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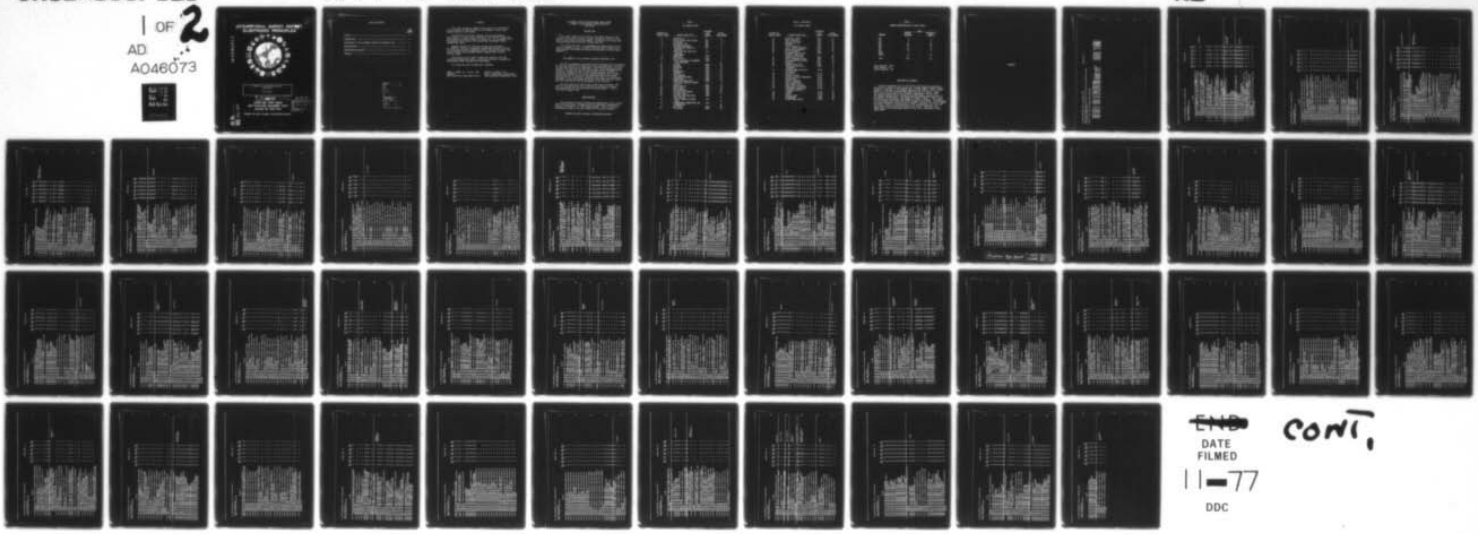

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OCCUPATIONAL SURVEY REPORT.
ELECTRONIC PRINCIPLES

AUTOMATIC FLIGHT CONTROL SYSTEMS
SPECIALIST

AFSC-32550,

AFPT 90-325-222
22 September 1977

51 p.

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Automatic Flight Control Systems Specialist, AFSC 32550.

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

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

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

This report has been reviewed and is approved.

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

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

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
AUTOMATIC FLIGHT CONTROL SYSTEMS SPECIALIST
AFSC 32550

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Automatic Flight Control Systems Specialist (AFSC 32550). The data for this report were collected during the period April through June 1977.

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

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

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

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

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 32550 airmen worldwide. Responses from 212 individuals represented 20 percent of the total of all AFSC 32550 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

TABLE 1

EPI SUBJECT AREAS

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

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

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

TABLE 2

COMMAND REPRESENTATION OF SURVEY SAMPLE

	32550	
COMMAND	PERCENT ASSIGNED	PERCENT OF SAMPLE
ADC	1	1
ATC	3	3
LOG	1	0
MAC	29	34
SAC	29	34
AFSC	2	2
TAC	22	22
AAC	1	1
USAFE	7	3
PACAF	5	0
TOTAL	100	100

Total Assigned - 1072
Total Sampled - 212
Percent Sampled - 20%

PRESENTATON OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the four selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Resistance (p. 23) and Soldering (pp. 11-12) to low in areas such as Infrared and Lasers (pp. 41-43). Additional AFSC 325X0 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 325X0 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC076	ALL AIRMEN DAFSC 32550	CONTAINING	212 MEMBERS.
GROUP IDENTITY =	SPC077	ALL AIRMEN DAFSC 32550 STATIONED IN CONUS	CONTAINING	170 MEMBERS.
GROUP IDENTITY =	SPC078	ALL AIRMEN DAFSC 32550 STATIONED OVERSEAS	CONTAINING	42 MEMBERS.
GROUP IDENTITY =	SPC079	ALL AIRMEN DAFSC 32550 ASSIGNED TO SAC	CONTAINING	61 MEMBERS.
GROUP IDENTITY =	SPC080	ALL ALL AMN DAFSC 32550 ASSIGNED TO TAC	CONTAINING	38 MEMBERS.
GROUP IDENTITY =	SPC081	ALL ALL AMN DAFSC 32550 ASSIGNED TO MAC	CONTAINING	76 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
A	1	A1-01 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.	70	75	82	89	88	67	
A	2	A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.	33	34	29	44	32	30	MATHEMATICS
A	3	A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	34	38	31	56	16	32	
A	4	A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	9	11	2	16	3	5	
A	5	A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	23	29	19	25	13	29	
A	6	A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	5	5	7	10	0	5	
A	7	A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	8	7	10	13	5	7	
A	8	A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.	5	5	5	7	0	8	
A	9	A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	2	2	5	5	0	1	
A	10	A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	8	9	5	10	3	11	
A	11	A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	47	45	55	66	13	54	
A	12	A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	6	7	2	10	0	8	
A	13	A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	3	3	5	5	0	5	
A	14	A1-14 DO YOU SOLVE OR USE PROPORTIONS.	8	8	12	8	3	11	
A	15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).	97	96	100	93	100	97	
A	16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	21	22	17	26	21	20	DIRECT CURRENT AND VOLTAGE
A	17	A2-03 DO YOU USE THE TERM OHM.	98	98	98	97	100	97	
A	18	A2-04 DO YOU USE THE TERM ION.	5	5	5	7	5	4	
A	19	A2-05 DO YOU USE THE TERM DYNE.	2	2	2	0	0	4	
A	20	A2-06 DO YOU USE THE TERM AMPERE.	91	90	95	92	100	87	
A	21	A2-07 DO YOU USE THE TERM NEUTRON.	7	8	5	11	5	5	
A	22	A2-08 DO YOU USE THE TERM COULOMB.	6	6	5	7	0	7	
A	23	A2-09 DO YOU USE THE TERM PROTON.	6	6	5	10	0	7	
A	24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	83	86	74	93	87	76	
A	25	A3-02 DO YOU INSPECT RESISTORS.	86	86	83	90	89	76	
A	26	A3-03 DO YOU CLEAN RESISTORS.	62	64	55	66	53	58	
A	27	A3-04 DO YOU ADJUST RESISTORS.	83	83	83	79	84	79	RESISTANCE
A	28	A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS.	88	89	83	93	92	78	
A	29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	82	82	81	89	92	69	
A	30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	9	8	12	8	5	8	
A	31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	80	79	83	85	82	70	
A	32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.	71	69	81	75	68	62	
A	33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	75	74	79	69	74	72	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
A	34	A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	64	65	67	61	63	59	
A	35	A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	15	16	7	15	16	12	
A	36	A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	16	16	12	18	11	12	
A	37	A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	87	87	86	90	89	80	
A	38	A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	24	22	29	26	18	17	
A	39	A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	18	17	24	18	13	16	
A	40	A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	20	21	19	26	18	13	
A	41	A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	13	15	7	21	13	8	
A	42	A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	21	21	24	26	13	14	
A	43	A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	17	16	19	16	13	13	
A	44	A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	19	21	14	28	16	12	
A	45	A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	15	15	12	21	11	9	
A	46	A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	13	15	5	21	11	8	
A	47	A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	19	18	24	20	16	17	
A	48	A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	17	15	21	18	13	14	
A	49	A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	17	17	19	20	18	13	
A	50	A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	14	15	12	21	13	8	
A	51	A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	12	13	7	16	13	9	
B	52	B1-01 DO YOU MEASURE RESISTANCE.	95	94	100	93	97	95	
B	53	B1-02 DO YOU REPAIR OHMMETERS.	9	10	7	18	11	1	
B	54	B1-03 DO YOU MEASURE VOLTAGE.	97	96	100	97	95	97	MULTIMETER USES
B	55	B1-04 DO YOU REPAIR VOLTMETERS.	8	9	5	13	11	1	
B	56	B1-05 DO YOU REPAIR AMMETERS.	4	5	0	8	5	1	
B	57	B1-06 DO YOU MEASURE CURRENT.	75	78	64	82	84	70	
B	58	B1-07 DO YOU USE MULTIMETERS.	97	96	100	97	97	97	
B	59	B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	0	1	0	2	0	0	
B	60	B1-09 DO YOU READ SCHEMATICS.	97	96	100	97	97	97	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
B	61	B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	52	52	55	67	45	42	ALTERNATING CURRENT
B	62	B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	62	65	48	77	95	59	
B	63	B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	65	68	55	72	63	61	
B	64	B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	34	37	21	46	21	38	
B	65	B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	64	68	48	84	58	58	
B	66	B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	19	13	19	16	5	11	
B	67	B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	34	32	40	43	24	26	
B	68	B3-02 DO YOU INSPECT INDUCTORS.	31	28	40	41	13	20	INDUCTORS AND INDUCTIVE REACTANCE
B	69	B3-03 DO YOU CLEAN INDUCTORS.	20	20	19	23	13	14	
B	70	B3-04 DO YOU ADJUST INDUCTORS.	14	16	5	26	11	9	
B	71	B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.	24	23	26	30	13	17	
B	72	B3-06 DO YOU USE OR REFER TO INDUCTANCE.	19	20	17	30	8	13	
B	73	B3-07 DO YOU USE OR REFER TO HENRIES.	9	10	5	8	5	7	
B	74	B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	12	14	7	16	5	9	
B	75	B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	1	1	0	0	0	0	
B	76	B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	3	4	0	5	0	1	
B	77	B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS	3	4	0	5	0	0	
B	78	B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	2	3	0	3	0	0	
B	79	B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.	2	2	0	3	0	1	
B	80	B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	4	5	0	5	0	3	
B	81	B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.	3	4	0	7	0	1	
B	82	B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	2	2	0	3	0	0	
B	83	B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES.	2	2	2	2	0	3	
B	84	B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	3	3	2	3	0	3	
B	85	B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	2	2	2	2	0	3	
B	86	B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	15	15	12	23	0	12	
B	87	B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	3	4	2	0	0	5	
B	88	B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	6	5	7	8	0	5	
B	89	B3-23 DO YOU WORK WITH POWER INDUCTORS.	19	19	19	30	8	12	
B	90	B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	5	5	7	7	0	7	
B	91	B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	5	4	7	7	0	5	

