.3
E 291	E3-15 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS?	.0	6.3
E 292	E3-16 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS?	.0	5.6
E 293	E3-17 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS?	.0	7.0
E 294	E3-18 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE?	.0	4.9

F MICROPHONES AND SENSING DEVICES (F1), SPEAKERS (F2), OSCILLOSCOPES (F3)

F 295	F1-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES OR OTHER SENSING DEVICES SUCH AS TRANSDUCERS? IF NO, GO TO ITEM F2-1; IF YES, CONTINUE.	20.2	19.6
F 296	F1-2 DO YOU INSPECT MICROPHONES?	2.2	9.1
F 297	F1-3 DO YOU CLEAN MICROPHONES?	1.1	7.0
F 298	F1-4 DO YOU OPERATE MICROPHONES?	19.1	19.6
F 299	F1-5 DO YOU TROUBLESHOOT MICROPHONE WIRE CONNECTIONS?	1.1	9.8
F 300	F1-6 DO YOU TROUBLESHOOT MICROPHONE COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	.0	4.2
F 301	F1-7 DO YOU REMOVE AND REPLACE COMPLETE MICROPHONES?	5.6	11.2
F 302	F1-8 DO YOU REMOVE OR REPLACE MICROPHONE COMPONENT PARTS?	.0	2.8
F 303	F1-9 DO YOU PERFORM TASKS ON CARBON MICROPHONES?	2.2	7.7
F 304	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES?	.0	.7
F 305	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES?	1.1	1.4
F 306	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES?	3.4	7.0
F 307	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES?	.0	.7

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 21

D TSK	TITLES	205	307
		(M)	(M)
F 308	F1-14 DO YOU PERFORM TASKS ON TRANSDUCERS?	1.1	1.4
F 309	F2-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS? IF NO, GO TO ITEM F3-1; IF YES, CONTINUE.	22.5	42.0
F 310	F2-2 DO YOU INSPECT SPEAKERS?	2.2	15.4
F 311	F2-3 DO YOU CLEAN SPEAKERS?	2.2	9.1
F 312	F2-4 DO YOU OPERATE SPEAKERS?	21.3	44.1
F 313	F2-5 DO YOU TROUBLESHOOT SPEAKER WIRE CONNECTIONS?	3.4	17.5
F 314	F2-6 DO YOU TROUBLESHOOT SPEAKER COMPONENT PARTS OTHER THAN WIRE CONNECTIONS?	.0	2.0
F 315	F2-7 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS?	4.5	9.1
F 316	F2-8 DO YOU REMOVE OR REPLACE SPEAKER PARTS?	.0	2.1
F 317	F2-9 DO YOU PERFORM ANY TASKS ON CONE SPEAKER PARTS?	.0	2.1
F 318	F2-10 DO YOU PERFORM ANY TASKS ON SPIDER SPEAKER PARTS?	.0	.7
F 319	F2-11 DO YOU PERFORM ANY TASKS ON FIELD COIL SPEAKER PARTS?	.0	1.4
F 320	F2-12 DO YOU PERFORM ANY TASKS ON VOICE COIL SPEAKER PARTS?	.0	2.8
F 321	F2-13 DO YOU PERFORM ANY TASKS ON PERMANENT MAGNET SPEAKER PARTS?	.0	.7
F 322	F2-14 DO YOU PERFORM ANY TASKS ON ELECTROMAGNET SPEAKER PARTS?	.0	.7
F 323	F2-15 DO YOU PERFORM ANY TASKS ON SOFT IRON CORE SPEAKER PARTS?	.0	.7
F 324	F3-1 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB? IF NO, GO TO ITEM G1-1; IF YES, CONTINUE.	38.2	68.5
F 325	F3-2 DO YOU PERFORM OPERATIONAL CHECKS USING OSCILLOSCOPES?	30.3	60.8
F 326	F3-3 DO YOU PERFORM ALIGNMENTS OR ADJUSTMENTS USING OSCILLOSCOPES?	15.7	38.5
F 327	F3-4 DO YOU TROUBLESHOOT ELECTRONIC CIRCUITS USING OSCILLOSCOPES?	2.2	49.0
F 328	F3-5 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCIES?	37.1	54.5
F 329	F3-6 DO YOU USE OSCILLOSCOPES TO MEASURE TIME?	36.0	43.4

NEESLER ELECTRONIC PPINCIPLES INVENTORY DATA

D TSM	TITLES	205 TO (M)	307 TO (M)
F 330	F3-7 DO YOU USE OSCILLOSCOPES TO OBSERVE LISSAJOUS PATTERNS?	28.1	14.7
F 331	F3-8 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES.	10.1	25.9
F 332	F3-9 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS?	24.7	15.4
F 333	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGES?	30.3	49.0
F 334	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGES?	25.8	58.0
F 335	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS?	23.6	36.4
F 336	F3-13 DO YOU USE OSCILLOSCOPES TO OBSERVE DATA PATTERNS?	31.5	63.6
F 337	F3-14 DO YOU USE OSCILLOSCOPES TO MEASURE RIPPLE VOLTAGES?	9.0	25.2
F 338	F3-15 DO YOU USE OSCILLOSCOPES TO MEASURE PHASE JITTERS?	16.9	41.3
F 339	F3-16 DO YOU USE OSCILLOSCOPES TO DISPLAY SWEEP GENERATOR PATTERNS?	24.7	33.6
F 340	F3-17 DO YOU USE OSCILLOSCOPES TO OBSERVE PHASE RELATIONSHIPS?	33.7	50.3
F 341	F3-18 DO YOU USE OSCILLOSCOPES TO OBSERVE SAMPLING DISPLAYS?	21.3	24.5

6 SEMICONDUCTOR DIODES (G1), TRANSISTORS (G2), TRANSISTOR AMPLIFIERS (G3)

G 342	G1-1 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB? IF NO, GO TO ITEM G2-1; IF YES, CONTINUE.	2.2	2.1
G 343	G1-2 DO YOU INSPECT DIODES?	.0	1.4
G 344	G1-3 DO YOU CHECK DIODES?	.0	1.4

D TSK	TITLES	205 70 (M)	307 70 (M)
6 345	61-4 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES?	.0	.0
6 346	61-5 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE?	.0	.0
6 347	61-6 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR JIODES?	.0	.0
6 348	61-7 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES?	.0	1.4
6 349	61-8 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE?	.0	2.1
6 350	61-9 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW?	.0	.0
6 351	61-10 DO YOU MEASURE FORWARD BIAS RESISTANCE?	.0	1.4
6 352	61-11 DO YOU MEASURE REVERSE BIAS RESISTANCE?	.0	1.4
6 353	61-12 DO YOU READ DIODE COLOR CODING?	.0	.7
6 354	61-13 DO YOU READ DIODE NUMBERING SYSTEM, SUCH AS IN 5387	.0	.0
6 355	61-14 DO YOU USE THE SYMBOL ON DIODE WHICH INDICATES THE CATHODE END?	.0	1.4
6 356	61-15 DO YOU DETERMINE DIRECTION OF CURRENT THROUGH A DIODE?	.0	1.4
6 357	61-16 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON?	.0	.7
6 358	61-17 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OR RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)?	.0	.7
6 359	61-18 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)?	.0	.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 24

O TSK	TITLES	205 70 (M)	307 70 (M)
6 360	61-19 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS?	.0	.0
6 361	61-20 DO YOU NEED AN UNDERSTANDING OF VALENCE BAND IN SEMICONDUCTOR MATERIALS?	.0	.0
6 362	61-21 DO YOU NEED AN UNDERSTANDING OF FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS?	.0	.0
6 363	61-22 DO YOU NEED AN UNDERSTANDING OF CONDUCTION BAND IN SEMICONDUCTOR MATERIALS?	.0	.0
6 364	61-23 DO YOU NEED AN UNDERSTANDING OF COVALENT BONDING IN SEMICONDUCTOR MATERIALS?	.0	.0
6 365	61-24 DO YOU NEED AN UNDERSTANDING OF ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS?	.0	.0
6 366	61-25 DO YOU NEED AN UNDERSTANDING OF ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS?	.0	.7
6 367	61-26 DO YOU NEED AN UNDERSTANDING OF DONOR IMPURITY IN SEMICONDUCTORS?	.0	.0
6 368	61-27 DO YOU NEED AN UNDERSTANDING OF ACCEPTOR IMPURITY IN SEMICONDUCTORS?	.0	.0
6 369	61-28 DO YOU NEED AN UNDERSTANDING OF P-TYPE SEMICONDUCTOR MATERIAL?	.0	.0
6 370	61-29 DO YOU NEED AN UNDERSTANDING OF N-TYPE SEMICONDUCTOR MATERIAL?	.0	.0
6 371	61-30 DO YOU NEED AN UNDERSTANDING OF MAJORITY CARRIERS IN SEMICONDUCTORS?	.0	.0
6 372	61-31 DO YOU NEED AN UNDERSTANDING OF MINORITY CARRIERS IN SEMICONDUCTORS?	.0	.0
6 373	61-32 DO YOU NEED AN UNDERSTANDING OF JUNCTION RECOMBINATION IN SEMICONDUCTORS?	.0	.0
6 374	61-33 DO YOU NEED AN UNDERSTANDING OF DEPLETION REGION IN SEMICONDUCTORS?	.0	.0

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

205 307
70
(M) (P)

D TSM TITLES

6 375	61-34 DO YOU NEED AN UNDERSTANDING OF RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL?	.0	.0
6 376	61-35 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES?	.0	1.4
6 377	61-36 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS?	.0	.0
6 378	61-37 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION?	.0	.0
6 379	61-38 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS?	.0	.7
6 380	61-39 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS?	.0	.0
6 381	61-40 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS?	.0	.7
6 382	61-41 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS?	.0	.7
6 383	62-1 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM G3-1; IF YES, CONTINUE.	1.1	3.5
6 384	62-2 DO YOU INSPECT TRANSISTORS?	.0	2.1
6 385	62-3 DO YOU CHECK TRANSISTORS?	.0	1.4
6 386	62-4 DO YOU NEED AN UNDERSTANDING OF EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS?	.0	1.4
6 387	62-5 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS?	.0	.7
6 388	62-6 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS?	.0	.7
6 389	62-7 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION?	.0	.7
6 390	62-8 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION?	.0	.7

D TSM	TITLES	205 70 (M)	307 70 (M)
6 391 62-9	DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE, AND EMITTER)?	.0	.7
6 392 62-10	DO YOU USE OR REFER TO LEAKAGE CURRENT (I SUB CBO) IN A TRANSISTOR?	.0	.7
6 393 62-11	DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS?	.0	1.4
6 394 62-12	DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, A2, A3, ETC.?	.0	.7
6 395 62-13	DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION?	.0	.7
6 396 62-14	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT (I SUB B) IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT (I SUB E) USUALLY (I SUB B) BEING 2 TO 8 PERCENT OF (I SUB E)?	.0	.7
6 397 62-15	DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS?	.0	.7
6 398 62-16	DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (I SUB CBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES?	.0	.0
6 399 62-17	DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES?	.0	.0
6 400 62-18	DO YOU USE OR REFER TO BETA TRANSISTOR GAINS?	.0	.0
6 401 62-19	DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS?	.0	.0
6 402 62-20	DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS?	.0	.0
6 403 62-21	DO YOU USE OR REFER TO THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE BASE - EMITTER VOLTAGE INTO THE BASE COLLECTOR VOLTAGE (AV = VCB/VBE)?	.0	.0
6 404 62-22	DO YOU USE OR REFER TO THE CURRENT GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT (AI = IC/IB)?	.0	.0

205 307
70 70
(M) (P)

D TSM TITLES

- 6 405 62-23 DO YOU USE OR REFER TO THE POWER GAIN FOR SPECIFIC TRANSISTORS BY MULTIPLYING THE CURRENT GAIN TIMES THE VOLTAGE GAIN (AP = AI X AV)?
- 6 406 62-24 DO YOU PERFORM TRANSISTOR MATCHING THROUGH THE USE OF CURVE TRACING?
- 6 407 63-1 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM H1-1; IF YES, CONTINUE.
- 6 408 63-2 DO YOU INSPECT TRANSISTOR AMPLIFIERS?
- 6 409 63-3 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS?
- 6 410 63-4 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL?
- 6 411 63-5 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS?
- 6 412 63-6 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER?
- 6 413 63-7 DO YOU REMOVE OR REPLACE AMPLIFIER CIRCUIT COMPONENTS?
- 6 414 63-8 DO YOU USE OR REFER TO THE CHANGE IN COLLECTOR CURRENT RESULTS FROM A CHANGE IN BASE CURRENT CONCERNING TRANSISTOR AMPLIFIERS?
- 6 415 63-9 DO YOU USE OR REFER TO THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT CONCERNING TRANSISTOR AMPLIFIERS?
- 6 416 63-10 DO YOU USE OR REFER TO THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT?
- 6 417 63-11 DO YOU USE OR REFER TO THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL CONCERNING TRANSISTOR AMPLIFIERS?
- 6 418 63-12 DO YOU USE OR REFER TO THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL CONCERNING TRANSISTOR AMPLIFIERS?

