CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

1. COMMENCES WITH SELECTION

   (A) WE ARE EXPECTING THE FIELD ENGINEER TO CARRY AN INCREASING RESPONSIBILITY FOR THE COMPANY'S AND HIS OWN FUTURE GROWTH.

   (B) THE FIELD ENGINEER EXPOSURE TO CUSTOMER ENVIRONMENT OFTEN COMPLEX AND SENSITIVE REQUIRES SKILL IN CUSTOMER RELATIONS.

   (C) COMPANY PRODUCTS ARE INCREASING IN COMPLEXITY.

2. RECRUIT ONLY HIGHLY QUALIFIED PEOPLE.

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

3. SOME IMPORTANT QUALIFICATIONS FAVORABLE TO SUCCESS AS A FIELD ENGINEER.

(A) SCHOOL GRADES - UPPER 1/3 OF CLASS AND SOME POST SECONDARY EDUCATION, I.E., "ASSOCIATE DEGREE", E.G., TECHNICAL & ELECTRONIC TRAINING RECENTLY EMERGING WORLD-WIDE.

(B) TEST RESULTS:

(I) ARITHMETIC TEST

(II) ARITHMETICAL REASONING TEST

(III) TECHNICAL APTITUDE TEST

(IV) LOGICAL APTITUDE TEST

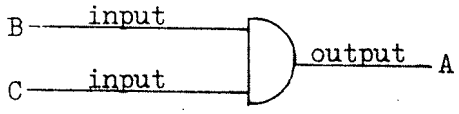
(RECENTLY INTRODUCED - VERY GOOD)

(C) "LEARNING ABILITY" AS RATED BY SCHOOL INSTRUCTORS, ETC. TO BE "GOOD" OR "SUPERIOR".

LOGICAL APTITUDE TEST

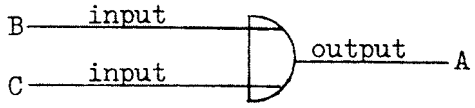
This test will give you an opportunity to see what kind of logical thinking is required in Computer maintenance. It will give us an opportunity to see how well you can do it.
First we will explain the operation of three logical elements used in Computers. After the explanation there is a sample question. Study it carefully to make sure you understand the elements.

1. AND gate. An AND gate is a logical element with one output and two or more inputs. The output is true only if all inputs are true. The symbol for an AND gate is shown below.



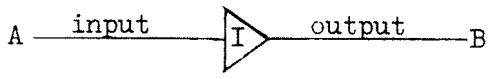
A is true when B and C are true
A is false if either B or C is false

OR gate. An OR gate is a logical element with one output and two or more inputs. The output is true if any input is true. The OR gate symbol is shown below.



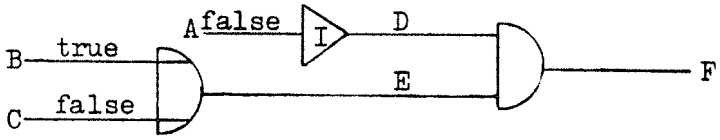
A is true when either B or C is true
A is false only when B and C are both false

3. INVERTER. An INVERTER is a logical element with one input and one output. The output is the reverse of the input. An INVERTER symbol is shown below.



B is true when A is false
B is false when A is true

Example:
When the inputs A,B and C are as shown what is the condition of points D,E and F?



a) D,E and F are true
b) E and F are false; D is true
c) D and F are false; E is true
d) D,E and F are false

The statement opposite the letter a) is the right answer. Therefore you would cross out the letter A on the answer sheet. You will note that this has already been done for you on the answer sheet, to indicate how to mark your answers on the other test questions.

This test contains 15 questions similar to the example given above. If you have any questions before you begin, ask the examiner.

You will have 15 minutes to complete this test.

DO NOT TURN THE PAGE UNTIL THE EXAMINER TELLS YOU TO DO SO.

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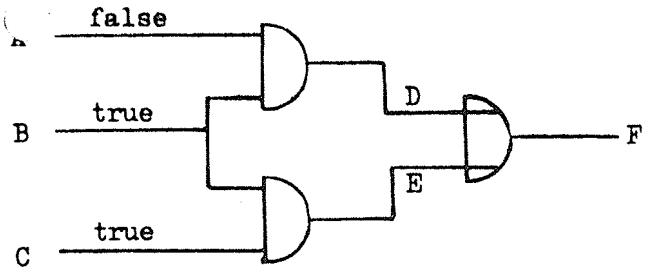
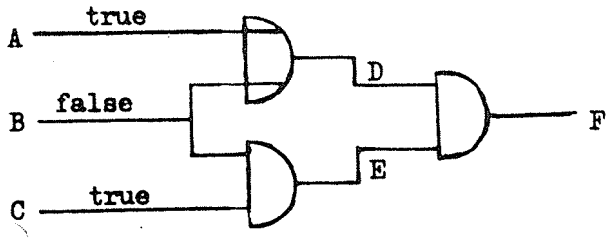
1. When the inputs are as shown, what is the condition of D,E and F?