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS GPSUMS PAGE 5

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		By-Task	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
C	92	C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	72	72	69	85	84	46	CAPACITORS AND CAPACITIVE REACTANCE
C	93	C1-02 DO YOU INSPECT CAPACITORS.	76	77	71	95	87	47	
C	94	C1-03 DO YOU CLEAN CAPACITORS.	53	56	40	74	58	34	
C	95	C1-04 DO YOU ADJUST CAPACITORS.	18	20	12	23	26	12	
C	96	C1-05 DO YOU TEST CAPACITORS.	56	56	55	67	79	32	
C	97	C1-06 DO YOU DISCHARGE CAPACITORS.	43	44	40	52	47	21	
C	98	C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	66	66	64	79	87	34	
C	99	C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	5	6	2	10	5	1	
C	100	C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	1	1	0	0	3	0	
C	101	C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	50	52	40	56	61	33	
C	102	C1-11 DO YOU USE OR REFER TO CAPACITANCE.	56	58	50	69	58	34	
C	103	C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	3	4	0	5	5	1	
C	104	C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	31	29	38	31	37	13	
C	105	C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	18	21	10	20	18	14	
C	106	C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	19	19	19	15	32	9	
C	107	C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	71	74	62	85	84	43	
C	108	C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	73	74	67	85	89	46	
C	109	C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	66	66	64	80	74	43	
C	110	C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	15	14	17	18	18	7	
C	111	C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	2	2	0	0	5	1	
C	112	C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	2	2	0	3	3	0	
C	113	C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	1	1	0	0	3	0	
C	114	C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	6	6	2	5	8	1	
C	115	C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	6	6	5	5	8	3	
C	116	C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	5	5	2	2	8	1	
C	117	C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	19	19	19	26	21	8	
C	118	C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	20	20	19	26	8	11	
C	119	C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	8	9	0	10	5	5	
C	120	C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	4	5	2	2	8	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
C 121	C1-30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	17	18	12	33	16	7	
C 122	C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	8	9	5	13	11	0	
C 123	C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	59	59	62	75	74	33	
C 124	C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	53	50	64	62	63	29	
C 125	C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	48	48	50	57	61	30	
C 126	C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	54	54	57	66	63	32	
C 127	C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	22	24	17	23	24	10	
C 128	C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	66	63	71	79	71	38	
C 129	C2-02 DO YOU INSPECT TRANSFORMERS	65	65	64	79	78	41	
C 130	C2-03 DO YOU CLEAN TRANSFORMERS	46	46	40	57	39	32	
C 131	C2-04 DO YOU ADJUST TRANSFORMERS	28	25	12	30	26	12	
C 132	C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	56	54	64	64	71	30	TRANSFORMERS
C 133	C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	64	62	69	74	76	38	
C 134	C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	4	5	0	2	11	3	
C 135	C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	2	2	2	0	3	1	
C 136	C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	2	1	5	0	3	1	
C 137	C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	2	2	2	3	3	0	
C 138	C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	4	4	2	2	0	5	
C 139	C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	4	4	5	3	0	3	
C 140	C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	2	2	5	0	3	0	
C 141	C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	15	15	14	25	5	11	
C 142	C2-15 DO YOU WORK WITH POWER TRANSFORMERS	61	61	62	69	71	43	
C 143	C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	8	6	17	8	3	8	
C 144	C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	7	8	2	13	3	4	
C 145	C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	17	17	17	20	18	13	
C 146	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	55	52	64	56	71	30	
C 147	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	52	49	64	52	71	29	
C 148	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	49	47	57	54	61	30	
C 149	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	10	10	12	8	11	11	
C 150	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	15	14	19	15	13	12	
C 151	C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	59	58	64	70	63	37	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
C 152	C2-25	DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	41	41	40	44	45	28	
C 153	C2-26	DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	43	41	50	41	50	28	
C 154	C2-27	DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	52	49	62	52	58	34	
C 155	C2-28	DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	21	19	29	25	24	17	
C 156	C2-29	DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	28	26	36	31	24	22	
C 157	C2-30	DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	40	37	52	44	45	26	
C 158	C2-31	DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	17	17	14	23	13	9	
C 159	C2-32	DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	8	7	10	5	13	6	
C 160	C2-33	DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO	7	8	5	7	13	3	
C 161	C2-34	DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	18	18	19	21	18	11	
C 162	C2-35	DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	2	2	2	3	3	1	
C 163	C2-36	DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	2	2	0	3	3	0	
C 164	C2-37	DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	41	41	40	48	58	20	
C 165	C2-38	DO YOU INSPECT THREE PHASE TRANSFORMERS	38	37	40	46	50	13	
C 166	C2-39	DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	17	18	17	20	18	9	
C 167	C2-40	DO YOU ADJUST THREE PHASE TRANSFORMERS	8	8	7	16	8	1	
C 168	C2-41	DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	32	29	43	36	47	11	
C 169	C2-42	DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	36	35	40	46	53	11	
C 170	C2-43	DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	1	2	0	2	3	1	
C 171	C3-01	DO YOU USE OR REFER TO PERMANENT MAGNETS	38	37	40	59	8	34	
C 172	C3-02	DO YOU USE OR REFER TO TEMPORARY MAGNETS	22	23	19	36	8	16	
C 173	C3-03	DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	12	12	12	13	5	14	MAGNETISM
C 174	C3-04	DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	13	14	10	15	5	16	
C 175	C3-05	DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	17	16	19	21	3	21	
C 176	C3-06	DO YOU USE OR REFER TO RESIDUAL MAGNETISM	14	14	17	23	3	16	
C 177	C3-07	DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	68	62	74	79	24	74	
C 178	C3-08	DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	6	5	10	10	3	7	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
C	179	C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	4	4	7	8	3	4	
C	180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	32	32	31	43	11	32	
C	181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY	33	32	30	44	13	37	
C	182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	44	46	53	52	21	49	
C	183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	9	9	7	11	3	8	
C	184	C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	7	7	5	7	5	7	
D	185	D1-01 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR PRESENT JOB	20	19	26	30	8	16	
D	186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	4	4	5	7	0	5	RCL CIRCUITS
D	187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	2	2	2	0	0	4	
D	188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	8	8	7	13	0	7	
D	189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	8	8	5	13	0	8	
D	190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	3	4	0	5	0	3	
D	191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	7	7	5	11	0	7	
D	192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	2	3	0	7	0	1	
D	193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	3	3	2	5	0	3	
D	194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	4	5	0	7	0	4	
D	195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	2	3	0	3	0	3	
D	196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	2	2	2	3	0	3	
D	197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	8	8	7	11	0	8	
D	198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	5	5	5	8	0	5	
D	199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	5	5	5	8	0	5	
D	200	D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	6	6	5	13	0	7	
D	201	D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	1	1	0	2	0	1	
D	202	D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	6	6	5	11	0	4	
D	203	D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	4	4	2	7	0	4	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
D 204	D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	8	7	12	16	0	5
D 205	D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	3	4	0	11	0	0
D 206	D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	1	1	2	0	0	3
D 207	D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	0	0	0	0	0	0
D 208	D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	2	2	0	5	0	1
D 209	D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	0	1	0	0	0	1
D 210	D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	0	1	0	0	0	1
D 211	D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	0	1	0	2	0	0
D 212	D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	1	1	0	3	0	0
D 213	D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	0	0	2	0	0	1
D 214	D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	1	1	0	2	0	1
D 215	D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	0	1	0	2	0	0
D 216	D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	1	1	2	2	0	1
D 217	D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	1	1	2	2	0	1
D 218	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	19	19	21	28	13	13
D 219	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	11	10	17	16	3	8
D 220	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	15	19	19	26	5	8
D 221	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	9	9	12	16	3	7
D 222	D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA= 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	0	1	0	2	0	0
D 223	D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	1	1	0	2	0	1
D 224	D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	3	3	2	8	0	1
D 225	D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	2	2	2	7	0	1
D 226	D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	3	4	0	11	0	0
D 227	D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	1	1	0	3	0	0
D 228	D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	2	2	2	5	0	3