.0 .0
.0 .0
5.6 21.0
.0 7.0
.0 18.9
.0 14.0
.0 1.4
2.2 18.9
.0 1.4
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KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPID4 PAGE 28

D TSK	TITLES	205 70 (M)	307 70 (P)
G 419	G3-13 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)?	.0	.7
G 420	G3-14 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR?	.0	.0
G 421	G3-15 DO YOU MEASURE VOLTAGE GAIN CONCERNING TRANSISTOR AMPLIFIERS?	1.1	9.1
G 422	G3-16 DO YOU MEASURE CURRENT GAIN CONCERNING TRANSISTOR AMPLIFIERS?	1.1	4.9
G 423	G3-17 DO YOU MEASURE POWER GAIN CONCERNING TRANSISTOR AMPLIFIERS?	1.1	15.4
G 424	G3-18 DO YOU USE OR REFER TO THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS BY DIVIDING THE CHANGE IN BASE - EMITTER VOLTAGE INTO THE CHANGE OF THE BASE COLLECTOR VOLTAGE?	.0	.0
G 425	G3-19 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION?	.0	.0
G 426	G3-20 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION?	.0	.0
G 427	G3-21 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION?	.0	.0
G 428	G3-22 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION?	.0	.0
G 429	G3-23 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION?	.0	.0

D TSM	TITLES	205 70 (M)	307 70 (M)
6 430	G3-24 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS, WHILE TROUBLESHOOTING THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION?	.0	.0
6 431	G3-25 DO YOU IDENTIFY OR TROUBLESHOOT AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS?	.0	12.6
6 432	G3-26 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS?	.0	12.6
6 433	G3-27 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS?	.0	9.8
6 434	G3-28 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS?	.0	1.4
6 435	G3-29 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS?	.0	.0
6 436	G3-30 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	.0	.0
6 437	G3-31 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS?	.0	.7
6 438	G3-32 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS?	.0	.0
6 439	G3-33 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS?	.0	.7
6 440	G3-34 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS?	.0	2.1
6 441	G3-35 DO YOU TROUBLESHOOT OR REPAIR VOLTAGE MULTIPLIERS (DOUBLERS/TRIPLERS)?	.0	1.4
6 442	G3-36 DO YOU TROUBLESHOOT OR REPAIR RF AMPLIFIERS?	1.1	4.2
6 443	G3-37 DO YOU TROUBLESHOOT OR REPAIR WIDEBAND AMPLIFIERS (VIDEO AMPS)?	1.1	2.1
6 444	G3-38 DO YOU TROUBLESHOOT OR REPAIR AUDIO AMPLIFIERS?	1.1	15.4
6 445	G3-39 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL OR POWER AMPLIFIERS?	1.1	2.1
6 446	G3-40 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	.0	.0

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTD4 PAGE 30

D TSK	TITLES	205 (P)	307 70 (P)
G 447	G3-41 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY AMPLIFIERS?	.0	.0
G 448	G3-42 DO YOU TROUBLESHOOT OR REPAIR IF AMPLIFIERS?	.0	2.1
G 449	G3-43 DO YOU TROUBLESHOOT OR REPAIR DIFFERENTIATING AMPLIFIERS (DIFF AMPS)?	.0	.0
G 450	G3-44 DO YOU TROUBLESHOOT OR REPAIR OPERATIONAL AMPLIFIERS (OP AMPS)?	.0	1.4
G 451	G3-45 DO YOU TROUBLESHOOT OR REPAIR INTEGRATING AMPLIFIERS?	.0	1.4
G 452	G3-46 DO YOU TROUBLESHOOT OR REPAIR SUMMING AMPLIFIERS?	.0	.7

H	SOLID-STATE SPECIAL PURPOSE DEVICES (H1), POWER SUPPLIES (H2), OSCILLATORS (H3)	-----	
H 453	H1-1 DO YOU USE OR REFER TO VARACTORS/VARICAP COMPONENTS?	1.1	4.9
H 454	H1-2 DO YOU USE OR REFER TO TUNNEL DIODE COMPONENTS?	1.1	6.3
H 455	H1-3 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTOR (FET) COMPONENTS?	2.2	5.6
H 456	H1-4 DO YOU USE OR REFER TO UNIUNCTION TRANSISTOR COMPONENTS?	1.1	3.5
H 457	H1-5 DO YOU USE OR REFER TO ZENEP DIODE COMPONENTS?	1.1	8.4
H 458	H1-6 DO YOU USE OR REFER TO INTEGRATED CIRCUIT COMPONENTS?	10.1	16.8
H 459	H1-7 DO YOU USE OR REFER TO PIN DIODE COMPONENTS?	3.4	2.8
H 460	H1-8 DO YOU USE OR REFER TO LED'S/LCD'S COMPONENTS?	23.6	32.9
H 461	H1-9 DO YOU USE OR REFER TO FANTAIL TRANSISTOR COMPONENTS?	1.1	.0
H 462	H1-10 DO YOU USE OR REFER TO SILICON CONTROL RECTIFIER (SCR) COMPONENTS?	1.1	4.2
H 463	H1-11 DO YOU USE OR REFER TO TRIAC COMPONENTS?	1.1	2.8
H 464	H1-12 DO YOU USE OR REFER TO PROGRAMMABLE UNIUNCTION TRANSISTOR (PUT) COMPONENTS?	1.1	.0

D TSK	TITLES	205	307	70	70	(M)	(P)
H 465	H1-13 DO YOU USE OR REFER TO SILICON CONTROLLED SWITCH (SCS) COMPONENTS?	1.1	2.1				
H 466	H1-14 DO YOU USE OR REFER TO SILICON UNILATERAL SWITCH (SUS) COMPONENTS?	1.1	2.1				
H 467	H2-1 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES? IF NO, GO TO ITEM H3-1; IF YES, CONTINUE.	1.1	28.0				
H 468	H2-2 DO YOU INSPECT POWER SUPPLIES?	.0	12.6				
H 469	H2-3 DO YOU CLEAN POWER SUPPLIES?	.0	7.0				
H 470	H2-4 DO YOU ALIGN OR ADJUST POWER SUPPLIES?	.0	11.2				
H 471	H2-5 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL?	.0	14.7				
H 472	H2-6 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS?	.0	1.4				
H 473	H2-7 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES?	.0	14.0				
H 474	H2-8 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS?	.0	.0				
H 475	H2-9 DO YOU INSPECT OR SERVICE COOLANT LEVELS?	.0	.7				
H 476	H2-10 DO YOU WORK WITH HALF-WAVE RECTIFIERS?	.0	2.1				
H 477	H2-11 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS?	.0	3.5				
H 478	H2-12 DO YOU WORK WITH BRIDGE RECTIFIERS?	.0	4.2				
H 479	H2-13 DO YOU WORK WITH THREE-PHASE RECTIFIERS?	.0	.0				
H 480	H2-14 DO YOU USE OR REFER TO INPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	.0	9.8				
H 481	H2-15 DO YOU USE OR REFER TO INPUT FREQUENCIES IN YOUR WORK WITH RECTIFIERS?	.0	11.2				
H 482	H2-16 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	.0	10.5				
H 483	H2-17 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	.0	9.8				
H 484	H2-18 DO YOU USE OR REFER TO RIPPLE AMPLITUDE IN YOUR WORK WITH RECTIFIERS?	.0	7.0				
H 485	H2-19 DO YOU USE OR REFER TO RIPPLE FREQUENCIES IN YOUR WORK WITH RECTIFIERS?	.0	7.0				

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D	TSK	TITLES	205 (M)	307 70 (M)
H	486	H2-20 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGES IN YOUR WORK WITH RECTIFIERS?	.0	1.4
H	487	H2-21 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS IN YOUR WORK WITH RECTIFIERS?	.0	9.8
H	488	H2-22 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGES IN YOUR WORK WITH RECTIFIERS?	.0	7.0
H	489	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS?	.0	4.9
H	490	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS?	.0	4.9
H	491	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS?	.0	3.5
H	492	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS?	.0	3.5
H	493	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS?	.0	3.5
H	494	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS?	.0	3.5
H	495	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER?	.0	1.4
H	496	H2-30 DO YOU WORK WITH POWER SUPPLY REGULATOR CIRCUITS OTHER THAN SOLID-STATE?	.0	4.2
H	497	H2-31 DO YOU WORK WITH SOLID-STATE POWER SUPPLY REGULATOR CIRCUITS?	.0	5.6
H	498	H3-1 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 11-1; IF YES, CONTINUE.	21.3	48.3
H	499	H3-2 DO YOU INSPECT OSCILLATORS?	3.4	16.1
H	500	H3-3 DO YOU ALIGN OR ADJUST OSCILLATORS?	5.6	28.7
H	501	H3-4 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS?	4.5	16.8
H	502	H3-5 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS?	.0	.7
H	503	H3-6 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL?	.0	13.3

D TSM	TITLES	205	307	70	(M)	(M)
M 504	H3-7 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS?	.0	1.4			
M 505	H3-8 DO YOU USE OR REFER TO FEEDBACK (DEGENERATIVE OR REGENERATIVE)?	5.6	16.1			
M 506	H3-9 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)?	5.6	9.8			
M 507	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY?	10.1	26.6			
M 508	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY?	15.7	30.1			
M 509	H3-12 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT (CRYSTAL OSCILLATIONS)?	5.6	3.5			
M 510	H3-13 DO YOU USE OR REFER TO HARMONIC DISTORTION?	12.4	39.2			
M 511	H3-14 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN DC TANK CIRCUITS?	1.1	4.2			
M 512	H3-15 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN RC NETWORKS?	1.1	4.9			
M 513	H3-16 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN CRYSTALS?	7.9	8.4			
M 514	H3-17 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN PHASE LOCK LOOPS (PLL)?	11.2	6.3			
M 515	H3-18 DO YOU WORK WITH OSCILLATORS WHICH CONTAIN - DON'T KNOW WHICH TYPE OF FDD?	4.5	21.7			
M 516	H3-19 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS?	.0	1.4			
M 517	H3-20 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS?	.0	1.4			
M 518	H3-21 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS?	.0	2.1			
M 519	H3-22 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS?	.0	.0			
M 520	H3-23 DO YOU WORK WITH VOLTAGE CONTROL SINUSOIDAL OSCILLATORS?	4.5	5.6			
M 521	H3-24 DO YOU WORK WITH CRYSTAL SINUSOIDAL OSCILLATORS?	9.0	9.8			
M 522	H3-25 DO YOU WORK WITH VOLTAGE CONTROL OSCILLATORS (VCO) SINUSOIDAL OSCILLATORS?	11.2	8.4			

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 34

D TSK	TITLES	205	307
		(M)	(M)
M 523	H3-26 DO YOU WORK WITH WIEN BRIDGE OSCILLATORS SINUSOIDAL OSCILLATORS?	.0	2.8
M 524	H3-27 DO YOU WORK WITH - DON'T KNOW WHICH TYPE OF SINUSOIDAL OSCILLATOR?	7.9	25.9
M 525	H3-28 DO YOU WORK WITH PULSE GENERATING CIRCUITS?	14.6	9.8
M 526	H3-29 DO YOU WORK WITH BLOCKING OSCILLATORS?	2.2	2.8
M 527	H3-30 DO YOU WORK WITH BURST GENERATORS?	1.1	2.1
M 528	H3-31 DO YOU WORK WITH BLOCKED OSCILLATORS?	.0	2.8

 I MULTIVIBRATORS (I1), LIMITERS AND CLAMPERS (I2), ELECTRON TUBES (I3)

I 529	I1-1 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM I2-1; IF YES, CONTINUE.	1.1	.7
I 530	I1-2 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUIT FREQUENCY DETERMINING DEVICES (FDD)?	.0	.0
I 531	I1-3 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORK FREQUENCY DETERMINING DEVICES (FDD)?	.0	.0
I 532	I1-4 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTAL FREQUENCY DETERMINING DEVICES (FDD)?	.0	.0
I 533	I1-5 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN - DON'T KNOW WHICH TYPE OF FDD?	.0	.0
I 534	I1-6 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS?	.0	.0
I 535	I1-7 DO YOU WORK WITH MONOSTABLE (ONE SHOT) MULTIVIBRATORS?	.0	.0
I 536	I1-8 DO YOU WORK WITH BISTABLE (FLIP FLOP) MULTIVIBRATORS?	.0	.0
I 537	I1-9 DO YOU WORK WITH R-S FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	.0	.0

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 35

D TSK	TITLES	205 70 (M)	307 70 (P)
I 538	11-10 DO YOU WORK WITH J-K FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	.0	.0
I 539	11-11 DO YOU WORK WITH "0" FLIP-FLOP INTEGRATED CIRCUIT REGULATORS?	.0	.0
I 540	12-1 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 13-1; IF YES, CONTINUE.	3.4	4.2
I 541	12-2 DO YOU WORK WITH SERIES DIODE LIMITERS?	.0	2.1
I 542	12-3 DO YOU WORK WITH SHUNT DIODE LIMITERS?	.0	3.5
I 543	12-4 DO YOU WORK WITH LIMITERS WITH BIAS?	.0	.7
I 544	12-5 DO YOU WORK WITH ZENER DIODE LIMITERS?	.0	2.8
I 545	12-6 DO YOU WORK WITH TRANSISTOR LIMITERS?	.0	1.4
I 546	12-7 DO YOU WORK WITH TRIODE LIMITERS?	.0	.0
I 547	12-8 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS?	.0	1.4
I 548	12-9 DO YOU WORK WITH BIAS DIODE CLAMPING CIRCUITS?	.0	.0
I 549	12-10 DO YOU WORK WITH DC RESTORERS (DCR)?	1.1	.0
I 550	13-1 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS BASIC ELECTRON TUBES (FOR PURPOSES OF THIS QUESTION DO NOT CONSIDER HIGH-FREQUENCY DEVICES SUCH AS KLYSTRONS, TRAVELING WAVE TUBES, BACKWARD WAVE OSCILLATORS, OR MAGNETRONS AS ELECTRON TUBES)? IF NO, GO TO ITEM J1-1; IF YES, CONTINUE.	2.2	2.1
I 551	13-2 DO YOU CHECK THE CONDITION OF ELECTRON TUBES?	.0	.7
I 552	13-3 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES?	.0	.7
I 553	13-4 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES?	.0	.0
I 554	13-5 DO YOU USE SCOPES TO CHECK ELECTRON TUBES?	1.1	.0
I 555	13-6 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES?	.0	.7
I 556	13-7 DO YOU USE OR REFER TO CUTOFF?	.0	.0
I 557	13-8 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING?	.0	.0
I 558	13-9 DO YOU USE OR REFER TO PEAK CURRENT RATING?	.0	.0
I 559	13-10 DO YOU USE OR REFER TO TRANSIT TIME?	.0	.0
I 560	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING?	.0	.0

