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UTILIZATION OF TECHNICAL  
MANPOWER

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## I N T R O D U C T I O N

The science of civil engineering has made great strides during last few decades. In every field of civil Engineering the state-of-art has attained new heights. To construct modern Highways; Bridges; under/over passes; intersections interchanges; urban expressways and streets systems, engineers possessing specialized qualifications and advanced training in various aspects of highway engineering are required. There is no institute or university in Pakistan offering post graduate studies or training in discipline of Highway Engineering. As a result, during initial periods, the engineers with the requisite expertise were not available locally. This deficiency was met by resorting to a policy of hiring services of foreign experts and consultants for the planning and design of urgently required Highways and Bridges in country and sending in-service engineers of Highway Departments for specialized training in various aspects of highway planning, design, construction and maintenance in the recognized universities of the developed countries for developing in-house expertise in these fields.

Since the services of the foreign experts are not only very costly, the residual gain in the local expertise is usually very small, hence maximum emphasis were placed for developing local expertise as fast as possible.

The steps taken so far by the Government have resulted in the training abroad of many engineers of various Departments in Planning, design, maintenance and operation of public facilities. But the departments have not properly and profitably utilized the foreign trained expertise. The foreign trained personnel are generally posted in positions not consonant with their training. Instances abound where engineers trained in one aspect of engineering have been given jobs totally unrelated to their training or sometime even posted to an entirely different branch of civil engineering such as in Public Health, after acquiring higher qualifications in Highway Engineering and vice versa. As a result the departments till this day have not developed the desired in-house expertise and continue to rely on outside consultants. Thus million of rupees in hard foreign exchange spent on these engineers have gone waste.

Mis-utilization has a number of dis-advantages. An inappropriate posting of a Highway Engineer, for instance, in Public Health Engineering Department is harmful to both the Highway as well as the Public Health Engineering Department. Highway Department loses competent and qualified advice and the Public Health Engineering Department also suffers due to handling of its affairs by an engineer not qualified in the field. Capital cost projects are sometimes conceived/ executed by persons having limited knowledge of the field which may result in serious short-falls and undermine the very purpose of the undertaking.

Manpower Division and the Establishment Division were consulted to find out any previous work done or a study in progress on the utilisation of technical manpower in Pakistan. The Manpower Division is collecting data about Scientists, Engineers and Doctors but has no plans for any in-depth study on utilization of Engineering Manpower. Similarly, the Establishment Division have a broad-based career Planning study for Government officials in country's administration.

## 2. OBJECTIVE OF THE STUDY

Right from the inception of Pakistan in 1947, the Government was cognisant of the need for properly trained technical manpower for the development of the new state. The Government of Pakistan started Overseas scholarship schemes of its own for advanced education and training of engineers serving in various Government departments who had received their Bachelor level technical education in the sub-continent. In addition, use was made of the Technical Assistance Programmes of friendly Governments of western countries for post graduate education and training of in service engineers in specialised fields. On return to Pakistan these engineers continued to serve in their parent Departments or changed to other departments not entirely in line with their foreign training. The objective of this study was to survey on sample basis the utilisation of technical manpower trained within the country and abroad by the Public Works Department.



3. CONSTRAINTS OF THE STUDY

Data collection for the study was a difficult task. Initially there was poor return from the department engineers vis-a-vis filling of the two page Questionnaire (Appendix I). Efforts were made to collect a reasonable sample for the study by sending reminders to the Heads of various departments to direct the engineers of their respective departments to co-operate with the National Transport Research Centre by returning the filled-in questionnaire. Personal contacts, where possible were made to have the engineers fill in the Questionnaire and a reasonable sample size obtained for the Study. The efforts of National Transport Research Centre yielded good results and in all 429 filled in Questionnaires were returned by the engineers serving in 10 Government and 3 autonomous Organizations.

4. SCOPE OF THE STUDY

To start with the Study was limited to the Highway departments/agencies only. But later on its scope was broadened to include the Irrigation and Power Departments and some autonomous Organizations in other fields of Civil Engineering. In all 10 Governments departments and 3 Autonomous Organizations were included in the Study (Table 4.1).

TABLE: 4.1 LIST OF ORGANIZATIONS WITH CODE

| <u>CODE</u> | <u>ORGANIZATIONS</u>                        | <u>SAMPLE SIZE</u> |
|-------------|---|--------------------|
| 1           | Punjab Highway Department                   | 56                 |
| 2           | Sind Highway Department                     | 49                 |
| 3           | NWFP Communications and Works Deptt:        | 36                 |
| 4           | Baluchistan Communications and Works Deptt: | 8                  |
| 5           | Azad Kashmir Public Works Department        | 14                 |
| 6           | Pakistan Public Works Department            | 16                 |
| 7           | Punjab Irrigation and Power Department      | 88                 |
| 8           | Sind Irrigation and Power Department        | 9                  |
| 9           | NWFP Irrigation Department                  | 27                 |
| 10          | Capital Development Authority               | 66                 |
| 11          | Kohistan Development Board                  | 25                 |
| 12          | FATA Development Corporation                | 17                 |
| 13          | NWFP Public Health Engineering Deptt:       | 18                 |
| <hr/>       |   |                    |
| Total       | Sample size                                 | 429                |
|             | - Provl.Highway Departments:                | 163                |
|             | - Provl.Irrigation Departments:             | 124                |
|             | - Autonomous Organisations                  | 108                |
|             | - Provl.Public Health Deptt:                | 18                 |
|             | - Pakistan Public Works Deptt:              | 16                 |

## 5. METHODOLOGY OF STUDY

- 5.1 QUESTIONNAIRE: A two page, 8 item Questionnaire was designed to elicit information/data pertinent to this study. Instructions for filling the blank proforma were also enclosed for guidance of the engineers. The Questionnaire and Instructions for filling it appear as Appendix - I. The Questionnaire elicits information on Department, Grade of appointment, Qualifications, training received, experience, service in the present department, number of departments changed, postings held, number of promotions, relevancy of job with respect to postings held and job satisfaction.
- 5.2 COLLECTION OF DATA: The lists of engineers serving in the Departments at different stations were obtained from the various departments. The blank questionnaires were directly mailed to the engineers at their duty station. Follow up of the data collection work was undertaken on a regular basis by sending reminders and by personal visits wherever possible. As a result a reasonably good sample of 429 engineers was collected for a purposeful study.
- 5.3 ANALYSIS OF DATA: The data received was systematically recorded in the National Transport Research Centre. The relevant data from the Questionnaire was tabulated on a work sheet (Appendix II) to help prepare tables III-2 to III-11 (Appendix - III), the basic listings for the study data giving complete information on number of engineers by Grades, Qualifications, training particulars, year of professional experience,

number of departments changed, years of service in present department, number of postings held, number of promotions, relevancy of job with respect to postings held and job satisfaction.

- 5.4 INTER PRETATION OF RESULTS: Based on the information tabulated in Tables III-2 to III-11 in Appendix-III, various parameters of data collected were analysed, discussed and results interpreted under the Chapter ' Findings of the Study . '

6. FINDINGS OF THE STUDY

6.1 NUMBER OF OFFICERS IN THE SAMPLE BY NPS GRADES (TABLE 6.1):

Out of total of 429 engineers in the sample for the study, 280 were in Grade 17, 116 in Grade 18, 31 in Grade 19 and two in Grade 20. These expressed in percentages are as follows:

| <u>GRADE</u> | <u>PERCENTAGE<br/>IN SAMPLE</u> |
|--------------|---------------------------------|
| 17           | 65 %                            |
| 18           | 27 %                            |
| 19           | 7 %                             |
| 20           | 1 %                             |
|              | <hr/>                           |
|              | 100 %                           |
|              | <hr/>                           |

Bulk of the engineers in the sample are, as expected, in Grade 17 of service followed by Officers in Grade 18 (Executive Engineers). Chief Engineers (Grade 20) constitute one percent of the sample.

6.2 QUALIFICATIONS OF ENGINEERS (TABLE 6.2):

Most of the engineers in the sample serving in the Public Works Departments and Autonomous Organizations have Bachelor's degree in Engineering (83%) and diploma holders account for 17 % of the sample. 7 of the 357 degree holders have post graduate qualifications.

TABLE: 6.1 NUMBER OF ENGINEERS BY NPS GRADES

| CODE | ORGANIZATION  | SAMPLE SIZE |     |     |     |     |    | NPS GRADE |    |     |   |     |    |
|------|---|-------------|-----|-----|-----|-----|----|-----------|----|-----|---|-----|----|
|      |   | 17          |     | 18  |     | 19  |    | 20        |    | 21  |   | 22  |    |
|      |   | No.         | %   | No. | %   | No. | %  | No.       | %  | No. | % | No. | %  |
| 1    | Punjab Highway Department.                              | 56          | 45  | 80  | 9   | 16  | 2  | 4         | 2  | 4   | 1 | 2   | 4  |
| 2    | Sind Highway Department.                                | 49          | 36  | 74  | 9   | 18  | 4  | 8         | 4  | 8   | 1 | 4   | 8  |
| 3    | NWFP Communication & Works Dept.                        | 36          | 24  | 67  | 7   | 19  | 5  | 14        | 5  | 14  | 1 | 5   | 14 |
| 4    | Baluchistan Communications & Works Dept.                | 8           | 6   | 75  | 1   | 12  | 1  | 13        | 1  | 13  | 1 | 1   | 13 |
| 5    | Azad Kashmir Public Works Dept.                         | 14          | 7   | 50  | 4   | 29  | 3  | 21        | 3  | 21  | 3 | 3   | 21 |
| 6    | Pakistan Public Works Dept.                             | 16          | 6   | 38  | 8   | 50  | 2  | 12        | 2  | 12  | 2 | 2   | 12 |
| 7    | Punjab Irrigation & Power Dept.                         | 88          | 59  | 67  | 26  | 30  | 2  | 2         | 2  | 2   | 1 | 1   | 2  |
| 8    | Sind Irrigation & Power Dept.                           | 9           | 4   | 44  | 5   | 56  |    |           |    |     |   |     |    |
| 9    | NWFP Irrigation Department.                             | 27          | 13  | 48  | 11  | 41  | 3  | 11        | 3  | 11  | 3 | 3   | 11 |
| 10   | Capital Development Authority.                          | 66          | 41  | 62  | 20  | 30  | 5  | 8         | 5  | 8   | 5 | 5   | 8  |
| 11   | Kohistan Development Board.                             | 25          | 17  | 68  | 6   | 24  | 2  | 8         | 2  | 8   | 2 | 2   | 8  |
| 12   | FATA Development Corporation.                           | 17          | 12  | 71  | 5   | 29  | 2  | 11        | 2  | 11  | 1 | 1   | 11 |
| 13   | NWFP Pub. Health Engg. Dept.                            | 18          | 10  | 56  | 5   | 28  | 2  | 9         | 2  | 9   | 1 | 1   | 9  |
| A    | All Provincial Highway Dept. (1+2+3+4+5)                | 163         | 118 | 73  | 30  | 18  | 15 | 9         | 15 | 9   | 5 | 5   | 9  |
| B    | All Provincial Irrigation Depts. (7+8+9)                | 124         | 76  | 61  | 42  | 34  | 5  | 4         | 5  | 4   | 1 | 1   | 4  |
| C    | All Autonomous Organizations (10+11+12)                 | 108         | 70  | 65  | 31  | 29  | 7  | 6         | 7  | 6   | 2 | 2   | 6  |
| D    | All Prov. Govt. Departments (A+B+13)                    | 305         | 204 | 67  | 77  | 25  | 22 | 7         | 22 | 7   | 1 | 1   | 7  |
| E    | All Federal/Prov. Govt. Depts & Autonomous Orgs (6+C+D) | 429         | 280 | 65  | 116 | 27  | 31 | 7         | 31 | 7   | 2 | 2   | 7  |

TABLE: 6.2 QUALIFICATIONS OF ENGINEERS

| CODE | ORGANIZATION  | SAMPLE SIZE | QUALIFICATIONS |    |        |     | POST GRADUATE NO. |
|------|---|-------------|----------------|----|--------|-----|-------------------|
|      |   |             | DIPLOMA        |    | DEGREE |     |                   |
|      |   |             | NO.            | %  | NO.    | %   |                   |
| 1.   | Punjab Highway Department.                              | 56          | 13             | 23 | 43     | 77  | (4)               |
| 2.   | Sind Highway Department.                                | 49          | 6              | 12 | 43     | 88  |                   |
| 3.   | NWFP Communications & Works Dept.                       | 36          | 2              | 6  | 34     | 94  |                   |
| 4.   | Baluchistan Communications and Works Department.        | 8           | 1              | 12 | 7      | 88  | (2)               |
| 5.   | Azad Jashir Public Works Dept.                          | 14          | 3              | 21 | 11     | 79  |                   |
| 6.   | Pakistan Public Works Dept.                             | 16          | 2              | 12 | 14     | 88  |                   |
| 7.   | Public Irrigation & Power Dept.                         | 88          | 22             | 25 | 66     | 75  |                   |
| 8.   | Sind Irrigation & Power Dept.                           | 9           | 3              | 33 | 6      | 67  |                   |
| 9.   | NWFP Irrigation Dept.                                   | 27          | 4              | 15 | 23     | 85  |                   |
| 10.  | Capital Development Authority.                          | 66          | 10             | 15 | 56     | 85  |                   |
| 11.  | Kohistan Development Board.                             | 25          | 6              | 24 | 19     | 76  |                   |
| 12.  | FATA Development Corp.                                  | 17          | -              | -  | 17     | 100 |                   |
| 13.  | NWFP Public Health Engineering Dept.                    | 18          | -              | -  | 18     | 100 | (1)               |
| A.   | All Provincial Highway Depts (1+2+3+4+5)                | 163         | 25             | 15 | 138    | 85  | (6)               |
| B.   | All Provincial Irrigation Dept. (7+8+9)                 | 124         | 29             | 23 | 95     | 77  |                   |
| C.   | All Autonomous Organizations (10+11+12)                 | 108         | 16             | 15 | 92     | 85  |                   |
| D.   | All Prov. Govt. Dept. (A+B+13)                          | 305         | 54             | 18 | 251    | 82  | (7)               |
| E.   | All Federal/Prvc.Govt.Depts.& Autonomous Orgs. (6+C+D). | 429         | 72             | 17 | 357    | 83  | (7)               |



6.3 TRAINING (TABLE 6.3)

39 percent of the engineers in the sample had some kind of training while 61 percent had no training of any kind. Those having training have been categorised as below:

| <u>Type of Training</u>       | <u>Number of Personnel</u> | <u>Percentage of Sample.</u> |
|-------------------------------|----------------------------|------------------------------|
| Departmental                  | 98                         | 23%                          |
| Job Related                   | 33                         | 8%                           |
| Not Job Related               | 2                          | -                            |
| Advance Training (In country) | 26                         | 6%                           |
| Advance Training (Foreign)    | 9                          | 20%                          |
| No Training                   | 261                        | 61%                          |
|                               | <u>429</u>                 | <u>100%</u>                  |

Departmental training was imparted to the in-service engineers to satisfactorily carry out the job requirements in that department. The training was generally in fields related to the working of department e.g. training in ground Water for Irrigation Department engineers and soil Mechanics for the engineers of Highway Department. No-job related training was in fields like civil defence and Administration. Advanced in-country training was primarily of EDI(World Bank) Courses held in Pakistan. Advanced foreign training was in specialised engineering fields such as Planning and design of dams, highway pavement design and air conditioning. More than half(61%) of the engineers in the sample have had no training what so ever and carried out the routine work of the

department with their educational background. Engineers working in the provincial public works Departments had 26% training figure as compared to 17% for the autonomous organizations. NWFP Communications & Works Department has a 55% departmental training seconded by the Punjab Irrigation and Power Department(33%) and the Punjab Highway Department and FATA Development Corporation in third position(29%). Punjab and Sind Irrigation Department engineers had more advanced in country training. Sind Irrigation and Power Department had 2 foreign trained engineers in a sample of 9. Only 9 out of total 429(20%) engineers in the study sample have advanced foreign training. More engineers need to be trained as only less than half of the sample(39%) were found to have training.