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
D 229	D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS	5	5	5	10	0	0	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
D 230	D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS	5	5	5	10	0	0	
D 231	D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE	3	3	5	3	0	1	
D 232	D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS	2	1	5	3	0	0	
D 233	D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)	1	1	0	3	0	0	
D 234	D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS	0	0	0	0	0	0	
D 235	D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS	0	1	0	0	0	0	
D 236	D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS	0	0	0	0	0	0	
D 237	D2-09 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	0	0	0	0	0	
D 238	D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS	0	1	0	2	0	0	
D 239	D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB	33	31	48	33	29	26	
D 240	D3-02 DO YOU INSPECT FILTER CIRCUITS	27	24	38	28	21	20	FILTERS
D 241	D3-03 DO YOU CLEAN FILTER CIRCUITS	16	16	17	20	11	11	
D 242	D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS	10	13	0	21	8	9	
D 243	D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL	21	18	36	21	16	13	
D 244	D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS	21	19	31	25	13	13	
D 245	D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT	25	22	33	25	21	21	
D 246	D3-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS	17	15	24	16	11	7	
D 247	D3-09 DO YOU WORK WITH LOW PASS FILTERS	24	22	33	30	18	13	
D 248	D3-10 DO YOU WORK WITH HIGH PASS FILTERS	25	22	33	30	24	13	
D 249	D3-11 DO YOU WORK WITH BANDPASS FILTERS	13	14	10	21	11	8	
D 250	D3-12 DO YOU WORK WITH BAND-REJECT FILTERS	10	11	5	16	11	9	
D 251	D3-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH	14	13	19	5	21	14	
D 252	D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION	10	9	17	18	5	9	
D 253	D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION	9	7	17	15	3	9	
D 254	D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION	8	7	14	10	5	6	
D 255	D3-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION	17	15	24	10	16	17	
D 256	D3-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS	10	10	10	20	8	3	
D 257	D3-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS	13	12	14	21	8	8	
D 258	D3-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS	10	11	7	18	11	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
D 259	D3-21	DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT	16	19	24	8	16	16	
D 260	D3-22	DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS	2	2	2	0	3	0	
E 261	E1-01	DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB	26	25	31	30	18	21	
E 262	E1-02	DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING	21	19	31	23	18	16	COUPLING
E 263	E1-03	DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING	18	16	24	23	13	9	
E 264	E1-04	DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING	25	24	31	30	18	17	
E 265	E1-05	DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING	21	19	29	25	18	13	
E 266	E1-06	DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING	18	17	21	25	13	9	
E 267	E1-07	DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING	25	24	29	30	18	14	
E 268	E1-08	DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS	18	17	21	18	16	13	
E 269	E1-09	DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS	17	14	29	21	13	12	
E 270	E1-10	DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS	14	13	17	18	13	12	
E 271	E1-11	DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS	20	18	29	23	16	16	
E 272	E1-12	DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS	9	9	10	11	5	5	
E 273	E2-01	IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS	89	87	95	90	89	82	
E 274	E2-02	DO YOU SELECT TYPE OF SOLDER TO USE	70	70	69	72	79	64	SOLDERING
E 275	E2-03	DO YOU ADD FLUX TO CONNECTIONS	85	83	93	89	92	76	
E 276	E2-04	DO YOU CLEAN CONNECTIONS USING SOLVENTS	71	71	69	74	79	62	
E 277	E2-05	DO YOU STRIP INSULATION FROM WIRES	90	89	93	93	95	80	
E 278	E2-06	DO YOU CONNECT OR DISCONNECT HEAT SINKS	75	74	79	77	84	61	
E 279	E2-07	DO YOU BEND OR SHAPE WIRES OR LEADS	90	88	95	92	95	80	
E 280	E2-08	DO YOU CUT WIRES	90	89	93	93	95	80	
E 281	E2-09	DO YOU FILE OR SHAPE SOLDERING IRON TIPS	68	68	69	74	74	54	
E 282	E2-10	DO YOU TIN SOLDERING IRON TIPS	90	89	95	92	95	82	
E 283	E2-11	DO YOU CLEAN SOLDERING IRON TIPS	90	89	95	93	95	80	
E 284	E2-12	DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS	51	52	48	48	61	49	
E 285	E2-13	DO YOU TIN OR PRE-TIN CONDUCTORS	84	84	86	89	95	67	
E 286	E2-14	DO YOU INSPECT SOLDERED CONNECTIONS	89	88	93	93	95	78	
E 287	E2-15	DO YOU DESOLDER CONNECTIONS BY WICKING	49	49	45	43	50	47	
E 288	E2-16	DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS	78	75	88	77	92	66	
E 289	E2-17	DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS	60	62	55	57	71	49	
E 290	E2-18	DO YOU CRUSH COMPONENTS FOR REMOVAL	15	15	12	11	24	8	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
E 291	E2-19 DO YOU MAKE HARDWIRE CONNECTIONS	77	78	76	80	76	71	
E 292	E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	50	54	36	48	66	38	
E 293	E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	50	51	48	51	61	33	
E 294	E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	42	43	36	28	54	32	
E 295	E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	84	82	93	84	92	76	
E 296	E3-02 DO YOU ADJUST RELAYS	30	29	33	49	18	17	
E 297	E3-03 DO YOU CLEAN RELAYS	51	52	50	66	42	43	
E 298	E3-04 DO YOU INSPECT RELAYS	75	75	76	82	79	69	RELAYS
E 299	E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	83	82	88	80	95	76	
E 300	E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	9	11	8	13	13	7	
E 301	E3-07 DO YOU TROUBLESHOOT RELAYS	82	79	90	79	95	72	
E 302	E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	40	41	33	49	39	32	
E 303	E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	30	32	21	38	26	29	
E 304	E3-10 DO YOU PERFORM TASKS ON RELAY CORES	7	8	5	8	11	1	
E 305	E3-11 DO YOU PERFORM TASKS ON RELAY COILS	8	9	7	11	11	3	
E 306	E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	9	11	5	18	11	1	
E 307	E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	15	16	10	28	11	9	
E 308	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	64	62	69	66	58	57	
E 309	E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	62	61	67	66	50	58	
E 310	E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	59	58	62	62	53	51	
E 311	E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	58	58	60	64	42	55	
E 312	E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	60	62	52	75	50	47	
E 313	E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	61	58	71	59	74	50	
F 314	F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	7	6	10	10	3	9	
F 315	F1-02 DO YOU INSPECT MICROPHONES	3	4	0	8	0	1	MICROPHONES
F 316	F1-03 DO YOU CLEAN MICROPHONES	2	3	0	7	0	1	
F 317	F1-04 DO YOU OPERATE MICROPHONES	8	7	10	11	3	9	
F 318	F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES	2	3	0	7	0	1	
F 319	F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	0	1	0	2	0	0	
F 320	F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	3	4	0	10	0	0	
F 321	F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	0	1	0	2	0	0	
F 322	F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	2	2	0	7	0	0	
F 323	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	1	0	5	0	0	3	
F 324	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	0	1	0	2	0	0	
F 325	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	0	0	0	0	0	0	
F 326	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	1	1	0	3	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
F 327	F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	5	5	7	8	0	7	
F 328	F2-02 DO YOU INSPECT SPEAKERS	1	2	0	5	0	0	SPEAKERS
F 329	F2-03 DO YOU CLEAN SPEAKERS	1	1	0	3	0	0	
F 330	F2-04 DO YOU OPERATE SPEAKERS	5	4	7	8	0	5	
F 331	F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	1	2	0	3	0	0	
F 332	F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	0	0	0	0	0	0	
F 333	F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	1	2	0	5	0	0	
F 334	F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	0	0	0	0	0	0	
F 335	F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	0	0	2	0	0	1	
F 336	F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	0	0	2	0	0	1	
F 337	F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	0	0	2	0	0	1	
F 338	F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	0	0	2	0	0	1	
F 339	F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	0	0	2	0	0	1	
F 340	F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	0	0	2	0	0	1	
F 341	F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	0	0	2	0	0	1	
F 342	F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	67	68	62	78	74	80	
F 343	F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	59	62	48	69	63	42	
F 344	F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	49	53	31	67	39	34	OSCILLOSCOPES
F 345	F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	56	59	38	67	58	43	
F 346	F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	38	41	24	56	26	33	
F 347	F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	23	26	10	41	13	18	
F 348	F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	53	55	48	72	61	25	
F 349	F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	20	25	2	30	13	14	
F 350	F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	15	16	7	26	11	8	
F 351	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	50	52	43	66	39	45	
F 352	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	35	38	24	57	16	33	
F 353	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	41	42	36	56	26	38	
G 354	G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	50	49	56	44	63	36	
G 355	G1-02 DO YOU INSPECT DIODES	49	48	50	44	63	39	
G 356	G1-03 DO YOU REMOVE OR REPLACE DIODES	46	46	48	34	63	34	SEMICONDUCTOR DIODES
G 357	G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	45	44	48	32	61	32	
G 358	G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	1	2	0	2	3	0	
G 359	G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE	3	4	2	3	5	1	
G 360	G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	5	5	5	3	5	4	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
G	383	61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	0	1	0	0	3	0	
G	384	61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	0	1	0	0	3	0	
G	385	61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	1	2	0	3	3	0	
G	386	61-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	2	2	5	3	3	3	
G	387	61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	6	5	10	8	5	3	
G	388	61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	2	2	0	5	3	0	
G	389	61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	1	1	0	2	3	0	
G	390	61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	12	11	14	10	11	9	
G	391	61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	11	11	14	10	11	8	
G	392	61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	1	2	0	3	3	0	
G	393	61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	1	2	0	3	3	0	
G	394	61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	1	1	0	2	3	0	
G	395	61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	2	2	0	5	3	0	
G	396	61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	1	1	0	2	3	0	
G	397	61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	4	5	2	3	5	5	
G	398	61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	1	1	0	2	3	0	
G	399	61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	10	10	10	7	11	7	
G	400	61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	5	5	7	5	3	3	
G	401	61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	3	3	2	3	3	0	
G	402	61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	5	5	2	10	3	0	
G	403	61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	6	6	5	8	3	3	
G	404	62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	98	96	98	94	61	26	
G	405	62-02 DO YOU INSPECT TRANSISTORS	44	44	43	43	56	25	
G	406	62-03 DO YOU REMOVE OR REPLACE TRANSISTORS	37	38	33	26	61	22	
G	407	62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	31	31	33	21	47	21	TRANSISTORS
G	408	62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	24	22	31	20	29	20	
G	409	62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	23	21	31	18	29	20	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	Dy-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
G 410	62-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	23	22	26	20	29	17	
G 411	62-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	8	8	10	8	13	7	
G 412	62-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	6	6	5	8	8	4	
G 413	62-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	11	13	2	15	13	8	
G 414	62-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	4	4	5	3	5	1	
G 415	62-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	41	40	43	34	55	26	
G 416	62-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	39	38	40	30	56	26	
G 417	62-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	15	14	10	8	21	16	
G 418	62-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)	8	6	12	7	11	7	
G 419	62-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS	14	12	19	7	24	8	
G 420	62-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	2	3	0	5	5	0	
G 421	62-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	3	3	5	7	3	0	
G 422	62-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	2	2	0	2	5	0	
G 423	62-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	2	2	0	2	5	0	
G 424	62-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	1	2	0	0	5	0	
G 425	62-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	1	1	0	0	5	0	
G 426	62-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	1	1	0	0	5	0	
G 427	62-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	1	1	0	0	5	0	
G 428	63-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	33	31	40	31	32	24	
G 429	63-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	29	28	36	34	26	21	
G 430	63-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	20	20	21	30	24	12	TRANSISTOR AMPLIFIERS
G 431	63-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	26	26	29	28	26	17	
G 432	63-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	20	20	19	20	26	12	
G 433	63-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	34	32	43	34	32	26	
G 434	63-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	17	15	24	11	21	13	
G 435	63-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	6	5	10	5	3	4	
G 436	63-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	3	3	5	2	3	4	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
G 437	63-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	6	6	10	5	3	5
G 438	63-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	2	3	0	3	0	3
G 439	63-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	7	6	10	7	3	3
G 440	63-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	3	3	2	2	0	3
G 441	63-14 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	1	0	0	0	1
G 442	63-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	2	3	0	7	0	1
G 443	63-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	0	1	0	0	0	1
G 444	63-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	15	15	12	18	11	8
G 445	63-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	9	10	7	15	6	5
G 446	63-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	9	9	7	13	11	4
G 447	63-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	0	1	0	0	3	0
G 448	63-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	0	1	0	0	3	0
G 449	63-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	0	1	0	0	3	0
G 450	63-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT EQ) OF THE TRANSISTOR)	1	1	0	3	0	0
G 451	63-24 DO YOU COMPUTE THE STATIC OPERATING POINT EQ) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	0	1	0	0	0	1
G 452	63-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	8	8	10	8	3	7
G 453	63-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	8	8	10	8	5	7