D TSM	TITLES	205 70 (M)	307 70 (M)
I 561	I3-12 DO YOU USE OR REFER TO SATURATION?	.0	.0
I 562	I3-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE?	.0	.0
I 563	I3-14 DO YOU USE OR REFER TO PLATE VOLTAGE?	.0	.0
I 564	I3-15 DO YOU USE OR REFER TO PLATE CURRENT?	.0	.0
I 565	I3-16 DO YOU USE OR REFER TO GRID VOLTAGE?	.0	.0
I 566	I3-17 DO YOU USE OR REFER TO GRID CURRENT?	.0	.0
I 567	I3-18 DO YOU USE OR REFER TO CATHODE VOLTAGE?	.0	.0
I 568	I3-19 DO YOU USE OR REFER TO CATHODE CURRENT?	.0	.0
I 569	I3-20 DO YOU USE OR REFER TO FILAMENT VOLTAGE?	.0	.0
I 570	I3-21 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)?	.0	.0
I 571	I3-22 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC.) AMPLIFICATION FACTORS?	.0	.0
I 572	I3-23 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)?	.0	.0
I 573	I3-24 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE?	.0	.0
I 574	I3-25 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE?	.0	.0
I 575	I3-26 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES?	.0	.0
I 576	I3-27 DO YOU USE OR REFER TO PLATE VOLTAGE FOR A SPECIFIED BIAS?	.0	.0
I 577	I3-28 DO YOU USE OR REFER TO PLATE CURRENT FOR A SPECIFIED BIAS?	.0	.0
I 578	I3-29 DO YOU USE OR REFER TO BIAS REQUIRED FOR CUTOFF?	.0	.0
I 579	I3-30 DO YOU USE OR REFER TO BIAS REQUIRED FOR SATURATION?	.0	.0
I 580	I3-31 DO YOU USE OR REFER TO GAIN?	.0	.0
I 581	I3-32 DO YOU USE OR REFER TO EFFICIENCY?	.0	.0

D TSK	TITLES	205 70 (M)	307 70 (M)
I 582	13-33 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	.0	.0
I 583	13-34 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	.0	.0
I 584	13-35 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN?	.0	.0
I 585	13-36 DO YOU USE OR REFER TO TUBE SOCKET NOTATION?	.0	.0
I 586	13-37 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS?	.0	.0
I 587	13-38 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS?	.0	.0
I 588	13-39 DO YOU USE OR REFER TO ELECTRON TUBE DIODES?	.0	.0

J ELECTRON TUBE AMPLIFIERS AND CIRCUITS (J1), SPECIAL PURPOSE ELECTRON TUBES (J2), HETERODYNING AND MODULATION - DEMODULATION (MODEMS) (J3)

J 589	J1-1 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM J2-1; IF YES, CONTINUE.	6.7	1.4
J 590	J1-2 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS?	.0	.0
J 591	J1-3 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS?	.0	.0
J 592	J1-4 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS?	1.1	.7
J 593	J1-5 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS?	.0	.0
J 594	J1-6 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS?	.0	.7

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 32

O TSK	TITLES	205 70 (M)	307 70 (M)
J 595	J1-7 DO YOU TROUBLESHOOT OR REPAIR - DON'T KNOW WHICH TYPE OF AMPLIFIER?	3.4	0.0
J 596	J2-1 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)?	2.2	2.1
J 597	J2-2 DO YOU WORK WITH CATHODE-RAY TUBES (CRT)?	68.5	35.7
J 598	J2-3 DO YOU WORK WITH BEAM POWER TUBES?	1.1	3.5
J 599	J2-4 DO YOU WORK WITH THYRATONS?	2.2	1.4
J 600	J2-5 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)?	22.5	7.7
J 601	J2-6 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)?	19.1	6.3
J 602	J2-7 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)?	15.7	4.2
J 603	J2-8 DO YOU USE OR REFER TO PHOSPHOR SCREENS CONCERNING CRT'S?	37.1	11.9
J 604	J2-9 DO YOU USE OR REFER TO AQUADAG COATINGS CONCERNING CRT'S?	15.7	2.8
J 605	J2-10 DO YOU USE OR REFER TO ELECTRON OPTICS CONCERNING CRT'S?	14.6	2.8
J 606	J2-11 DO YOU USE OR REFER TO PERSISTENCE CONCERNING CRT'S?	31.5	8.4
J 607	J2-12 DO YOU USE OR REFER TO DECAY TIMES CONCERNING CRT'S?	28.1	7.7
J 608	J2-13 DO YOU USE OR REFER TO FLOURESCENCE CONCERNING CRT'S?	24.7	4.9
J 609	J2-14 DO YOU USE OR REFER TO PHOSPHORESCENCE CONCERNING CRT'S?	25.8	5.6
J 610	J2-15 DO YOU USE OR REFER TO SHADOW MASK CONCERNING CRT'S?	3.4	1.4
J 611	J3-1 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K1-1; IF YES, CONTINUE.	13.5	56.6
J 612	J3-2 DO YOU PERFORM TASKS ON FREQUENCY CONVERTER SYSTEMS STAGES?	7.9	23.8

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

D TSM	TITLES	205	307
		(M)	(M)
J 613 JJ-3	DO YOU PERFORM TASKS ON FREQUENCY MIXER SYSTEMS STAGES?	7.9	14.7
J 614 JJ-4	DO YOU PERFORM TASKS ON MODEM SYSTEMS STAGES?	3.4	49.7
J 615 JJ-5	DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS?	7.9	25.9
J 616 JJ-6	DO YOU PERFORM TASKS ON REACTANCE MODULATOR SYSTEM STAGES?	.0	2.8
J 617 JJ-7	DO YOU PERFORM TASKS ON MODULATED OSCILLATOR SYSTEM STAGES?	1.1	7.0

 K AM SYSTEMS (K1), FM SYSTEMS (K2), NUMBERING SYSTEMS (K3)

K 618 K1-1	DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K2-1; IF YES, CONTINUE.	12.4	18.9
K 619 K1-2	DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS?	3.4	7.7
K 620 K1-3	DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS?	.0	2.8
K 621 K1-4	DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS?	2.2	6.3
K 622 K1-5	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS?	.0	16.8
K 623 K1-6	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS?	.0	6.3
K 624 K1-7	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS?	1.1	4.9
K 625 K1-8	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS?	.0	2.1
K 626 K1-9	DO YOU PERFORM TASKS ON RF OSCILLATORS/SYNTHESIZERST	5.6	2.8
K 627 K1-10	DO YOU PERFORM TASKS ON RF AMPLIFIERS?	5.6	3.5
K 628 K1-11	DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	7.9	7.0
K 629 K1-12	DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	4.5	4.9
K 630 K1-13	DO YOU PERFORM TASKS ON LOCAL OSCILLATORS?	6.7	5.6

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 40

D TSK	TITLES	205 70 (M)	307 70 (M)
K 631	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	5.6	2.1
K 632	K1-15 DO YOU PERFORM TASKS ON DETECTORS?	6.7	1.4
K 633	K1-16 DO YOU PERFORM TASKS ON MIXER AMPLIFIERS?	5.6	2.1
K 634	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS?	3.4	4.2
K 635	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS?	5.6	6.3
K 636	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS?	11.2	11.9
K 637	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS?	10.1	9.1
K 638	K2-1 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM K3-1; IF YES, CONTINUE.	10.1	37.1
K 639	K2-2 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS?	3.4	15.4
K 640	K2-3 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS?	.0	7.0
K 641	K2-4 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS?	1.1	12.6
K 642	K2-5 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS?	.0	32.9
K 643	K2-6 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS?	.0	14.7
K 644	K2-7 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS?	1.1	6.3
K 645	K2-8 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS?	.0	4.9
K 646	K2-9 DO YOU PERFORM LINK PERFORMANCE ASSESSMENTS?	.0	30.8
K 647	K2-10 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS?	5.6	13.3
K 648	K2-11 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS?	1.1	7.0
K 649	K2-12 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)?	3.4	6.3
K 650	K2-13 DO YOU PERFORM TASKS ON POWER AMPLIFIERS?	2.2	9.8
K 651	K2-14 DO YOU PERFORM TASKS ON RF AMPLIFIERS?	3.4	8.4
K 652	K2-15 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS?	5.6	7.0
K 653	K2-16 DO YOU PERFORM TASKS ON IF AMPLIFIERS?	5.6	6.3

O TSK	TITLES	205 70 (M)	307 70 (P)
K 654	K2-17 DO YOU PERFORM TASKS ON LIMITERS?	2.2	7.0
K 655	K2-18 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS?	4.5	7.0
K 656	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS?	.0	11.2
K 657	K2-20 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS?	.0	11.9
K 658	K2-21 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSCIEVERS?	.0	7.7
K 659	K2-22 DO YOU PLOT RECEIVE SIGNAL LEVEL CURVES (RSL)?	.0	18.2
K 660	K3-1 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS?	21.3	7.7
K 661	K3-2 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS?	37.1	19.6
K 662	K3-3 DO YOU CONVERT DECIMAL NUMBERS TO HEXADECIMAL (BASE 16) NUMBERS?	13.5	7.0
K 663	K3-4 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS?	20.2	9.1
K 664	K3-5 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS?	20.2	7.7
K 665	K3-6 DO YOU CONVERT OCTAL NUMBERS TO HEXADECIMAL NUMBERS?	11.2	4.9
K 666	K3-7 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS?	37.1	19.6
K 667	K3-8 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS?	18.0	7.7
K 668	K3-9 DO YOU CONVERT BINARY NUMBERS TO HEXADECIMAL NUMBERS?	13.5	6.3
K 669	K3-10 DO YOU CONVERT HEXADECIMAL NUMBERS TO DECIMAL NUMBERS?	13.5	7.0
K 670	K3-11 DO YOU CONVERT HEXADECIMAL NUMBERS TO OCTAL NUMBERS?	11.2	4.9
K 671	K3-12 DO YOU CONVERT HEXADECIMAL NUMBERS TO BINARY NUMBERS?	13.5	7.0
K 672	K3-13 DO YOU ADD BINARY NUMBERS?	22.5	15.4
K 673	K3-14 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD?	9.0	6.3
K 674	K3-15 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD?	13.5	12.6
K 675	K3-16 DO YOU ADD OCTAL NUMBERS?	14.6	5.6

O TSK	TITLES	205 70 (M)	307 70 (M)
K 676	K3-17 DO YOU SUBTRACT OCTAL NUMBERS?	12.4	5.6
K 677	K3-18 DO YOU ADD HEXADECIMAL NUMBERS?	9.0	2.1
K 678	K3-19 DO YOU SUBTRACT HEXADECIMAL NUMBERS?	9.0	2.1
K 679	K3-20 DO YOU DIVIDE BINARY NUMBERS?	9.0	7.7
K 680	K3-21 DO YOU MULTIPLY BINARY NUMBERS?	9.0	7.7
K 681	K3-22 DO YOU USE OR REFER TO BINARY CODED DECIMAL (BCD)?	29.2	18.2
K 682	K3-23 DO YOU USE OR REFER TO GRAY CODE?	2.2	4.2
K 683	K3-24 DO YOU USE OR REFER TO ICAO CODE?	3.4	2.1
K 684	K3-25 DO YOU USE OR REFER TO EXCESS-3 CODE?	2.2	.7

 L LOGIC FUNCTIONS (L1), BOOLEAN EQUATIONS (L2), COUNTERS (L3)

L 685	L1-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS? IF NO, GO TO ITEM L2-1; IF YES, CONTINUE.	2.2	1.4
L 686	L1-2 DO YOU CONSTRUCT TRUTH TABLES FOR 'AND' LOGIC SYMBOLS OR GATES?	.0	.7
L 687	L1-3 DO YOU CONSTRUCT TRUTH TABLES FOR 'OR' LOGIC SYMBOLS OR GATES?	.0	.7
L 688	L1-4 DO YOU CONSTRUCT TRUTH TABLES FOR 'AND' OR 'OR' LOGIC SYMBOLS WITH STATE INDICATORS?	.0	.7
L 689	L1-5 DO YOU CONSTRUCT TRUTH TABLES FOR 'EXCLUSIVE OR' LOGIC SYMBOLS OR GATES?	1.1	.7
L 690	L1-6 DO YOU USE OR REFER TO TRUTH TABLES FOR 'AND' LOGIC SYMBOLS OR GATES?	.0	.7
L 691	L1-7 DO YOU USE OR REFER TO TRUTH TABLES FOR 'OR' LOGIC SYMBOLS OR GATES?	.0	.7
L 692	L1-8 DO YOU USE OR REFER TO TRUTH TABLES FOR 'AND' OR 'OR' LOGIC SYMBOLS WITH STATE INDICATORS?	.0	.0