TABLE: 6.3 TRAINING PARTICULARS OF ENGINEERS

| CODE | ORGANIZATION   | SAMPLE SIZE | TRAINING       |    |         |    |             |   |                     |    |                  |    |       |    |
|------|--|-------------|----------------|----|---------|----|-------------|---|---------------------|----|------------------|----|-------|----|
|      |  |             | DEPART. MENTAL |    | RELATED |    | NOT RELATED |   | ADVANCED IN COUNTRY |    | ADVANCED FOREIGN |    | N I L |    |
|      |  |             | NO             | %  | NO      | %  | NO          | % | NO                  | %  | NO               | %  | NO    | %  |
| 1    | Punjab Highway Department.                               | 56          | 16             | 29 | 4       | 7  | -           | - | 5                   | 8  | 1                | 2  | 30    | 54 |
| 2    | Sind Highway Department.                                 | 49          | 8              | 16 | 8       | 16 | -           | - | -                   | -  | -                | -  | 33    | 68 |
| 3    | NWFP Communications & Works Dept.                        | 36          | 20             | 55 | 2       | 6  | -           | - | 2                   | 6  | -                | -  | 12    | 33 |
| 4    | Baluchistan C & W Department.                            | 8           | -              | -  | 1       | 12 | -           | - | 2                   | 25 | -                | -  | 5     | 63 |
| 5    | Azad Kashmir Public Works Dept.                          | 14          | -              | -  | 2       | 14 | -           | - | 1                   | 7  | -                | -  | 11    | 79 |
| 6    | Pakistan Public Works Dept.                              | 16          | 1              | 6  | 2       | 13 | -           | - | 1                   | 6  | -                | -  | 12    | 75 |
| 7    | Punjab Irrigation & Power Dept.                          | 88          | 29             | 33 | 3       | 3  | -           | - | 7                   | 8  | 1                | -  | 48    | 55 |
| 8    | Sind Irrigation & Power Dept.                            | 9           | 2              | 22 | 1       | 11 | -           | - | -                   | -  | 2                | 22 | 4     | 45 |
| 9    | NWFP Irrigation Department.                              | 27          | 3              | 11 | -       | -  | -           | - | 7                   | 26 | -                | -  | 17    | 63 |
| 10   | Capital Development Authority.                           | 66          | 11             | 17 | 6       | 9  | -           | - | -                   | -  | 3                | 4  | 46    | 70 |
| 11   | Kohistan Development Board.                              | 25          | 2              | 8  | 4       | 16 | 1           | 4 | -                   | -  | -                | -  | 18    | 72 |
| 12   | FATA Development Corp.                                   | 17          | 5              | 29 | -       | -  | 1           | 6 | -                   | -  | -                | -  | 11    | 65 |
| 13   | NWFP Pub. Health Engg. Dept.                             | 18          | 1              | 6  | -       | -  | -           | - | 1                   | 6  | 2                | 11 | 14    | 77 |
| A    | ALL Provl. Highway Depts. (1+2+3+4+5)                    | 163         | 44             | 27 | 17      | 10 | -           | - | 10                  | 6  | 1                | 1  | 91    | 56 |
| B    | ALL Provl. Irrigation Depts. (7+8+9)                     | 124         | 34             | 28 | 4       | 3  | -           | - | 14                  | 11 | 3                | 2  | 69    | 56 |
| C    | ALL Autonomous Organizations. (10+11+12)                 | 108         | 18             | 17 | 10      | 9  | 2           | 2 | -                   | -  | 3                | 3  | 75    | 69 |
| D    | ALL Provl. Govt. Depts. (A+B+13)                         | 305         | 79             | 26 | 21      | 7  | -           | - | 25                  | 8  | 6                | 2  | 174   | 57 |
| E    | ALL Federal/Provl. Govt. Depts & Autonomous Orgs (6+C+D) | 429         | 98             | 23 | 33      | 8  | 2           | - | 26                  | 6  | 9                | 2  | 261   | 61 |

#### 6.4 EXPERIENCE OF ENGINEERS (TABLE 6.4)

The professional experience of engineers in the study sample appears in detail in Table 6.4 on the following page. It is summarised as below:

| <u>Experience<br/>Y e a r s</u> | <u>Number of<br/>Engineers</u> | <u>% of Engineers<br/>in study sample</u> |
|---------------------------------|--------------------------------|---|
| 0 - 5                           | 85                             | 20 %                                      |
| 5 - 10                          | 118                            | 28 %                                      |
| 10 - 15                         | 47                             | 11 %                                      |
| 15 - 20                         | 66                             | 15 %                                      |
| 20 - 25                         | 42                             | 10 %                                      |
| 25 - 30                         | 32                             | 7 %                                       |
| 30 - 35                         | 28                             | 7 %                                       |
| 35 - 40                         | 8                              | 1 %                                       |
| Not mentioned                   | 3                              | 1 %                                       |

Most of the engineers are in the 5-10 years experience group (28%) followed by fresh entrants (20%). Table 6.4 shows that NWFP Public Health Engineering Department 50 % engineers in the 15-20 years age group followed by Azad Kashmir (29%) Sind (21%) and NWFP (20%) Highway Departments. Governments departments have more experienced engineers (17%) as compared to autonomous organisations (12%) in the 15 to 20 years age group. NWFP Communications and Works, Pakistan Public Works Department, Capital Development Authority (CDA) and Kohistan Development Board have the desirable uniformity in experience held by their engineers.

TABLE: 6.4 YEARS OF PROFESSIONAL EXPERIENCE

| CODE | ORGANIZATION   | SAMPLE SIZE | EXPERIENCE, YEARS. |             |            |            |            |            |            |           |           |           | NOT MENTIONED. |
|------|--|-------------|--------------------|-------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|----------------|
|      |  |             | 0-5                | 5-10        | 10-15      | 15-20      | 20-25      | 25-30      | 30-35      | 35-40     |           |           |                |
| 1    | Punjab Highway Department.                             | 56          | 9<br>(16)          | 23<br>(41)  | 4<br>(7)   | 7<br>(13)  | 2<br>(4)   | 5<br>(9)   | 6<br>(10)  | -         | -         | -         | -              |
| 2    | Sind Highway Dept.                                     | 49          | 5<br>(10)          | 21<br>(43)  | 4<br>(8)   | 10<br>(21) | 4<br>(8)   | 1<br>(2)   | 4<br>(8)   | -         | -         | -         | -              |
| 3    | NWFP Communications & Works Dept.                      | 36          | 7<br>(20)          | 8<br>(22)   | 5<br>(13)  | 7<br>(20)  | 4<br>(11)  | 5<br>(14)  | -          | -         | -         | -         |                |
| 4    | Baluchistan C&W Department.                            | 8           | 2<br>(25)          | 4<br>(51)   | 1<br>(12)  | 1<br>(12)  | -          | -          | -          | -         | -         | -         |                |
| 5    | Azad Kashmir Public Works Dept.                        | 14          | 2<br>(14)          | 5<br>(36)   | 1<br>(7)   | 4<br>(29)  | 2<br>(14)  | -          | -          | -         | -         | -         |                |
| 6    | Pakistan Public works Dept.                            | 16          | 4<br>(25)          | 4<br>(25)   | 3<br>(19)  | 1<br>(6)   | 3<br>(19)  | 1<br>(6)   | 6<br>(11)  | 1<br>(6)  | -         | -         |                |
| 7    | Punjab Irrigation & Power Dept.                        | 88          | 21<br>(23)         | 13<br>(15)  | 6<br>(7)   | 7<br>(8)   | 13<br>(15) | 12<br>(14) | 10<br>(11) | 6<br>(7)  | -         | -         |                |
| 8    | Sind Irrigation & Power Dept.                          | 9           | 1<br>(11)          | 2<br>(22)   | -          | -          | -          | 4<br>(45)  | 1<br>(11)  | 1<br>(11) | -         | -         |                |
| 9    | NWFP Irrigation Department.                            | 27          | 2<br>(7)           | 5<br>(19)   | 5<br>(19)  | 7<br>(26)  | 2<br>(7)   | 3<br>(11)  | 3<br>(11)  | -         | -         | -         |                |
| 10   | Capital Development authority.                         | 66          | 21<br>(32)         | 15<br>(23)  | 10<br>(15) | 7<br>(11)  | 7<br>(11)  | 2<br>(3)   | 2<br>(3)   | 1<br>(1)  | 1<br>(1)  | 1<br>(1)  |                |
| 11   | Kohistan Development Board.                            | 25          | 7<br>(28)          | 3<br>(12)   | 4<br>(16)  | 3<br>(12)  | 5<br>(20)  | -          | 1<br>(4)   | 1<br>(4)  | -         | -         |                |
| 12   | FATA Development Corp.                                 | 17          | 3<br>(18)          | 7<br>(41)   | 4<br>(23)  | 3<br>(18)  | -          | -          | -          | -         | -         | -         |                |
| 13   | NWFP Pub. Health Engg. Dept.                           | 18          | 1<br>(6)           | 8<br>(44)   | -          | 9<br>(50)  | -          | -          | -          | -         | -         | -         |                |
| A    | All Prov'l. Highway Depts. (1+2+3+4+5)                 | 163         | 25<br>(15)         | 57<br>(97)  | 15<br>(18) | 29<br>(18) | 19<br>(17) | 17<br>(15) | 18<br>(18) | 10<br>(8) | 10<br>(8) | 10<br>(8) |                |
| B    | All Prov. Irrigation Dept. (7+8+9)                     | 124         | 24<br>(19)         | 28<br>(28)  | 14<br>(11) | 14<br>(11) | 15<br>(12) | 15<br>(15) | 7<br>(6)   | 6<br>(5)  | -         | -         |                |
| C    | All Autonomous Orgs. (10+11+12)                        | 108         | 37<br>(28)         | 25<br>(23)  | 18<br>(17) | 13<br>(12) | 12<br>(11) | 2<br>(2)   | 3<br>(3)   | 3<br>(3)  | -         | -         |                |
| D    | All Prov. Govt. Depts. (A+I+13)                        | 305         | 50<br>(16)         | 89<br>(89)  | 26<br>(26) | 52<br>(17) | 27<br>(29) | 30<br>(10) | 24<br>(8)  | 24<br>(8) | 2<br>(2)  | 2<br>(2)  |                |
| E    | All. Fed./Prov. Govt. Depts & Autonomous Orgs. (6+C+D) | 429         | 85<br>(20)         | 118<br>(28) | 47<br>(11) | 66<br>(15) | 42<br>(10) | 32<br>(7)  | 28<br>(7)  | 8<br>(1)  | 8<br>(1)  | 3<br>(1)  |                |

6.5 JOB RELEVANCE (TABLE 6.5)

6.5.1 JOB RELEVANCE IN GENERAL:

When the educational background and the type of training held by engineer matches with the job requirements, it was considered a relevant posting. Job relevancy is highly desirable for efficient output, satisfaction and morale of the engineer. Modern job relevance techniques provide for proper career and training programmes planned on scientific grounds.

Job relevance as revealed by this study is nearly satisfactory as 75 % of the postings of the engineers in all the departments are in the relevant field. Job relevance is highest in the Baluchistan Communications and Works Department followed by other departments as shown below:

| <u>ORGANIZATION</u>             | <u>JOB RELEVANCE<br/>(PERCENTAGE)</u> |
|---------------------------------|---------------------------------------|
| Baluchistan C&W Department      | 90 %                                  |
| NWFP Irrigation Dept.           | 86 %                                  |
| Kohistan Development Board      | 83 %                                  |
| NWFP Pub. Health Engg: Deptts:  | 83 %                                  |
| Punjab Irrigation & Power Dept: | 75 %                                  |
| Capital Development Authority   | 72 %                                  |

6.5.2 JOB RELEVANCE OF ENGINEERS HAVING  
ADVANCED IN COUNTRY TRAINING.

Table III-12 in Appendix shows detailed particulars of advanced in country training held by engineers of various departments and organizations. The results of the detailed analysis in table III-12 appendix are summarised as below:

| S.NO. | CODE | ORGANIZATION                      | NO.OF ENGINEERS WITH ADVANCED IN COUNTRY TRAINING. | ENGINEERS WITH RELEVANCE OF TRAINING TO DUTIES IN THE DEPARTMENT. |
|-------|------|-----------------------------------|--|---|
| 1.    | 1    | Punjab Highway Department.        | 5  | 4   |
| 2.    | 3    | NWFP C&W Dept.                    | 2  | 1   |
| 3.    | 4    | Baluchistan C&W Dept.             | 2  | 1   |
| 4.    | 5    | Azad Kashmir Pub.Works Dept.      | 1  | 1   |
| 5.    | 6    | Pakistan Pub Works Dept.          | 1  | 1   |
| 6.    | 7    | Punjab Irrigation Dept.           | 7  | 7   |
| 7.    | 9    | NWFP Irrigation Department.       | 7  | 3   |
| 8.    | 13   | NWFP Pub.Health Engg: Department. | 1  | -   |
|       |      |                                   | 26   | 18  |

18 out of 26 engineers having advanced in-country training and serving in 8 different organizations were found to be working in their field of training. Four out of five Punjab Highway Departments engineers having advanced in country training in Highway Construction, Maintenance, Planning, Field testing and construction quality control were found to have postings relevant to their training a Highway Department. Seven Irrigation Department engineers were found to have their postings relevant to their training. 70 percent job relevance has been found in utilization of services of engineers having advanced in country training.

6.5.3 JOB RELEVANCE OF ENGINEERS HAVING FOREIGN TRAINING.

Table III-13 in Appendix shows detailed particulars of foreign training held by engineers of various departments and organizations. The results of the analysis are summarized as below:

| S.NO. | CODE | ORGANIZATION                         | NO. OF ENGINEERS WITH FOREIGN TRAINING | ENGINEERS HAVING RELEVANCE OF TRAINING TO POSTINGS IN THE DEPARTMENT |
|-------|------|--------------------------------------|--|--|
| 1.    | 1    | Punjab Highway Department            | 1                                      | 1  |
| 2.    | 7    | Punjab Irrigation Dept.              | 1                                      | 1  |
| 3.    | 8    | Sind Irrigation Dept.                | 2                                      | 2  |
| 4.    | 11   | Kohistan Development Board           | 3                                      | 1  |
| 5.    | 13   | NWFP Public Health Engg. Department. | 2                                      | 2  |
|       |      |                                      | <hr/>                                  | <hr/>  |
|       |      |                                      | 9                                      | 7  |
|       |      |                                      | <hr/>                                  | <hr/>  |

7 Out of 9 foreign trained engineers serving in 5 different organizations were found to be working in their fields of training in the respective departments giving 77 percent job relevance in utilization of their foreign training.



TABLE: 6.5 JOB RELEVANCE

| CODE | ORGANIZATION  | SAMPLE SIZE | JOB RELEVANCE, POSTINGS |                    |                    |                    |                    |                    |                    |                    |                    |                    | TOTAL |
|------|---|-------------|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------|
|      |   |             | RELEVANT POSTING %      | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % | RELEVANT POSTING % |       |
| 1    | Punjab Highway Dept.                                  | 56          | 177                     | 71                 | 25                 | 10                 | 11                 | 5                  | 35                 | 14                 | 248                |                    |       |
| 2    | Sind Highway Dept.                                    | 49          | 109                     | 73                 | 18                 | 12                 | 8                  | 5                  | 14                 | 10                 | 149                |                    |       |
| 3    | NWFP C & W Department.                                | 36          | 66                      | 61                 | 25                 | 23                 | 5                  | 5                  | 12                 | 11                 | 108                |                    |       |
| 4    | Baluchistan C & W Dept.                               | 9           | 19                      | 90                 | 2                  | 10                 | -                  | -                  | -                  | -                  | 21                 |                    |       |
| 5    | Azad Kasmir Public Works Dept                         | 14          | 32                      | 75                 | 1                  | 2                  | -                  | -                  | 10                 | 23                 | 43                 |                    |       |
| 6    | Pakistan Public Works Dept.                           | 16          | 23                      | 66                 | 7                  | 20                 | 1                  | 3                  | 4                  | 11                 | 35                 |                    |       |
| 7    | Punjab Irrigation & Power Dept.                       | 88          | 216                     | 75                 | 44                 | 15                 | 7                  | 2                  | 24                 | 28                 | 291                |                    |       |
| 8    | Sind Irrigation & Power Dept.                         | 9           | 9                       | 60                 | 2                  | 13                 | -                  | -                  | 4                  | 27                 | 15                 |                    |       |
| 9    | NWFP Irrigation Dept.                                 | 27          | 76                      | 86                 | 6                  | 7                  | 1                  | 1                  | 5                  | 6                  | 88                 |                    |       |
| 10   | Capital Development Authority                         | 68          | 96                      | 72                 | 16                 | 12                 | 10                 | 7                  | 12                 | 9                  | 134                |                    |       |
| 11   | Kohistan Development Board.                           | 25          | 29                      | 83                 | 1                  | 3                  | -                  | -                  | 5                  | 14                 | 35                 |                    |       |
| 12   | FATA Development Corp.                                | 17          | 17                      | 68                 | -                  | -                  | -                  | -                  | 8                  | 32                 | 25                 |                    |       |
| 13   | NWFP Pub. Health Engg:Dept.                           | 16          | 49                      | 83                 | 1                  | 2                  | -                  | -                  | 9                  | 15                 | 59                 |                    |       |
| A    | All Prov. Highway Depts. (1+2+3+4+5)                  | 163         | 403                     | 72                 | 71                 | 12                 | 24                 | 4                  | 71                 | 12                 | 569                |                    |       |
| B    | All Prov. Irrigation Depts. (7+8+9)                   | 124         | 361                     | 80                 | 52                 | 11                 | 8                  | 2                  | 33                 | 7                  | 454                |                    |       |
| C    | All Autonomous Organizations (10+11+12)               | 108         | 142                     | 73                 | 17                 | 9                  | 10                 | 5                  | 25                 | 13                 | 194                |                    |       |
| D    | All Prov. Govt. Departments (A+B+13)                  | 305         | 813                     | 76                 | 118                | 11                 | 32                 | 3                  | 113                | 10                 | 1076               |                    |       |
| E    | All Fed./Prov. Govt. Depts & Autonomous Orgs. (5+C+D) | 429         | 978                     | 75                 | 142                | 11                 | 43                 | 3                  | 142                | 11                 | 1305               |                    |       |

6.6 JOB SATISFACTION (TABLE 6.6)

When an Officer is posted in a position which is relevant to his qualifications and experience, he works efficiently and has job satisfaction.

Job satisfaction as revealed by this study is 70%. 913 out of 1305 postings of 429 engineers in 13 organisations gave full work satisfaction to the engineer. 182 postings gave partial satisfaction and 63 postings were found un-satisfactory by the incumbents. Job satisfaction is highest (89%) in the NWFP Irrigation Department followed by other departments as shown below :

| <u>ORGANIZATION</u>                       | <u>JOB SATISFACTION<br/>(PERCENTAGE)</u> |
|---|--|
| Baluchistan Communications & Works Dept   | 86 %                                     |
| NWFP Public Health Engineering Department | 82 %                                     |
| Punjab Irrigation and Power Department    | 78 %                                     |
| Sind Irrigation and Power Department      | 73 %                                     |
| Kohistan Development Board                | 72 %                                     |

TABLE: 6.6 JOB SATISFACTION

| CODE | ORGANIZATION  | SAMPLE SIZE | JOB SATISFACTION |             |                   |             |                         |             | TOTAL |    |      |
|------|---|-------------|------------------|-------------|-------------------|-------------|-------------------------|-------------|-------|----|------|
|      |   |             | TOTAL Post-ing.  | % Post-ing. | PARTIAL Post-ing. | % Post-ing. | NOT MENTIONED Post-ing. | % Post-ing. |       |    |      |
| 1    | Punjab Highway Department.                            | 56          | 169              | 68          | 31                | 12          | 12                      | 5           | 36    | 15 | 248  |
| 2    | Sind Highway Department.                              | 49          | 97               | 66          | 20                | 14          | 12                      | 8           | 18    | 12 | 147  |
| 3    | NWFP Communications & Works Dept.                     | 36          | 57               | 52          | 36                | 33          | 5                       | 4           | 12    | 11 | 110  |
| 4    | Baluchistan C & W Dept.                               | 8           | 18               | 86          | 2                 | 9           | -                       | -           | 1     | 5  | 21   |
| 5    | Azad Kashmir Public Works Dept.                       | 14          | 24               | 56          | 10                | 23          | 8                       | 19          | 1     | 2  | 43   |
| 6    | Pakistan Public Works Dept.                           | 16          | 24               | 63          | 7                 | 20          | 1                       | 3           | 3     | 9  | 35   |
| 7    | Punjab Irrigation & Power Dept.                       | 88          | 274              | 78          | 40                | 12          | 11                      | 3           | 26    | 7  | 351  |
| 8    | Sind Irrigation & Power Dept.                         | 9           | 11               | 73          | -                 | -           | -                       | -           | 4     | 27 | 15   |
| 9    | NWFP Irrigation Dept.                                 | 27          | 78               | 89          | 3                 | 3           | 2                       | 2           | 5     | 6  | 88   |
| 10   | Capital Development Authority.                        | 66          | 77               | 57          | 33                | 25          | 12                      | 9           | 12    | 9  | 134  |
| 11   | Kohistan Development Board.                           | 25          | 18               | 72          | 2                 | 8           | -                       | -           | 5     | 20 | 25   |
| 12   | FATA Development Corp.                                | 17          | 17               | 68          | 1                 | 4           | -                       | -           | 7     | 28 | 25   |
| 13   | NWFP Pub.Health Engg: Dept.                           | 18          | 49               | 82          | 1                 | 2           | -                       | -           | 10    | 17 | 60   |
| A    | All Provincial Highway Depts. (1+2+3+4+5)             | 163         | 365              | 64          | 99                | 17          | 37                      | 7           | 68    | 12 | 569  |
| B    | All Provincial Irrigation Depts. (7+8+9)              | 124         | 363              | 80          | 43                | 9           | 13                      | 3           | 35    | 8  | 454  |
| C    | All Autonomous Organizations (10+11+12)               | 100         | 112              | 61          | 36                | 20          | 12                      | 6           | 24    | 13 | 184  |
| D    | All Prov.Govt.Departments (A+B+13)                    | 305         | 777              | 72          | 139               | 13          | 50                      | 5           | 113   | 10 | 1079 |
| E    | All Federal/Prov.Govt.Depts & Autonomous Orgs(5+C+D). | 420         | 913              | 70          | 182               | 14          | 63                      | 5           | 147   | 11 | 1305 |

6.7 NUMBER OF PROMOTIONS (TABLE 6.7)

Promotion of Officers of a department are indicative of efficient discharge of duties by them. As most of the Officers (65%) in the sample of 429 engineers are in the entering Grade 17, the percentage of those who are yet to receive first promotion is 44%. The percentage of Officers receiving promotions is as below:

| <u>NUMBER OF PROMOTIONS</u> | <u>PERCENTAGE OF OFFICERS</u> |
|-----------------------------|-------------------------------|
| Nil                         | 44                            |
| 1                           | 36                            |
| 2                           | 12                            |
| 3                           | 3                             |
| 4                           | 2                             |
| Not mentioned               | 3                             |
|                             | <u>100</u>                    |

36 percent of Officers have received their first promotion from Grade 16 to 17 and 12 percent have been promoted from Grade 17 to Grade 18 as Executive Engineers. 3 percentage have become Superintending Engineers (Grade 19) and 2 percent of the sample has received four promotions to the rank of Chief Engineer(Grade-20).