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
G 454	63-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	6	6	7	8	5	9
G 455	63-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	8	7	10	7	5	5
G 456	63-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	8	7	10	7	5	5
G 457	63-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	6	5	10	7	3	9
G 458	63-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	8	8	10	8	3	7
G 459	63-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	9	9	10	10	5	7
G 460	63-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	7	7	7	8	8	9
G 461	63-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	10	9	14	8	11	7
G 462	63-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	10	9	14	8	11	7
G 463	63-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	6	6	7	7	5	9
G 464	63-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	8	8	10	10	3	5
G 465	63-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	7	6	10	10	0	5
G 466	63-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	5	6	0	10	3	1
G 467	63-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	7	7	5	13	3	9
G 468	63-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	5	5	5	10	0	9
G 469	63-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	3	9	0	8	0	1
G 470	63-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	9	9	2	7	0	3
G 471	63-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	5	5	5	10	3	1
G 472	63-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	8	8	10	10	3	5
G 473	63-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	17	16	21	18	11	19
G 474	63-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	6	6	2	11	3	9
G 475	63-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	8	7	10	11	3	9

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
G	476	63-99 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	8	8	12	13	3	5	
H	477	H1-01 DO YOU USE OR REFER TO VARACTORS	8	9	7	11	8	4	
H	478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	14	14	12	13	11	9	SOLID-STATE SPECIAL PURPOSE DEVICES
H	479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	14	14	12	16	8	13	
H	480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	7	8	6	11	3	4	
H	481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	41	40	43	39	39	36	
H	482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	44	44	43	39	39	51	
H	483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	60	63	48	80	42	58	
H	484	H2-02 DO YOU INSPECT POWER SUPPLIES	60	63	48	80	47	53	
H	485	H2-03 DO YOU CLEAN POWER SUPPLIES	49	52	36	64	34	46	
H	486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	33	34	26	57	13	25	POWER SUPPLIES
H	487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	49	51	40	61	39	45	
H	488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	37	39	29	43	26	37	
H	489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	54	59	45	75	32	58	
H	490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	31	32	26	38	24	28	
H	491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	24	27	24	38	16	18	
H	492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	30	29	31	48	16	21	
H	493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	33	33	31	48	18	26	
H	494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	25	27	19	41	18	17	
H	495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	36	35	34	54	21	22	
H	496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	23	25	14	43	13	12	
H	497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	25	26	19	41	16	16	
H	498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	29	31	24	48	16	20	
H	499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	12	12	12	13	8	11	
H	500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	10	11	7	13	5	7	
H	501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	12	12	10	20	8	5	
H	502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	21	23	14	38	11	14	
H	503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	25	25	21	38	13	18	
H	504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	29	27	38	39	13	22	
H	505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	23	23	21	36	5	14	
H	506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	17	15	21	34	3	7	
H	507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	15	15	17	33	3	5	
H	508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	13	14	12	28	3	5	
H	509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	15	15	14	30	5	8	
H	510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	21	23	14	30	24	14	
H	511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	2	3	0	3	5	1	
H	512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	13	14	10	21	11	9	OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
H	513	H3-02 DO YOU INSPECT OSCILLATORS	10	11	7	18	5	1	
H	514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	7	7	7	13	3	1	
H	515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	9	9	7	15	5	1	
H	516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	6	6	5	8	5	1	
H	517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	8	9	5	16	5	1	
H	518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	7	7	5	11	5	1	
H	519	H3-08 DO YOU USE OR REFER TO FEEDBACK	8	8	7	15	5	3	
H	520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	5	6	0	10	3	3	
H	521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	5	5	7	8	3	3	
H	522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	5	5	5	10	3	1	
H	523	H3-12 DO YOU USE OR REFER TO DAMPING	6	6	5	11	5	0	
H	524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	7	7	5	15	5	0	
H	525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	2	3	0	3	3	1	
H	526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	3	4	0	7	3	0	
H	527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	3	4	0	8	3	0	
H	528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	3	4	0	8	3	0	
H	529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	4	5	0	8	3	1	
H	530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	6	6	5	11	3	1	
H	531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	2	3	0	5	0	1	
H	532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	4	5	2	8	3	1	
H	533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	3	2	5	3	0	3	
H	534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	4	4	5	7	0	3	
H	535	H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	4	4	5	7	0	3	
H	536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	2	2	0	3	0	1	
H	537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	2	2	2	3	0	3	
H	538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	6	6	5	11	3	1	
I	539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	8	9	2	16	5	1	
I	540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	5	6	0	13	5	0	
I	541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	4	5	0	10	3	0	MULTIVIBRATORS
I	542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	3	4	0	10	3	0	
I	543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	6	7	0	15	5	0	
I	544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	5	6	0	13	3	0	
I	545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	5	6	0	13	5	0	
I	546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	4	4	2	8	3	0	
I	547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	4	5	2	11	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 074	SPC 077	SPC 078	SPC 079	SPC 08D	SPC 081	
I 548	11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	5	5	2	13	0	0	
I 549	11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	3	4	0	8	0	1	
I 550	11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	2	3	0	3	5	0	
I 551	11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	4	5	2	10	3	0	
I 552	11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	5	5	2	11	3	0	
I 553	11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	6	6	2	13	3	1	
I 554	11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	2	3	0	5	3	0	
I 555	12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	14	16	5	26	8	7	
I 556	12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	4	5	2	10	3	1	LIMITERS AND CLAMPERS
I 557	12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	4	4	2	10	0	1	
I 558	12-04 DO YOU WORK WITH LIMITERS WITH BIAS	5	5	2	11	0	3	
I 559	12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	6	6	2	11	0	4	
I 560	12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	6	7	2	16	0	3	
I 561	12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	9	11	2	16	8	4	
I 562	12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	6	6	2	15	0	3	
I 563	12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	5	5	2	13	0	1	
I 564	12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	8	10	0	18	5	0	
I 565	13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	50	48	62	89	13	38	
I 566	13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	52	49	67	92	16	39	ELECTRON TUBES
I 567	13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	51	48	64	90	13	39	
I 568	13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	17	16	19	31	8	8	
I 569	13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	7	8	2	16	0	3	
I 570	13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	42	41	45	67	11	25	
I 571	13-07 DO YOU USE OR REFER TO CUTOFF	9	10	5	21	0	1	
I 572	13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	4	4	5	7	0	3	
I 573	13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	7	7	5	13	3	1	
I 574	13-10 DO YOU USE OR REFER TO TRANSIT TIME	3	2	5	5	0	0	
I 575	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	5	5	5	8	0	1	
I 576	13-12 DO YOU USE OR REFER TO SATURATION	10	11	7	23	3	4	
I 577	13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	5	5	5	10	3	0	
I 578	13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	1	1	0	2	0	0	
I 579	13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	26	27	29	56	8	11	
I 580	13-16 DO YOU USE OR REFER TO PLATE CURRENT	19	22	10	44	5	5	
I 581	13-17 DO YOU USE OR REFER TO GRID VOLTAGE	25	25	21	52	8	11	
I 582	13-18 DO YOU USE OR REFER TO GRID CURRENT	20	22	10	44	5	5	
I 583	13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	22	22	21	44	5	9	
I 584	13-20 DO YOU USE OR REFER TO CATHODE CURRENT	17	19	10	38	5	5	
I 585	13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)	1	2	0	3	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
I 586	I3-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	0	1	0	0	0	0	
I 587	I3-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	9	9	7	7	0	3	
I 588	I3-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	1	1	0	2	0	0	
I 589	I3-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	0	1	0	0	0	0	
I 590	I3-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	1	1	0	2	0	0	
I 591	I3-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	1	1	0	2	0	0	
I 592	I3-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	1	2	0	3	0	0	
I 593	I3-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	0	1	0	2	0	0	
I 594	I3-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	1	1	0	3	0	0	
I 595	I3-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	1	2	0	5	0	0	
I 596	I3-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	2	2	0	7	0	0	
I 597	I3-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	1	2	0	5	0	0	
I 598	I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	12	11	14	21	0	8	
I 599	I3-36 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	7	6	12	11	0	5	
I 600	I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	23	21	31	48	0	12	
I 601	I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	10	9	17	16	5	7	
I 602	I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	9	5	2	8	0	9	
I 603	I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	0	0	0	0	0	0	
I 604	I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	0	0	0	0	0	0	
I 605	I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	31	29	38	61	3	18	
I 606	I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	34	32	43	69	5	21	
I 607	I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON	2	2	0	5	0	0	
I 608	I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	26	24	36	52	5	20	
J 609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	33	28	55	56	8	28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS
J 610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	9	9	10	20	0	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
J 611	J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	9	8	14	18	0	7	
J 612	J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	19	17	29	33	3	13	
J 613	J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	11	9	19	20	0	7	
J 614	J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	8	6	14	11	0	8	
J 615	J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	20	16	36	30	11	16	
J 616	J2-01 DO YOU WORK WITH GAS TUBES (NOT CATHODE OR COLD CATHODE)	19	20	17	39	5	11	
J 617	J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	12	15	2	33	3	9	SPECIAL PURPOSE ELECTRON TUBES