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 43

D TSM	TITLES	205 70 (M)	307 70 (M)
L 693 LI-9	DO YOU USE UP REFER TO TRUTH TABLES FOR 'EXCLUSIVE OR' LOGIC SYMBOLS?	.0	.7
L 694 LI-10	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'AND' GATES?	.0	.7
L 695 LI-11	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'OR' GATES?	.0	.7
L 696 LI-12	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'NAND' OR 'NOR' GATES?	.0	.7
L 697 LI-13	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR 'EXCLUSIVE OR' GATES?	1.1	.7
L 698 LI-14	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR INHIBITED 'AND' GATES?	.0	.7
L 699 LI-15	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR "B" BARS?	.0	.0
L 700 LI-16	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR "M" BARS?	.0	.0
L 701 LI-17	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR COMBINERS?	.0	.0
L 702 LI-18	DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS?	.0	.7
L 703 LI-19	DO YOU USE OR REFER TO ONE-SHOT MULTIVIBRATOR SYMBOLS?	.0	.0
L 704 LI-20	DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT OR SCHEMATIC DIAGRAMS?	.0	.7
L 705 LI-21	DO YOU USE OR REFER TO ONE-SHOT CIRCUIT OR SCHEMATIC DIAGRAMS?	.0	.0
L 706 LI-22	DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES?	.0	.0
L 707 LI-23	DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS?	.0	.0
L 708 LI-24	DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS?	.0	.0
L 709 LI-25	DO YOU USE OR REFER TO NONCOMPLEMENTED FLIP-FLOP LOGIC SYMBOLS?	.0	.0
L 710 LI-26	DO YOU CONSTRUCT TRUTH TABLES FOR "B" BARS?	.0	.0
L 711 LI-27	DO YOU CONSTRUCT TRUTH TABLES FOR "M" BARS?	.0	.0
L 712 LI-28	DO YOU CONSTRUCT TRUTH TABLES FOR COMBINERS?	.0	.0

MEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTON PAGE 44

D	TSK	TITLES	205	307
			70	70
			(M)	(M)
L 713	L1-29	DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS?	.0	.0
L 714	L1-30	DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS?	.0	.7
L 715	L1-31	DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS?	.0	.7
L 716	L1-32	DO YOU TRACE DATA FLOW THROUGH NONCOMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS?	.0	.7
L 717	L1-33	DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS?	.0	.0
L 718	L2-1	IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS? IF NO, GO TO ITEM L3-1; IF YES, CONTINUE.	1.1	1.4
L 719	L2-2	DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS?	.0	.0
L 720	L2-3	DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS?	.0	.0
L 721	L2-4	DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS?	.0	1.4
L 722	L2-5	DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES?	.0	.0
L 723	L2-6	DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS?	.0	.7
L 724	L2-7	DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA?	.0	.7
L 725	L2-8	DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES?	.0	.0
L 726	L2-9	DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE L JIC (CML) CIRCUITS?	.0	.0
L 727	L2-10	DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE?	.0	.0
L 728	L2-11	DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS?	.0	.7

Q TSK	TITLES	205 70 (M)	307 70 (M)
L 729	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS?	.0	.7
L 730	L3-1 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM MI-1; IF YES, CONTINUE.	12.4	9.8
L 731	L3-2 DO YOU USE OR REFER TO UP-COUNTERS?	4.5	4.9
L 732	L3-3 DO YOU USE OR REFER TO DOWN-COUNTERS?	4.5	.7
L 733	L3-4 DO YOU USE OR REFER TO SERIAL COUNTERS?	3.4	2.1
L 734	L3-5 DO YOU USE OR REFER TO PARALLEL COUNTERS?	2.2	2.8
L 735	L3-6 DO YOU USE OR REFER TO RING COUNTERS?	1.1	.7
L 736	L3-7 DO YOU USE OR REFER TO DECADE (MOD 10) COUNTERS?	4.5	1.4
L 737	L3-8 DO YOU USE OR REFER TO DOWN DETECT CIRCUITS?	.0	2.8
L 738	L3-9 DO YOU USE OR REFER TO DOWN CLOCKS?	1.1	1.4
L 739	L3-10 DO YOU USE OR REFER TO UP CLOCKS?	1.1	2.1
L 740	L3-11 DO YOU USE OR REFER TO OTHER MODULOUS COUNTERS?	3.4	3.5
L 741	L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS?	1.1	.7
L 742	L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DOWN-COUNTERS?	1.1	.7
L 743	L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-DOWN COUNTERS?	1.1	.7
L 744	L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS?	.0	.7
L 745	L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS?	.0	.7
L 746	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF COUNTERS FEEDING STORAGE REGISTERS?	.0	.7
L 747	L3-18 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS?	1.1	.7
L 748	L3-19 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS?	1.1	2.8

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

20E 307
70 70
(M) (M)

0 TSK TITLES
L 749 L3-20 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS?
L 750 L3-21 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES?
L 751 L3-22 DO YOU DETERMINE THE APPROPRIATE 'AND' GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT?

M TIMING CIRCUITS (M1), USE OF SIGNAL GENERATORS (M2), MOTORS AND GENERATORS (M3)

M 752 M1-1 DO YOU WORK WITH SAWTOOTH WAVE GENERATOR TIMING CIRCUITS? 21.3 7.0
M 753 M1-2 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATOR TIMING CIRCUITS? 1.1 2.8
M 754 M1-3 DO YOU WORK WITH PULSED OSCILLATOR TIMING CIRCUITS? 14.6 6.3
M 755 M1-4 DO YOU WORK WITH BLOCKING OSCILLATOR TIMING CIRCUITS? 3.4 2.8
M 756 M1-5 DO YOU WORK WITH MASTER STATION TIMING CIRCUITS? 4.5 30.1
M 757 M1-6 DO YOU USE OR REFER TO RISE TIME? 42.7 14.7
M 758 M1-7 DO YOU USE OR REFER TO FALL OR FLYBACK TIME? 39.3 9.8
M 759 M1-8 DO YOU USE OR REFER TO SWEEP TIME? 46.1 19.6
M 760 M1-9 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS? 22.5 3.5
M 761 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS? 22.5 3.5
M 762 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS? 16.9 4.9
M 763 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS? 14.6 3.5

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTDN PAGE 47

D TSK	TITLES	205	307	70	(M)	(M)
M 764	M2-1 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE.	21.3	67.8			
M 765	M2-2 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS?	15.7	60.8			
M 766	M2-3 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS?	4.5	26.6			
M 767	M2-4 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS?	1.1	15.4			
M 768	M2-5 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS?	.0	3.5			
M 769	M2-6 DO YOU USE AUDIO SINE-WAVE GENERATORS?	15.7	58.7			
M 770	M2-7 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE?	18.0	18.9			
M 771	M2-8 DO YOU USE RF GENERATORS LESS THAN 1,000 MHZ?	10.1	16.1			
M 772	M2-9 DO YOU USE RF GENERATORS GREATER THAN 1,000 MHZ?	5.6	7.7			
M 773	M2-10 DO YOU USE WHITE NOISE GENERATORS?	.0	13.3			
M 774	M2-11 DO YOU USE PATTERN GENERATORS?	3.4	53.8			
M 775	M2-12 DO YOU USE PSEUDO-RANDOM GENERATORS?	2.2	18.2			
M 776	M2-13 DO YOU USE TIME MARK GENERATORS?	16.9	6.3			
M 777	M2-14 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS?	3.4	16.1			
M 778	M3-1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS, GENERATORS (SERVO), OR ALTERNATORS? IF NO, GO TO ITEM M1-1; IF YES, CONTINUE.	2.2	4.9			
M 779	M3-2 DO YOU INSPECT MOTORS?	.0	3.5			
M 780	M3-3 DO YOU CLEAN OR LUBRICATE MOTORS?	.0	2.1			
M 781	M3-4 DO YOU OPERATE MOTORS?	.0	3.5			
M 782	M3-5 DO YOU REMOVE OR REPLACE COMPLETE MOTORS?	.0	1.4			
M 783	M3-6 DO YOU REMOVE OR REPLACE MOTOR PARTS?	.0	1.4			

KESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 48

D TSK	TITLES	205	307	70	(M)	(M)
M 784	M3-7 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS?	.0	2.1			
M 785	M3-8 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS?	.0	1.4			
M 786	M3-9 DO YOU PERFORM TASKS ON MOTOR FIELD COILS?	.0	.7			
M 787	M3-10 DO YOU PERFORM ANY TASKS ON MOTOR ARMATURES?	.0	.7			
M 788	M3-11 DO YOU PERFORM ANY TASKS ON MOTOR ROTORS?	.0	.7			
M 789	M3-12 DO YOU PERFORM ANY TASKS ON MOTOR BRUSHES?	.0	1.4			
M 790	M3-13 DO YOU PERFORM ANY TASKS ON MOTOR SLIP RINGS?	.0	1.4			
M 791	M3-14 DO YOU PERFORM ANY TASKS ON MOTOR COMMUTATORS?	.0	.7			
M 792	M3-15 DO YOU PERFORM ANY TASKS ON MOTOR POLE PIECES?	.0	1.4			
M 793	M3-16 DO YOU DETERMINE OR MEASURE FORCE OR TORQUE CREATED BY A MOTOR?	.0	.7			
M 794	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR?	.0	.0			
M 795	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS?	.0	.0			
M 796	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS?	.0	.7			
M 797	M3-20 DO YOU WORK WITH INDUCTION MOTORS?	.0	.0			
M 798	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS?	.0	.0			
M 799	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS?	.0	.7			
M 800	M3-23 DO YOU WORK WITH SERVOS OR SYNCHROS MOTORS?	.0	.7			
M 801	M3-24 DO YOU WORK WITH SHADED-POLE MOTORS?	.0	.0			
M 802	M3-25 DO YOU INSPECT GENERATORS OR ALTERNATORS?	.0	4.2			
M 803	M3-26 DO YOU CLEAN OR LUBRICATE GENERATORS OR ALTERNATORS?	.0	1.4			
M 804	M3-27 DO YOU OPERATE GENERATORS OR ALTERNATORS?	.0	4.2			
M 805	M3-28 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS OR ALTERNATORS?	.0	1.4			
M 806	M3-29 DO YOU REMOVE OR REPLACE GENERATOR, ALTERNATOR, OR PARTS?	.0	.7			

205 307
70 70
(M) (M)

D TSK TITLES

M 807 M3-30 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS OR ALTERNATORS? .0 2.1

M 808 M3-31 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS OR ALTERNATORS? .0 .7

N METER MOVEMENTS (M1), SATURABLE REACTORS AND MAGNETIC AMPLIFIERS (M2), WAVESHAPING CIRCUITS (M3)

M 809 M1-1 DO YOU WORK WITH METERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM N2-1; IF YES, CONTINUE. 7.9 68.5

M 810 M1-2 DO YOU CONSIDER THE FUNCTIONS OF PERMANENT MAGNET INTERNAL METER PARTS? .0 10.5

M 811 M1-3 DO YOU CONSIDER THE FUNCTIONS OF MOVING COIL INTERNAL METER PARTS? .0 14.0

M 812 M1-4 DO YOU CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS INTERNAL METER PARTS? .0 9.8

M 813 M1-5 DO YOU READ METER SCALES? 7.9 69.2

M 814 M1-6 DO YOU EXTEND THE RANGE OF AMMETERS? .0 16.1

M 815 M1-7 DO YOU EXTEND THE RANGE OF VOLTMETERS? 1.1 24.5

M 816 M1-8 DO YOU ZERO OHMMETERS? .0 45.5

M 817 M1-9 DO YOU ZERO AMMETERS? .0 23.1

M 818 M1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)? .0 22.4

M 819 M1-11 DO YOU CONSIDER BALLASTIC RESPONSE OF METER MOVEMENTS? .0 7.0

M 820 M1-12 DO YOU CONSIDER OTHER METER MOVEMENTS? .0 18.9

M 821 M2-1 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB? IF NO, GO TO ITEM M3-1; IF YES, CONTINUE. 1.1 .0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 50

D TSK	TITLES	205 70 (M)	307 70 (P)
N 022	N2-2 DO YOU INSPECT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 023	N2-3 DO YOU CLEAN SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 024	N2-4 DO YOU ADJUST SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 025	N2-5 DO YOU TROUBLESHOOT SATURABLE REACTORS OR MAGNETIC AMPLIFIERS?	.0	.0
N 026	N2-6 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS?	.0	.0
N 027	N2-7 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS?	.0	.0
N 028	N2-8 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS?	.0	.0
N 029	N2-9 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	.0	.0
N 030	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SATURABLE REACTORS?	.0	.0
N 031	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS?	.0	.0
N 032	N2-12 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS?	.0	.0
N 033	N3-1 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 01-1; IF YES, CONTINUE.	22.5	6.3
N 034	N3-2 DO YOU USE OR REFER TO TRANSIENT INTERVALS (RISE TIME AND FALL TIME)?	21.3	3.5
N 035	N3-3 DO YOU USE OR REFER TO PULSE WIDTH (PW)?	23.6	4.9
N 036	N3-4 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)?	23.6	3.5
N 037	N3-5 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)?	23.6	3.5
N 038	N3-6 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS?	5.6	.7