TABLE: 6.7 NUMBER OF PROMOTIONS

| CODE | ORGANIZATION  | SAMPLE SIZE | NUMBER OF PROMOTIONS |     |       |      |                |       |   |    |    |     |
|------|---|-------------|----------------------|-----|-------|------|----------------|-------|---|----|----|-----|
|      |   |             | ONE                  | TWO | THREE | FOUR | NOT MENTIONED. | N I L |   |    |    |     |
|      |   |             | %                    | %   | %     | %    | %              | %     | % | %  | %  |     |
| 1    | Punjab Highway Department.                                  | 56          | 18                   | 5   | 1     | 2    | 1              | 2     | 3 | 5  | 28 | 50  |
| 2    | Sing Highway Department.                                    | 49          | 18                   | 11  | 22    | -    | 1              | 2     | 6 | 12 | 13 | 27  |
| 3    | NWFP Communications & Works Dept.                           | 36          | 12                   | 4   | 11    | 3    | 1              | 3     | - | -  | 16 | 45  |
| 4    | Baluchistan. C & W Dept.                                    | 8           | 3                    | 2   | 25    | -    | -              | -     | - | -  | 3  | 38  |
| 5    | Azad Kashmir Public Works Dept.                             | 14          | 4                    | 3   | 21    | 1    | 7              | -     | 1 | 7  | 5  | 36  |
| 6    | Pakistan Public Works Dept.                                 | 16          | 2                    | 12  | 8     | 50   | -              | -     | - | -  | 6  | 38  |
| 7    | Punjab Irrigation & Power Dept.                             | 88          | 46                   | 52  | -     | -    | 4              | 5     | - | -  | 38 | 43  |
| 8    | Sind Irrigation & Power Dept.                               | 9           | 2                    | 22  | 2     | 22   | -              | -     | - | -  | 5  | 56  |
| 9    | NWFP Irrigation Dept.                                       | 27          | 9                    | 33  | 7     | 26   | 2              | 7     | - | 1  | 4  | 30  |
| 10   | Capital Development Authority                               | 66          | 26                   | 39  | 9     | 14   | 1              | 2     | - | -  | 30 | 45  |
| 11   | Kohistan Development Board                                  | 25          | 2                    | 8   | -     | -    | 1              | 4     | - | -  | 22 | 88  |
| 12   | FATA Development Corp.                                      | 17          | 5                    | 29  | -     | -    | 1              | 6     | - | -  | 11 | 65  |
| 13   | NWFP Public Health Engineering Dept.                        | 18          | 7                    | 39  | 2     | 11   | 3              | 17    | - | -  | 6  | 33  |
| A    | All Provincial Highway Dept. (1+2+3+4+5)                    | 163         | 55                   | 34  | 25    | 15   | 5              | 3     | 3 | 2  | 10 | 65  |
| B    | All Provincial Irrigation Depts. (7+8+9)                    | 124         | 57                   | 46  | 9     | 7    | 2              | 1     | 4 | 3  | 1  | 51  |
| C    | All Autonomous Organizations (10+11+12).                    | 108         | 33                   | 21  | 9     | 8    | 3              | 3     | - | -  | -  | 63  |
| D    | All Prov. Govt. Departments (A+B+13).                       | 505         | 119                  | 39  | 36    | 12   | 10             | 3     | 7 | 2  | 11 | 122 |
| E    | All Federal/Prov. Govt. Depts and Autonomous Orgs. (6+C+D). | 429         | 154                  | 36  | 53    | 12   | 13             | 3     | 7 | 2  | 11 | 191 |

6.8 NUMBER OF DEPARTMENTS CHANGED (TABLE 6.8)

Too frequent changes of employment are not in interest of work. A change is indicative of lack of job relevance and satisfaction in the department or that poor service conditions force the person to make a job change. The study shows that 44% of the engineers have remained in a steady job with one department. The percentage of engineers changing their jobs from one department to another is as below :

| <u>NUMBER OF DEPTT:<br/>CHANGED</u> | <u>PERCENTAGE OF<br/>ENGINEERS</u> |
|-------------------------------------|------------------------------------|
| No. Change                          | 44 %                               |
| 1                                   | 25 %                               |
| 2                                   | 19 %                               |
| 3                                   | 8 %                                |
| 4                                   | 2 %                                |
| 5                                   | 1 %                                |
| 6                                   | 1 %                                |
|                                     | <hr/>                              |
|                                     | 100 %                              |
|                                     | <hr/>                              |

About half (44%) of the engineers in the sample have remained in steady employment with one department, 25% have changed one department and 19% have changed two departments. Only 12% have changed more than two departments and as such the job steadiness among the engineers is quite good and indicative of their interest in work.

TABLE: 6.8 NUMBER OF DEPARTMENTS CHANGED

| CODE | ORGANIZATION   | SAMPLE SIZE | DEPTS CHANGED |    |     |    |    |    |    |    |   |   |   |   |    |   |      |    |
|------|--|-------------|---------------|----|-----|----|----|----|----|----|---|---|---|---|----|---|------|----|
|      |  |             | Nil           | %  | 1   | %  | 2  | %  | 3  | %  | 4 | % | 5 | % | 6  | % | N.M. | %  |
| 1    | Punjab Highway Department.                                   | 56          | 26            | 46 | 4   | 7  | 16 | 29 | 8  | 14 | 2 | 4 | - | - | -  | - | -    | -  |
| 2    | Sind Highway Department.                                     | 49          | 31            | 63 | 11  | 22 | 6  | 12 | 1  | 2  | - | - | - | - | -  | - | -    | -  |
| 3    | NWFP Communications & Works Dept.                            | 36          | 12            | 33 | 7   | 19 | 7  | 19 | 6  | 17 | 2 | 6 | 1 | 3 | 1  | 3 | -    | -  |
| 4    | Baluchistan C & W Department.                                | 8           | 6             | 75 | 2   | 25 | -  | -  | -  | -  | - | - | - | - | -  | - | -    | -  |
| 5    | Azad Kashmir Public Works Dept.                              | 14          | 8             | 57 | -   | -  | 5  | 36 | 1  | 7  | - | - | - | - | -  | - | -    | -  |
| 6    | Pakistan Public Works Dept.                                  | 16          | 8             | 50 | -   | -  | 5  | 31 | 2  | 3  | 1 | 6 | - | - | -  | - | -    | -  |
| 7    | Punjab Irrigacion. & Power Dept.                             | 88          | 43            | 49 | 30  | 34 | 9  | 10 | 5  | 6  | 1 | 1 | - | - | -  | - | -    | -  |
| 8    | Sind Irrigation & Power Dept.                                | 9           | 1             | 11 | 4   | 45 | 2  | 22 | -  | -  | - | - | - | 1 | 11 | 1 | 11   | 11 |
| 9    | NWFP Irrigation Dept.  | 27          | 9             | 33 | 6   | 22 | 7  | 26 | 4  | 15 | 1 | 4 | - | - | -  | - | -    | -  |
| 10   | Capital Development Authority .                              | 66          | 27            | 41 | 23  | 35 | 10 | 15 | 6  | 9  | - | - | - | - | -  | - | -    | -  |
| 11   | Kohistan Development Board.                                  | 25          | 7             | 28 | 11  | 44 | 2  | 8  | -  | 8  | 2 | 8 | 2 | 8 | 1  | 4 | -    | -  |
| 12   | FATA Development Corp.                                       | 17          | 6             | 35 | 4   | 29 | 5  | 29 | 2  | 12 | - | - | - | - | -  | - | -    | -  |
| 13   | NWFP Pub. Health Engineering Dept.                           | 18          | 5             | 27 | 6   | 33 | 7  | 39 | -  | -  | - | - | - | - | -  | - | -    | -  |
| A    | All Provincial Highway Depts.<br>(1+2+3+4+5)                 | 163         | 83            | 51 | 24  | 15 | 34 | 21 | 16 | 10 | 4 | 2 | 1 | 1 | 1  | 1 | 1    | 1  |
| B    | All Provincial Irrigation Depts.<br>(7+8+9)                  | 124         | 53            | 43 | 40  | 32 | 18 | 15 | 9  | 7  | 2 | 2 | - | - | 1  | 1 | 1    | 1  |
| C    | All Autonomous Organizations<br>(10+11+12)                   | 108         | 40            | 37 | 38  | 35 | 17 | 16 | 8  | 7  | 2 | 2 | 2 | 2 | 1  | 1 | -    | -  |
| D    | All Prov. Govt. Departments<br>(A+B+13)                      | 305         | 141           | 46 | 70  | 23 | 59 | 19 | 25 | 8  | 6 | 2 | 1 | - | 2  | 1 | 1    | 1  |
| E    | All Federal/Prov. Govt. Depts and<br>Autonomous Orgs.(A+C+D) | 429         | 189           | 44 | 108 | 25 | 81 | 19 | 35 | 8  | 9 | 2 | 3 | 1 | 3  | 1 | 1    | 1  |

6.9 SERVICE IN PRESENT DEPARTMENT (TABLE 6.9)

Personnel having long service in a department are desirable for efficient discharge of duties and increased output. The length of service of the 429 engineers in the study is tabulated below :

| <u>SERVICE YEAR</u> | <u>NUMBER OF ENGINEERS</u> | <u>PERCENTAGE</u> |
|---------------------|----------------------------|-------------------|
| 0 to 5              | 148                        | 34 %              |
| 5 to 10             | 117                        | 27 %              |
| 10 to 15            | 41                         | 10 %              |
| 15 to 20            | 53                         | 12 %              |
| 20 to 25            | 30                         | 7 %               |
| 25 to 30            | 20                         | 5 %               |
| 30 to 35            | 10                         | 4 %               |
| Not mentioned       | 4                          | 1 %               |
|                     | <u>429</u>                 | <u>100 %</u>      |

61 % engineers in the sample have a service of upto 10 years and 22% have a service of 10 to 20 years. Engineers having more than 20 years service are 17 % of the sample. Punjab Highway Department, Sind Highway Department and Azad Kashmir Public Works Department have 14%, 17% and 21% engineers in the 15 to 20 years service group. Capital Development Authority has 23% of its engineers in this service group. In case of FATA Development Corporation, 71% of its engineers have a service of 5 to 10 years.



TABLE: 6.9 SERVICE IN PRESENT DEPARTMENT

| CODE | ORGANIZATION  | SAMPLE SIZE | SERVICE IN PRESENT DEPARTMENT YEARS. |      |       |       |       |       |       |       |       |       |     | % N.M % |    |    |   |
|------|---|-------------|--------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-----|---------|----|----|---|
|      |   |             | 0-5                                  | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50+ |         |    |    |   |
| 1    | Punjab Highway Department.                                  | 56          | 11                                   | 20   | 23    | 41    | 2     | 4     | 8     | 14    | 4     | 7     | 5   | 3       | 5  | 5  | 2 |
| 2    | Sind Highway Department.                                    | 49          | 8                                    | 16   | 21    | 43    | 3     | 6     | 8     | 17    | 3     | 6     | 3   | 2       | 4  | 1  | 2 |
| 3    | WFP Communications & Works Dept.                            | 36          | 19                                   | 53   | 5     | 14    | 3     | 8     | 4     | 11    | 4     | 11    | 1   | 3       | -  | -  | - |
| 4    | WFP Communications & W Department.                          | 8           | 2                                    | 25   | 4     | 50    | 2     | 25    | -     | -     | -     | -     | -   | -       | -  | -  | - |
| 5    | Baluchistan C & W Department.                               | 14          | 4                                    | 29   | 3     | 21    | 2     | 15    | 3     | 21    | 2     | 14    | -   | -       | -  | -  | - |
| 6    | Azad Kashmir Pub. Works Dept.                               | 16          | 6                                    | 39   | 2     | 12    | 4     | 25    | 2     | 12    | 2     | 12    | -   | -       | -  | -  | - |
| 7    | Pakistan Public Works Dept.                                 | 88          | 29                                   | 33   | 15    | 17    | 6     | 7     | 5     | 6     | 11    | 13    | 10  | 11      | 10 | 11 | 2 |
| 8    | Punjab Irrigation & Power Dept.                             | 9           | 3                                    | 33   | 4     | 45    | 1     | 11    | 1     | 11    | -     | -     | -   | -       | -  | -  | - |
| 9    | Sind Irrigation & Power Dept.                               | 27          | 8                                    | 30   | 6     | 21    | 4     | 15    | 4     | 15    | 3     | 11    | 1   | 1       | 1  | 4  | - |
| 10   | WFP Irrigation Department.                                  | 66          | 26                                   | 40   | 14    | 21    | 11    | 16    | 15    | 23    | -     | 4     | -   | -       | -  | -  | - |
| 11   | Capital Development Authority.                              | 25          | 23                                   | 9    | -     | -     | -     | -     | -     | -     | 1     | 4     | -   | -       | -  | -  | - |
| 12   | Pakistan Development Board.                                 | 17          | 5                                    | 29   | 12    | 71    | -     | -     | -     | -     | -     | -     | -   | -       | -  | -  | - |
| 13   | FATA Development Corp.                                      | 18          | 4                                    | 22   | 8     | 44    | 3     | 17    | 3     | 17    | -     | -     | -   | -       | -  | -  | - |
| A    | WFI Pub. Health Engg. Dept.                                 | 163         | 44                                   | 27   | 56    | 34    | 12    | 7     | 23    | 14    | 13    | 8     | 9   | 5       | 5  | 3  | 1 |
| B    | All Govt. Highway Dept.                                     | 124         | 40                                   | 32   | 25    | 20    | 11    | 9     | 10    | 8     | 14    | 11    | 11  | 9       | 11 | 9  | 2 |
| C    | All Prov. Irrigation Dept.                                  | 108         | 54                                   | 50   | 26    | 24    | 11    | 10    | 15    | 14    | 1     | 1     | -   | -       | -  | -  | 1 |
| D    | All Autonomous Organizations                                | 305         | 88                                   | 29   | 89    | 29    | 26    | 9     | 36    | 12    | 27    | 9     | 20  | 6       | 16 | 5  | 3 |
| E    | All Federal/Prov. Govt. Depts. and Autonomous Orgs. (6+C+D) | 429         | 148                                  | 34   | 117   | 27    | 41    | 10    | 53    | 12    | 30    | 7     | 20  | 5       | 16 | 4  | 4 |

6.10 NUMBER OF POSTINGS HELD (TABLE 6.10)

It is a practice in the departments to change the posting of the engineers every couple of years in interest of work and public service. The number of transfers depends on the length of service an engineer has put in the department. The number of transfers as revealed by this study are as below:

| <u>NUMBER OF TRANSFER</u> | <u>PERCENTAGE OF ENGINEERS</u> |
|---------------------------|--------------------------------|
| Nil                       | 37%                            |
| 1 to 3                    | 36%                            |
| 4 to 6                    | 12%                            |
| 7 to 9                    | 7%                             |
| 10 to 12                  | 5%                             |
| 13 to 15                  | 1%                             |
| 16 to 18                  | 1%                             |
| Not mentioned             | 1%                             |

As about half of the engineers(207 out of 429 sample) are less than 35 years age group with less than 10 years service in the department, the number transfers does not exceed 3 for 73% engineers.