J 618	J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	2	2	5	3	0	1	
J 619	J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	2	1	5	0	3	1	
J 620	J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	0	1	0	0	0	1	
J 621	J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	1	1	0	0	0	1	
J 622	J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	2	3	0	5	0	1	
J 623	J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	1	2	0	2	0	1	
J 624	J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	1	1	0	2	0	0	
J 625	J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	4	5	0	8	0	4	
J 626	J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	0	0	0	0	0	0	
J 627	J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	0	1	0	0	3	0	
J 628	J2-13 DO YOU USE OR REFER TO PERSISTENCE	1	2	0	3	0	1	
J 629	J2-14 DO YOU USE OR REFER TO DECAY TIMES	2	2	2	7	0	0	
J 630	J2-15 DO YOU USE OR REFER TO FLUORESCENCE	3	4	0	7	3	3	
J 631	J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	3	4	0	7	3	3	
J 632	J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	1	1	0	2	0	1	
J 633	J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	1	1	0	0	0	1	HETERODYNING, MODULATION, AND DEMODULATION
J 634	J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	1	2	0	2	0	1	
J 635	J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	1	
J 636	J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	1	1	0	0	0	1	
J 637	J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	1	1	0	0	0	1	
K 638	K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	1	0	0	0	1	
K 639	K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	1	AM SYSTEMS
K 640	K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	1	
K 641	K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	1	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
K 642	K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	1	
K 643	K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	1	1	0	0	0	1	
K 644	K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	0	0	1	
K 645	K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	1	1	0	0	0	1	
K 646	K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	1	1	0	0	0	1	
K 647	K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	1	0	0	0	1	
K 648	K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	1	0	0	0	1	
K 649	K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	1	0	0	0	1	
K 650	K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	1	1	0	0	0	1	
K 651	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	1	1	0	0	0	1	
K 652	K1-15 DO YOU PERFORM TASKS ON DETECTORS	1	1	0	0	0	1	
K 653	K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	0	0	0	0	0	0	
K 654	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	1	0	0	0	1	
K 655	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	0	1	0	0	0	1	
K 656	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	1	1	0	0	0	1	
K 657	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	1	1	0	0	0	1	
K 658	K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	1	1	0	0	0	1	
K 659	K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	1	1	0	0	0	1	
K 660	K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	1	1	0	0	0	1	
K 661	K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	1	1	0	0	0	1	
K 662	K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	1	1	0	0	0	1	
K 663	K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	1	1	0	0	0	1	
K 664	K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	0	1	0	0	0	1	
K 665	K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	0	1	0	0	0	1	
K 666	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	0	0	0	0	FM SYSTEMS
K 667	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
K 668	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
K 669	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
K 670	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
K 671	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	
K 672	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	0	1	0	0	3	0	
K 673	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	
K 674	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0	0	0	0	
K 675	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	0	0	0	0	0	0	
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0	0	0	0	
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0	0	0	0	
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	0	0	0	0	0	0	
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	0	0	0	
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	0	0	0	0	0	0	
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	0	0	0	0	0	0	
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	0	1	0	2	0	0	
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	0	0	0	0	0	0	
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	4	4	5	2	0	7	
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	7	6	10	2	0	12	NUMBERING SYSTEMS
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	5	4	7	2	0	7	
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	4	4	5	0	0	7	
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	8	7	10	5	0	11	
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	4	4	5	0	0	7	
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	8	8	10	5	3	11	
K 692	K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	4	3	7	0	0	5	
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	5	5	7	2	0	8	
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	3	3	5	0	0	5	
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	10	12	5	20	0	9	
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	5	5	2	3	3	7	LOGIC FUNCTIONS
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	5	5	2	3	3	7	
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	4	4	2	3	3	4	
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	2	2	2	2	3	3	
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	5	5	2	7	0	7	
L 701	L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	5	5	2	7	0	7	
L 702	L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	3	4	2	3	0	5	
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	3	3	2	2	0	7	
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	8	9	5	16	0	7	
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	8	9	5	16	0	7	
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	8	9	5	16	0	7	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
L 707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	7	7	5	13	0	7	
L 708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	3	4	0	3	0	3	
L 709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	0	0	0	0	0	0	BOOLEAN EQUATIONS
L 710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	0	0	0	0	0	0	
L 711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	0	1	0	0	0	1	
L 712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	2	3	0	5	0	1	
L 713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	0	1	0	0	0	1	
L 714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	2	2	0	2	0	3	
L 715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	1	1	0	3	0	0	
L 716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	0	0	0	0	0	0	
L 717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	3	4	0	3	0	3	
L 718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	0	1	0	2	0	0	
L 719	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	1	2	0	3	0	0	
L 720	L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	2	2	0	5	0	0	
L 721	L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	3	4	0	5	0	3	
L 722	L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	2	3	0	5	0	1	
L 723	L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	2	3	0	5	0	1	
L 724	L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	2	3	0	5	0	1	
L 725	L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	2	3	0	5	0	1	
L 726	L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	2	2	0	3	0	1	
L 727	L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	1	1	0	3	0	0	
L 728	L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	1	1	0	3	0	0	
L 729	L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	1	2	0	5	0	0	
L 730	L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	1	2	0	5	0	0	
L 731	L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	1	2	0	5	0	0	
L 732	L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
L 733	L3-01	DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	8	7	12	15	0	11	
L 734	L3-02	DO YOU USE OR REFER TO UP-COUNTERS	3	4	0	7	0	4	
L 735	L3-03	DO YOU USE OR REFER TO DOWN-COUNTERS	3	4	0	5	0	4	
L 736	L3-04	DO YOU USE OR REFER TO SERIAL COUNTERS	3	4	0	7	0	3	COUNTERS
L 737	L3-05	DO YOU USE OR REFER TO PARALLEL COUNTERS	1	2	0	3	0	1	
L 738	L3-06	DO YOU USE OR REFER TO RING COUNTERS	2	2	5	5	0	3	
L 739	L3-07	DO YOU USE OR REFER TO DECADE COUNTERS	2	2	0	5	0	1	
L 740	L3-08	DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	2	2	2	3	0	3	
L 741	L3-09	DO YOU USE OR REFER TO DOWN CLOCKS	2	3	0	5	0	3	
L 742	L3-10	DO YOU USE OR REFER TO UP CLOCKS	2	3	0	5	0	3	
L 743	L3-11	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	1	1	0	3	0	0	
L 744	L3-12	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	1	1	0	3	0	0	
L 745	L3-13	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	1	1	0	3	0	0	
L 746	L3-14	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	1	1	0	3	0	0	
L 747	L3-15	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	0	1	0	2	0	0	
L 748	L3-16	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	1	2	0	5	0	0	
L 749	L3-17	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	3	3	2	8	0	1	
L 750	L3-18	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	0	1	0	2	0	0	
L 751	L3-19	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	0	0	0	0	0	0	
L 752	L3-20	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTERS	1	2	0	2	3	1	
L 753	L3-21	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	2	2	0	7	0	0	
L 754	L3-22	DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	0	0	0	0	0	0	
L 755	L3-23	DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	1	1	0	3	0	0	
L 756	L3-24	DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	0	1	0	2	0	0	
M 757	M1-01	DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	6	8	0	11	5	3	
M 758	M1-02	DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	3	4	0	2	3	1	TIMING CIRCUITS
M 759	M1-03	DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	5	5	2	10	0	3	
M 760	M1-04	DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	3	4	0	5	0	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
M 761	M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	3	4	0	5	0	3	
M 762	M1-06 DO YOU USE OR REFER TO RISE TIME	4	4	2	7	0	4	
M 763	M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	3	4	0	7	0	3	
M 764	M1-08 DO YOU USE OR REFER TO SWEEP TIME	5	6	0	11	3	3	
M 765	M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	4	5	0	5	3	4	
M 766	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	4	5	0	8	0	3	
M 767	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	3	4	0	7	0	3	
M 768	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	3	4	0	7	0	3	
M 769	M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	15	18	2	26	5	16	
M 770	M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	15	18	2	26	5	14	
M 771	M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	11	14	2	23	5	8	USE OF SIGNAL GENERATORS
M 772	M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	13	16	2	26	5	12	
M 773	M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	7	8	2	11	3	8	
M 774	M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	8	10	2	15	0	9	
M 775	M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	4	5	2	7	3	4	
M 776	M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	4	5	0	3	3	5	
M 777	M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	3	4	0	2	3	5	
M 778	M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	9	11	2	16	0	13	
M 779	M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	52	51	57	80	14	50	
M 780	M3-02 DO YOU INSPECT MOTORS	49	48	52	80	14	42	MOTORS AND GENERATORS
M 781	M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	41	39	48	70	14	30	
M 782	M3-04 DO YOU OPERATE MOTORS	47	46	55	77	14	39	
M 783	M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	50	49	57	80	14	46	
M 784	M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	27	24	33	51	11	14	
M 785	M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	43	41	52	67	13	38	
M 786	M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	21	21	21	38	5	12	
M 787	M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	7	7	7	15	0	7	
M 788	M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	17	15	21	31	5	14	
M 789	M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	12	12	14	25	3	9	
M 790	M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	34	32	43	62	11	24	
M 791	M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	11	11	10	25	0	5	
M 792	M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	16	17	12	34	3	9	
M 793	M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	6	6	2	13	0	3	