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTD4 PAGE 51

D TSK	TITLES	ZDS	307
		(M)	(M)
N 839	N3-7 DO YOU USE OR REFER TO INTEGRATING CIRCUITS?	5.6	1.4
N 840	N3-8 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT?	3.4	.7
N 841	N3-9 DO YOU DETERMINE WHETHER AN LP OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION?	1.1	.0
N 842	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATOR SOLID STATE CIRCUITS?	14.6	4.9
N 843	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATOR SOLID STATE CIRCUITS?	6.7	.7
N 844	N3-12 DO YOU WORK WITH TRIANGULAR (SAWTOOTH) WAVE GENERATOR SOLID STATE CIRCUITS?	14.6	.7
N 845	N3-13 DO YOU WORK WITH RAMP (TRAPEZOIDAL) GENERATOR SOLID STATE CIRCUITS?	5.6	1.4
N 846	N3-14 DO YOU WORK WITH FUNCTION GENERATOR SOLID STATE CIRCUITS?	7.9	2.1
N 847	N3-15 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS?	2.2	2.1
N 848	N3-16 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS?	2.2	1.4
N 849	N3-17 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS?	1.1	1.4
N 850	N3-18 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS?	1.1	1.4
N 851	N3-19 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS?	1.1	1.4
N 852	N3-20 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS?	1.1	.7
N 853	N3-21 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS?	1.1	.0

205 307
70 70
(M) (M)

D TSK TITLES

0	SINGLE OR INDEPENDENT SIDEBAND SYSTEMS (01), PULSE MODULATION SYSTEMS (02), ANTENNAS (03)		
0 854	01-1 DO YOU WORK ON SINGLE OR INDEPENDENT SIDEBAND SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 02-1; IF YES, CONTINUE.	5.6	19.6
0 855	01-2 DO YOU INSPECT SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	4.9
0 856	01-3 DO YOU CLEAN SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	2.1
0 857	01-4 DO YOU ALIGN SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	4.2
0 858	01-5 DO YOU TROUBLESHOOT TO SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	18.9
0 859	01-6 DO YOU TROUBLESHOOT TO SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE COMPONENTS?	.0	9.1
0 860	01-7 DO YOU REMOVE OR REPLACE SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE SYSTEMS?	.0	3.5
0 861	01-8 DO YOU REMOVE OR REPLACE SINGLE SIDE BAND (SSB) OR INDEPENDENT SIDEBAND (ISB) TRANSMIT OR RECEIVE COMPONENTS?	.0	2.8
0 862	01-9 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM AUDIO AMPLIFIER STAGE?	3.4	6.3
0 863	01-10 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM BALANCED MODULATOR STAGE?	.0	1.4
0 864	01-11 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM CARRIER OSCILLATOR STAGE?	2.2	2.8
0 865	01-12 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM LC FILTER STAGE?	.0	.7
0 866	01-13 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM CRYSTAL FILTER STAGE?	1.1	.7
0 867	01-14 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM MECHANICAL FILTER STAGE?	.0	1.4
0 868	01-15 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM OSCILLATOR STAGE?	3.4	2.1
0 869	01-16 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM MIXER STAGE?	2.2	1.4
0 870	01-17 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM DRIVER STAGE?	.0	.7
0 871	01-18 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM POWER AMPLIFIER STAGES?	1.1	2.1
0 872	01-19 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM RF AMPLIFIER STAGE?	2.2	1.4
0 873	01-20 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM FREQUENCY CONVERTER STAGES?	2.2	2.8
0 874	01-21 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM IF AMPLIFIER STAGE?	3.4	1.4
0 875	01-22 DO YOU PERFORM TASKS ON SSB OR ISB TRANSMIT OR RECEIVE SYSTEM DEMODULATOR STAGE?	4.5	2.8
0 876	01-23 DO YOU USE OR REFER TO SELECTIVE FADING WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	.0	8.4

0 TSK	TITLES	205 (M)	307 (P)
0 877	01-24 DO YOU USE OR REFER TO PEAK POWER WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	1.1	11.9
0 878	01-25 DO YOU USE OR REFER TO FREQUENCY STABILITY WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	2.2	11.9
0 879	01-26 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS WHEN WORKING WITH SSB TRANSMIT OR RECEIVE SYSTEMS?	.0	2.8
0 880	01-27 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB OR ISB TRANSMITTERS?	1.1	2.0
0 881	01-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB OR ISB TRANSMITTER SCHEMATIC DIAGRAMS?	.0	2.8
0 882	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB OR ISB RECEIVER SCHEMATIC DIAGRAMS?	.0	2.1
0 883	01-30 DO YOU PERFORM AERONAUTIC STATION ASSESSMENT PROGRAMS (ASAP)?	.0	2.1
0 884	02-1 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB? IF NO, GO TO ITEM 03-1; IF YES, CONTINUE.	14.6	17.5
0 885	02-2 DO YOU INSPECT PULSE MODULATION SYSTEMS?	2.2	7.0
0 886	02-3 DO YOU CLEAN PULSE MODULATION SYSTEMS?	1.1	2.1
0 887	02-4 DO YOU ALIGN PULSE MODULATION SYSTEMS?	.0	3.5
0 888	02-5 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS?	.0	14.0
0 889	02-6 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS?	.0	6.3
0 890	02-7 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS?	.0	3.5
0 891	02-8 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS?	.0	1.4
0 892	02-9 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) PULSE MODULATION SYSTEMS?	5.6	11.9
0 893	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) PULSE MODULATION SYSTEMS?	6.7	1.4
0 894	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) PULSE MODULATION SYSTEMS?	7.9	2.8
0 895	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) PULSE MODULATION SYSTEMS?	4.5	14.0
0 896	02-13 DO YOU WORK ON LINE PULSING MODULATION PULSE MODULATION SYSTEMS?	.0	.7
0 897	02-14 DO YOU WORK ON TIME DIVISION MULTIPLEXING (TDM) PULSE MODULATION SYSTEMS?	4.5	17.5
0 898	02-15 DO YOU WORK ON - DON'T KNOW WHICH TYPE OF MODULATION SYSTEM?	4.5	1.4
0 899	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLY STAGE?	1.1	3.5
0 900	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODE STAGE?	1.1	.0
0 901	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORK STAGE?	1.1	.7
0 902	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMER STAGE?	2.2	1.4
0 903	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRON STAGE?	1.1	.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPTDN PAGE 54

0 TSK	TITLES	205 70 (M)	307 70 (M)
0 904	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMER STAGE?	2.2	.0
0 905	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBE STAGE?	1.1	.7
0 906	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIER STAGE?	3.4	1.4
0 907	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTER STAGE?	4.5	2.8
0 908	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIER STAGE?	4.5	1.4
0 909	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTOR STAGE?	3.4	.7
0 910	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIER STAGE?	4.5	.7
0 911	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIER STAGE?	2.2	.7
0 912	02-29 DO YOU USE OR REFER TO PULSE RECURRENT FREQUENCY (PRF) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	14.6	2.8
0 913	02-30 DO YOU USE OR REFER TO PULSE RECURRENT TIME (PRT) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	14.6	2.8
0 914	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	14.6	6.3
0 915	02-32 DO YOU USE OR REFER TO PULSE SHAPE WHEN WORKING WITH PULSE MODULATION SYSTEMS?	13.5	4.9
0 916	02-33 DO YOU USE OR REFER TO PEAK POWER WHEN WORKING WITH PULSE MODULATION SYSTEMS?	13.5	7.7
0 917	02-34 DO YOU USE OR REFER TO AVERAGE POWER WHEN WORKING WITH PULSE MODULATION SYSTEMS?	12.4	5.6
0 918	02-35 DO YOU USE OR REFER TO DUTY CYCLE (DC) WHEN WORKING WITH PULSE MODULATION SYSTEMS?	13.5	3.5
0 919	02-36 DO YOU CALCULATE PULSE RECURRENT TIME (PRT) OR PULSE RECURRENT FREQUENCY (PRF)?	13.5	.7
0 920	02-37 DO YOU MEASURE PULSE RECURRENT TIME (PRT) OR PULSE RECURRENT FREQUENCY (PRF)?	12.4	1.4
0 921	02-38 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS?	12.4	3.5
0 922	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS?	1.1	3.5
0 923	02-40 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS?	.0	4.2
0 924	03-1 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB? IF NO, GO TO ITEM PI-1; IF YES, CONTINUE.	15.7	18.9
0 925	03-2 DO YOU INSPECT ANTENNAS?	2.2	4.9
0 926	03-3 DO YOU CLEAN ANTENNAS?	1.1	2.8
0 927	03-4 DO YOU PHYSICALLY ALIGN ANTENNAS?	1.1	2.1
0 928	03-5 DO YOU ELECTRICALLY ALIGN ANTENNAS?	1.1	2.1
0 929	03-6 DO YOU TROUBLESHOOT TO ANTENNAS?	1.1	13.3
0 930	03-7 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS?	1.1	2.1
0 931	03-8 DO YOU REMOVE OR INSTALL ANTENNAS?	3.4	3.5

0 TSM	TITLES	205 70 (M)	307 70 (P)
0 932 03-9	DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS?	1.1	2.0
0 933 03-10	DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES?	6.7	4.9
0 934 03-11	DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES?	6.7	4.9
0 935 03-12	DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS?	5.6	2.1
0 936 03-13	DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS RESISTIVE LOADS TO THE GENERATOR?	4.5	2.1
0 937 03-14	DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR?	3.4	1.4
0 938 03-15	DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR?	3.4	1.4
0 939 03-16	DO YOU WORK WITH HERTZ BASIC ANTENNAS?	2.2	1.4
0 940 03-17	DO YOU WORK WITH MARCONI BASIC ANTENNAS?	.0	.7
0 941 03-18	DO YOU WORK WITH RHOMBIC BASIC ANTENNAS?	1.1	7.7
0 942 03-19	DO YOU WORK WITH DIPOLE BASIC ANTENNAS?	6.7	7.7
0 943 03-20	DO YOU WORK WITH SCIMITAR BASIC ANTENNAS?	1.1	.0
0 944 03-21	DO YOU WORK WITH PARABOLIC BASIC ANTENNAS?	7.9	12.6
0 945 03-22	DO YOU WORK WITH GROUND PLANE BASIC ANTENNAS?	1.1	3.5
0 946 03-23	DO YOU WORK WITH FOLDED DIPOLE BASIC ANTENNAS?	2.2	.7
0 947 03-24	DO YOU WORK WITH BROADSIDE ARRAYS?	3.4	2.1
0 948 03-25	DO YOU WORK WITH END-FIRE ARRAYS?	1.1	1.4
0 949 03-26	DO YOU WORK WITH CARDIOID ARRAYS?	1.1	.7
0 950 03-27	DO YOU WORK WITH COLLINER ARRAYS?	2.2	1.4
0 951 03-28	DO YOU WORK WITH PHASE ARRAYS?	5.6	3.5
0 952 03-29	DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS?	6.7	1.4
0 953 03-30	DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS?	2.2	.0
0 954 03-31	DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS?	9.0	4.2
0 955 03-32	DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS?	4.5	.0
0 956 03-33	DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION?	4.5	.0
0 957 03-34	DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD?	3.4	.0
0 958 03-35	ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED?	9.0	2.1
0 959 03-36	ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED?	9.0	2.8
0 960 03-37	DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON?	3.4	.7

D TSK	TITLES	205 (M)	307 70 (M)
0 961 03-38	DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS?	1.1	.7
0 962 03-39	DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS?	3.4	2.1
0 963 03-40	DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS?	4.5	1.4
0 964 03-41	DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN - DON'T KNOW WHAT KIND OF ELEMENT?	4.5	5.6
0 965 03-42	DO YOU WORK ON UNIDIRECTIONAL ANTENNAS?	6.7	13.3
0 966 03-43	DO YOU WORK ON BIDIRECTIONAL ANTENNAS?	3.4	4.9
0 967 03-44	DO YOU WORK ON OMNIDIRECTIONAL ANTENNAS?	12.4	9.1
0 968 03-45	DO YOU WORK WITH ROTARY ANTENNA ARRAYS?	5.6	6.3

P TRANSMISSION LINES (P1), WAVEGUIDES AND CAVITY RESONATORS (P2), MICROWAVE AMPLIFIERS AND OSCILLATORS (P3)

P 969 P1-1	IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES? (DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES.) IF NO, GO TO ITEM P2-1; IF YES, CONTINUE.	3.4	49.7
P 970 P1-2	WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE COPPER LOSS OR 'I SUB 2 R' LOSS IN TRANSMISSION LINES?	1.1	7.7
P 971 P1-3	WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES?	1.1	8.4
P 972 P1-4	WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE RADIATION LOSS?	1.1	12.6
P 973 P1-5	WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE DIELECTRIC LOSS?	1.1	11.2
P 974 P1-6	WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE LEAKAGE LOSSES?	1.1	13.3
P 975 P1-7	WHEN WORKING WITH TRANSMISSION LINES DO YOU REFER TO OR USE FARADAY SHIELD?	.0	1.4
P 976 P1-8	DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES?	1.1	42.0
P 977 P1-9	DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES?	1.1	19.6
P 978 P1-10	DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES?	1.1	20.3
P 979 P1-11	DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES?	2.2	32.9
P 980 P1-12	DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES?	1.1	9.8
P 981 P1-13	DO YOU TROUBLESHOOT TRANSMISSION LINES?	.0	46.2
P 982 P1-14	DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)?	.0	30.1
P 983 P1-15	DO YOU SELECT APPROPRIATE TRANSMISSION LINE TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS?	.0	13.3

KEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 57

Q TSK	TITLES	205 7C (M)	307 7D (P)
P 984	PI-16 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS?	.0	12.6
P 985	PI-17 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES?	.0	4.9
P 986	PI-18 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES?	.0	4.9
P 987	PI-19 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS?	.0	3.5
P 988	PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS?	1.1	19.6
P 989	PI-21 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING?	.0	.7
P 990	PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES?	2.2	23.1
P 991	PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES?	.0	11.9
P 992	PI-24 DO YOU USE OR REFER TO THE TERM CUT OFF FREQUENCY OF TRANSMISSION LINES?	1.1	14.0
P 993	PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES?	.0	3.5
P 994	PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES?	1.1	6.3
P 995	PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTHS FOR GIVEN FREQUENCIES?	.0	2.8
P 996	PI-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	4.9
P 997	PI-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES?	.0	18.2
P 998	PI-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES?	1.1	12.6
P 999	PI-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING?	.0	2.1
PI000	PI-1 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB? IF NO, GO TO ITEM P3-1; IF YES, CONTINUE.	2.2	4.2
PI001	P2-2 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS?	.0	2.8
PI002	P2-3 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
PI003	P2-4 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS?	.0	1.4
PI004	P2-5 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS?	.0	.7
PI005	P2-6 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS?	.0	3.5
PI006	P2-7 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES?	.0	.7
PI007	P2-8 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS?	.0	2.1
PI008	P2-9 DO YOU REMOVE OR INSTALL DUMMY LOADS?	.0	4.2
PI009	P2-10 DO YOU REMOVE OR INSTALL E BENDS?	.0	.7
PI010	P2-11 DO YOU REMOVE OR INSTALL H BENDS?	.0	.7
PI011	P2-12 DO YOU REMOVE OR INSTALL OTHER BENDS?	.0	.7

D TSK	TITLES	205 70 (M)	307 70 (P)
P1012	P2-13 DO YOU REMOVE OR INSTALL CHOKE JOINTS?	.0	.7
P1013	P2-14 DO YOU REMOVE OR INSTALL ROTATING JOINTS?	.0	.0
P1014	P2-15 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS?	.0	3.5
P1015	P2-16 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS?	.0	2.8
P1016	P2-17 DO YOU REMOVE OR INSTALL DUPLEXERS OR MIXERS?	.0	2.1
P1017	P2-18 DO YOU REMOVE OR INSTALL WAVEGUIDE SHUTTERS?	.0	.7
P1018	P2-19 DO YOU REMOVE OR INSTALL TRANSMIT (TR) OR ANTI-TRANSMIT (ATR) TUBES?	.0	.7
P1019	P2-20 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES?	.0	.7
P1020	P2-21 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES?	.0	.7
P1021	P2-22 DO YOU USE OR REFER TO CUT OFF FREQUENCY OF WAVEGUIDES?	1.1	4.2
P1022	P2-23 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES?	.0	2.1
P1023	P2-24 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES?	.0	2.1
P1024	P2-25 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS?	.0	1.4
P1025	P2-26 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS?	.0	.7
P1026	P2-27 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS?	.0	.0
P1027	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OR .7 WAVELENGTHS OF THE OPERATING FREQUENCY?	.0	1.4
P1028	P2-29 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 AS AN AVERAGE?	.0	1.4
P1029	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION?	.0	.7
P1030	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	.7
P1031	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES?	.0	.7
P1032	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES?	.0	.7
P1033	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES?	.0	.7
P1034	P2-35 DO YOU WORK WITH HIGH POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	.0
P1035	P2-36 DO YOU WORK WITH LOW POWER PROBE ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	2.8
P1036	P2-37 DO YOU WORK WITH LOOP ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	1.4
P1037	P2-38 DO YOU WORK WITH APERTURES (WINDOWS OR IRISES) ENERGY COUPLING DEVICES ON WAVEGUIDES OR CAVITY RESONATORS?	.0	2.1
P1038	P2-39 DO YOU WORK WITH CHOKE JOINTS IN WAVEGUIDES OR CAVITY RESONATORS?	.0	.7

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ELECTRONIC PRINCIPLES INVENTORY KEESLER TECHNICAL
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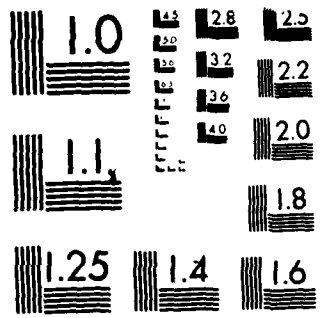
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

ID TSM	TITLES	205	3C7	70	(M)	(P)
P1039	P2-40 DO YOU WORK WITH ROTATING JOINTS IN WAVEGUIDES OR CAVITY RESONATORS?	.0	.0			
P1040	P2-41 DO YOU WORK WITH JOINTS IN WAVEGUIDES OR CAVITY RESONATORS BUT DON'T KNOW WHICH KIND?	1.1	2.1			
P1041	P2-42 DO YOU TUNE CAVITY RESONATORS USING ELECTRICAL METHODS?	.0	1.4			
P1042	P2-43 DO YOU TUNE CAVITY RESONATORS USING MECHANICAL METHODS?	.0	2.1			
P1043	P2-44 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS?	.0	2.0			
P1044	P3-1 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS? IF NO, GO TO ITEM DL-1. IF YES, CONTINUE.	4.5	5.6			
P1045	P3-2 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	1.1	1.4			
P1046	P3-3 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	1.1	1.4			
P1047	P3-4 DO YOU USE OR REFER TO LEAD INDUCTANCE FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	1.1	2.1			
P1048	P3-5 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY FACTORS THAT CAUSE POOR OPERATION OF CONVENTIONAL ELECTRON TUBES AT HIGH FREQUENCIES?	2.2	2.1			
P1049	P3-6 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION?	2.2	1.4			
P1050	P3-7 DO YOU USE OR REFER TO ELECTRON BUNCHING?	2.2	2.1			
P1051	P3-8 DO YOU WORK WITH TWO-CAVITY KLYSTRONS?	1.1	.7			
P1052	P3-9 DO YOU WORK WITH THREE-CAVITY KLYSTRONS?	1.1	.7			
P1053	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS?	1.1	4.2			
P1054	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)?	3.4	4.9			
P1055	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS?	1.1	2.0			
P1056	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS?	1.1	2.0			
P1057	P3-14 DO YOU WORK WITH MAGNETRONS?	2.2	.7			
P1058	P3-15 DO YOU WORK WITH BACKWARD WAVE OSCILLATORS (BWO)?	2.2	.0			
P1059	P3-16 DO YOU INSPECT KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	2.1			
P1060	P3-17 DO YOU CLEAN KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	.0			
P1061	P3-18 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY?	.0	.7			
P1062	P3-19 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY?	.0	2.1			
P1063	P3-20 DO YOU PERFORM OPERATIONAL CHECKS ON KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	3.5			
P1064	P3-21 DO YOU TROUBLESHOOT KLYSTRONS OR TRAVELING WAVE TUBES (TWT)?	.0	3.5			
P1065	P3-22 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRONS OR TWT'S?	.0	1.4			
P1066	P3-23 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS?	.0	.7			
P1067	P3-24 DO YOU INSPECT PARAMETRIC AMPLIFIERS?	.0	1.4			

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 60

D	YSK	TITLES	205 (M)	307 (M)	70 (M)
	P1068	P3-25 DO YOU CLEAN PARAMETRIC AMPLIFIERS?	.0	.7	
	P1069	P3-26 DO YOU ADJUST PARAMETRIC AMPLIFIERS?	.0	1.4	
	P1070	P3-27 DO YOU TUNE PARAMETRIC AMPLIFIERS?	.0	1.4	
	P1071	P3-28 DO YOU PERFORM OPERATIONAL CHECKS ON PARAMETRIC AMPLIFIERS?	.0	2.8	
	P1072	P3-29 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS?	.0	2.8	
	P1073	P3-30 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIERS?	.0	.7	
	P1074	P3-31 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS?	.0	.7	
	P1075	P3-32 DO YOU INSPECT MAGNETRONS?	.0	.7	
	P1076	P3-33 DO YOU CLEAN MAGNETRONS?	.0	.0	
	P1077	P3-34 DO YOU ADJUST MAGNETRONS?	.0	.7	
	P1078	P3-35 DO YOU TUNE MAGNETRONS?	.0	.7	
	P1079	P3-36 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS?	.0	1.4	
	P1080	P3-37 DO YOU TROUBLESHOOT MAGNETRONS?	.0	.7	
	P1081	P3-38 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRONS?	.0	.0	
	P1082	P3-39 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS?	.0	.0	
	P1083	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF COLLECTOR PLATE COMPONENTS OF TWO-CAVITY KLYSTRONS?	1.1	.7	
	P1084	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATCHER CAVITY COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.0	
	P1085	P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATCHER GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.7	
	P1086	P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FEEDBACK LOOP COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.0	
	P1087	P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF DRIFT SPACE COMPONENTS OF TWO-CAVITY KLYSTRONS?	1.1	.0	
	P1088	P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF BUMCHER GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	1.1	.0	
	P1089	P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF BUMCHER CAVITY COMPONENTS OF TWO-CAVITY KLYSTRONS?	.0	.0	
	P1090	P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CONTROL GRID COMPONENTS OF TWO-CAVITY KLYSTRONS?	1.1	.7	
	P1091	P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF TWO-CAVITY KLYSTRONS?	2.2	.7	
	P1092	P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REPELLER (REFLECTOR) PLATE COMPONENTS OF REFLEX KLYSTRONS?	.0	2.8	
	P1093	P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF GRID COMPONENTS OF REFLEX KLYSTRONS?	.0	1.4	
	P1094	P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF GRID CAVITY GAP COMPONENTS OF REFLEX KLYSTRONS?	.0	1.4	
	P1095	P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF RESONANT CAVITY COMPONENTS OF REFLEX KLYSTRONS?	2.2	3.5	
	P1096	P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MAGNETIC COUPLING LOOP COMPONENTS OF REFLEX KLYSTRONS?	.0	2.1	
	P1097	P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FILAMENT COMPONENTS OF REFLEX KLYSTRONS?	1.1	2.1	

Q TSM	TITLES	205 (M)	3C7 70 (M)
P1098	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF REFLEX KLYSTRONS?	2.2	2.1
P1099	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF OUTPUT LEAD COMPONENTS OF REFLEX KLYSTRONS?	1.1	.7
P1100	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF FILAMENT COMPONENTS OF TRAVELING-WAVE TUBES?	3.4	1.4
P1101	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF CATHODE COMPONENTS OF TRAVELING-WAVE TUBES?	3.4	1.4
P1102	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MODULATOR GRID COMPONENTS OF TRAVELING-WAVE TUBES?	3.4	.7
P1103	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF ANODE COMPONENTS OF TRAVELING-WAVE TUBES?	3.4	1.4
P1104	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF HELIX COMPONENTS OF TRAVELING-WAVE TUBES?	2.2	1.4
P1105	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF COLLECTOR COMPONENTS OF TRAVELING-WAVE TUBES?	3.4	1.4
P1106	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF MAGNET COMPONENTS OF TRAVELING-WAVE TUBES?	2.2	.7
P1107	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF ATTENUATOR COMPONENTS OF TRAVELING-WAVE TUBES?	1.1	.7
P1108	DO YOU PERFORM TASKS ON FERRITE CIRCULATOR COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.0
P1109	DO YOU PERFORM TASKS ON SIGNAL CAVITY COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.7
P1110	DO YOU PERFORM TASKS ON IDLER CAVITY COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.0
P1111	DO YOU PERFORM TASKS ON VARACTOR DIODE COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.0
P1112	DO YOU PERFORM TASKS ON FERRITE ISOLATOR COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.0
P1113	DO YOU PERFORM TASKS ON REVERSE-BIAS BATTERY COMPONENTS OF PARAMETRIC AMPLIFIERS?	.0	.0
P1114	DO YOU PERFORM TASKS ON ANODE COMPONENTS OF MAGNETRONS?	1.1	.0
P1115	DO YOU PERFORM TASKS ON ANODE COOLING PIN COMPONENTS OF MAGNETRONS?	1.1	.0
P1116	DO YOU PERFORM TASKS ON COUPLING LOOP COMPONENTS OF MAGNETRONS?	1.1	.0
P1117	DO YOU PERFORM TASKS ON HEATER LEAD COMPONENTS OF MAGNETRONS?	1.1	.0
P1118	DO YOU PERFORM TASKS ON RESONANT CAVITY COMPONENTS OF MAGNETRONS?	1.1	.0
P1119	DO YOU PERFORM TASKS ON CATHODE COMPONENTS OF MAGNETRONS?	1.1	.0
P1120	DO YOU PERFORM TASKS ON MAGNET COMPONENTS OF MAGNETRONS?	.0	.0

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70 70
(M) (M)