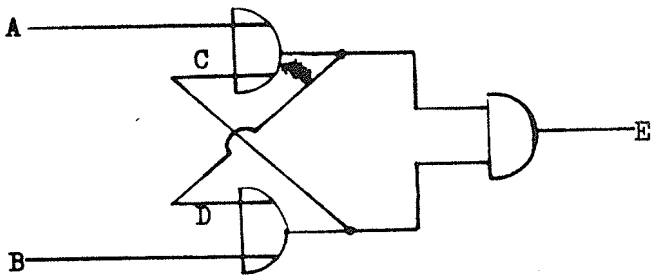
a) D,E and F are false
b) D,E and F are true
c) D is false, E and F are true
d) E is false, D and F are true

2. When the inputs are as shown, which of the statements is correct?



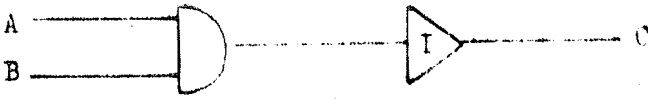
a) F will never be true if B is false
b) D,E and F are true
c) D,E and F are false
d) D and E are true

3. Which statement is correct?



a) Both A and B must be true before E will be true
b) E is true if either A or B is true
c) E can never be false
d) E is true when D is false

4. Which statement is correct?

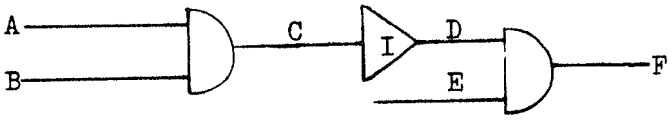


a) C is true when A and B are true
b) C is false when either A or B is true
c) C is true if either A or B is false
d) C is true only when both A and B are false

5. Which statement is correct?

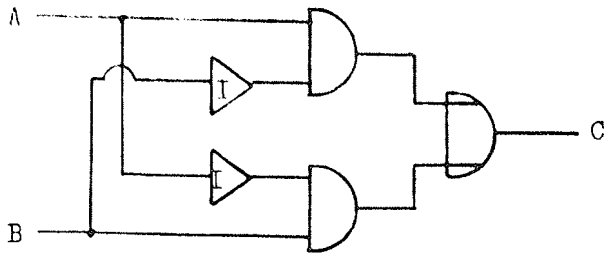
a) C is true when A and B are true
b) C is true when either A or B are true
c) C is true if either A or B is false
d) Cis true only when A and B are both false

6. Which statement is correct?



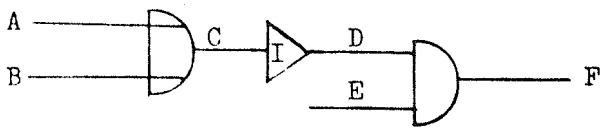
a) F is true when A,B and E are true
b) F is true when A is false and E is true
c) F is true when A,B and E are false
d) F is true when C and E are true

7. Which statement is correct?



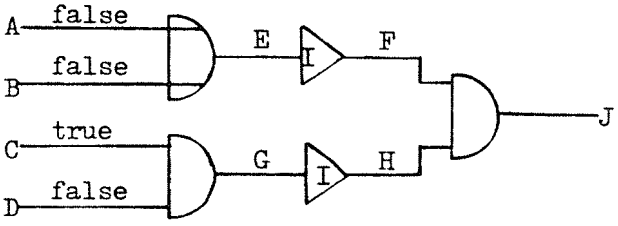
a) C is true when A and B are true
b) C is false if A is false and B is true
c) C is true if A is false and B is true or when A is true and B is false
d) C is false if A is true and B is false