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
N 799	M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	28	30	21	61	3	22	
N 795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	31	32	29	69	5	29	
N 796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	17	16	19	21	5	20	
N 797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	28	29	24	46	11	26	
N 798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	23	22	24	41	3	21	
N 799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	17	17	14	30	3	14	
N 800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	34	33	40	57	8	32	
N 801	M3-23 DO YOU INSPECT GENERATORS	29	28	33	61	11	20	
N 802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	22	23	17	39	11	14	
N 803	M3-25 DO YOU OPERATE GENERATORS	27	26	31	48	11	21	
N 804	M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	25	25	26	41	13	20	
N 805	M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	12	13	10	21	11	5	
N 806	M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	26	25	29	44	8	20	
N 807	M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	8	9	7	15	8	4	
N 808	N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	80	77	90	80	71	76	
N 809	N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	12	11	19	13	11	11	
N 810	N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	13	11	21	15	14	9	METER MOVEMENTS
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	12	12	14	16	18	8	
N 812	N1-05 DO YOU READ METER SCALES	82	80	90	80	79	79	
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	25	25	24	25	24	28	
N 814	N1-07 DO YOU ZERO OHMMETERS	80	78	88	77	79	78	
N 815	N1-08 DO YOU ZERO AMMETERS	20	22	14	21	21	22	
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	37	37	34	34	29	42	
N 817	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	50	49	52	61	32	53	
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	14	15	10	36	8	1	
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	14	15	10	34	8	1	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	8	9	2	20	5	1	
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	5	2	10	5	0	
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	11	11	10	25	8	1	
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	13	14	10	33	8	1	
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	4	4	2	7	8	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
N	825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	1	2	0	3	3	0	
N	826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	2	2	6	3	3	0	
N	827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	4	4	2	8	6	0	
N	828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	3	3	6	7	3	0	
N	829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	1	1	0	2	3	0	
N	830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	2	2	0	6	3	0	
N	831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	3	4	0	8	3	0	
N	832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	2	3	0	7	3	0	
N	833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	6	6	2	15	3	0	
N	834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	8	10	0	20	6	3	
N	835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	1	1	0	3	0	0	WAVESHAPING CIRCUITS
N	836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	4	5	0	10	3	1	
N	837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	3	4	0	7	3	3	
N	838	N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	2	3	0	5	3	1	
N	839	N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	4	5	0	8	3	3	
N	840	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	6	8	0	16	3	3	
N	841	N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	4	5	0	8	3	3	
N	842	N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION	1	2	0	3	0	1	
N	843	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	5	6	0	13	3	1	
N	844	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	3	4	0	7	3	1	
O	845	O1-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	0	1	0	2	0	0	
O	846	O1-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
O	847	O1-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	SINGLE SIDEBAND SYSTEMS
O	848	O1-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
O	849	O1-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
O	850	O1-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	
O	851	O1-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	
O	852	O1-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
0 853	01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	0	1	0	2	0	0	
0 854	01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	1	0	2	0	0	
0 855	01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	1	0	2	0	0	
0 856	01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	0	1	0	2	0	0	
0 857	01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	1	0	2	0	0	
0 858	01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	1	0	2	0	0	
0 859	01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	0	1	0	2	0	0	
0 860	01-16 DO YOU PERFORM TASKS ON SSB MIXERS	0	1	0	2	0	0	
0 861	01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	0	1	0	2	0	0	
0 862	01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	0	1	0	2	0	0	
0 863	01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	0	1	0	2	0	0	
0 864	01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	1	0	2	0	0	
0 865	01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	1	0	2	0	0	
0 866	01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	0	1	0	2	0	0	
0 867	01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	0	1	0	0	3	0	
0 868	01-24 DO YOU USE OR REFER TO SELECTIVE FADING	0	0	0	0	0	0	
0 869	01-25 DO YOU USE OR REFER TO PEAK POWER	0	1	0	2	0	0	
0 870	01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	0	1	0	2	0	0	
0 871	01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	0	1	0	2	0	0	
0 872	01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	0	0	0	0	0	0	
0 873	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	
0 874	01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	
0 875	02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	1	1	0	3	0	0	
0 876	02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	2	2	0	6	0	1	PULSE MODULATION SYSTEMS
0 877	02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	1	1	0	3	0	0	
0 878	02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	0	1	0	2	0	0	
0 879	02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	1	1	0	3	0	0	
0 880	02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	0	1	0	2	0	0	
0 881	02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	1	1	0	3	0	0	
0 882	02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	0	0	0	0	0	0	
0 883	02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	1	1	0	3	0	0	
0 884	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	1	1	0	3	0	0	
0 885	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	0	1	0	2	0	0	
0 886	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	0	0	0	0	0	0	
0 887	02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	0	1	0	2	0	0	
0 888	02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
0 889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	1	1	0	3	0	0	
0 890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	1	1	0	3	0	0	
0 891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	1	1	0	3	0	0	
0 892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	1	1	0	3	0	0	
0 893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	0	0	0	0	0	0	
0 894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	0	1	0	2	0	0	
0 895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	0	1	0	2	0	0	
0 896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	0	1	0	2	0	0	
0 897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	0	1	0	2	0	0	
0 898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	0	1	0	2	0	0	
0 899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	0	1	0	2	0	0	
0 900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	0	0	0	0	0	0	
0 901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	0	0	0	0	0	0	
0 902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	0	0	0	0	0	0	
0 903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	0	0	0	0	0	0	
0 904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	0	1	0	2	0	0	
0 905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	1	1	0	3	0	0	
0 906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	1	1	0	3	0	0	
0 907	02-33 DO YOU USE OR REFER TO PEAK POWER	0	1	0	2	0	0	
0 908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	0	1	0	2	0	0	
0 909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	0	0	0	0	0	0	
0 910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	0	1	0	2	0	0	
0 911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	0	0	0	0	0	0	
0 912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	
0 913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	
0 914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	1	1	0	0	0	3	ANTENNAS
0 915	03-02 DO YOU INSPECT ANTENNAS	1	1	0	0	0	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
0 916	03-03 DO YOU CLEAN ANTENNAS	0	1	0	0	0	1
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	0	1	0	0	0	1
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	0	0	0	0	0	0
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	1	1	0	0	0	3
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	0	0	0	0	0	0
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	0	1	0	0	0	1
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	0	0	0	0	0	0
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	0	0	0	0
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	0	0	0	0	0	0
0 925	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	0	0	0	0	0	0
0 926	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	1	0	0	0	1
0 927	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	0	1	0	0	0	1
0 928	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	0	0	0	0	0	0
0 929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	0	0	0	0	0	0
0 930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	0	0	0	0	0	0
0 931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	0	0	0	0	0	0
0 932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	0	0	0	0	0	0
0 933	03-20 DO YOU WORK WITH CARDIOID ARRAYS	0	0	0	0	0	0
0 934	03-21 DO YOU WORK WITH COLLINEAR ARRAYS	0	0	0	0	0	0
0 935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0	0	0
0 936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	0	0	0	0	0	0
0 937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0	0	0
0 938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	0	0	0	0	0	0
0 939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0	0	0	0
0 940	03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	0	0	0	0	0	0
0 941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	0	0	0	0	0	0
0 942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	0	0	0	0
0 943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	0	0	0	0
0 944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
O 945	03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	0	1	0	0	0	1	
O 946	03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	0	1	0	0	0	1	
O 947	03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	0	1	0	0	0	1	
O 948	03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	0	0	0	0	0	0	
O 949	03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	0	1	0	0	0	1	