D YSK TITLES

0 REGISTERS (01), STORAGE DEVICES (02), DIGITAL-TO-ANALOG AND ANALOG-TO-DIGITAL CONVERTERS (03)

Q1121	Q1-1 DO YOU USE OR REFER TO STORAGE REGISTERS?	10.1	7.0
Q1122	Q1-2 DO YOU USE OR REFER TO SHIFT REGISTERS?	11.2	7.0
Q1123	Q1-3 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS?	5.6	4.2
Q1124	Q1-4 DO YOU USE OR REFER TO LOGIC SYMBOLS OR STORAGE REGISTERS?	3.4	4.2
Q1125	Q1-5 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTER CIRCUITS?	5.6	3.5
Q1126	Q1-6 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPES OF REGISTER CIRCUITS?	3.4	2.0
Q1127	Q1-7 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED?	4.5	2.0
Q1128	Q2-1 DO YOU WORK WITH STORAGE DEVICES IN YOUR PRESENT JOB? IF NO, GO TO ITEM Q3-11 IF YES, CONTINUE.	59.6	12.6
Q1129	Q2-2 DO YOU USE OR REFER TO DELAY LINES?	12.4	.0
Q1130	Q2-3 DO YOU USE OR REFER TO MAGNETIC CORES OR BIMAGS?	7.9	2.1
Q1131	Q2-4 DO YOU USE OR REFER TO MAGNETIC DRUMS?	10.1	5.6
Q1132	Q2-5 DO YOU USE OR REFER TO MAGNETIC TAPES?	59.6	11.9
Q1133	Q2-6 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OF MEMORY SYSTEMS?	33.7	7.0
Q1134	Q2-7 DO YOU USE OR REFER TO STORAGE CAPACITY OF MEMORY SYSTEMS?	41.6	10.5
Q1135	Q2-8 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS?	14.6	7.0
Q1136	Q2-9 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES?	2.2	.0
Q1137	Q2-10 DO YOU USE OR REFER TO MAGNETIC DISKS?	55.1	11.2
Q1138	Q2-11 DO YOU USE OR REFER TO THIN FILMS?	6.7	.0
Q1139	Q2-12 DO YOU USE OR REFER TO SEMICONDUCTOR MEMORY (INTEGRATED) CIRCUITS?	13.5	4.9
Q1140	Q2-13 DO YOU USE OR REFER TO BUBBLE MEMORIES?	4.5	2.1
Q1141	Q2-14 DO YOU USE OR REFER TO PUNCH CARDS?	24.7	7.7
Q1142	Q2-15 DO YOU USE OR REFER TO PAPER TAPES?	29.2	7.0
Q1143	Q2-16 DO YOU USE OR REFER TO RANDOM ACCESS MEMORIES (RAM)?	34.8	9.8
Q1144	Q2-17 DO YOU USE OR REFER TO READ ONLY MEMORIES (ROM)?	33.7	9.1
Q1145	Q2-18 DO YOU USE OR REFER TO PROGRAMMABLE READ ONLY MEMORIES (PROM)?	21.3	7.7
Q1146	Q2-19 DO YOU USE OR REFER TO TRANSFORMER READ ONLY STORAGES (TROS)?	4.5	.0
Q1147	Q2-20 DO YOU USE OR REFER TO CAPACITY READ ONLY STORAGES (CROS)?	3.4	.0
Q1148	Q2-21 DO YOU INSPECT STORAGE DEVICES?	13.5	4.2
Q1149	Q2-22 DO YOU CLEAN STORAGE DEVICES?	11.2	1.4
Q1150	Q2-23 DO YOU ALIGN STORAGE DEVICES?	3.4	.0
Q1151	Q2-24 DO YOU ADJUST STORAGE DEVICES?	4.5	.0
Q1152	Q2-25 DO YOU TROUBLESHOOT MEMORY SYSTEM STORAGE DEVICES?	3.4	4.2
Q1153	Q2-26 DO YOU REMOVE OR REPLACE SUBASSEMBLIES OR COMPONENTS OF STORAGE DEVICES?	5.6	.0

D TSM	TITLES	205 70 (M)	307 70 (M)
01154	02-27 DO YOU TRACE SIGNAL FLOW IN STORAGE DEVICES USING LOGIC DIAGRAMS OR SCHEMATICS?	6.7	.7
01155	03-1 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS OR ANALOG-TO-DIGITAL (A/D) CONVERTERS? IF NO, GO TO ITEM R1-11 IF YES, CONTINUE.	21.3	33.6
01156	03-2 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES?	1.1	4.2
01157	03-3 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?	.0	1.4
01158	03-4 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS?	.0	1.4
01159	03-5 DO YOU PERFORM TASKS ON SAMPLE FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	4.5	5.6
01160	03-6 DO YOU PERFORM TASKS ON HOLD FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	1.1	2.8
01161	03-7 DO YOU PERFORM TASKS ON COMPARE FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	1.1	2.1
01162	03-8 DO YOU PERFORM TASKS ON DIGITIZE FUNCTION PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS?	7.9	3.5
01163	03-9 DO YOU PERFORM TASKS ON PORTIONS OF ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS BUT DON'T KNOW WHICH FUNCTION?	1.1	4.9
01164	03-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS?	5.6	7.0
01165	03-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS?	4.5	3.5
01166	03-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS?	3.4	2.8
01167	03-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS?	9.0	7.7
01168	03-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS?	.0	2.1
01169	03-15 DO YOU PERFORM ANY TASKS ON ELECTRONIC A/D CONVERTERS?	5.6	14.0
01170	03-16 DO YOU PERFORM ANY TASKS ON DIGITAL-TO-ANALOG (D/A) CONVERTERS?	2.2	11.9
01171	03-17 DO YOU OPERATE COMPUTER KEYBOARDS?	19.1	14.0
01172	03-18 DO YOU WORK AT OR WITH COMPUTER TERMINALS?	19.1	18.2
01173	03-19 HAVE YOU BEEN SENT TO FACTORY TRAINING OR TO ANY OTHER SCHOOL FOR THE SPECIFIC PURPOSE OF RECEIVING COMPUTER OR LOGIC CIRCUIT RELATED TRAINING?	3.4	.7
01174	03-20 DO YOU HAVE MICROPROCESSORS OR COMPUTER EQUIPMENT LOCATED AT YOUR WORK STATION WHICH IS OPERATED OR MAINTAINED BY CONTRACTOR PERSONNEL?	14.6	12.6
01175	03-21 WAS THE COMPUTER OR LOGIC CIRCUIT TRAINING YOU RECEIVED IN YOUR 3-LEVEL AWARING COURSE ADEQUATE IN TERMS OF YOUR PRESENT DUTIES?	1.1	5.6

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D TSK TITLES

01176 Q3-22 ARE YOU ASSIGNED AGAINST A POSITION WHICH REQUIRES A
"D" PREFIX? .0 .0 .7

R PHANTASTRONS (R1), SCHMITT TRIGGERS (R2), CABLE
FABRICATION (R3)

R1177 R1-1 DO YOU WORK WITH PHANTASTRON CIRCUITRY? IF NO, GO TO
ITEM R2-1. IF YES, CONTINUE. .0 2.1

R1178 R1-2 PHANTASTRON CIRCUITRY HAS VARIABLE-DELAY APPLICATIONS
IN MY JOB. .0 .7

R1179 R1-3 PHANTASTRON CIRCUITRY HAS SEARCH-LOCK AUTOMATIC
FREQUENCY CONTROLS (AFC) APPLICATIONS IN MY JOB. .0 1.4

R1180 R1-4 PHANTASTRON CIRCUITRY HAS MONOSTABLE MULTIVIBRATORS
APPLICATIONS IN MY JOB. .0 .7

R1181 R1-5 PHANTASTRON CIRCUITRY HAS BISTABLE MULTIVIBRATORS
APPLICATIONS IN MY JOB. .0 .7

R1182 R1-6 PHANTASTRON CIRCUITRY HAS FREE-RUNNING MULTIVIBRATORS
APPLICATIONS IN MY JOB. .0 .7

R1183 R2-1 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER
CIRCUITS? IF NO, GO TO ITEM R3-1; IF YES, CONTINUE. 6.7 .7

R1184 R2-2 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER
SCHEMATIC DIAGRAMS? 1.1 .0

R1185 R2-3 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS?
R1186 R3-1 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR
CABLES? .0 .0

R1187 R3-2 DO YOU FABRICATE COAXIAL CABLES? 2.2 14.7

S INPUT/OUTPUT (PERIPHERAL) DEVICES (S1), PHOTO SENSITIVE
DEVICES (S2), SYNCHRONOUS VIBRATIONS (CHOPPER
CIRCUITS) (S3)

S1188 S1-1 DO YOU WORK WITH INPUT OR OUTPUT DEVICES ON YOUR
PRESENT JOB? IF NO, GO TO ITEM S2-1; IF YES, CONTINUE. 78.7 76.9

S1189 S1-2 DO YOU USE OR REFER TO KEYBOARDS OR TELETYPEWRITERS? 79.8 76.2

S1190 S1-3 DO YOU USE OR REFER TO TAPE DRIVES (UNITS)? 66.3 75.5

S1191 S1-4 DO YOU USE OR REFER TO CARD READERS/CARD PUNCHES? 57.3 29.4

S1192 S1-5 DO YOU USE OR REFER TO VIDEO DISPLAYS (CRT'S)? 27.0 21.7

S1193 S1-6 DO YOU USE OR REFER TO MIXIE LIGHTS (TUBES)? 77.5 49.0

S1194 S1-7 DO YOU USE OR REFER TO LED'S? 30.3 18.2

S1195 S1-8 DO YOU USE OR REFER TO LCD'S? 47.2 44.1

S1196 S1-9 DO YOU USE OR REFER TO INCANDESCENT DISPLAYS? 25.8 23.1

S1197 S1-10 DO YOU USE OR REFER TO TOGGLE OR PUSH BUTTON SWITCH
INPUTS? 10.1 11.2

S1198 S1-11 DO YOU USE OR REFER TO INTERFACE ADAPTER UNITS? 44.9 35.0

S1199 S1-12 DO YOU USE OR REFER TO INTERFACE ADAPTER UNITS? 24.7 35.7

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

O TSK	TITLES	205 (M)	307 7C (M)
S1200	S1-13 DO YOU USE OR REFER TO TAPE READERS?	39.3	38.5
S1201	S1-14 DO YOU USE OR REFER TO TAPE PUNCHES?	37.1	35.0
S1202	S2-1 DO YOU WORK WITH PHOTODIODE PHOTO SENSITIVE DEVICES?	1.1	1.4
S1203	S2-2 DO YOU WORK WITH PHOTOTRANSISTOR PHOTO SENSITIVE DEVICES?	1.1	.7
S1204	S2-3 DO YOU WORK WITH PHOTOTUBE PHOTO SENSITIVE DEVICES?	1.1	.7
S1205	S2-4 DO YOU WORK WITH PHOTO-SCR PHOTO SENSITIVE DEVICES?	1.1	.7
S1206	S2-5 DO YOU WORK WITH PHOTOCCELL (PHOTOCONDUCTIVE OR PHOTOVOLTAIC) PHOTO SENSITIVE DEVICES?	1.1	3.5
S1207	S3-1 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS? IF NO, GO TO ITEM T1-11 IF YES, CONTINUE.	1.1	.0
S1208	S3-2 DO YOU USE OR REFER TO EXCITATION FREQUENCY CHOPPER COIL ITEMS?	.0	.0
S1209	S3-3 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIP CHOPPER COIL ITEMS?	.0	.0
S1210	S3-4 DO YOU MEASURE EXCITATION FREQUENCY CHOPPER COIL ITEMS?	.0	.0
S1211	S3-5 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIP CHOPPER COIL ITEMS?	.0	.0
S1212	S3-6 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
S1213	S3-7 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
S1214	S3-8 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0
S1215	S3-9 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION?	.0	.0

T	INFRARED (T1), LASERS (T2), DISPLAY TUBES (T3), TELEVISION (T4)		
T1216	T1-1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS? IF NO, GO TO ITEM T2-1; IF YES, CONTINUE.	2.2	.7
T1217	T1-2 DO YOU INSPECT INFRARED SYSTEMS?	.0	.0
T1218	T1-3 DO YOU CLEAN INFRARED SYSTEMS?	.0	.0
T1219	T1-4 DO YOU SERVICE INFRARED SYSTEMS?	.0	.0
T1220	T1-5 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS?	.0	.0
T1221	T1-6 DO YOU OPERATE INFRARED SYSTEMS?	.0	.0
T1222	T1-7 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS?	.0	.0
T1223	T1-8 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS?	.0	.0
T1224	T1-9 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS?	.0	.0
T1225	T1-10 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS?	.0	.0