8. Which statement is correct?



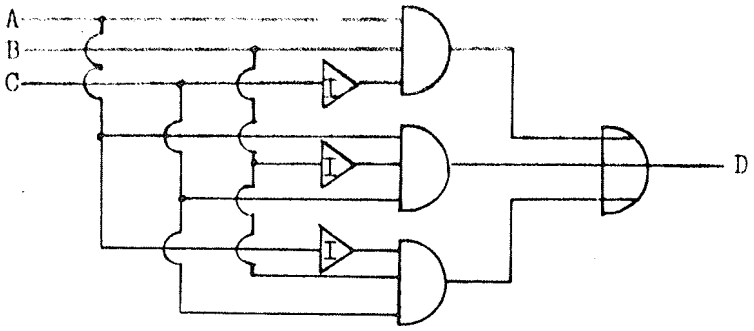
a) F is true when E is true and both A and B are false
b) F is true when E is true and either A or B is true
c) F is true when E,A and B are true
d) F is true when E,A and B are false

9. With the inputs as shown, which statement is correct?



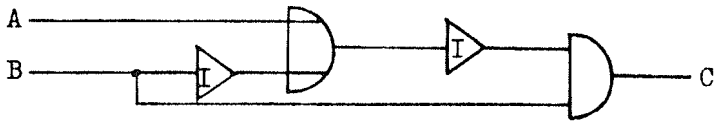
a) C,E and J are false
b) G and E are false, J is true
c) F and H are false
d) G and E are true, J is false

10. Which statement is correct?



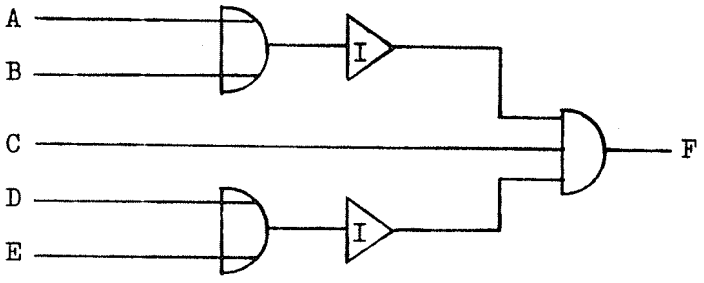
a) D is true when A,B and C are true
b) D is true when A,B and C are false
c) D is true if two inputs are false
d) D is true when one input is false and the other two inputs are true

11. Which statement is correct?



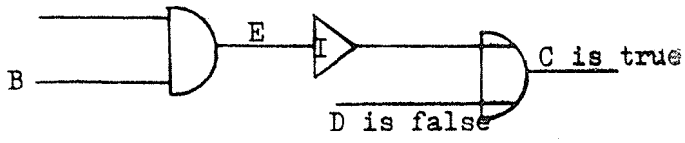
a) C is true if A and B are true
b) C is true if A and B are false
c) C is true if A is false and B is true
d) C is true if A is true and B is false

12. Which statement is correct?



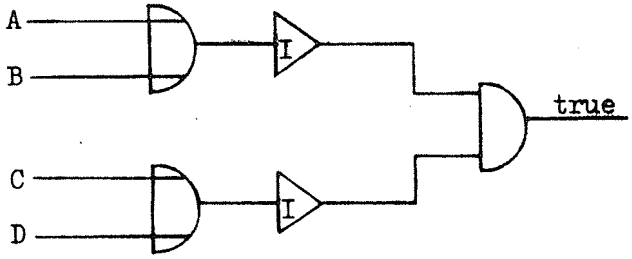
a) F is true when B,C and D are true
b) F is true when C is false and B and D are false
c) F is true when A,B,D and E are false and C is true
d) F is true if A,C and E are true

13. Which of the following statements is correct when C and D are as shown?



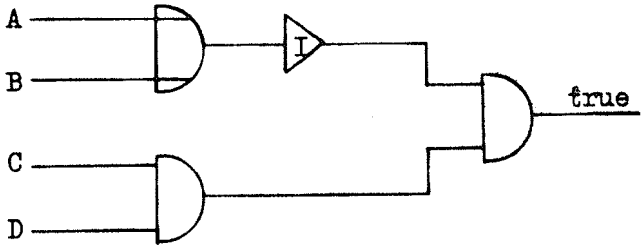
a) Either A or B is false
b) A and B must both be false
c) A and B are both true
d) E is true

14. When the output is true, which of the following statements is correct for the inputs?



a) A,B,C and D are all false
b) A,B and C are all true
c) A and D are true or B and C are true
d) A and C are true or B and D are true

15. When the output is true, which of the following statements is correct for the inputs?



a) A or B is false, C and D are true
b) A and B are false, C and D are true
c) A,B,C and D are true
d) A,B,C and D are false

END

Printed in U.S.America

Form INT - 1025 (8/72)