TABLE: 6.10 NUMBER OF POSTINGS HELD

| CODE | ORGANIZATION  | SAMPLE SIZE | POSTINGS |       |       |       |         |         |         |       |    |    |   |   |   |   |   |
|------|---|-------------|----------|-------|-------|-------|---------|---------|---------|-------|----|----|---|---|---|---|---|
|      |   |             | NIL      | % 1-3 | % 4-6 | % 7-9 | % 10-12 | % 13-15 | % 16-18 | % N.M | %  |    |   |   |   |   |   |
| 1    | Punjab Highway Department.                                    | 58          | 16       | 29    | 15    | 27    | 15      | 27      | 2       | 3     | 6  | 11 | 1 | 2 | 1 | 2 | - |
| 2    | Sind Highway Department.                                      | 49          | 10       | 20    | 26    | 53    | 9       | 19      | 2       | 4     | 2  | 4  | - | - | - | - | - |
| 3    | MWP Communications & Works Dept.                              | 38          | 22       | 60    | 5     | 14    | 2       | 6       | 2       | 6     | 2  | 6  | 1 | 3 | 2 | 6 | - |
| 4    | Baluchistan C & W Department.                                 | 14          | 3        | 38    | 3     | 38    | 1       | 12      | 1       | 12    | -  | -  | - | - | - | - | - |
| 5    | Azad Kashmir's Public Works Dept.                             | 16          | 3        | 21    | 6     | 43    | 3       | 21      | 1       | 7     | 1  | 7  | - | - | - | - | - |
| 6    | Pakistan Public Works Dept.                                   | 89          | 5        | 38    | 9     | 56    | 1       | 6       | -       | -     | -  | -  | - | - | - | - | - |
| 7    | Punjab Irrigation & Power Dept.                               | 9           | 24       | 28    | 40    | 46    | 3       | 8       | 9       | 10    | 5  | 6  | 3 | 2 | 2 | 2 | 2 |
| 8    | Sind Irrigation & Power Dept.                                 | 9           | 3        | 36    | 5     | 56    | 1       | 11      | -       | -     | -  | -  | - | - | - | - | - |
| 9    | MWP Irrigation Depex Agent.                                   | 27          | 8        | 30    | 9     | 33    | 5       | 19      | -       | -     | 2  | 7  | 1 | 4 | - | - | 2 |
| 10   | Capital Development Authority.                                | 63          | 23       | 35    | 26    | 40    | 7       | 11      | 10      | 15    | -  | -  | - | - | - | - | - |
| 11   | Kohistan Development Board.                                   | 25          | 23       | 92    | -     | -     | -       | -       | -       | -     | 1  | 4  | - | - | - | - | 1 |
| 12   | FATA Development Corp.  | 17          | 12       | 70    | 3     | 18    | 2       | 12      | -       | -     | -  | -  | - | - | - | - | - |
| 13   | MWP Pub.Health Engg. Department.                              | 18          | 5        | 34    | 7     | 39    | 1       | 5       | 2       | 11    | 1  | 5  | - | - | - | - | 1 |
| A    | All Provincial Highway Dept.<br>(1+2+3+4+5)                   | 163         | 54       | 33    | 55    | 34    | 30      | 18      | 8       | 5     | 11 | 7  | 2 | 1 | 3 | 2 | - |
| B    | All Provincial Irrigation Dept.<br>(7+8+9)                    | 124         | 35       | 28    | 54    | 44    | 9       | 7       | 9       | 7     | 7  | 6  | 4 | 3 | 2 | 2 | 4 |
| C    | All Autonomous Organizations<br>(10+11+12)                    | 108         | 58       | 54    | 29    | 27    | 9       | 8       | 10      | 9     | 1  | 1  | - | - | - | - | 1 |
| D    | All Provincial Govt. Depts<br>(A+B+13)                        | 305         | 95       | 31    | 116   | 38    | 40      | 13      | 19      | 6     | 19 | 6  | 6 | 2 | 5 | 2 | 5 |
| E    | All Federal/Prov. Govt. Depts and<br>Autonomous Orgs. (6+C+D) | 429         | 159      | 37    | 154   | 36    | 50      | 12      | 29      | 7     | 20 | 5  | 6 | 1 | 5 | 1 | 6 |

## 7. CONCLUSIONS

1. The assumption in objective of the study that trained engineers are not posted to relevant departments has not proved to be quite true. Job relevancy in general for all the 429 engineers in the sample has been found to be 75 percent.
2. Job relevancy amongst engineers having advanced in country training was found to be 70 percent. Foreign trained engineers have a job relevancy of 77 percent. 26 engineers in the sample have advanced in country training and 9 have attended foreign training courses/programmes in fields which are directly related to the nature of work in their respective departments. Their postings, however, are 70 percent and 77 percent relevant to their in country and foreign training respectively.
3. The Government departments have more engineers with advanced training (10%) as compared to autonomous Organizations(3%).

8. RECOMMENDATIONS

1. Utilization of Engineers can be further improved by proper postings in line with professional background of the engineers. This would improve the job relevance from 70-77 percent range to a higher figure.
2. Only 7 of the 429 man sample possess post graduate qualifications. Engineers should be encouraged to improve their qualifications at both In Country and foreign institutions.
3. Departmental training programmes should be made a permanent feature in all engineering departments and engineers should be sent for advanced In Country and foreign training courses. 61% of the engineers in the study sample have had no training of any kind.

GOVERNMENT OF PAKISTAN  
PLANNING AND DEVELOPMENT DIVISION  
NATIONAL TRANSPORT RESEARCH CENTRE  
+ + +

UTILIZATION OF TECHNICAL MANPOWER  
IN PUBLIC WORKS DEPARTMENTS

PLEASE READ THE ATTACHED INSTRUCTIONS BEFORE FILLING  
THIS QUESTIONNAIRE.

1. N A M E \_\_\_\_\_
2. DESIGNATION \_\_\_\_\_
3. DEPARTMENT \_\_\_\_\_
4. PROVINCE \_\_\_\_\_
5. DATE OF BIRTH \_\_\_\_\_
6. ACADEMIC QUALIFICATIONS:

| YEAR | DIPLOMA | DEGREE | FIELD |
|------|---------|--------|-------|
| 1.   | 2.      | 3.     | 4.    |
|      |         |        |       |
|      |         |        |       |
|      |         |        |       |
|      |         |        |       |

7. TRAINING PARTICULARS:

| S.No. | FROM | TO | FIELD | BRIEF DESCRIPTION |
|-------|------|----|-------|-------------------|
| 1.    | 2.   | 3. | 4.    | 5.                |
|       |      |    |       |                   |
|       |      |    |       |                   |
|       |      |    |       |                   |
|       |      |    |       |                   |
|       |      |    |       |                   |

APPENDIX I  
Page 2

8. EXPERIENCE: (Please begin with the first appointment).

| S.NO | FROM | TO | DESIGNATION | NPS GRADE. | DEPARTMENT | DESCRIPTION OF JOB | RELEVANCE OF JOB VERSUS QUALIFICATION (TOTAL PARTIAL/NIL) | JOB SATISFACTION (TOTAL PARTIAL/NIL) |
|------|------|----|-------------|------------|------------|--------------------|---|--------------------------------------|
| 1.   | 2    | 3. | 4.          | 5.         | 6.         | 7.                 | 8.  | 9.                                   |

UTILIZATION OF TECHNICAL MANPOWER  
IN PUBLIC WORKS DEPARTMENT.

GENERAL INSTRUCTION  
FOR FILLING UP THE QUESTIONNAIRE

The information contained in the Questionnaire will be treated as CONFIDENTIAL and will be used only for Statistical purposes.

While filling up the questionnaire, please ensure that all the questions have been answered. If a particular question is not applicable to your case, please cross it or enter 'N.A'(Not Applicable). Please use additional sheets where ever required. Specific instructions in respect of question Nos. 6-9 are as follows:

6. ACADEMIC QUALIFICATIONS: Please enter all the details in chronological order.

- Col. 1. The year when the examination result was declared is to be entered.
- Cols.2-3: Only one of the columns, which ever is applicable, is to be entered.
- Col.4 The area of specialization is to be entered.

7. TRAINING PARTICULARS: Please enter all the details in chronological order.

- Col.1 Serial number of each entry is to be given.
- Col.2 The starting date is to be entered.
- Col.3 The finishing date is to be entered.
- Col.4 The name of the training course/seminar is to be entered.
- Col.5 Salient features of the training are to be described briefly.

8. EXPERIENCE: Please enter all the essential details in chronological order starting from the first appointment.

- Col.1-3 Please follow the same instructions as for question No. 7, (Cols. 1 to 3).
- Col.4 The title of the post is to be entered.

C O N T D .....



- Col.5 The equivalent National Pay Scale grade No. as constituted at present is to be entered as some of the old designations might have been upgraded in the present pay grade structure.
- Col.6 The exact name of the Department may be entered.
- Col.7 The exact nature of work actually done by you in the Department is to be described.
- Col.8 The extent to which the job(the work involved) had/has relevance to your field of specialization or academic qualification and past experience is to be described.
- Col.9 Please state in un-ambiguous terms whether you derived any 'Job satisfaction' i.e. did you feel that you were doing the job for which you had been trained or for which you had any aptitude or liking.

9. REMARKS : Please enter/your views regarding the present utilization of technical manpower in your department. Also specify the areas where you feel that the technical personnel can be more effectively used alongwith your suggestions for carrying out the improvement.

PLEASE RETURN THE FILLED UP QUESTIONNAIRE AT THE EARLIEST ON THE FOLLOWING ADDRESS:

THE DEPUTY CHIEF  
NATIONAL TRANSPORT RESEARCH CENTRE  
PLANNING & DEVELOPMENT DIVISION  
8-AGHA KHAN ROAD, F-6/4,  
I S L A M A B A D.

APPENDIX-II  
WORK SHEET  
 (S.NO.OF THE QUESTIONNAIRE)

UTILIZATION OF TECHNICAL MANPOWER IN PUBLIC WORKS DEPARTMENTS  
 DEPARTMENT: \_\_\_\_\_  
 (BASE YEAR INFORMATION IS UPTO 31ST DECEMBER, 1979)

| Variables | Age<br>Years<br>&<br>Months | Design-<br>ation<br>&<br>Grade | ACADEMIC QUALIFICATIONS<br>(Specific Field)        |   |  | TRAINING PARTICULARS<br>(Specify Field & Duration<br>No. of Training Received |
|-----------|-----------------------------|--------------------------------|--|---|--|---|
|           |                             |                                | DIPLOMA<br>(d)<br>Single<br>Double<br>Triple<br>a. | DEGREE<br>(D)<br>Single<br>Double<br>Triple<br>b. | POST GRA-<br>DUATE<br>DEGREE(PD)<br>Single<br>Double<br>Triple<br>c. |   |
|           | 1.                          | 2.                             |  | 3.  |  | 4.  |
| 2         |                             |                                |  |   |  |   |
| 3         |                             |                                |  |   |  |   |
| 4         |                             |                                |  |   |  |   |
| 5         |                             |                                |  |   |  |   |
| 6         |                             |                                |  |   |  |   |
| 7         |                             |                                |  |   |  |   |
| 8         |                             |                                |  |   |  |   |
| 9         |                             |                                |  |   |  |   |
| 10        |                             |                                |  |   |  |   |
| 11        |                             |                                |  |   |  |   |

UTILIZATION OF TECHNICAL MANPOWER IN PUBLIC WORKS DEPARTMENTS

DEPARTMENT: \_\_\_\_\_  
 (BASE YEAR INFORMATION IS UPTO 31ST DECEMBER, 1979)

| Total Experience (Year & Months) | No. of Deptt: Changed | Total service in the present Deptt: (Yr. & Mh). | No. of posting in the present Department. | No. of promotions/selection in Present Deptt: | JOB RELEVANCE NO. OF POSTINGS IN THE PRESENT DEPARTMENT |             |         |                    | JOB SATISFACTION AGAINST NO. OF POSTINGS IN THE PRESENT DEPTT: |             |         |                   |  |  |
|----------------------------------|-----------------------|---|---|---|---|-------------|---------|--------------------|--|-------------|---------|-------------------|--|--|
|                                  |                       |   |   |   | (a) TOTAL   | (b) PARTIAL | (c) NIL | (d) NOT MENTIONED. | (a) TOTAL  | (b) PARTIAL | (c) NIL | (d) NOT MENTIONED |  |  |
| 5.                               | 6.                    | 7.  | 8.  | 9.  | 10.   | 11.         |         |                    |  |             |         |                   |  |  |

TABLE: III-1 LIST OF ORGANIZATION WITH CODE

| CODE | ORGANIZATION                                     | SAMPLE SIZE. |
|------|--|--------------|
| 1.   | Punjab Highway Department                        | 56           |
| 2.   | Sind Highway Department                          | 49           |
| 3.   | NWFP Communications & Works Department.          | 36           |
| 4.   | Baluchistan Communications and Works Department. | 8            |
| 5.   | Azad Kashmir Public Works Department.            | 14           |
| 6.   | Pakistan Public Works Department.                | 16           |
| 7.   | Punjab Irrigation & Power Deptt.                 | 88           |
| 8.   | Sind Irrigation & Power Department.              | 9            |
| 9.   | NWFP Irrigation Department.                      | 27           |
| 10.  | Capital Development Authority.                   | 66           |
| 11.  | Kohistan Development Board.                      | 25           |
| 12.  | FATA Development Corporation.                    | 17           |
| 13.  | NWFP Public Health Engineering Deptt.            | 18           |
|      | Total: Sample Size                               | 429          |
|      | Provincial Highway Deptt.                        | 163          |
|      | Provincial Irrigation Deptt.                     | 124          |
|      | Autonomous Organization.                         | 108          |
|      | NWFP Public Health Deptt.                        | 18           |
|      | Pakistan Public Works Deptt.                     | 16           |

TABLE: III-2: ENGINEERS IN VARIOUS NPS GRADES

| AGE GROUP      | DEPT CODE   | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E   |
|----------------|-------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|-----|
|                | SAMPLE SIZE | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 55 | 17 | -  | 18 | -  | -   |
|                | GRADE       |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |     |
| 20-25          | 17          | 1  | 1  | 1  | - | -  | 3  | -  | -  | - | -  | -  | 3  | -  | -  | 3  | -  | 3  | 6   |
|                | 18          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 19          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | 1  | 1  | 1  | - | -  | 3  | -  | -  | - | -  | -  | -  | 3  | -  | -  | 3  | -  | 3   |
| 25-30          | 17          | 10 | 12 | 6  | 1 | 3  | 32 | 3  | 20 | 2 | 1  | 23 | 19 | 6  | 2  | 27 | 1  | 56 | 86  |
|                | 18          | 1  | -  | -  | - | 1  | 2  | -  | -  | - | -  | -  | 2  | -  | -  | 2  | -  | 2  | 4   |
|                | 19          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | 11 | 12 | 6  | 1 | 4  | 34 | 3  | 20 | 2 | 1  | 23 | 21 | 6  | 2  | 29 | 1  | 58 | 90  |
| 30-35          | 17          | 19 | 11 | 6  | 4 | 3  | 43 | 3  | 16 | - | 8  | 24 | 10 | 4  | 9  | 23 | 6  | 73 | 99  |
|                | 18          | 2  | 1  | -  | - | 1  | 4  | 2  | 1  | 1 | 2  | 4  | 5  | 1  | 2  | 8  | -  | 8  | 18  |
|                | 19          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | 21 | 12 | 6  | 4 | 4  | 47 | 5  | 17 | 1 | 10 | 28 | 15 | 5  | 11 | 31 | 6  | 81 | 117 |
| 35-40          | 17          | 5  | 3  | 6  | - | 1  | 15 | -  | -  | - | -  | -  | 3  | 1  | 1  | 5  | 2  | 17 | 22  |
|                | 18          | -  | 2  | 3  | 1 | 1  | 7  | 2  | 4  | - | 6  | 10 | 6  | 3  | -  | 9  | 4  | 21 | 32  |
|                | 19          | -  | -  | -  | 1 | -  | 1  | -  | -  | - | -  | -  | 1  | -  | -  | 1  | 1  | 2  | 4   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | 5  | 5  | 9  | 2 | 2  | 23 | 3  | 4  | - | 6  | 10 | 10 | 4  | 1  | 15 | 7  | 40 | 58  |
| 40-45          | 17          | 1  | 3  | 3  | 1 | -  | 8  | -  | 2  | - | 1  | 3  | 2  | 6  | -  | 8  | 1  | 12 | 20  |
|                | 18          | 5  | 3  | 3  | - | -  | 11 | 2  | 6  | - | 2  | 8  | 5  | -  | 3  | 8  | 1  | 20 | 30  |
|                | 19          | -  | -  | 1  | - | 3  | 4  | -  | 2  | - | 2  | 1  | 2  | -  | 3  | 1  | 7  | 10 | 1   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | 1  | 1  | 1  | 1   |
|                | Sub Total:  | 6  | 6  | 7  | 1 | 3  | 23 | 2  | 10 | - | 3  | 13 | 8  | 8  | 3  | 19 | 4  | 40 | 61  |
| 45-50          | 17          | 1  | 2  | 1  | - | -  | 4  | -  | 7  | 2 | -  | 9  | 2  | -  | -  | 2  | -  | 13 | 15  |
|                | 18          | 1  | 1  | 1  | - | 1  | 4  | 2  | 8  | - | 8  | 1  | 2  | -  | 3  | 0  | 12 | 17 | 9   |
|                | 19          | 1  | 4  | 2  | - | -  | 7  | 1  | -  | - | 1  | 1  | 1  | -  | 1  | -  | 8  | 9  | -   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | 3  | 7  | 4  | - | 1  | 15 | 2  | 15 | 2 | 1  | 18 | 4  | 2  | -  | 6  | -  | 33 | 41  |
| 50-55          | 17          | 7  | 2  | 1  | - | -  | 10 | -  | 6  | - | 2  | 8  | 2  | -  | -  | 2  | -  | 18 | 20  |
|                | 18          | -  | 1  | -  | - | -  | 1  | -  | 6  | 2 | 1  | 9  | -  | -  | -  | -  | -  | 10 | 10  |
|                | 19          | 1  | -  | 2  | - | -  | 3  | 1  | -  | - | 2  | 2  | 2  | -  | -  | 2  | -  | 5  | 7   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | 8  | 3  | 3  | - | -  | 14 | -  | 12 | 2 | 5  | 19 | 4  | -  | -  | 4  | -  | 33 | 37  |
| 55-60          | 17          | 1  | 2  | -  | - | -  | 3  | -  | 6  | - | 1  | 7  | -  | -  | -  | -  | -  | 10 | 16  |
|                | 18          | -  | 1  | -  | - | -  | 1  | -  | 1  | 2 | -  | 3  | 1  | -  | -  | 1  | -  | 4  | 5   |
|                | 19          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | 1  | - | -  | 1  | -  | -  | -  | -  | -  | 1  | 1   |
|                | Sub Total:  | 1  | 3  | -  | - | -  | 4  | -  | 8  | 2 | 1  | 11 | 1  | -  | -  | 1  | -  | 15 | 22  |
| Not mentioned. | 17          | -  | -  | -  | - | -  | -  | -  | 2  | - | -  | 2  | -  | -  | -  | -  | -  | 2  | 2   |
|                | 18          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 19          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | 20          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -   |
|                | Sub Total:  | -  | -  | -  | - | -  | -  | -  | 2  | - | -  | 2  | -  | -  | -  | -  | -  | 2  | 2   |