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

FCPT04 PAGE 66

D TSN	TITLES	205 70 (M)	307 70 (M)
T1226	TI-11 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS?	.0	.0
T1227	TI-12 DO YOU USE OR REFER TO FAR REGIONS?	1.1	.0
T1228	TI-13 DO YOU USE OR REFER TO INTERMEDIATE REGIONS?	1.1	.0
T1229	TI-14 DO YOU USE OR REFER TO NEAR REGIONS?	1.1	.0
T1230	TI-15 DO YOU USE OR REFER TO MICRONS (M)?	1.1	.0
T1231	TI-16 DO YOU USE OR REFER TO GRAY BODIES?	1.1	.0
T1232	TI-17 DO YOU USE OR REFER TO BLACK BODIES?	1.1	.0
T1233	TI-18 DO YOU USE OR REFER TO ABSORPTION?	1.1	.0
T1234	TI-19 DO YOU USE OR REFER TO SCATTERING?	1.1	.0
T1235	TI-20 DO YOU USE OR REFER TO ABSOLUTE ZERO?	1.1	.0
T1236	TI-21 DO YOU PERFORM TASKS ON BLITZ?	.0	.0
T1237	TI-22 DO YOU PERFORM TASKS ON TARGET BUTTONS?	.0	.0
T1238	TI-23 DO YOU PERFORM TASKS ON ERECTOR LENSES?	.0	.0
T1239	TI-24 DO YOU PERFORM TASKS ON OCULAR LENSES?	.0	.0
T1240	TI-25 DO YOU PERFORM TASKS ON CORRECTION LENSES?	.0	.0
T1241	TI-26 DO YOU PERFORM TASKS ON FILTERS?	.0	.0
T1242	TI-27 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS?	.0	.0
T1243	TI-28 DO YOU PERFORM TASKS ON PLANE MIRRORS?	.0	.0
T1244	TI-29 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS? IF NO, GO TO ITEM T3-11. IF YES, CONTINUE.	2.2	.7
T1245	TI-30 DO YOU INSPECT LASER SYSTEMS?	.0	.0
T1246	TI-31 DO YOU CLEAN LASER SYSTEMS?	.0	.0
T1247	TI-32 DO YOU SERVICE LASER SYSTEMS?	.0	.0
T1248	TI-33 DO YOU OPERATE LASER SYSTEMS?	.0	.0
T1249	TI-34 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS?	.0	.0
T1250	TI-35 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS?	.0	.0
T1251	TI-36 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS?	.0	.0
T1252	TI-37 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS?	.0	.0
T1253	TI-38 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS?	.0	.0
T1254	TI-39 DO YOU USE OR REFER TO ANGSTROMS (A)?	1.1	.0
T1255	TI-40 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS?	.0	.0
T1256	TI-41 DO YOU USE OR REFER TO GROUND STATE?	.0	.0
T1257	TI-42 DO YOU USE OR REFER TO EXCITED STATE?	.0	.0
T1258	TI-43 DO YOU USE OR REFER TO PACKET OF RADIATION?	.0	.0
T1259	TI-44 DO YOU USE OR REFER TO PHOTONS?	.0	.0
T1260	TI-45 DO YOU USE OR REFER TO SPONTANEOUS EMISSIONS?	.0	.0
T1261	TI-46 DO YOU USE OR REFER TO STIMULATED EMISSIONS?	.0	.0
T1262	TI-47 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE?	1.1	.0
T1263	TI-48 DO YOU USE OR REFER TO INVERSION LEVELS?	.0	.0
T1264	TI-49 DO YOU USE OR REFER TO MONOCHROMATIC?	.0	.0
T1265	TI-50 DO YOU WORK WITH ACTIVE MATERIALS?	.0	.0
T1266	TI-51 DO YOU WORK WITH PUMPING SOURCES?	.0	.0
T1267	TI-52 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS?	.0	.0

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O TSK TITLES

T1260	12-25	DO YOU WORK WITH HALF SILVERED 1923 REFLECTIVE MIRRORS?	.0	.0
T1269	12-26	DO YOU WORK WITH MEDICAL FLASHTUBES?	.0	.0
T1270	12-27	DO YOU WORK WITH RUBY MATERIALS?	.0	.0
T1271	12-28	DO YOU WORK WITH HELIUM-NEON MATERIALS?	.0	.0
T1272	12-29	DO YOU WORK WITH HELIUM-XENON MATERIALS?	.0	.0
T1273	12-30	DO YOU WORK WITH XENON MATERIALS?	.0	.0
T1274	12-31	DO YOU WORK WITH CESIUM-HELIUM MATERIALS?	.0	.0
T1275	12-32	DO YOU WORK WITH ARGON MATERIALS?	.0	.0
T1276	12-33	DO YOU WORK WITH NEODYMIUM IN GLASS MATERIALS?	.0	.0
T1277	12-34	DO YOU WORK WITH GALLIUM ARSENIDE MATERIALS?	.0	.0
T1278	13-1	IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE TUBES (DVST), MULTIPLE MODE STORAGE TUBES (MMST), OR SCAN CONVERTER TUBES (SCT)? IF NO, GO TO ITEM 14-1; IF YES, CONTINUE.	3.4	1.4
T1279	13-2	DO YOU INSPECT DVST OR MMST?	1.1	.0
T1280	13-3	DO YOU CLEAN DVST OR MMST?	1.1	.0
T1281	13-4	DO YOU ADJUST OR CALIBRATE DVST OR MMST?	1.1	.0
T1282	13-5	DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST?	2.2	.7
T1283	13-6	DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS?	.0	.0
T1284	13-7	DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS?	.0	.0
T1285	13-8	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF DVST?	1.1	.7
T1286	13-9	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF MMST?	1.1	.7
T1287	13-10	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME VARIOUS ELEMENTS OF SCT?	.0	.7
T1288	13-11	DO YOU PERFORM TASKS ON FLOOD GUNS?	.0	.0
T1289	13-12	DO YOU PERFORM TASKS ON WRITE GUNS?	.0	.0
T1290	13-13	DO YOU PERFORM TASKS ON READ GUNS?	.0	.0
T1291	13-14	DO YOU PERFORM TASKS ON ATTACK GUNS?	.0	.0
T1292	13-15	DO YOU PERFORM TASKS ON ERASE GUNS?	.0	.0
T1293	13-16	DO YOU PERFORM TASKS ON STORAGE GRIDS?	.0	.0
T1294	14-1	IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS DEALING WITH TELEVISION SYSTEMS INCLUDING LOW LIGHT TELEVISION? IF NO, GO TO ITEM 14-1; IF YES, CONTINUE.	4.5	1.4
T1295	14-2	DO YOU INSPECT TELEVISION SYSTEMS?	1.1	.0
T1296	14-3	DO YOU CLEAN TELEVISION SYSTEMS?	1.1	.0
T1297	14-4	DO YOU ADJUST OR CALIBRATE TELEVISION SYSTEMS?	1.1	.0
T1298	14-5	DO YOU OPERATE TELEVISION SYSTEMS?	3.4	.0
T1299	14-6	DO YOU TROUBLESHOOT WIRE CONNECTIONS OF TV SYSTEMS?	1.1	.0
T1300	14-7	DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF TV SYSTEMS?	.0	.0
T1301	14-8	DO YOU TROUBLESHOOT DOWN TO TV SYSTEM COMPONENT PARTS?	.0	.0
T1302	14-9	DO YOU REMOVE OR REPLACE TV SYSTEM MAJOR ASSEMBLIES?	.0	.0
T1303	14-10	DO YOU REMOVE OR REPLACE TV SYSTEM COMPONENT PARTS?	.0	.0

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D TSK TITLES

U COMPUTERS, MICROPROCESSORS, AND PROGRAMMING (U1), DB AND POWER RATIOS (U2)

U1304	U1-1 IN YOUR PRESENT JOB, DO YOU PERFORM MAINTENANCE ROUTINES OR PROGRAMMING TASKS? IF NO, GO TO ITEM U2-1; IF YES, CONTINUE.	13.5	12.6
U1305	U1-2 DO YOU USE OR REFER TO DECIMAL SYSTEMS?	7.9	7.0
U1306	U1-3 DO YOU USE OR REFER TO OCTAL SYSTEMS?	6.7	4.2
U1307	U1-4 DO YOU USE OR REFER TO PARITY DETECTORS/GENERATORS?	2.2	4.9
U1308	U1-5 DO YOU USE OR REFER TO HEXADECIMAL SYSTEMS?	5.6	4.9
U1309	U1-6 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS?	.0	2.1
U1310	U1-7 DO YOU USE OR REFER TO FOUR SYSTEMS?	.0	1.4
U1311	U1-8 DO YOU USE OR REFER TO BINARY SYSTEMS?	10.1	7.7
U1312	U1-9 DO YOU USE OR REFER TO TIME-SHARING (MULTI-SEQUENCING)?	9.0	5.6
U1313	U1-10 DO YOU USE OR REFER TO DATA WORDS?	9.0	9.1
U1314	U1-11 DO YOU USE OR REFER TO ADDRESS WORDS?	9.0	8.4
U1315	U1-12 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS?	5.6	7.7
U1316	U1-13 DO YOU USE OR REFER TO STEERING/INFORMATION?	1.1	2.1
U1317	U1-14 DO YOU USE OR REFER TO INSTRUCTION WORDS?	6.7	8.4
U1318	U1-15 DO YOU USE OR REFER TO DAP-16?	.0	.7
U1319	U1-16 DO YOU USE OR REFER TO BINARY CODED DECIMAL (BCD)?	6.7	6.3
U1320	U1-17 DO YOU USE OR REFER TO CONTROL WORDS?	4.5	9.1
U1321	U1-18 DO YOU USE OR REFER TO RESPONSE WORDS?	2.2	7.7
U1322	U1-19 DO YOU USE OR REFER TO WRAPAROUND WORDS?	1.1	3.5
U1323	U1-20 DO YOU USE OR REFER TO TEST OR DIAGNOSTIC PROGRAMS?	3.4	10.5
U1324	U1-21 DO YOU USE OR REFER TO RELIABILITY PROGRAMS?	2.2	4.2
U1325	U1-22 DO YOU USE OR REFER TO COMPILERS?	5.6	2.8
U1326	U1-23 DO YOU USE OR REFER TO ASSEMBLERS?	4.5	3.5
U1327	U1-24 DO YOU USE OR REFER TO MACHINE LANGUAGE?	6.7	4.2
U1328	U1-25 DO YOU USE OR REFER TO MNEMONICS?	1.1	5.6
U1329	U1-26 DO YOU USE OR REFER TO ROUTINES OR SUBROUTINES?	9.0	8.4
U1330	U1-27 DO YOU USE OR REFER TO FLOW CHARTS OR DIAGRAMS?	9.0	6.3
U1331	U1-28 DO YOU USE OR REFER TO 'ATLAS'?	.0	.7
U1332	U1-29 DO YOU USE OR REFER TO 'ELAN'?	.0	.7
U1333	U1-30 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING SYSTEMS?	2.2	3.5
U1334	U1-31 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING SYSTEMS?	2.2	2.1
U1335	U1-32 DO YOU WRITE PROGRAMS FOR TROUBLESHOOTING OF SPECIFIC CIRCUITS?	.0	2.8
U1336	U1-33 DO YOU USE PROGRAMS FOR TROUBLESHOOTING OF SPECIFIC CIRCUITS?	2.2	5.6
U1337	U1-34 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER CONTROL SECTIONS?	5.6	3.5
U1338	U1-35 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER INPUT SECTIONS?	6.7	5.6
U1339	U1-36 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER OUTPUT SECTIONS?	6.7	4.9

D TSM	TITLES	205	307
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U1340	U1-37 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER MONITOR SECTIONS?	6.7	7.0
U1341	U1-38 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER TRANSMIT SECTIONS?	5.6	6.3
U1342	U1-39 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER RECEIVE SECTIONS?	6.7	6.3
U1343	U1-40 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER INPUT DEVICES?	9.0	7.7
U1344	U1-41 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER STORAGE DEVICES?	5.6	5.6
U1345	U1-42 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER OUTPUT DEVICES?	9.0	7.7
U1346	U1-43 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER POWER DEVICES?	4.5	4.9
U1347	U1-44 DO YOU PERFORM TASKS ON BASIC DIGITAL COMPUTER MONITOR DEVICES?	7.9	7.0
U1348	U1-45 DO YOU USE FORTRAN PROGRAMMING LANGUAGE?	11.2	2.1
U1349	U1-46 DO YOU USE COBOL PROGRAMMING LANGUAGE?	4.5	2.1
U1350	U1-47 DO YOU USE RPG PROGRAMMING LANGUAGE?	.0	.7
U1351	U1-48 DO YOU USE OR PERFORM TASKS ON MICROPROCESSOR BASED EQUIPMENT?	4.5	4.2
U1352	U1-49 DO YOU USE INPUT PORT LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	2.1
U1353	U1-50 DO YOU USE OUTPUT PORT LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	2.1
U1354	U1-51 DO YOU USE RAM MEMORY CIRCUITS (STATIC OR DYNAMIC) IN CONJUNCTION WITH THE MICROPROCESSOR?	4.5	7.7
U1355	U1-52 DO YOU USE ROM MEMORY CIRCUITS (INCLUDES PROM, EPROM, ETC.) IN CONJUNCTION WITH THE MICROPROCESSOR?	4.5	7.0
U1356	U1-53 DO YOU USE TRI-STATE CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	.7
U1357	U1-54 DO YOU USE CLOCK GENERATOR CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	4.9
U1358	U1-55 DO YOU USE STATUS LATCH CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	1.4
U1359	U1-56 DO YOU USE BIDIRECTIONAL BUFFER CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	1.1	3.5
U1360	U1-57 DO YOU USE ENCODER/DECODER CIRCUITS IN CONJUNCTION WITH THE MICROPROCESSOR?	.0	2.8
U1361	U2-1 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION?	61.8	82.5
U1362	U2-2 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS?	24.7	43.4
U1363	U2-3 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS?	20.2	42.0
U1364	U2-4 DO YOU USE VTVM (DB METERS) TO CHECK FOR NOISE OR SIGNAL LEVEL?	10.1	70.6
U1365	U2-5 DO YOU USE VTVM (DB METERS) TO CHECK OR ADJUST AUDIO AMPLIFIERS?	7.9	64.3

NEESLER ELECTRONIC PRINCIPLES INVENTORY DATA

205 307
70 70
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O TSM TITLES

U1366 V2-6 DO YOU USE A HP1550 OR J444 TEST SET TO ALIGN AUDIO EQUIPMENT?

2.2 96.2

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