This Test Supervised By

_____
(Name) (Title)

Score ____ in ____ Minutes
Time Started _____
Time Finished _____

ANSWER SHEET
LOGICAL APTITUDE TEST

NAME _____ DATE _____

LOCATION _____ POSITION APPLIED FOR _____

EXAMPLE ~~A~~ B C D

TEST

1.	A	B	~~C~~	D
2.	~~A~~	B	C	D
3.	A	~~B~~	C	D
4.	A	B	~~C~~	D
5.	A	B	C	~~D~~
6.	A	~~B~~	C	D
7.	A	B	~~C~~	D
8.	~~A~~	B	C	D
9.	A	~~B~~	C	D
10.	A	B	C	~~D~~
11.	A	B	~~C~~	D
12.	A	B	~~C~~	D
13.	~~A~~	B	C	D
14.	~~A~~	B	C	D
15.	A	~~B~~	C	D

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

4. INITIAL CAREER PATH IS PRODUCT ORIENTED.

(A) FIELD ENGINEER-TRAINEE

(I) RECEIVES FORMAL AND ON-THE-JOB TRAINING ON PRODUCTS HE IS TO HANDLE IN JOB FOR WHICH HE HAS BEEN SELECTED.

(II) OLD TRADITION OF TRAINING ON SIMPLEST MACHINE FIRST NO LONGER VALID.

(III) NO NEED TO START "AT THE BOTTOM" ON CAREER PATH.

(B) FIELD ENGINEER

(I) RECEIVES CLOSE SUPERVISION AND ON-THE-JOB TRAINING, IS PRODUCTIVE AND PROMOTED FROM TRAINEE AFTER 3-4 MONTHS TRAINING.

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

4. (CONTINUED)

(C) SENIOR FIELD ENGINEER -

PROMOTION FROM F.E. 18 MONTHS

(I) PROMOTION COMES FOLLOWING DEMONSTRATED SUCCESS AS A FIELD ENGINEER.

(D) GROUP LEADER

(I) PROMOTION FROM SENIOR FIELD ENGINEER AFTER DEMONSTRATED SUCCESS. LEADS A TEAM, USUALLY THREE MEN IN TOTAL, OPERATING AS A TEAM TO TAKE ADVANTAGE OF SOME SPECIALIZATION