A=1+2+3+4+5  
 B=7+3+9  
 C=10+11+12

D= A+B+13  
 E= 6+C+D

| AGE GROUP                   | DEPT CODE     | 1         | 2         | 3         | 4        | 5         | A          | 6         | 7         | 8        | 9         | B          | 10        | 11        | 12        | C          | 13        | D          | E          |
|-----------------------------|---------------|-----------|-----------|-----------|----------|-----------|------------|-----------|-----------|----------|-----------|------------|-----------|-----------|-----------|------------|-----------|------------|------------|
|                             | SAMPLE SIZE   | 56        | 49        | 36        | 8        | 14        | 163        | 16        | 88        | 9        | 27        | 124        | 66        | 25        | 17        | 108        | 18        | 305        | 429        |
|                             | GRADE         |           |           |           |          |           |            |           |           |          |           |            |           |           |           |            |           |            |            |
| Total by various NPS Grades | 17            | 45        | 36        | 24        | 6        | 7         | 118        | 6         | 59        | 4        | 13        | 76         | 41        | 17        | 12        | 70         | 10        | 204        | 280        |
|                             | 18            | 9         | 9         | 7         | 1        | 4         | 30         | 8         | 26        | 5        | 11        | 42         | 20        | 6         | 5         | 31         | 5         | 77         | 116        |
|                             | 19            | 2         | 4         | 5         | 1        | 3         | 15         | 2         | 2         | -        | 3         | 5          | 5         | 2         | -         | 7          | 2         | 22         | 31         |
|                             | 20            | -         | -         | -         | -        | -         | -          | -         | 1         | -        | -         | 1          | -         | -         | -         | -          | 1         | 2          | 2          |
|                             | <b>Total:</b> | <b>56</b> | <b>49</b> | <b>36</b> | <b>8</b> | <b>14</b> | <b>163</b> | <b>16</b> | <b>88</b> | <b>9</b> | <b>27</b> | <b>124</b> | <b>66</b> | <b>25</b> | <b>17</b> | <b>108</b> | <b>18</b> | <b>305</b> | <b>429</b> |

A = 1+2+3+4+5  
 B = 7+8+9  
 C = 10+11+12

D = A+B+13  
 E = 6+C+D

TABLE: III-3: QUALIFICATIONS OF ENGINEERS

| AGE GROUP          | DEPT CODE     | 1   | 2  | 3  | 4   | 5   | A   | 6  | 7  | 8 | 9  | B   | 10 | 11 | 12 | C   | 13  | D   | E   |
|--------------------|---------------|-----|----|----|-----|-----|-----|----|----|---|----|-----|----|----|----|-----|-----|-----|-----|
|                    | SAMPLE SIZE   | 56  | 49 | 36 | 8   | 14  | -   | 16 | 88 | 9 | 27 | -   | 66 | 25 | 17 | -   | 18  |     |     |
|                    | QUALIFICATION |     |    |    |     |     |     |    |    |   |    |     |    |    |    |     |     |     |     |
| 20-25              | Engg Diploma  | -   | -  | -  | -   | 1   | 1   | -  | -  | - | -  | -   | 8  | 6  | -  | 14  | -   | 1   | 1   |
|                    | Engg Degree   | 1   | 1  | 1  | -   | -   | 3   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | 3   | 17  |
|                    | Post Grad     | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
| 25-30              | Engg Diploma  | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
|                    | Engg Degree   | 11  | 12 | 6  | 1   | 2   | 32  | 3  | 21 | 2 | 1  | 24  | 17 | 5  | 2  | 24  | 1   | 57  | 84  |
|                    | Post Grad     | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
| 30-35              | Engg Diploma  | 1   | -  | -  | -   | -   | 1   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | 1   | 1   |
|                    | Engg Degree   | 21  | 11 | 6  | 4   | 5   | 47  | 4  | -  | 1 | 6  | 1   | 17 | 4  | 10 | 31  | 6   | 54  | 89  |
|                    | Post Grad     | -   | -  | -  | 1   | -   | 1   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | 1   | 1   |
| 35-40              | Engg Diploma  | 2   | -  | -  | -   | 1   | 3   | -  | -  | - | 1  | 1   | 3  | 2  | -  | 3   | -   | 4   | 7   |
|                    | Engg Degree   | 3   | 5  | 9  | 2   | 2   | 21  | 1  | 5  | - | 2  | 11  | 7  | -  | 2  | 11  | 7   | 39  | 51  |
|                    | Post Grad     | 3   | -  | -  | 1   | -   | 4   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | 4   | 4   |
| 40-45              | Engg Diploma  | 1   | -  | -  | 1   | -   | 2   | -  | 3  | - | 1  | 4   | 3  | 6  | -  | 9   | -   | 6   | 15  |
|                    | Engg Degree   | 4   | 8  | 7  | -   | 2   | 21  | 2  | 5  | - | 3  | 7   | 4  | 2  | 3  | 9   | 4   | 32  | 43  |
|                    | Post Grad     | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | 1   | 1   |
| 45-50              | Engg Diploma  | 1   | 2  | 1  | -   | 1   | 5   | -  | 7  | 2 | 1  | 10  | 1  | -  | -  | 1   | -   | 15  | 16  |
|                    | Engg Degree   | 2   | 5  | 3  | -   | -   | 10  | 3  | 10 | - | -  | 13  | 3  | -  | -  | 3   | -   | 23  | 29  |
|                    | Post Grad     | 1   | -  | -  | -   | -   | 1   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | 1   | 1   |
| 50-55              | Engg Diploma  | 7   | 2  | 1  | -   | -   | 10  | 1  | 7  | - | -  | 7   | 2  | -  | -  | 2   | -   | 17  | 20  |
|                    | Engg Degree   | 1   | 1  | 2  | -   | -   | 4   | 1  | 5  | 2 | 1  | -   | -  | -  | -  | -   | -   | 11  | 12  |
|                    | Post Grad     | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
| 55-60              | Engg Diploma  | 1   | 2  | -  | -   | -   | 3   | -  | 5  | 1 | 1  | 7   | 1  | -  | -  | 1   | -   | 10  | 11  |
|                    | Engg Degree   | -   | -  | -  | -   | -   | -   | -  | 2  | 1 | -  | 4   | -  | -  | -  | -   | -   | 4   | 4   |
|                    | Post Grad     | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
| Not mention-<br>ed | Engg Diploma  | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
|                    | Engg Degree   | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
|                    | Post Grad     | -   | -  | -  | -   | -   | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -   | -   | -   |
| Total              | Engg Diploma  | 13  | 6  | 2  | 1   | 3   | 25  | 2  | 22 | 3 | 4  | 29  | 10 | 6  | -  | 16  | -   | 54  | 72  |
|                    | Engg Degree   | 43  | 43 | 34 | 7   | 11  | 138 | 14 | 66 | 6 | 23 | 95  | 56 | 19 | 17 | 92  | 18  | 251 | 357 |
|                    | Post Grad     | (4) |    |    | (2) | (6) |     |    |    |   |    |     |    |    |    |     | (1) | (7) | (7) |
|                    | Total:        | 56  | 49 | 36 | 8   | 14  | 163 | 16 | 88 | 9 | 27 | 124 | 66 | 25 | 17 | 108 | 18  | 305 | 429 |

A = 1+2+3+4+5

D = A+B+13

B = 7+8+9

E = 6+C+D

C = 10+11+12

TABLE: 4. TRAINING PARTICULARS OF ENGINEERS

| AGE GROUP | DEPT CODE            | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E  |
|-----------|----------------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|----|
|           | SAMPLE SIZE          | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | -  | 18 |    |    |
| 20-25     | TRAINING             |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |    |
|           | Departmental Related | 1  | 1  | -  | - | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|           | Not related          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | Advanced in-country. | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | Advanced Foreign.    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | 1  | -  | -  | 1  | -  | 1  |
|           | Nil                  | -  | -  | 1  | - | 1  | 2  | -  | -  | - | -  | -  | 2  | 6  | -  | 8  | -  | 2  | 10 |
| 25-30     | Departmental Related | 3  | 2  | 3  | - | -  | 8  | 1  | 5  | 1 | -  | 6  | 3  | -  | 1  | 4  | -  | 14 | 19 |
|           | Not Related          | 1  | -  | 2  | - | -  | 3  | -  | 1  | - | -  | 1  | 3  | -  | -  | 3  | -  | 4  | 7  |
|           | Advanced in-Country. | 1  | -  | 1  | - | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|           | Advanced Foreign.    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | Nil                  | 6  | 10 | 3  | 1 | 3  | 23 | 2  | 13 | 1 | 1  | 15 | 12 | 5  | 1  | 18 | 1  | 39 | 59 |
| 30-35     | Departmental Related | 5  | 2  | 4  | - | -  | 11 | -  | 5  | - | -  | 5  | 3  | -  | 3  | 6  | 1  | 17 | 23 |
|           | Not Related          | -  | -  | -  | 1 | 1  | 1  | -  | 1  | - | -  | 1  | 2  | 2  | -  | 4  | -  | 2  | 6  |
|           | Advanced In-Country. | 1  | -  | 1  | - | -  | 2  | 1  | 2  | - | 2  | 4  | -  | -  | -  | -  | -  | 6  | 7  |
|           | Advanced Foreign.    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | Nil                  | 15 | 10 | 2  | 3 | 4  | 34 | 4  | 12 | 1 | 4  | 17 | 11 | 1  | 7  | 19 | 5  | 56 | 79 |
| 35-40     | Departmental Related | -  | -  | 3  | - | -  | 3  | -  | 1  | - | -  | 1  | 2  | -  | 1  | 3  | -  | 4  | 7  |
|           | Not Related          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | Advanced In-Country. | 2  | -  | -  | - | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|           | Advanced Foreign.    | -  | -  | -  | 2 | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 3  |
|           | Nil                  | 2  | 5  | 6  | - | 2  | 15 | 2  | 2  | - | 6  | 8  | 10 | 5  | 1  | 16 | 6  | 29 | 47 |
| 40-45     | Departmental Related | 3  | 1  | 5  | - | -  | 9  | -  | 2  | - | -  | 2  | 2  | 2  | -  | 4  | -  | 11 | 15 |
|           | Not Related          | -  | -  | -  | - | 2  | 2  | -  | 1  | - | -  | 1  | -  | 1  | -  | 1  | -  | 3  | 4  |
|           | Advanced In-Country. | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | 1  | 1  | -  | -  | 1  |
|           | Advanced Foreign.    | 1  | -  | -  | - | 1  | 2  | -  | -  | - | -  | 2  | -  | -  | -  | -  | -  | 4  | 4  |
|           | Nil                  | 3  | 7  | 2  | 1 | 13 | 26 | 2  | 3  | - | 1  | 4  | 7  | 1  | 2  | 10 | 2  | 32 | 44 |

Contd.....



TABLE: 4 TRAINING PARTICULARS OF ENGINEERS

| AGE GROUP | DEPT CODE            | 1  | 2  | 3  | 4 | 5  | A   | 6  | 7  | 8  | 9  | B   | 10 | 11 | 12 | C   | 13 | D   | E   |
|-----------|----------------------|----|----|----|---|----|-----|----|----|----|----|-----|----|----|----|-----|----|-----|-----|
|           | SAMPLE SIZE          | 56 | 49 | 36 | 8 | 14 | -   | 16 | 88 | 9  | 27 | -   | 66 | 25 | 17 | -   | 18 | -   | -   |
|           | <u>TRAINING</u>      |    |    |    |   |    |     |    |    |    |    |     |    |    |    |     |    |     |     |
| 45-50     | Departmental         | 1  | 1  | 4  | - | -  | 6   | -  | 5  | -  | 2  | 7   | -  | -  | -  | -   | -  | 13  | 15  |
|           | Related              | -  | -  | -  | - | -  | -   | 1  | -  | -  | -  | -   | 1  | 1  | -  | 2   | -  | -   | 5   |
|           | Not Related          | -  | -  | -  | - | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |
|           | Advanced In-Country. | 1  | -  | -  | - | -  | 1   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | 1   | 1   |
|           | Advanced Foreign.    | 1  | -  | -  | - | -  | -   | -  | 1  | 1  | -  | 2   | 1  | -  | -  | 1   | -  | 2   | 3   |
|           | Nil                  | -  | 6  | -  | - | -  | 1   | 7  | 1  | 10 | 1  | 2   | 13 | 1  | -  | -   | -  | 20  | 21  |
| 50-55     | Departmental         | 3  | 1  | 1  | - | -  | 5   | -  | 5  | -  | 1  | 6   | -  | -  | -  | -   | -  | 11  | 11  |
|           | Related              | 1  | -  | -  | - | -  | 1   | 1  | -  | 1  | -  | 1   | -  | -  | -  | -   | -  | 2   | 3   |
|           | Not Related          | -  | -  | -  | - | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |
|           | Advanced In-Country. | 1  | -  | -  | - | -  | 1   | -  | 2  | -  | 5  | 7   | -  | -  | -  | -   | -  | 8   | 8   |
|           | Advanced Foreign     | -  | -  | -  | - | -  | -   | -  | -  | 1  | -  | 1   | 1  | -  | -  | 1   | -  | 1   | 2   |
|           | Nil                  | 6  | 1  | 2  | - | -  | 9   | -  | 6  | -  | 2  | 8   | 3  | -  | -  | 3   | -  | 17  | 20  |
| 55-60     | Departmental         | -  | -  | -  | - | -  | -   | -  | 6  | 1  | -  | 7   | 1  | -  | -  | 1   | -  | 7   | 8   |
|           | Related              | -  | -  | -  | - | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |
|           | Not Related          | -  | -  | -  | - | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |
|           | Adv. In-country      | -  | -  | -  | - | -  | -   | -  | 1  | -  | -  | 1   | -  | -  | -  | -   | -  | 1   | 1   |
|           | Adv. Foreign         | -  | -  | -  | - | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |
|           | Nil                  | 1  | 2  | -  | - | -  | 3   | -  | 2  | 1  | 1  | 4   | -  | -  | -  | -   | -  | 7   | 7   |
| Total     | Departmental         | 16 | 8  | 20 | - | -  | 44  | 1  | 29 | 2  | 3  | 34  | 11 | 2  | 5  | 18  | 1  | 79  | 98  |
|           | Related              | 4  | 8  | 2  | 1 | 2  | 17  | 2  | 3  | 1  | -  | 4   | 6  | 4  | -  | 10  | -  | 21  | 33  |
|           | Not Related          | -  | -  | -  | - | -  | -   | -  | -  | -  | -  | -   | -  | 1  | 1  | 2   | -  | -   | 2   |
|           | Adv. In-Country      | 5  | -  | 2  | 2 | 1  | 10  | 1  | 7  | -  | 7  | 14  | -  | -  | -  | -   | 1  | 25  | 26  |
|           | Adv. Foreign         | 1  | -  | -  | - | -  | 1   | -  | 1  | 2  | -  | 3   | 3  | -  | -  | 3   | 2  | 6   | 9   |
|           | Nil                  | 30 | 33 | 12 | 5 | 11 | 91  | 12 | 48 | 4  | 17 | 69  | 46 | 18 | 11 | 75  | 14 | 174 | 261 |
|           | Totals:              | 56 | 49 | 36 | 8 | 14 | 163 | 16 | 88 | 9  | 27 | 124 | 66 | 25 | 17 | 108 | 18 | 305 | 429 |

A = 1+2+3+4+5

B = 7+8+9

C = 10+11+12

D = A+B+13

E = 6+C+D

TABLE III-5: YEARS OF EXPERIENCE

| AGE GROUP | DEPT CODE   | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E  |
|-----------|-------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|----|
|           | SAMPLE SIZE | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | -  | 18 | -  | -  |
| 20-25     | EXPERIENCE  |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |    |
|           | 0 - 5       | 1  | 1  | 1  | - | -  | 3  | -  | -  | - | -  | -  | 5  | 4  | -  | 9  | -  | 3  | 12 |
|           | 5 - 10      | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | 1  | 1  | -  | 2  | -  | -  | 2  |
| 25-30     | NM          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | 1  | -  | 1  | -  | -  | 1  |
|           | 0 - 5       | 6  | 2  | 3  | 1 | 1  | 13 | 3  | 15 | 1 | -  | 16 | 14 | 3  | 2  | 19 | -  | 29 | 51 |
|           | 5 - 10      | 5  | 9  | 3  | - | 2  | 19 | -  | 5  | 1 | -  | 6  | 3  | 1  | -  | 4  | 1  | 26 | 30 |
| 30-35     | NM          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | 1  | -  | 1  | -  | -  | 1  |
|           | 0 - 5       | 2  | 2  | 1  | 1 | 1  | 7  | 1  | 6  | - | 2  | 8  | 2  | -  | 1  | 3  | 1  | 16 | 20 |
|           | 5 - 10      | 17 | 9  | 4  | 3 | 3  | 36 | 3  | 8  | 1 | 4  | 13 | 10 | 1  | 6  | 17 | 5  | 54 | 74 |
|           | 10 - 15     | 2  | -  | 1  | - | -  | 3  | 1  | 2  | - | 1  | 3  | 4  | -  | 3  | 7  | -  | 6  | 14 |
|           | 15 - 20     | -  | -  | -  | - | -  | -  | -  | -  | - | 1  | 1  | -  | -  | -  | -  | -  | 1  | 1  |
| 35-40     | 20 - 25     | -  | -  | -  | - | -  | -  | -  | 1  | - | -  | 1  | -  | -  | -  | -  | -  | 1  | 1  |
|           | 0 - 5       | -  | -  | 2  | - | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|           | 5 - 10      | 1  | 3  | 1  | 1 | -  | 6  | 1  | -  | - | 1  | 1  | 2  | -  | 1  | 3  | 1  | 8  | 12 |
|           | 10 - 15     | 2  | 2  | 4  | 1 | 1  | 10 | 1  | 2  | - | 3  | 5  | 5  | 3  | 1  | 9  | -  | 15 | 25 |
|           | 15 - 20     | 2  | 2  | 2  | - | 1  | 7  | -  | 2  | - | 3  | 5  | 1  | -  | -  | 1  | 6  | 18 | 19 |
| 40-45     | 20 - 25     | -  | -  | -  | - | -  | -  | -  | -  | - | -  | 2  | -  | -  | 2  | -  | -  | -  | 2  |
|           | 5 - 10      | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | 1  | 1  | 2  |
|           | 10 - 15     | -  | 2  | -  | - | -  | 2  | -  | -  | - | 1  | 1  | 1  | 1  | -  | 2  | -  | 3  | 5  |
|           | 15 - 20     | 5  | 6  | 5  | 1 | 2  | 19 | 1  | 5  | - | 2  | 7  | 5  | 3  | 3  | 11 | 3  | 29 | 41 |
|           | 20 - 25     | -  | -  | 2  | - | 1  | 3  | 1  | 3  | - | -  | 3  | 2  | 4  | -  | 6  | -  | 6  | 13 |
| 45-50     | 25 - 30     | -  | -  | -  | - | -  | 1  | -  | 8  | - | -  | 8  | -  | -  | -  | -  | -  | 9  | 9  |
|           | 10 - 15     | -  | -  | -  | - | -  | -  | 1  | 2  | - | -  | 2  | -  | -  | -  | -  | -  | 2  | 3  |
|           | 15 - 20     | -  | 1  | -  | - | -  | 1  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 1  |
|           | 20 - 25     | 2  | 4  | 2  | - | 1  | 9  | 2  | 7  | - | 1  | 8  | 2  | 1  | -  | 3  | -  | 17 | 22 |
|           | 25 - 30     | 1  | 1  | 2  | - | -  | 4  | -  | 4  | 2 | 2  | 8  | 2  | -  | -  | 2  | -  | 12 | 14 |
| 50-55     | 30 - 35     | -  | 1  | -  | - | -  | 1  | -  | -  | - | -  | -  | 1  | -  | 1  | -  | 1  | -  | 2  |
|           | 15 - 20     | -  | 1  | -  | - | -  | 1  | -  | -  | - | 1  | 1  | 1  | -  | -  | 1  | -  | 2  | 3  |
|           | 20 - 25     | -  | -  | -  | - | -  | -  | -  | 2  | - | 1  | 3  | 1  | -  | -  | 1  | -  | 3  | 4  |
|           | 25 - 30     | 3  | -  | 3  | - | -  | 6  | -  | -  | 2 | 1  | 3  | -  | -  | -  | -  | -  | 9  | 9  |
| 55-60     | 30 - 35     | 5  | 2  | -  | - | -  | 7  | 1  | 6  | - | 1  | 7  | 2  | -  | -  | 2  | -  | 14 | 17 |
|           | 35 - 40     | 1  | 1  | -  | - | -  | 2  | -  | 4  | 1 | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|           | NM          | -  | 1  | -  | - | -  | 1  | -  | 4  | 1 | -  | 5  | 1  | -  | -  | 1  | -  | 6  | 7  |
|           |             | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | 1  | -  | -  | 1  | -  | -  | 1  |