O 950	03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	0	1	0	0	0	1	
O 951	03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	0	0	0	0	0	0	
O 952	03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	0	0	0	0	0	0	
P 953	P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES	0	1	0	0	0	1	TRANSMISSION LINES
P 954	P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	
P 955	P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	0	0	0	0	0	0	
P 956	P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	
P 957	P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	
P 958	P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	0	0	0	0	0	0	
P 959	P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	0	0	0	0	0	0	
P 960	P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	0	1	0	0	0	1	
P 961	P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	0	1	0	0	0	1	
P 962	P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	0	1	0	0	0	1	
P 963	P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	0	1	0	0	0	1	
P 964	P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	0	1	0	0	0	1	
P 965	P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	0	0	0	0	0	0	
P 966	P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	0	0	0	0	0	0	
P 967	P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	0	0	0	0	0	0	
P 968	P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES	0	0	0	0	0	0	
P 969	P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	0	0	0	0	0	0	
P 970	P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	0	1	0	0	0	1	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
P 971	P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	0	0	0	0	0	0	
P 972	P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	0	0	0	0	0	0	
P 973	P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	
P 974	P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	0	0	0	0	0	0	
P 975	P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	0	0	0	0	0	0	
P 976	P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	0	0	0	0	0	0	
P 977	P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0	0	0	0	
P 978	P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	0	0	0	0	0	0	
P 979	P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	0	0	0	0	0	0	
P 980	P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	0	0	0	0	0	0	
P 981	P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	0	0	0	0	0	0	
P 982	P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	0	0	0	0	0	0	
P 983	P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	0	0	0	0	0	0	
P 984	P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	0	1	0	0	0	1	
P 985	P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	0	1	0	0	0	1	WAVEGUIDES AND CAVITY RESONATORS
P 986	P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	
P 987	P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	
P 988	P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	
P 989	P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	0	1	0	0	0	1	
P 990	P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	
P 991	P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	0	1	0	0	0	1	
P 992	P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	0	1	0	0	0	1	
P 993	P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	0	1	0	0	0	1	
P 994	P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	0	1	0	0	0	1	
P 995	P2-12 DO YOU REMOVE OR INSTALL E BENDS	0	1	0	0	0	1	
P 996	P2-13 DO YOU REMOVE OR INSTALL H BENDS	0	0	0	0	0	0	
P 997	P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	0	1	0	0	0	1	
P 998	P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	0	0	0	0	0	0	
P 999	P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	1	0	0	0	1	
P1000	P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	0	1	0	0	0	1	
P1001	P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	0	1	0	0	0	1	
P1002	P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
P1003	P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	0	0	0	0	0	0
P1004	P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	0	0	0	0	0	0
P1005	P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	0	0
P1006	P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	0	0
P1007	P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0
P1008	P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0
P1009	P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0
P1010	P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY	0	0	0	0	0	0
P1011	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE	0	0	0	0	0	0
P1012	P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	0	0	0	0	0	0
P1013	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	0	0	0	0	0	0
P1014	P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES	0	0	0	0	0	0
P1015	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0	0	0
P1016	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0	0	0
P1017	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0	0	0
P1018	P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0
P1019	P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0
P1020	P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0
P1021	P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0
P1022	P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	1	0	0	0	1
P1023	P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0
P1024	P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
P1025	P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	
P1026	P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	
P1027	P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	1	6	0	0	1	
P1028	P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	
P1029	P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	0	0	0	0	0	0	
P1030	P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	0	0	0	0	0	0	
P1031	P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	0	0	0	0	0	0	
P1032	P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	0	0	0	0	0	0	
P1033	P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	0	1	0	0	0	1	
P1034	P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS	0	0	0	0	0	0	MICROWAVE AMPLIFIERS AND OSCILLATORS
P1035	P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	0	0	0	0	0	0	
P1036	P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	0	0	0	0	0	0	
P1037	P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	0	0	0	0	0	0	
P1038	P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	0	0	0	0	0	0	
P1039	P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	0	0	0	0	0	0	
P1040	P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	0	0	0	0	0	0	
P1041	P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	0	0	0	0	0	0	
P1042	P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	0	0	0	0	0	0	
P1043	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	0	0	0	0	0	0	
P1044	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	0	0	0	0	0	0	
P1045	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	
P1046	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	
P1047	P3-14 DO YOU WORK WITH MAGNETRONS	0	0	0	0	0	0	
P1048	P3-15 DO YOU INSPECT KLYSTRONS OR TWT	0	0	0	0	0	0	
P1049	P3-16 DO YOU CLEAN KLYSTRONS OR TWT	0	0	0	0	0	0	
P1050	P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	0	0	0	0	0	0	
P1051	P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	0	0	0	0	0	0	
P1052	P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	0	0	0	0	0	0	
P1053	P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	0	0	0	0	0	0	
P1054	P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	0	0	0	0	0	0	
P1055	P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	0	0	0	0	0	0	
P1056	P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	
P1057	P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	
P1058	P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0	0	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0	0	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0	0	0
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0	0	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS	0	0	0	0	0	0
P1065 P3-32 DO YOU CLEAN MAGNETRONS	0	0	0	0	0	0
P1066 P3-33 DO YOU ADJUST MAGNETRONS	0	0	0	0	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS	0	0	0	0	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	0	0	0	0	0	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	0	0	0	0	0	0
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	0	0	0	0	0	0
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	0	0	0	0	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	0	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0	0	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0	0	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0	0	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0	0	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0	0	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0	0	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	0	0	0	0	0	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	0	0	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0	0	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	0	0	0	0	0	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	0	0	0	0	0	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	0	0	0	0	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081
P1088	P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	0	0	0	0	0	0
P1089	P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	0	0	0	0	0	0
P1090	P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	0	0	0	0	0	0
P1091	P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	0	0	0	0	0	0
P1092	P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	0	0	0	0	0	0
P1093	P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	0	0	0	0	0	0
P1094	P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	0	0	0	0	0	0
P1095	P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	0	0	0	0	0	0
P1096	P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	0	0	0	0	0	0
P1097	P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0	0	0
P1098	P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	0
P1099	P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	0	0
P1100	P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	0	0	0	0
P1101	P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	0	0
P1102	P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	0	0
P1103	P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0	0	0
P1104	P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	0	0	0	0	0	0
P1105	P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	0	1	0	0	3	0
P1106	P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0	0	0
P1107	P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	0	0	0	0	0	0
P1108	P3-75 DO YOU PERFORM TASKS ON CATHODES	0	0	0	0	0	0
P1109	P3-76 DO YOU PERFORM TASKS ON MAGNETS	0	0	0	0	0	0
Q1110	Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	1	2	0	2	0	3
Q1111	Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	2	2	0	2	0	4
Q1112	Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	2	2	5	2	0	5
Q1113	Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	2	2	5	2	0	5
Q1114	Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	0	1	0	0	0	1
Q1115	Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	1	1	0	0	0	3

REGISTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
Q1116	Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	1	1	0	0	3	1	
Q1117	Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	8	8	5	11	3	11	
Q1118	Q2-02 DO YOU USE OR REFER TO DELAY LINES	2	2	0	5	0	1	
Q1119	Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	1	1	0	3	0	0	STORAGE DEVICES
Q1120	Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	0	1	0	2	0	0	
Q1121	Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	3	4	0	2	0	7	
Q1122	Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	1	1	0	3	0	0	
Q1123	Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	1	2	0	3	0	1	
Q1124	Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	0	1	0	2	0	0	
Q1125	Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	0	1	0	2	0	0	
Q1126	Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS	3	4	0	5	0	4	DIGITAL TO ANALOG CONVERTERS
Q1127	Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES	1	1	0	3	0	0	
Q1128	Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS	0	0	0	0	0	0	
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	0	0	0	0	0	0	
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	1	0	3	0	0	
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	1	0	3	0	0	
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	1	0	3	0	0	
Q1133	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	2	0	5	0	0	
Q1134	Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	0	0	0	0	0	0	
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	1	2	0	3	0	1	
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	1	1	0	3	0	0	
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	1	1	0	3	0	0	
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	1	2	0	3	0	1	
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	1	1	0	3	0	0	

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	0	1	0	0	0	1	PHANTASTRONS
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	5	6	0	7	8	4	SCHMITT TRIGGERS
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	3	4	0	7	3	3	
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	3	4	0	7	0	3	
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	32	31	38	34	24	33	CABLE FABRICATION
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	15	19	21	23	5	13	
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	22	24	17	28	8	29	INPUT/OUTPUT DEVICES
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	1	2	0	3	0	0	
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	0	1	0	2	0	0	
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	12	15	0	38	3	1	PHOTO SENSITIVE DEVICES
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	16	20	0	49	0	3	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	7	9	0	23	3	0	
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	8	10	0	25	3	0	
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	6	8	0	20	0	0	
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	8	9	0	25	0	0	
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	9	12	0	28	0	1	
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	5	6	0	15	0	1	
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	10	12	0	33	0	1	
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	8	9	0	23	0	1	
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	0	0	0	0	INFRARED
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	0	0	0	0	0	0	
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	0	0	0	0	0	0	
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0	0	0	0	
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	0	0	0	0	0	0	
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0	0	0	0	
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	0	0	
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	0	0	
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	0	0	
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
T1169	T1-11	DO YOU USE OR REFER TO FAR REGION	0	0	0	0	0	0	
T1170	T1-12	DO YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0	0	0	0	
T1171	T1-13	DO YOU USE OR REFER TO NEAR REGION	0	0	0	0	0	0	
T1172	T1-14	DO YOU USE OR REFER TO MICRON	0	0	0	0	0	0	
T1173	T1-15	DO YOU USE OR REFER TO GRAY BODIES	0	0	0	0	0	0	
T1174	T1-16	DO YOU USE OR REFER TO BLACK BODIES	0	0	0	0	0	0	
T1175	T1-17	DO YOU USE OR REFER TO ABSORPTION	0	0	0	0	0	0	
T1176	T1-18	DO YOU USE OR REFER TO SCATTERING	0	0	0	0	0	0	
T1177	T1-19	DO YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0	0	0	0	
T1178	T1-20	DO YOU PERFORM TASKS ON BLITZ	0	0	0	0	0	0	
T1179	T1-21	DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	0	0	0	
T1180	T1-22	DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0	0	
T1181	T1-23	DO YOU PERFORM TASKS ON OCULAR LENSES	0	0	0	0	0	0	
T1182	T1-24	DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	0	0	0	
T1183	T1-25	DO YOU PERFORM TASKS ON FILTERS	0	0	0	0	0	0	
T1184	T1-26	DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0	0	0	0	
T1185	T1-27	DO YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0	0	0	0	
T1186	T2-01	DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0	0	0	0	
T1187	T2-02	DO YOU INSPECT LASER SYSTEMS	0	0	0	0	0	0	
T1188	T2-03	DO YOU CLEAN LASER SYSTEMS	0	0	0	0	0	0	LASERS
T1189	T2-04	DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	
T1190	T2-05	DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	
T1191	T2-06	DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0	0	0	
T1192	T2-07	DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	
T1193	T2-08	DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	
T1194	T2-09	DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	
T1195	T2-10	DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	
T1196	T2-11	DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	0	0	0	
T1197	T2-12	DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0	0	0	
T1198	T2-13	DO YOU USE OR REFER TO GROUND STATE	0	0	0	0	0	0	
T1199	T2-14	DO YOU USE OR REFER TO EXCITED STATE	0	0	0	0	0	0	
T1200	T2-15	DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	0	
T1201	T2-16	DO YOU USE OR REFER TO PHOTONS	0	0	0	0	0	0	
T1202	T2-17	DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0	0	
T1203	T2-18	DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	0	0	0	0	
T1204	T2-19	DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	0	0	0	
T1205	T2-20	DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0	0	0	
T1206	T2-21	DO YOU USE OR REFER TO MONOCHROMATIC	0	0	0	0	0	0	
T1207	T2-22	DO YOU WORK WITH ACTIVE MATERIALS	0	0	0	0	0	0	
T1208	T2-23	DO YOU WORK WITH PUMPING SOURCES	0	0	0	0	0	0	
T1209	T2-24	DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
T1210	T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	0	0	0	0	0	0	
T1211	T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0	0	0	0	
T1212	T2-27 DO YOU WORK WITH RUBY	0	0	0	0	0	0	
T1213	T2-28 DO YOU WORK WITH HELIUM-NEON	0	0	0	0	0	0	
T1214	T2-29 DO YOU WORK WITH HELIUM-XENON	0	0	0	0	0	0	
T1215	T2-30 DO YOU WORK WITH XENON	0	1	0	0	3	0	
T1216	T2-31 DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	0	
T1217	T2-32 DO YOU WORK WITH ARGON	0	0	0	0	0	0	
T1218	T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	0	0	0	
T1219	T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0	0	0	0	
T1220	T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)	0	1	0	0	0	1	
T1221	T3-02 DO YOU INSPECT DVST OR MMST	0	1	0	2	0	0	DISPLAY TUBES
T1222	T3-03 DO YOU CLEAN DVST OR MMST	0	0	0	0	0	0	
T1223	T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	0	0	0	0	0	0	
T1224	T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	0	1	0	0	0	1	
T1225	T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS	0	0	0	0	0	0	
T1226	T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	0	0	0	0	0	0	
T1227	T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	0	0	0	0	0	0	
T1228	T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	0	0	0	0	0	0	
T1229	T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS	0	0	0	0	0	0	
T1230	T3-11 DO YOU PERFORM TASKS ON WRITE GUNS	0	0	0	0	0	0	
T1231	T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS	0	0	0	0	0	0	
T1232	T3-13 DO YOU PERFORM TASKS ON ERASE GUNS	0	0	0	0	0	0	
T1233	T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	0	0	0	0	0	0	
U1234	U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	4	5	0	2	0	9	
U1235	U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	1	2	0	2	0	3	PROGRAMMING
U1236	U1-03 DO YOU USE OR REFER TO PROGRAMS	3	4	0	2	0	7	
U1237	U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	0	0	0	0	0	0	
U1238	U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	2	2	0	2	0	4	
U1239	U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	0	0	0	0	0	0	
U1240	U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	2	2	0	2	0	4	
U1241	U1-08 DO YOU USE OR REFER TO TIME-SHARING	0	0	0	0	0	0	
U1242	U1-09 DO YOU USE OR REFER TO DATA WORDS	0	0	0	0	0	0	
U1243	U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	1	2	0	0	0	4	
U1244	U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	1	1	0	0	0	3	
U1245	U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	2	2	0	0	0	5	
U1246	U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	0	0	0	0	0	0	
U1247	U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	3	4	0	2	0	7	
U1248	U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	0	0	0	0	0	0	

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS QPSUMS PAGE 99

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 076	SPC 077	SPC 078	SPC 079	SPC 080	SPC 081	
U1249	U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	1	1	0	2	0	1	
U1250	U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	0	1	0	2	0	0	
U1251	U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	0	0	0	0	0	0	
U1252	U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	1	1	0	2	0	1	
U1253	U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	0	1	0	2	0	0	
U1254	U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	1	1	0	2	0	1	
U1255	U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	4	5	0	7	3	4	
U1256	U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	0	1	0	0	0	1	DB AND POWER RATIOS
U1257	U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	0	1	0	0	0	1	
U1258	U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	0	1	0	0	0	1	


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AUTOMATIC FLIGHT CONTROL SYSTEMS SPECIALIST AFSC-32550.(U)
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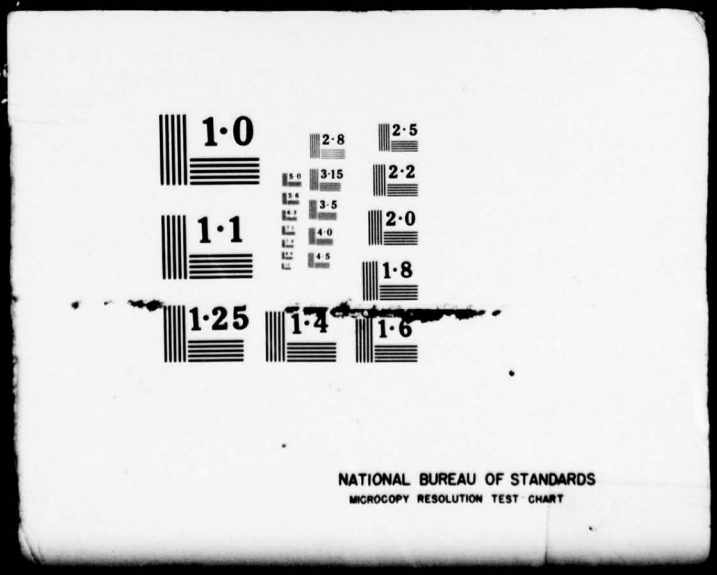

SUPPLEMENTARY

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

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Automatic Flight Control Systems Specialist (AFSC 32550). This report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

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This specialty has the following functions:

Inspects, troubleshoots, removes, repairs, installs, adjusts, and modifies automatic flight control systems, components, and test equipment. Performs inspection and maintenance on automatic flight control systems. Repairs and maintains automatic flight control systems. Supervises automatic flight control systems personnel.