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

COMPARATIVE JOB WORTH
DEPENDS ON

- TECHNICAL COMPLEXITY OF PRODUCT (I. E. DEGREE OF DIFFICULTY)
- PRODUCTIVITY

NOT - HOW HARD A MAN TRIES
HOW LONG HE HAS BEEN WITH US
HOW MUCH HE THINKS HE IS WORTH

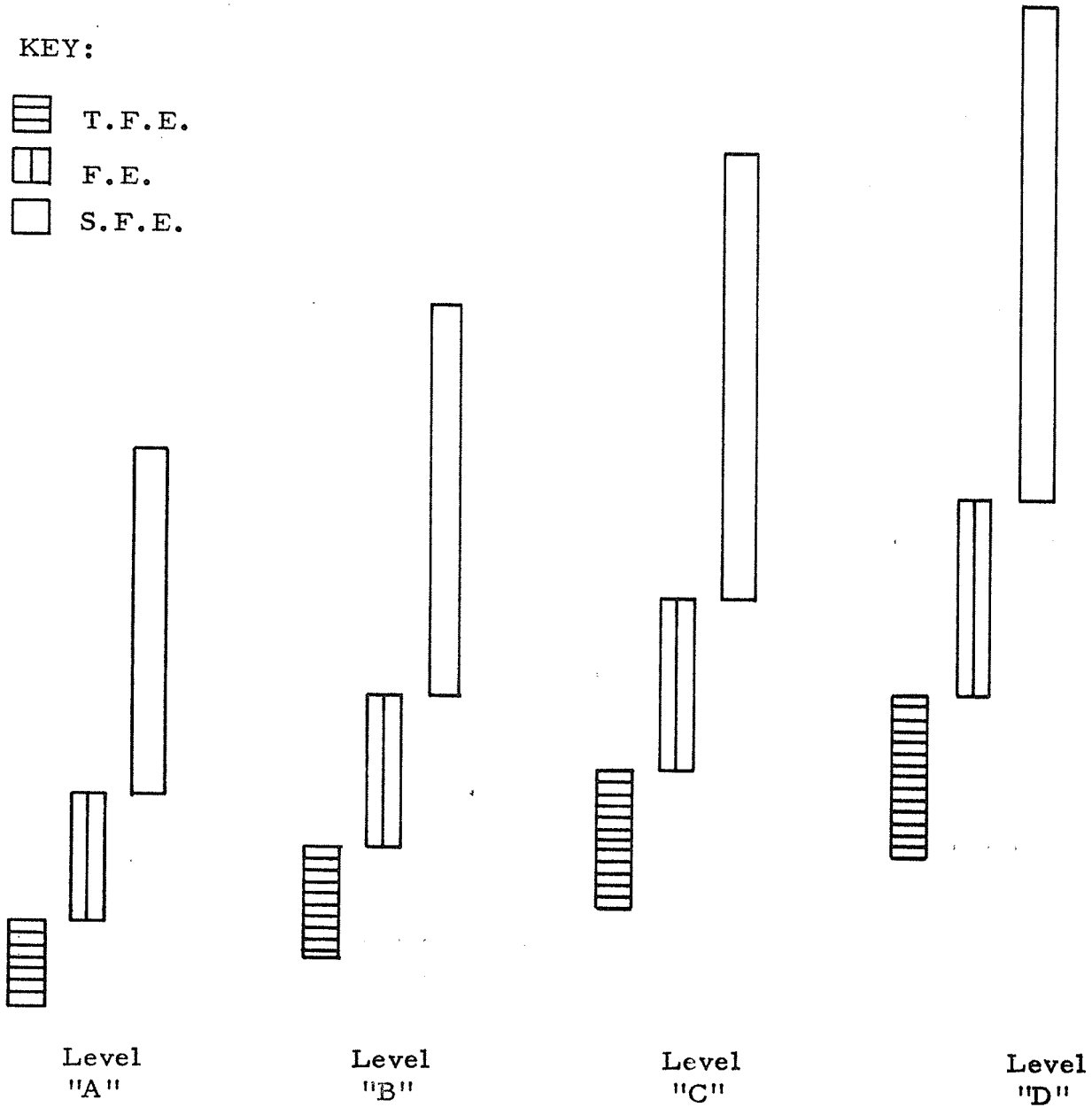
BUT - HOW EFFECTIVE IS HE?

CAREER DEVELOPMENT REQUIRES A CLEAR UNDERSTANDING OF THIS WHICH IS PROVIDED BY PERFORMANCE REVIEW AND EVALUATION OF EACH INDIVIDUAL AND A REGULAR CONFERENCE WITH FIRST LINE MANAGEMENT