A = 1+2+3+4+5  
 B = 7+8+9  
 C = 10+11+12

D = A+B+13  
 E = C+D

| AGE GROUP     | DEPT CODE   | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E  |   |
|---------------|-------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|----|---|
|               | SAMPLE SIZE | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | -  | 18 | -  | -  |   |
| NOT MENTIONED | EXPERIENCE  |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |    |   |
|               | 15-20       | -  | -  | -  | - | 1  | 1  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | 1  | 1 |
|               | 35-40       | -  | -  | -  | - | -  | -  | -  | 1  | - | 1  | -  | -  | -  | -  | -  | -  | -  | 1  | 1 |
| TOTAL         | 0-5         | 9  | 5  | 7  | 2 | 2  | 25 | 4  | 21 | 1 | 2  | 24 | 21 | 7  | 3  | 31 | 1  | 50 | 85 |   |
|               | 5-10        | 23 | 21 | 8  | 4 | 5  | 61 | 4  | 13 | 2 | 5  | 20 | 15 | 3  | 7  | 25 | 8  | 89 | 18 |   |
|               | 10-15       | 4  | 4  | 5  | 1 | 1  | 15 | 3  | 6  | - | 5  | 11 | 10 | 4  | 4  | 18 | -  | 26 | 47 |   |
|               | 15-20       | 7  | 10 | 7  | 1 | 4  | 29 | 1  | 7  | - | 7  | 14 | 7  | 3  | 3  | 13 | 9  | 52 | 66 |   |
|               | 20-25       | 2  | 4  | 4  | - | 2  | 12 | 3  | 13 | - | 2  | 15 | 7  | 5  | -  | 12 | -  | 27 | 42 |   |
|               | 25-30       | 5  | 1  | 5  | - | -  | 11 | -  | 12 | 4 | 3  | 19 | 2  | -  | -  | 2  | -  | 30 | 32 |   |
|               | 30-35       | 6  | 4  | -  | - | -  | 10 | 1  | 10 | 1 | 3  | 14 | 2  | 1  | -  | 3  | -  | 24 | 28 |   |
|               | 35-40       | -  | -  | -  | - | -  | -  | -  | -  | 6 | 1  | -  | 7  | 1  | -  | -  | 1  | -  | 7  | 8 |
|               | N.M.        | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | 1  | 2  | -  | 3  | -  | -  | 3 |

A=1+2+3+4+5  
B=7+8+9  
C=10+11+12

D=A+B+13  
E=6+C+D

TABLE: III-6 NUMBER OF DEPARTMENTS CHANGED

| AGE GROUP | DEPT CODE      | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B | 10 | 11 | 12 | C  | 13 | D  | E  |  |
|-----------|----------------|----|----|----|---|----|----|----|----|---|----|---|----|----|----|----|----|----|----|--|
|           | SAMPLE SIZE    | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | - | 66 | 25 | 17 | -  | 18 | -  | -  |  |
| 20-25     | DEPTS CHANGED. |    |    |    |   |    |    |    |    |   |    |   |    |    |    |    |    |    |    |  |
|           | NIL            | 1  | 1  | -  | - | 1  | 3  | -  | 4  | - | -  | 4 | 1  | 2  | -  | 3  | -  | 7  | 10 |  |
|           | 1              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | 2  | 3  | -  | 5  | -  | -  | 5  |  |
|           | 2              | 1  | -  | 1  | - | -  | 2  | -  | -  | - | -  | - | -  | 1  | -  | 1  | -  | 2  | 3  |  |
|           | 3              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | 4              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | 5              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | 6              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
| N.M       | -              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  |    |  |
| 25-30     | NIL            | 4  | 8  | 1  | - | 1  | 14 | 2  | 8  | - | -  | 8 | 8  | 4  | 2  | 14 | -  | 22 | 38 |  |
|           | 1              | -  | 1  | 2  | 1 | -  | 4  | -  | 6  | 2 | -  | 8 | 3  | 1  | -  | 4  | 1  | 13 | 17 |  |
|           | 2              | 5  | -  | 1  | - | 2  | 8  | 1  | 2  | - | -  | 2 | -  | -  | -  | -  | -  | 10 | 11 |  |
|           | 3              | 2  | -  | 1  | - | -  | 3  | -  | 4  | - | -  | 4 | -  | -  | -  | -  | -  | 7  | 7  |  |
|           | 4              | -  | -  | 1  | - | -  | 1  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | 1  | 1  |  |
|           | 5              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | 6              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | N.M            | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
| 30-35     | NIL            | 13 | 5  | 1  | 4 | 1  | 24 | 2  | 5  | 1 | 2  | 8 | 10 | -  | 4  | 14 | 2  | 34 | 50 |  |
|           | 1              | 1  | 6  | 1  | - | -  | 8  | -  | 9  | - | -  | 9 | 4  | 3  | 2  | 9  | 2  | 19 | 28 |  |
|           | 2              | 4  | -  | 2  | - | 2  | 8  | 2  | 2  | - | 5  | 7 | 1  | -  | 3  | 4  | 2  | 17 | 23 |  |
|           | 3              | 2  | -  | 2  | - | 1  | 5  | -  | 1  | - | 1  | 2 | 1  | -  | 1  | 2  | -  | 7  | 9  |  |
|           | 4              | 1  | -  | -  | - | -  | 1  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | 1  | 1  |  |
|           | 5              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | 6              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | N.M            | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
| 35-40     | NIL            | 1  | 3  | 5  | 2 | 2  | 13 | 1  | 1  | - | 1  | 2 | 5  | -  | -  | 5  | 1  | 16 | 22 |  |
|           | 1              | 2  | 1  | 2  | - | -  | 5  | -  | 2  | - | 5  | 7 | 4  | 4  | 1  | 9  | 2  | 14 | 23 |  |
|           | 2              | 1  | 3  | 1  | - | -  | 5  | 1  | 1  | - | 1  | - | -  | 1  | 1  | 2  | 4  | 10 | 13 |  |
|           | 3              | 1  | -  | 1  | - | -  | 2  | -  | -  | - | 1  | 1 | -  | -  | -  | -  | -  | 3  | 3  |  |
|           | 4              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | 1  | -  | 1  | -  | -  | 1  |  |
|           | 5              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | 6              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
|           | N.M            | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |
| 40-45     | NIL            | 2  | 5  | 2  | - | 3  | 12 | 1  | 5  | - | 1  | 6 | 3  | 1  | -  | 4  | 2  | 20 | 25 |  |
|           | 1              | 1  | -  | 1  | 1 | -  | 3  | -  | -  | - | -  | - | 4  | -  | 1  | 5  | 1  | 4  | 9  |  |
|           | 2              | 2  | 2  | -  | - | -  | 4  | 1  | 3  | - | 1  | 4 | 2  | -  | 1  | 3  | 1  | 9  | 13 |  |
|           | 3              | 1  | 1  | 2  | - | -  | 4  | -  | -  | - | 1  | 1 | 2  | -  | 1  | 3  | -  | 5  | 8  |  |
|           | 4              | -  | -  | 1  | - | -  | 1  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | 1  | 1  |  |
|           | 5              | -  | -  | 1  | - | -  | 1  | -  | -  | - | -  | - | -  | 2  | -  | 2  | -  | 1  | 3  |  |
|           | 6              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | 1  | -  | 1  | -  | -  | 1  |  |
|           | N.M            | -  | -  | -  | - | -  | -  | -  | -  | - | -  | - | -  | -  | -  | -  | -  | -  | -  |  |

A=1+2+3+4+5  
B=7+8+9  
C=10+11+12

D=A+B+13  
E=6+C+D

| AGE GROUP      | DEPT CODE     | 1  | 2  | 3  | 4  | 5   | A  | 6  | 7  | 8  | 9   | B  | 10 | 11 | 12  | C  | 13  | D   | E   |
|----------------|---------------|----|----|----|----|-----|----|----|----|----|-----|----|----|----|-----|----|-----|-----|-----|
|                | SAMPLE SIZE   | 56 | 49 | 36 | 8  | 14  | -  | 16 | 88 | 9  | 27  | -  | 66 | 25 | 17  | -  | 18  | -   | -   |
|                | DEPTS CHANGED |    |    |    |    |     |    |    |    |    |     |    |    |    |     |    |     |     |     |
| 45-50          | Nil           | 1  | 5  | 1  | -  | -   | 7  | 2  | 12 | -  | 2   | 14 | -  | -  | -   | -  | -   | 21  | 23  |
|                | 1             | -  | 2  | 1  | -  | -   | 3  | -  | 5  | 2  | 1   | 8  | 2  | -  | -   | 2  | -   | 11  | 13  |
|                | 2             | 1  | 1  | 1  | -  | 1   | 4  | -  | -  | -  | -   | -  | 2  | -  | -   | 2  | -   | 4   | 6   |
|                | 3             | 1  | -  | -  | -  | -   | 1  | 1  | -  | -  | -   | -  | 2  | -  | -   | 2  | -   | 1   | 4   |
|                | 4             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | 1  | -   | 1  | -   | -   | 1   |
|                | 5             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 6             | -  | -  | 1  | -  | -   | 1  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | 1   | 1   |
|                | N.M.          | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
| 50-55          | Nil           | 4  | 2  | 2  | -  | -   | 8  | -  | 9  | -  | 3   | 12 | -  | -  | -   | -  | -   | 20  | 22  |
|                | 1             | -  | 1  | -  | -  | -   | 1  | -  | 1  | -  | -   | 1  | 4  | -  | -   | 4  | -   | 2   | 6   |
|                | 2             | 1  | -  | 1  | -  | -   | 2  | -  | 1  | 1  | 1   | 3  | -  | -  | -   | -  | -   | 5   | 5   |
|                | 3             | 1  | -  | -  | -  | -   | 1  | -  | -  | -  | 1   | 1  | -  | -  | -   | -  | -   | 2   | 2   |
|                | 4             | 1  | -  | -  | -  | -   | 1  | 1  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 2   | 3   |
|                | 5             | 1  | -  | -  | -  | -   | 1  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | 1   | 1   |
|                | 6             | -  | -  | -  | -  | -   | -  | -  | -  | 1  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |
|                | N.M.          | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
| 55-60          | Nil           | -  | 2  | -  | -  | -   | 2  | -  | 8  | -  | -   | 8  | -  | -  | -   | -  | -   | 10  | 10  |
|                | 1             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 2             | 1  | -  | -  | -  | -   | 1  | -  | -  | 1  | -   | 1  | 1  | -  | -   | 1  | -   | 2   | 3   |
|                | 3             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | 1  | -  | -   | 1  | -   | 0   | 2   |
|                | 4             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | 1  | 1  | -  | -   | -  | -   | 1   | 1   |
|                | 5             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 6             | -  | -  | -  | -  | -   | -  | -  | -  | -  | 1   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | N.M.          | -  | -  | -  | -  | -   | -  | -  | -  | 1  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |
| Not mentioned. | Nil           | -  | -  | -  | -  | -   | -  | -  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |
|                | 1             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 2             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 3             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 4             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 5             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 6             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | N.M.          | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
| Total          | Nil           | 26 | 31 | 12 | 6  | 8   | 83 | 8  | 43 | 1  | 9   | 53 | 27 | 7  | 6   | 40 | 5   | 141 | 189 |
|                | 1             | 4  | 11 | 7  | 2  | -   | 24 | -  | 30 | 4  | 6   | 40 | 23 | 11 | 4   | 38 | 6   | 70  | 108 |
|                | 2             | 16 | 6  | 7  | -  | 5   | 34 | 5  | 9  | 2  | 7   | 18 | 10 | 2  | 5   | 17 | 7   | 59  | 81  |
|                | 3             | 8  | 1  | 6  | -  | 1   | 16 | 2  | 5  | -  | 4   | 9  | 6  | -  | 2   | 8  | -   | 25  | 35  |
|                | 4             | 2  | -  | 2  | -  | -   | 4  | 1  | 1  | -  | 1   | 2  | -  | 2  | -   | 2  | -   | 6   | 9   |
|                | 5             | -  | -  | 1  | -  | -   | 1  | -  | -  | -  | -   | -  | -  | 2  | -   | 2  | -   | 1   | 3   |
|                | 6             | -  | -  | 1  | -  | -   | 1  | -  | -  | 1  | -   | 1  | -  | 1  | -   | 1  | -   | 2   | 3   |
|                | N.M.          | -  | -  | -  | -  | -   | -  | -  | -  | 1  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |
| Totals:        | 56            | 49 | 36 | 8  | 14 | 163 | 16 | 88 | 9  | 27 | 124 | 66 | 25 | 17 | 108 | 18 | 305 | 429 |     |

A = 1+2+3+4+5  
B = 7+8+9  
C = 10+11+12

D = A+B+13  
E = 6+C+D

TABLE:III-7 SERVICE IN PRESENT DEPARTMENT

| AGE GROUP | DEPT CODE     | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E  |
|-----------|---------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|----|
|           | SAMPLE SIZE   | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | -  | 18 | -  | -  |
| 20-25     | SERVICE YEARS |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |    |
|           | 0 - 5         | 1  | 1  | 1  | - | -  | 3  | -  | -  | 2 | -  | 2  | 6  | 5  | -  | 11 | -  | 5  | 16 |
|           | 5 - 10        | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 10 - 15       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 15 - 20       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 20 - 25       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 25 - 30       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 30 - 35       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| N.M.      | -             | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  |    |
| 25-30     | 0 - 5         | 8  | 2  | 6  | 1 | 2  | 19 | 3  | 18 | - | -  | 18 | 13 | 5  | 2  | 20 | 1  | 38 | 61 |
|           | 5 - 10        | 3  | 9  | -  | - | 1  | 13 | -  | 2  | - | 1  | 3  | 3  | -  | -  | 3  | -  | 16 | 19 |
|           | 10 - 15       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | 1  | -  | -  | 1  | -  | -  | 1  |
|           | 15 - 20       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 20 - 25       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 25 - 30       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 30 - 35       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N.M.          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | 1  | -  | 1  | -  | -  | 1  |
| 30-35     | 0 - 5         | 2  | 2  | 5  | 1 | 2  | 12 | 3  | 10 | - | 5  | 15 | 15 | 4  | 3  | 12 | 3  | 30 | 45 |
|           | 5 - 10        | 18 | 9  | 1  | 3 | 2  | 33 | 1  | 6  | 1 | 3  | 10 | 7  | -  | 7  | 14 | 3  | 46 | 61 |
|           | 10 - 15       | 1  | -  | -  | - | -  | 1  | 1  | 1  | - | -  | 1  | 4  | -  | -  | 4  | -  | 2  | 7  |
|           | 15 - 20       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 20 - 25       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 25 - 30       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 30 - 35       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N.M.          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| 35-40     | 0 - 5         | -  | -  | 3  | - | -  | 3  | -  | -  | - | 3  | 3  | 1  | 8  | -  | 9  | -  | 6  | 15 |
|           | 5 - 10        | 2  | 2  | 2  | 1 | -  | 7  | 1  | 7  | - | 2  | 9  | 3  | -  | 2  | 5  | 4  | 20 | 26 |
|           | 10 - 15       | 1  | 2  | 3  | 1 | 1  | 8  | 1  | 3  | - | 4  | 7  | 4  | -  | -  | 4  | 2  | 17 | 22 |
|           | 15 - 20       | 2  | 1  | 1  | - | 1  | 5  | -  | -  | - | 1  | 1  | 2  | -  | -  | 2  | 1  | 7  | 9  |
|           | 20 - 25       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 25 - 30       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 30 - 35       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N.M.          | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| 40-45     | 0 - 5         | -  | 1  | 2  | - | -  | 3  | -  | -  | - | -  | -  | 1  | -  | 1  | -  | 3  | 4  |    |
|           | 5 - 10        | -  | 1  | 2  | - | -  | 3  | -  | -  | - | -  | -  | 1  | -  | 3  | 4  | 1  | 4  | 8  |
|           | 10 - 15       | -  | 1  | -  | 1 | 1  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | 1  | 3  | 3  |
|           | 15 - 20       | 5  | 5  | 1  | - | 2  | 13 | 2  | 5  | - | 2  | 9  | 7  | -  | -  | 7  | 2  | 24 | 33 |
|           | 20 - 25       | -  | -  | 2  | - | 1  | 3  | 1  | 3  | - | -  | 4  | -  | 1  | -  | 1  | -  | 6  | 8  |
|           | 25 - 30       | 1  | -  | -  | - | 1  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 1  |
|           | 30 - 35       | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N.M.          | -  | -  | -  | - | -  | -  | -  | -  | 1 | 1  | -  | -  | -  | -  | -  | -  | 1  | 1  |