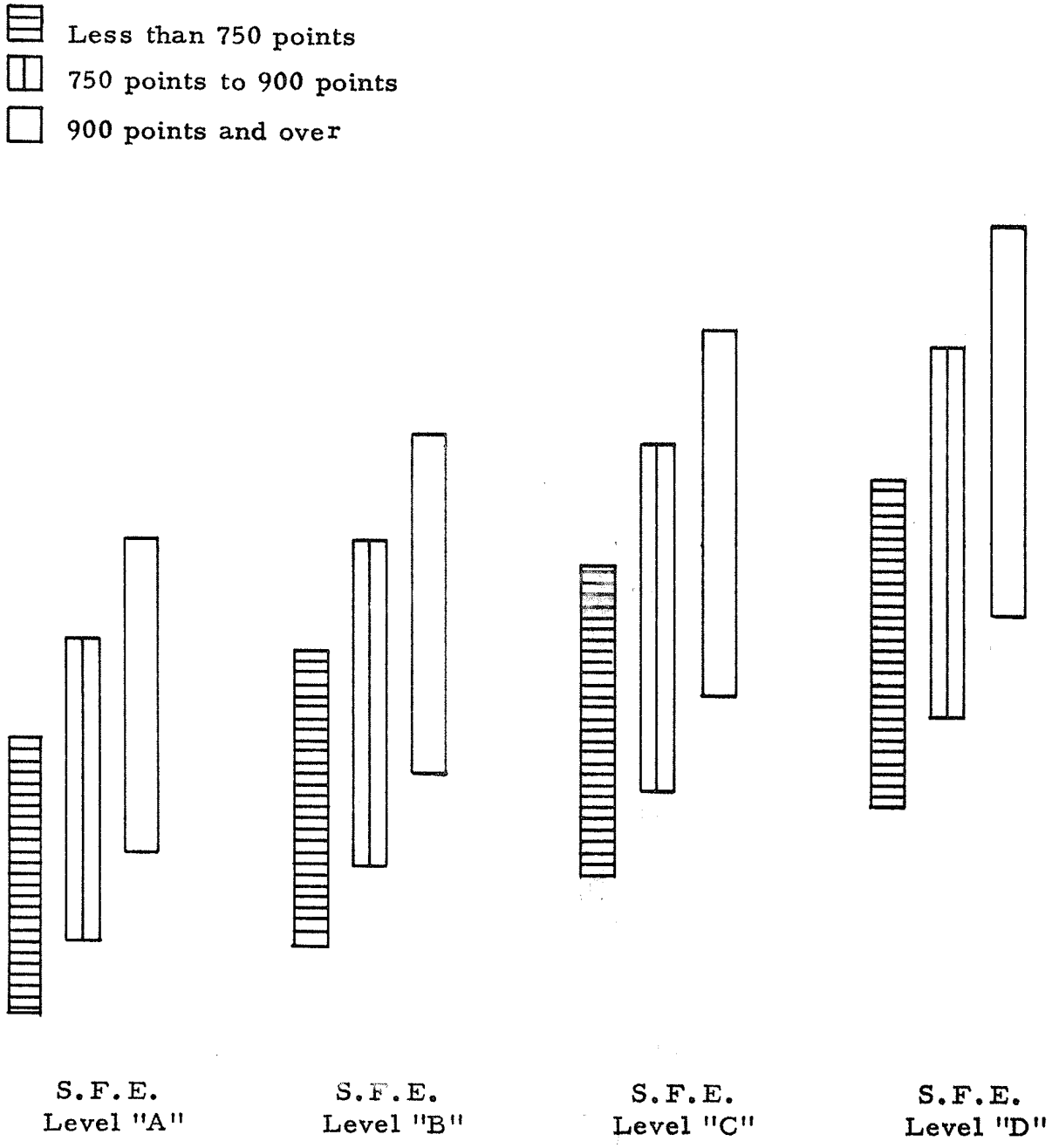
FIELD ENGINEERING PRODUCT LEVELS
FOR SALARY ADMINISTRATION PURPOSES

PRODUCT GROUP	LEVEL A	LEVEL B	LEVEL C	LEVEL D	LEVEL E
GROUP I	All Group I Equipment (excluding full electronic calculator training)	Electronic calculator full training			
GROUP II	Series P Bookkeeping & V&R Machines Series F Accounting equipment Series L2/3/4000 MTR	L2/3/4000 full training L5000, L 7000, L8000 E1000 thru E4000 Series P&F coupled to tape/card perforators F2000, F4000 A4000, A1495	L8000 system with Group III type peripheral		
GROUP IIIS		Peripherals (non-magnetic)	E6000/8000 B700 B1710	B1710 system support (including software)	
GROUP III		Peripherals (non-magnetic)	B200/500 B1720 B9131/9134 Peripherals (Magnetic)	B1720 system support (including Software) B2500/3500 B3700/4700 B5500/5700 B6700/7700 Large System/Branch Peripheral Specialist	System Specia (Hardware/ Software
GROUP IV	All Group IV equipment				
GROUP V	P700, P900, P6000 T100/T600 Encoders	A130, A149, A150, A160 Series N, Series S PC800/PC900			
GROUP VI	TC500/TC700 MTR	TC300, 500, 700 TC1500, 2500, 3500 Series TU, TD, RT, EV	TC1500, 2500, 3500 with Group III type peripherals		
GROUP VII		Series TA DC140	DC140 with Group III type peripherals		

SUBJECT: EXAMPLE OF SALARY RANGE RELATIONSHIPS DEVELOPED ON BASIS OF FIELD ENGINEERING PRODUCT LEVELS



SUBJECT: EXAMPLE OF SENIOR FIELD ENGINEERING RANGE RELATIONSHIP DEVELOPED ON BASIS OF FIELD ENGINEERING PRODUCT LEVELS AND PRODUCTIVITY



CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

6. KEY ELEMENTS OF PERFORMANCE EVALUATED AND REVIEWED FOR MAXIMUM CAREER DEVELOPMENT AND TRAINING

(A) QUALITY AND QUANTITY OF PREVENTIVE MAINTENANCE PERFORMED IN RELATION TO THAT WHICH WAS ASSIGNED.

(B) PERFORMANCE OF PRODUCTS FOR WHICH HE IS RESPONSIBLE

(I) NUMBER OF UNSCHEDULED ATTENTIONS (EXTRA CALLS) COMPARED TO QUANTITY OF PREVENTIVE MAINTENANCE. SUCCESS IN REDUCING EXTRA CALLS.

(II) ACTUAL TIME SPENT BY PRODUCT COMPARED TO STANDARD TIME (I.E., POINTS)

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

6. (CONTINUED)

(C) RESPONSE TIME

(D) SUPPLY SALES

MANAGEMENT EVALUATED ON PERFORMANCE OF THEIR ZONE OR BRANCH. IMPROVEMENTS EXPECTED FROM YEAR TO YEAR IN ALL ABOVE AS WELL AS IMPROVED PRODUCTIVITY PER MAN.

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

7. FIELD ENGINEERING MANAGEMENT PROGRESSION

(A) ZONE FIELD ENGINEERING MANAGER

A SUCCESSFUL GROUP LEADER OR SENIOR FIELD ENGINEER. IS FIRST LEVEL OF MANAGEMENT SUPERVISES FIELD ENGINEERS WITHIN A SECTION OF A BRANCH.

(B) HEAD OFFICE TECHNICAL STAFF POSITIONS

(SUBSIDIARY LEVEL)THESE POSITIONS ARE FILLED BY MEN WHO HAVE CONSISTENTLY DISPLAYED OUTSTANDING TECHNICAL ABILITY.

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

7. (CONTINUED)

(C) BRANCH FIELD ENGINEERING MANAGER

RESPONSIBLE FOR ALL FIELD ENGINEERING ACTIVITIES IN HIS BRANCH, INCLUDING SELECTION AND TRAINING OF FIELD ENGINEERS AND SUPERVISION.

(D) SUBSIDIARY FIELD ENGINEERING MANAGER

THE EXECUTIVE HEAD OF THE SUBSIDIARY FIELD ENGINEERING OPERATIONS WITHIN HIS COUNTRY.

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

8. MANAGEMENT TRAINING.

(A) FIELD ENGINEERING MANAGEMENT COURSE

(I) A ONE WEEK COURSE CONDUCTED AT UNITED KINGDOM TRAINING CENTER FOR NEWLY APPOINTED MANAGERS. WHEN SCHEDULED, AVAILABLE TO ALL COUNTRIES.

(B) FIELD ENGINEERING MANAGEMENT AIDS.

(I) DEVELOPED IN BISA AND MADE AVAILABLE THROUGHOUT INTERNATIONAL. SUPPLEMENTED REGULARLY WITH INSERTS ISSUED FROM BISA.

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

8. (CONTINUED)

(C) INTERNATIONAL MANAGEMENT AND PERSONNEL ADMINISTRATION MANUAL.