A = 1+2+3+4+5

D = A+B+13

B = 7+8+9

E = 6+C+D

C = 10+11+12

| AGE GROUP      | DEPT CODE     | 1  | 2  | 3  | 4  | 5   | A  | 6  | 7  | 8  | 9   | B  | 10 | 11 | 12  | C  | 13  | D   | E   |
|----------------|---------------|----|----|----|----|-----|----|----|----|----|-----|----|----|----|-----|----|-----|-----|-----|
|                | SAMPLE SIZE   | 56 | 49 | 36 | 8  | 14  | -  | 16 | 88 | 9  | 27  | -  | 66 | 25 | 17  | -  | 18  | -   | -   |
|                | SERVICE YEARS |    |    |    |    |     |    |    |    |    |     |    |    |    |     |    |     |     |     |
| 45-50          | 0 - 5         | -  | 2  | 2  | -  | -   | 4  | -  | -  | 1  | -   | 1  | 1  | -  | -   | 1  | -   | 5   | 6   |
|                | 5 - 10        | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 10 - 15       | -  | 1  | 1  | -  | -   | -  | 2  | 2  | 1  | -   | 3  | -  | -  | -   | -  | -   | -   | 3   |
|                | 15 - 20       | -  | 1  | 1  | -  | -   | -  | 2  | 2  | 1  | -   | 3  | -  | -  | -   | -  | -   | -   | 3   |
|                | 20 - 25       | 2  | 3  | 1  | -  | 1   | 7  | 1  | 7  | 2  | 9   | 3  | -  | -  | -   | -  | -   | -   | 16  |
|                | 25 - 30       | 1  | 2  | -  | -  | -   | 3  | -  | 6  | -  | 1   | 7  | -  | -  | -   | -  | -   | -   | 10  |
|                | 30 - 35       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | 2   |
| N. M.          | -             | -  | 5  | 3  | -  | -   | 6  | 2  | -  | 7  | 2   | -  | -  | -  | -   | -  | -   | 2   |     |
| 50-55          | 0 - 5         | -  | -  | -  | -  | -   | -  | -  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |
|                | 5 - 10        | -  | -  | -  | -  | -   | -  | -  | -  | 2  | -   | 2  | -  | -  | -   | -  | -   | 2   | 2   |
|                | 10 - 15       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | 2  | -  | -   | 2  | -   | -   | 2   |
|                | 15 - 20       | 1  | 1  | 1  | -  | -   | 2  | -  | -  | -  | -   | -  | 3  | -  | -   | 3  | -   | 2   | 5   |
|                | 20 - 25       | 1  | 1  | 1  | -  | -   | 2  | -  | -  | -  | -   | -  | 3  | -  | -   | 3  | -   | 2   | 5   |
|                | 25 - 30       | 3  | 1  | 1  | -  | -   | 5  | -  | 4  | -  | -   | 4  | -  | -  | -   | -  | -   | 9   | 9   |
|                | 30 - 35       | 3  | 1  | -  | -  | -   | 4  | -  | 6  | -  | 1   | 7  | -  | -  | -   | -  | -   | 11  | 11  |
| N. M.          | -             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |     |
| 55-60          | 0 - 5         | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 5 - 10        | -  | -  | -  | -  | -   | -  | -  | -  | 1  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |
|                | 10 - 15       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 15 - 20       | 1  | 1  | 1  | -  | -   | 3  | -  | -  | 1  | -   | 1  | 1  | -  | -   | 1  | -   | 1   | 2   |
|                | 20 - 25       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 25 - 30       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | 5   | 5   |
|                | 30 - 35       | -  | 1  | -  | -  | -   | 1  | -  | 4  | -  | -   | 4  | -  | -  | -   | -  | -   | 2   | 2   |
| N. M.          | -             | -  | 1  | -  | -  | 1   | -  | -  | -  | 1  | 1   | -  | -  | -  | -   | -  | -   | -   |     |
| Not mentioned. | 0 - 5         | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 5 - 10        | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 10 - 15       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 15 - 20       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 20 - 25       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 25 - 30       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
|                | 30 - 35       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |
| N. M.          | -             | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   |     |
| Total          | 0 - 5         | 11 | 8  | 19 | 2  | 4   | 44 | 6  | 29 | 3  | 8   | 40 | 26 | 23 | 5   | 54 | 4   | 88  | 148 |
|                | 5 - 10        | 23 | 21 | 5  | 4  | 3   | 56 | 2  | 15 | 4  | 6   | 25 | 14 | -  | 12  | 26 | 8   | 89  | 117 |
|                | 10 - 15       | 2  | 3  | 3  | 2  | 2   | 12 | 4  | 6  | 1  | 4   | 11 | 11 | -  | -   | 11 | 3   | 26  | 41  |
|                | 15 - 20       | 8  | 8  | 4  | -  | 3   | 23 | 2  | 5  | 1  | 4   | 10 | 15 | -  | -   | 15 | 3   | 36  | 53  |
|                | 20 - 25       | 4  | 3  | 4  | -  | 2   | 13 | 2  | 11 | -  | 3   | 14 | -  | 1  | -   | 1  | -   | 27  | 30  |
|                | 25 - 30       | 5  | 3  | 1  | -  | -   | 9  | -  | 10 | -  | 1   | 11 | -  | -  | -   | -  | -   | 20  | 20  |
|                | 30 - 35       | 3  | 2  | -  | -  | -   | 5  | -  | 10 | -  | 1   | 11 | -  | -  | -   | -  | -   | 16  | 16  |
| N. M.          | -             | 1  | -  | -  | -  | 1   | -  | 2  | -  | -  | 2   | -  | 1  | -  | 1   | -  | 3   | 4   |     |
| Totals:        | 56            | 49 | 36 | 8  | 14 | 163 | 16 | 88 | 9  | 27 | 124 | 66 | 25 | 17 | 108 | 18 | 305 | 429 |     |

$A = 1+2+3+4+5$                        $D = A+B+13$   
 $B = 7+8+9$                                $E = 6+C+D$   
 $C = 10+11+12$

TABLE III-8: POSTINGS IN PRESENT DEPARTMENT

| AGE GROUP | DEPT CODE<br>SAMPLE SIZE | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E  |
|-----------|--------------------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|----|
|           |                          | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | -  | 18 | -  | -  |
|           | P O S T I N G S          |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |    |
| 20-25     | Nil                      | 1  | 2  | 1  | - | -  | 4  | -  | -  | - | -  | -  | 4  | 5  | -  | 9  | -  | 4  | 13 |
|           | 1 - 3                    | -  | -  | -  | - | -  | -  | -  | -  | 2 | -  | 2  | -  | -  | -  | -  | -  | 2  | 2  |
|           | 4 - 6                    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 7 - 9                    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 10 - 12                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 13 - 15                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 16 - 18                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N. M.                    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| 25-30     | Nil                      | 9  | 3  | 5  | 1 | 2  | 20 | 3  | 13 | - | -  | 13 | 8  | 5  | 2  | 15 | 1  | 34 | 52 |
|           | 1 - 3                    | 2  | 8  | 1  | - | -  | 11 | -  | 7  | - | 1  | 8  | -  | -  | -  | -  | -  | 19 | 19 |
|           | 4 - 6                    | -  | -  | -  | - | 1  | 1  | -  | -  | - | -  | -  | 1  | -  | -  | 1  | -  | 1  | 2  |
|           | 7 - 9                    | -  | 2  | -  | - | -  | 2  | -  | -  | - | -  | -  | 1  | -  | -  | 1  | -  | 2  | 3  |
|           | 10 - 12                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 13 - 15                  | 1  | -  | -  | - | -  | 1  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 1  |
|           | 16 - 18                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N. M.                    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | 1  | -  | 1  | -  | -  | 1  |
| 30-35     | Nil                      | 6  | 2  | 6  | 2 | 1  | 17 | 3  | 9  | - | 5  | 14 | 6  | 4  | 6  | 16 | 3  | 34 | 53 |
|           | 1 - 3                    | 7  | 6  | -  | 1 | 3  | 17 | 2  | 7  | - | 1  | 8  | 8  | -  | 2  | 10 | 3  | 28 | 40 |
|           | 4 - 6                    | 7  | 2  | -  | 1 | 1  | 11 | -  | 1  | 1 | 2  | 4  | 2  | -  | 2  | -  | 15 | 17 | -  |
|           | 7 - 9                    | 1  | -  | -  | - | -  | 1  | -  | -  | - | -  | -  | 7  | -  | -  | 7  | -  | 1  | 8  |
|           | 10 - 12                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 13 - 15                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 16 - 18                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N. M.                    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | 1  | -  | -  | 1  | -  | -  | 1  |
| 35-40     | Nil                      | -  | 1  | 4  | - | -  | 5  | -  | -  | - | 1  | 1  | 4  | 8  | 1  | 13 | 2  | 8  | 21 |
|           | 1 - 3                    | 2  | 2  | 2  | 2 | 2  | 10 | 2  | 4  | - | 4  | 8  | 6  | -  | 1  | 7  | 2  | 20 | 29 |
|           | 4 - 6                    | 3  | 2  | -  | - | -  | 5  | -  | -  | - | 1  | 1  | 1  | -  | 2  | 3  | 1  | 7  | 10 |
|           | 7 - 9                    | -  | -  | 2  | - | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | 1  | 3  | 3  |
|           | 10 - 12                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 13 - 15                  | -  | -  | 1  | - | -  | 1  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 1  |
|           | 16 - 18                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N. M.                    | -  | -  | -  | - | -  | -  | -  | -  | - | 1  | 1  | -  | -  | -  | -  | -  | 1  | 1  |
| 40-45     | Nil                      | -  | 2  | 4  | - | -  | 6  | -  | -  | - | 1  | 1  | -  | 1  | 3  | 4  | -  | 7  | 11 |
|           | 1 - 3                    | 1  | 4  | -  | - | 1  | 6  | 2  | 3  | 1 | -  | 4  | 6  | -  | -  | 6  | 2  | 12 | 20 |
|           | 4 - 6                    | 3  | 1  | 1  | - | -  | 5  | -  | -  | - | 1  | 1  | 1  | -  | -  | 1  | -  | 6  | 7  |
|           | 7 - 9                    | -  | -  | -  | 1 | 1  | 2  | -  | 3  | - | -  | 3  | 2  | -  | -  | 2  | 1  | 6  | 8  |
|           | 10 - 12                  | 2  | -  | 2  | - | -  | 4  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | 13 - 15                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | 1  | 1  | -  | -  | -  | 1  | 1  |
|           | 16 - 18                  | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|           | N. M.                    | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |

A = 1+2+3+4+5  
B = 7+8+9  
C = 10+11+12

D = A+B+13  
E = 6+C+D



| AGE GROUP      | DEPT CODE   | 1  | 2  | 3  | 4  | 5   | A  | 6  | 7  | 8  | 9   | B  | 10 | 11 | 12  | C  | 13  | D   | E   |  |
|----------------|-------------|----|----|----|----|-----|----|----|----|----|-----|----|----|----|-----|----|-----|-----|-----|--|
|                | SAMPLE SIZE | 56 | 49 | 36 | 8  | 14  | -  | 16 | 88 | 9  | 27  | -  | 66 | 25 | 17  | -  | 18  | -   | -   |  |
|                | POSTING     |    |    |    |    |     |    |    |    |    |     |    |    |    |     |    |     |     |     |  |
| 45-50          | Nil         | -  | -  | 2  | -  | -   | 2  | -  | -  | 1  | -   | 1  | 1  | -  | -   | 1  | -   | 3   | 4   |  |
|                | 1 - 3       | 2  | 5  | 1  | -  | -   | 8  | 2  | 7  | 1  | 1   | 9  | 2  | -  | -   | 2  | -   | 17  | 21  |  |
|                | 4 - 6       | 1  | 1  | 1  | -  | 1   | 4  | 1  | 2  | -  | -   | 2  | 1  | -  | -   | 1  | -   | 6   | 8   |  |
|                | 7 - 9       | -  | -  | -  | -  | -   | -  | -  | 3  | -  | -   | 3  | -  | -  | -   | -  | -   | 3   | 3   |  |
|                | 10 - 12     | -  | 1  | -  | -  | 1   | 2  | -  | 1  | -  | 2   | 3  | -  | -  | -   | -  | -   | 5   | 5   |  |
|                | 13 - 15     | -  | -  | -  | -  | -   | -  | -  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |  |
|                | 16 - 18     | 1  | -  | -  | -  | -   | 1  | -  | 2  | -  | -   | 2  | -  | -  | -   | -  | -   | 3   | 3   |  |
|                | N.M.        | -  | -  | -  | -  | -   | -  | -  | 2  | -  | -   | 2  | -  | -  | -   | -  | -   | 2   | 2   |  |
| 50-55          | Nil         | -  | -  | -  | -  | -   | -  | -  | 1  | 1  | 1   | 3  | -  | -  | -   | -  | -   | 3   | 3   |  |
|                | 1 - 3       | 1  | 1  | 1  | -  | -   | 3  | 1  | 8  | 1  | 2   | 11 | 3  | -  | -   | 3  | -   | 14  | 18  |  |
|                | 4 - 6       | 1  | 1  | -  | -  | -   | 2  | -  | -  | -  | 1   | 1  | 1  | -  | -   | 1  | -   | 3   | 4   |  |
|                | 7 - 9       | 1  | -  | -  | -  | -   | 1  | -  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 2   | 2   |  |
|                | 10 - 12     | 4  | 1  | -  | -  | -   | 5  | -  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 6   | 6   |  |
|                | 13 - 15     | -  | -  | -  | -  | -   | -  | -  | 2  | -  | -   | 2  | -  | -  | -   | -  | -   | 2   | 2   |  |
|                | 16 - 18     | -  | -  | 2  | -  | -   | 2  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | 2   | 2   |  |
|                | N.M.        | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
| 55-60          | Nil         | -  | -  | -  | -  | -   | -  | -  | 1  | 1  | -   | 2  | -  | -  | -   | -  | -   | 2   | 2   |  |
|                | 1 - 3       | -  | -  | -  | -  | -   | -  | -  | 4  | -  | -   | 4  | 1  | -  | -   | 1  | -   | 4   | 5   |  |
|                | 4 - 6       | -  | 2  | -  | -  | -   | 2  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | 2   | 2   |  |
|                | 7 - 9       | -  | -  | -  | -  | -   | -  | -  | 2  | -  | -   | 2  | -  | -  | -   | -  | -   | 2   | 2   |  |
|                | 10 - 12     | -  | -  | -  | -  | -   | -  | -  | 1  | -  | -   | 1  | -  | -  | -   | -  | -   | 1   | 1   |  |
|                | 13 - 15     | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 16 - 18     | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | N. M.       | -  | -  | -  | -  | -   | -  | -  | -  | -  | 1   | 1  | -  | -  | -   | -  | -   | 1   | 1   |  |
| Not mentioned. | Nil         | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 1 - 3       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 4 - 6       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 7 - 9       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 10 - 12     | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 13 - 15     | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | 16 - 18     | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
|                | N. M.       | -  | -  | -  | -  | -   | -  | -  | -  | -  | -   | -  | -  | -  | -   | -  | -   | -   | -   |  |
| Total          | Nil         | 16 | 10 | 22 | 3  | 3   | 54 | 6  | 24 | 3  | 8   | 35 | 23 | 23 | 12  | 58 | 6   | 95  | 159 |  |
|                | 1 - 3       | 15 | 26 | 5  | 3  | 6   | 55 | 9  | 40 | 5  | 9   | 54 | 26 | -  | 3   | 29 | 7   | 116 | 154 |  |
|                | 4 - 6       | 15 | 9  | 2  | 1  | 3   | 30 | 1  | 3  | 1  | 5   | 9  | 7  | -  | 2   | 9  | 1   | 40  | 50  |  |
|                | 7 - 9       | 2  | 2  | 2  | 1  | 1   | 8  | -  | 9  | -  | -   | 9  | 10 | -  | -   | 10 | 2   | 19  | 29  |  |
|                | 10 - 12     | 6  | 2  | 2  | -  | 1   | 11 | -  | 5  | -  | 2   | 7  | -  | 1  | -   | 21 | 1   | 19  | 20  |  |
|                | 13 - 15     | 1  | -  | 1  | -  | -   | 2  | -  | 3  | -  | 1   | 4  | -  | -  | -   | -  | -   | 6   | 6   |  |
|                | 16 - 18     | 1  | -  | 2  | -  | -   | 3  | -  | 2  | -  | 2   | 2  | -  | -  | -   | -  | -   | 5   | 5   |  |
|                | N. M.       | -  | -  | -  | -  | -   | -  | -  | 2  | -  | -   | 2  | -  | 1  | -   | 1  | 1   | 54  | 6   |  |
| Totals:        | 56          | 49 | 36 | 8  | 14 | 163 | 16 | 88 | 9  | 27 | 124 | 66 | 25 | 17 | 108 | 18 | 305 | 429 |     |  |