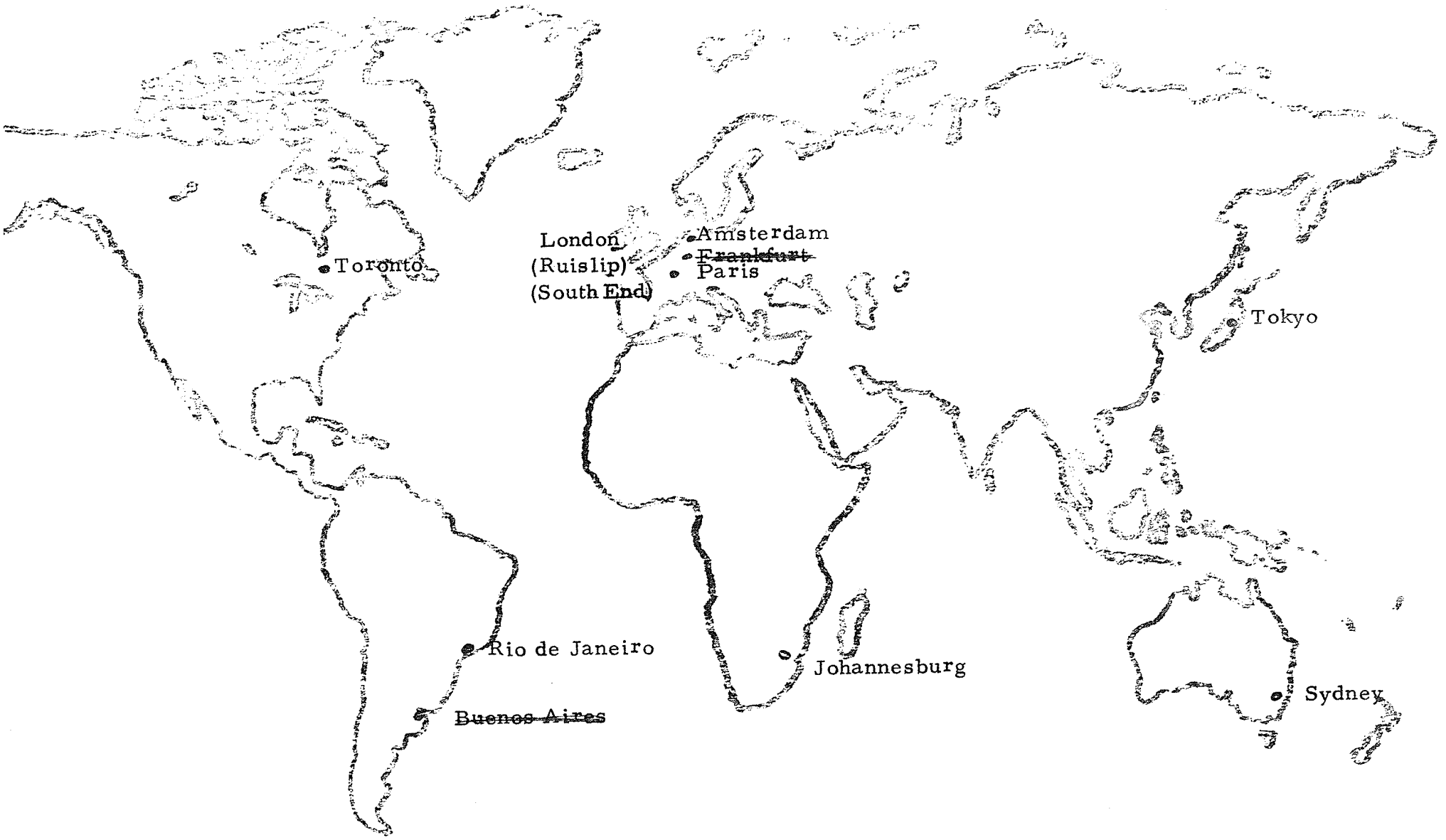
(1) MAINTAINED AND REVISED BY INTERNATIONAL HOME OFFICE FIELD ENGINEERING.

(D) JOB ROTATION (MOST SIGNIFICANT MANAGEMENT TRAINING).

(1) ROTATION IS NOW POSSIBLE THRU ASSIGNMENTS AT BISA HEADQUARTERS, U.K. HEADQUARTERS AS WELL AS THE LATIN AMERICAN AND PACIFIC AND CANADIAN AREA OFFICES IN DETROIT. INTERNATIONAL FIELD ENGINEERING GROUP HEADQUARTERS OPERATES ALMOST 75% ON A ROTATION BASIS.

(E) QUARTERLY FIELD ENGINEERING AREA MANAGEMENT MEETINGS

INTERNATIONAL FIELD ENGINEERING TRAINING SCHOOLS



CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

B.I.S.A. - F.E. TRAINING CENTERS

CENTER	COUNTRIES SERVED
FRANCE (CERGY/PONTOISE) FRENCH AND ENGLISH	FRANCE BELGIUM SWITZERLAND (FRENCH) ALL BISA GP, III DISTRIBUTORS
HOLLAND (AMSTERDAM) DUTCH AND ENGLISH	HOLLAND DENMARK SWEDEN NORWAY GERMANY AUSTRIA SWITZERLAND SPAIN ITALY PORTUGAL DISTRIBUTORS

(OCCASIONALLY COURSES CONDUCTED IN COUNTRIES TO SATISFY HEAVY LOCAL REQUIREMENTS)

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

B.I.S.A. - F.E. TRAINING CENTERS

CENTER	COUNTRIES SERVED
SOUTH AFRICA (JOHANNESBURG) ENGLISH	SOUTH AFRICA RHODESIA ZAMBIA DISTRIBUTORS

CAREER DEVELOPMENT AND TRAINING

INTERNATIONAL FIELD ENGINEERING

LATIN AMERICA AREA - F. E. TRAINING CENTERS

CENTER	COUNTRIES SERVED
BRAZIL (RIO DE JANEIRO) PORTUGUESE and SPANISH	CHILE PERU PUERTO RICO VENEZUELA COLOMBIA ECUADOR COSTA RICA DISTRIBUTORS

TO BE ESTABLISHED

ARGENTINA (BUENOS AIRES) SPANISH MEXICO (MEXICO CITY) SPANISH	AVAILABLE TO ALL SPANISH SPEAKING COUNTRIES - COORDINATED THROUGH AREA TRAINING CENTER, BRAZIL.