A = 1+2+3+4+5  
B = 7+8+9  
C = 10+11+12

D = A+B+13  
E = 6+C+D

TABLE:III-9 NUMBER OF PROMOTIONS

| AGE GROUP. | DEPT CODE          | 1  | 2  | 3  | 4 | 5  | A  | 6  | 7  | 8 | 9  | B  | 10 | 11 | 12 | C  | 13 | D  | E  |    |
|------------|--------------------|----|----|----|---|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|
|            | SAMPLE SIZE        | 56 | 49 | 36 | 8 | 14 | -  | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | -  | 13 | -  | -  |    |
| 20-25      | NO. OF PROMOTIONS. |    |    |    |   |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |
|            | ONE                | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|            | TWO                | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|            | THREE              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|            | FOUR               | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|            | N.M.               | -  | 2  | -  | - | 1  | 3  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | 3  | 3  |
| NIL        | 1                  | 1  | 1  | -  | - | 3  | -  | -  | 2  | - | 2  | 3  | 6  | -  | 9  | -  | 5  | 14 | -  |    |
| 25-30      | ONE                | 1  | 8  | -  | - | -  | 9  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 10 | 10 |
|            | TWO                | -  | -  | -  | - | -  | -  | -  | -  | - | 1  | 1  | 1  | -  | -  | 1  | -  | 1  | 2  | -  |
|            | THREE              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|            | FOUR               | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
|            | N.M.               | -  | 2  | -  | - | -  | 2  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|            | NIL                | 10 | 3  | 4  | 1 | 3  | 21 | 3  | 20 | - | -  | 20 | 16 | 4  | 2  | 22 | -  | 41 | 66 | -  |
| 30-35      | ONE                | 5  | 4  | 2  | 2 | 2  | 15 | 1  | 1  | - | 1  | 3  | 4  | 1  | 2  | 7  | 2  | 20 | 28 |    |
|            | TWO                | 1  | 2  | -  | - | -  | 3  | 1  | -  | 1 | 1  | 2  | 1  | -  | -  | 1  | -  | 5  | 7  |    |
|            | THREE              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | 1  | 1  | -  | -  | 1  |    |
|            | FOUR               | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |    |
|            | N.M.               | -  | 2  | -  | - | -  | 2  | -  | -  | - | 1  | 1  | -  | -  | -  | -  | -  | -  | 3  | 3  |
|            | NIL                | 15 | 6  | 5  | 2 | 2  | 30 | 3  | 16 | - | 6  | 22 | 5  | 4  | 7  | 16 | 4  | 56 | 75 | -  |
| 35-40      | ONE                | 3  | -  | 1  | 1 | 2  | 7  | -  | 4  | - | 6  | 10 | 10 | -  | 2  | 12 | 2  | 19 | 31 |    |
|            | TWO                | -  | -  | -  | 1 | -  | 1  | 2  | -  | - | 1  | 1  | 4  | -  | -  | 4  | 1  | 3  | 9  |    |
|            | THREE              | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |    |
|            | FOUR               | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |    |
|            | N.M.               | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | 2  | 2  |
|            | NIL                | 2  | -  | 4  | - | -  | 6  | -  | -  | - | -  | -  | 2  | 7  | -  | 9  | 2  | 8  | 17 | -  |
| 40-45      | ONE                | 5  | 2  | 5  | - | -  | 12 | -  | 7  | - | -  | 7  | 6  | 1  | 1  | 8  | 2  | 21 | 29 |    |
|            | TWO                | -  | 4  | 1  | 1 | 3  | 9  | 2  | -  | - | 1  | 1  | 2  | -  | -  | 2  | 1  | 11 | 15 |    |
|            | THREE              | 1  | -  | 1  | - | -  | 2  | -  | -  | - | 1  | 1  | 1  | -  | -  | 1  | 1  | 4  | 5  |    |
|            | FOUR               | -  | -  | -  | - | -  | -  | -  | 4  | - | -  | 4  | -  | -  | -  | -  | -  | 4  | 4  |    |
|            | N.M.               | -  | -  | -  | - | -  | -  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | -  | -  |    |
|            | NIL                | -  | 2  | 2  | - | -  | 4  | -  | -  | - | 1  | 1  | 2  | 1  | 2  | 5  | -  | 5  | 10 |    |
| 45-50      | ONE                | 1  | 2  | 3  | - | -  | 6  | -  | 15 | - | -  | 15 | 2  | -  | -  | 2  | -  | 21 | 23 |    |
|            | TWO                | 1  | 2  | 2  | - | -  | 5  | 3  | -  | 1 | 2  | 3  | -  | -  | -  | -  | -  | 8  | 11 |    |
|            | THREE              | -  | -  | 1  | - | 1  | 2  | -  | -  | - | 1  | 1  | -  | 1  | -  | 1  | -  | 3  | 4  |    |
|            | FOUR               | -  | 1  | -  | - | -  | 1  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 1  |    |
|            | N.M.               | 1  | -  | -  | - | -  | 1  | -  | -  | - | -  | -  | -  | -  | -  | -  | -  | 1  | 1  |    |
|            | NIL                | -  | 1  | -  | - | -  | 1  | -  | 1  | 1 | -  | 2  | 2  | -  | -  | 2  | -  | 3  | 5  |    |

A=1+2+3+4+5  
B=7+8+9  
C=10+11+12

D=A+B+13  
E=6+C+D

| AGE GROUP          | DEPT. CODE        | 1  | 2  | 3  | 4 | 5  | A   | 6  | 7  | 8 | 9  | B   | 10 | 11 | 12 | C   | 13 | D   | E   |   |
|--------------------|-------------------|----|----|----|---|----|-----|----|----|---|----|-----|----|----|----|-----|----|-----|-----|---|
|                    | SAMPLE SIZE       | 56 | 49 | 36 | 8 | 14 | -   | 16 | 88 | 9 | 27 | -   | 66 | 25 | 17 | -   | 18 | -   | -   |   |
|                    | NO. OF PROMOTIONS |    |    |    |   |    |     |    |    |   |    |     |    |    |    |     |    |     |     |   |
| 50-55              | One               | 2  | -  | 1  | - | -  | 3   | 1  | 11 | 1 | 2  | 14  | 3  | -  | -  | 3   | -  | 17  | 21  |   |
|                    | Two               | 3  | 3  | 1  | - | -  | 7   | -  | -  | - | 1  | 1   | 1  | -  | -  | 1   | -  | 8   | 9   |   |
|                    | Three             | -  | -  | 1  | - | -  | 1   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | 1   | 1 |
|                    | Four              | 1  | -  | 1  | - | -  | 2   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | 2   | 2 |
|                    | N. M.             | 2  | -  | -  | - | -  | 2   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | 2   | 2 |
|                    | Nil               | -  | -  | -  | - | -  | -   | -  | 1  | 1 | 1  | 3   | -  | -  | -  | -   | -  | -   | 3   | 3 |
| 55-60              | One               | 1  | -  | -  | - | -  | -   | 8  | 1  | - | 9  | 1   | -  | -  | -  | -   | -  | 9   | 9   |   |
|                    | Two               | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Three             | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Four              | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | N. M.             | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Nil               | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
| Not ment-<br>ioned | One               | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Two               | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Three             | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Four              | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | N. M.             | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
|                    | Nil               | -  | -  | -  | - | -  | -   | -  | -  | - | -  | -   | -  | -  | -  | -   | -  | -   | -   |   |
| Total              | One               | 18 | 18 | 12 | 3 | 4  | 55  | 2  | 46 | 2 | 9  | 57  | 26 | 2  | 5  | 33  | 7  | 119 | 154 |   |
|                    | Two               | 5  | 11 | 4  | 2 | 3  | 25  | 8  | -  | 2 | 7  | 9   | 9  | -  | -  | 9   | 2  | 36  | 53  |   |
|                    | Three             | 1  | -  | 3  | - | 1  | 5   | -  | -  | - | 2  | 2   | 1  | 1  | 1  | 3   | 3  | 10  | 13  |   |
|                    | Four              | 1  | 1  | 1  | - | -  | 3   | -  | 4  | - | -  | 4   | -  | -  | -  | -   | -  | 7   | 7   |   |
|                    | N. M.             | 3  | 6  | -  | - | 1  | 10  | -  | -  | - | 1  | 1   | -  | -  | -  | -   | -  | 11  | 11  |   |
|                    | Nil               | 28 | 13 | 16 | 3 | 5  | 65  | 6  | 38 | 5 | 8  | 51  | 30 | 22 | 11 | 63  | 6  | 122 | 191 |   |
|                    | Totals:           | 56 | 49 | 45 | 8 | 14 | 163 | 16 | 88 | 9 | 27 | 124 | 66 | 25 | 17 | 108 | 18 | 305 | 154 |   |

A = 1+2+3+4+5

B = 7+8+9

C = 10+11+12

D = A+B+13

E = 6+C+D



| AGE GROUP | DEPT CODE           | 1   | 2   | 3   | 4  | 5  | A   | 6  | 7   | 8  | 9  | B   | 10  | 11 | 12 | C   | 13 | D    | E    |
|-----------|---------------------|-----|-----|-----|----|----|-----|----|-----|----|----|-----|-----|----|----|-----|----|------|------|
|           | SAMPLE SIZE         | 56  | 49  | 36  | 3  | 14 | -   | 16 | 38  | 9  | 27 | -   | 66  | 25 | 17 | -   | 18 | -    | -    |
|           | J. O B RELEVANCE    |     |     |     |    |    |     |    |     |    |    |     |     |    |    |     |    |      |      |
|           | Relevant            | 177 | 109 | 66  | 19 | 32 | 403 | 23 | 216 | 9  | 76 | 361 | 96  | 29 | 17 | 142 | 49 | 813  | 978  |
|           | Partially Relevant. | 25  | 18  | 25  | 2  | 1  | 71  | 7  | 44  | 2  | 6  | 52  | 16  | 1  | -  | 17  | 1  | 118  | 142  |
| Total     | Not Rele.           | 11  | 8   | 5   | -  | -  | 24  | 1  | 7   | -  | 1  | 8   | 10  | -  | -  | 10  | -  | 32   | 43   |
|           | Not Men.            | 35  | 14  | 12  | -  | 10 | 71  | 4  | 24  | 4  | 5  | 33  | 12  | 5  | 8  | 25  | 9  | 113  | 142  |
|           | Total Postings      | 248 | 149 | 108 | 21 | 43 | 569 | 35 | 291 | 15 | 88 | 454 | 134 | 35 | 25 | 194 | 59 | 1076 | 1305 |

A = 1+2+3+4+5  
B = 7+8+9  
C = 10+11+12

D = A+B+13  
E = 6+C+D

TABLE III-11. POSTINGS OF JOB SATISFACTION

| AGE GROUP          | DEPT CODE       | 1   | 2   | 3   | 4  | 5  | A   | 6  | 7   | 8  | 9  | B   | 10  | 11 | 12 | C   | 13 | D    | E    |
|--------------------|-----------------|-----|-----|-----|----|----|-----|----|-----|----|----|-----|-----|----|----|-----|----|------|------|
|                    | SAMPLE SIZE     | 56  | 49  | 36  | 3  | 14 | -   | 16 | 88  | 9  | 27 | -   | 66  | 25 | 17 | -   | 13 | -    | -    |
| J O B SATISFACTION |                 |     |     |     |    |    |     |    |     |    |    |     |     |    |    |     |    |      |      |
| 20-25              | Total           | 1   | 2   | -   | -  | -  | 3   | -  | -   | -  | -  | -   | 2   | -  | -  | 2   | -  | 3    | 5    |
|                    | PARTIAL         | 3   | -   | 1   | -  | -  | 4   | -  | -   | -  | -  | -   | 1   | -  | -  | 1   | -  | 4    | 5    |
|                    | Nil<br>Not Men. | -   | -   | -   | -  | -  | -   | -  | -   | -  | -  | -   | -   | -  | -  | -   | -  | -    | -    |
| 25-30              | Total           | 8   | 9   | 6   | 1  | 3  | 27  | 1  | 14  | 3  | 1  | 18  | 8   | 2  | 1  | 11  | 1  | 46   | 58   |
|                    | Partial         | 15  | 8   | 1   | -  | 2  | 26  | 2  | 8   | -  | 1  | 9   | 10  | 1  | -  | 11  | -  | 35   | 48   |
|                    | Nil             | 1   | 2   | 1   | -  | 1  | 5   | -  | 6   | -  | 1  | 7   | -   | -  | -  | -   | -  | 12   | 12   |
|                    | N.M.            | 1   | 2   | -   | -  | 1  | 4   | -  | -   | -  | -  | -   | 2   | 3  | 1  | 6   | -  | 4    | 10   |
| 30-35              | Total           | 42  | 12  | 4   | 6  | -  | 64  | 6  | 12  | 4  | 6  | 22  | 14  | 4  | 11 | 29  | 9  | 95   | 130  |
|                    | Partial         | 9   | 3   | 1   | 2  | 1  | 16  | 2  | 18  | -  | 1  | 19  | 10  | -  | 1  | 11  | -  | 35   | 43   |
|                    | Nil             | 3   | 5   | 1   | -  | 3  | 12  | -  | -   | -  | -  | -   | 5   | -  | -  | 5   | -  | 12   | 17   |
|                    | N. M.           | 7   | 5   | -   | 1  | -  | 13  | -  | 2   | -  | 5  | 7   | -   | 1  | 5  | 6   | 2  | 22   | 28   |
| 35-40              | Total           | 8   | 7   | 28  | 3  | 1  | 47  | 4  | -   | -  | 13 | 13  | 15  | 3  | 3  | 21  | 21 | 81   | 106  |
|                    | Partial         | 3   | -   | 7   | -  | 1  | 11  | 1  | 3   | -  | -  | 3   | 4   | 1  | -  | 5   | 1  | 15   | 21   |
|                    | Nil             | 1   | 2   | 1   | -  | -  | 4   | 1  | -   | -  | 1  | 1   | -   | -  | -  | -   | -  | 5    | 6    |
|                    | N. M.           | -   | 5   | -   | -  | -  | 5   | -  | 5   | -  | -  | 5   | 8   | -  | -  | 8   | 1  | 11   | 19   |
| 40-45              | Total           | 25  | 16  | 7   | 8  | 12 | 68  | 3  | 43  | -  | 19 | 62  | 18  | 7  | 2  | 27  | 18 | 148  | 178  |
|                    | Partial         | -   | 4   | 3   | -  | 4  | 16  | -  | -   | -  | -  | -   | 7   | -  | -  | 7   | -  | 16   | 23   |
|                    | Nil             | 3   | 1   | 2   | -  | -  | 6   | -  | -   | -  | -  | -   | 5   | -  | -  | 5   | -  | 6    | 11   |
|                    | N.M.            | 11  | -   | 11  | -  | -  | 22  | 3  | 7   | -  | -  | 7   | -   | 1  | 1  | 2   | 7  | 36   | 41   |
| 45-50              | Total           | 25  | 29  | 7   | -  | 8  | 69  | 10 | 68  | 1  | 24 | 93  | 6   | 2  | -  | 8   | -  | 162  | 180  |
|                    | Partial         | 1   | 2   | 1   | -  | 2  | 6   | -  | 11  | -  | 1  | 12  | 1   | -  | -  | 1   | -  | 14   | 15   |
|                    | Nil             | 4   | 2   | -   | -  | -  | 6   | -  | 1   | -  | -  | 1   | 2   | -  | -  | 2   | -  | 7    | 9    |
|                    | N. M.           | 17  | -   | 1   | -  | -  | 18  | -  | 12  | 2  | -  | 14  | -   | -  | -  | -   | -  | 32   | 32   |
| 50-55              | Total           | 59  | 17  | 5   | -  | -  | 81  | -  | 74  | 2  | 14 | 90  | 12  | -  | -  | 12  | -  | 171  | 183  |
|                    | Partial         | -   | 3   | 17  | -  | -  | 20  | 2  | -   | -  | -  | -   | -   | -  | -  | -   | -  | 20   | 22   |
|                    | Nil             | -   | -   | -   | -  | -  | -   | -  | 2   | -  | -  | 2   | -   | -  | -  | -   | -  | 2    | 2    |
|                    | N. M.           | -   | -   | -   | -  | -  | -   | -  | -   | -  | -  | -   | 2   | -  | -  | 2   | -  | -    | 2    |
| 55-60              | Total           | 1   | 5   | -   | -  | -  | 6   | -  | 61  | 1  | 1  | 63  | 2   | -  | -  | 2   | -  | 69   | 71   |
|                    | Partial         | -   | -   | -   | -  | -  | -   | -  | -   | -  | -  | -   | -   | -  | -  | -   | -  | -    | -    |
|                    | Nil             | -   | -   | -   | -  | -  | -   | 2  | -   | -  | -  | 2   | -   | -  | -  | -   | -  | 2    | 2    |
|                    | N. M.           | -   | 6   | -   | -  | -  | 6   | -  | -   | 2  | -  | 2   | -   | -  | -  | -   | -  | 8    | 8    |
| Not ment-<br>ioned | Total           | -   | -   | -   | -  | -  | -   | 2  | -   | -  | 2  | -   | -   | -  | -  | -   | -  | 2    | 2    |
|                    | Partial         | -   | -   | -   | -  | -  | -   | -  | -   | -  | -  | -   | -   | -  | -  | -   | -  | -    | -    |
|                    | Nil<br>N.M.     | -   | -   | -   | 4  | 4  | -   | -  | -   | -  | -  | -   | -   | -  | -  | -   | -  | 4    | 4    |
| Total              | Total           | 169 | 97  | 57  | 18 | 24 | 365 | 24 | 274 | 11 | 78 | 363 | 77  | 18 | 17 | 112 | 49 | 777  | 913  |
|                    | Partial         | 31  | 20  | 36  | 2  | 10 | 99  | 7  | 40  | -  | 3  | 43  | 33  | 2  | 1  | 36  | 1  | 139  | 182  |
|                    | Nil             | 12  | 12  | 5   | -  | 8  | 37  | 1  | 11  | -  | 2  | 13  | 12  | -  | -  | 12  | -  | 50   | 63   |
|                    | N. M.           | 36  | 18  | 12  | 1  | 1  | 68  | 3  | 26  | 4  | 5  | 35  | 12  | 5  | 7  | 24  | 10 | 113  | 147  |
|                    | Totals          | 248 | 147 | 110 | 21 | 43 | 599 | 35 | 351 | 15 | 88 | 454 | 134 | 25 | 25 | 184 | 60 | 1079 | 1305 |

A = 1+2+3+4+5

D = A+B+13

B = 7+8+9

E = 6+C+D

C = 10+11+12

TABLE III-12. IN COUNTRY ADVANCED TRAINING  
OF ENGINEERS.

| PARTICULARS OF<br>IN-COUNTRY<br>ADVANCED<br>TRAINING | DEPT CODE<br>SAMPLE<br>SIZE<br>RELEVANCY | 1   | 2  | 3  | 4  | 5  | A | 6  | 7 | 8  | 9  | B | 10 | 11 | 12 | C  | 13 | D | E   |
|--|--|---|--|----|----|----|---|----|---|----|----|---|----|----|----|----|----|---|-----|
|  |  | Highway Construc-<br>tion CENTO-Highway<br>Maint EDI(World<br>Bank)Course Field<br>Testing Construc-<br>tion Quality<br>Control | Relevant<br>"<br>Not Relev.<br>Relevant<br>" | 55 | 49 | 36 | 3 | 14 | - | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | - | 18  |
|  |  | 5   | -  | -  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | 5   |
| Road BLDG,Highway<br>Engg:PIDE Course,<br>Proj Plng. | "<br>Not Relev.                          | -   | -  | 1  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
|  |  | -   | -  | 2  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | 2   |
| TRRL Course,HWY ENGG<br>EDI Course                   | Relevant<br>Not Relev.                   | -   | -  | -  | 1  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
|  |  | -   | -  | -  | 2  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | 2   |
| EDI Course   | Relevant                                 | -   | -  | -  | -  | 1  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | 1   |
| Soil Mechanics                                       | "  | -   | -  | -  | -  | -  | - | 1  | - | -  | -  | - | -  | -  | -  | -  | -  | - | 1   |
| Management/PA,NIPA<br>Hyd.Structures                 | "<br>"                                   | -   | -  | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
| Bridges,Dams Layout                                  | "  | -   | -  | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
| Earth Moving   | "  | -   | -  | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
| Adv.Mechanical Cou-<br>rse.                          | "  | -   | -  | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
| Constr/Maint of<br>Canals.                           | "  | -   | -  | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
| Reinforced Concrete                                  | "  | -   | -  | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | -   |
|  |  | -   | -  | -  | -  | -  | - | -  | 7 | -  | -  | - | -  | -  | -  | -  | -  | - | 7   |
| Proj Plng/Appraisal<br>Construction                  | Not Relev.<br>Relevant                   | -   | -  | -  | -  | -  | - | -  | - | -  | 4  | - | -  | -  | -  | -  | -  | - | -   |
| Tunneling  | "  | -   | -  | -  | -  | -  | - | -  | - | -  | 1  | - | -  | -  | -  | -  | -  | - | -   |
| SEATO,Soil Mech.<br>Course                           | "  | -   | -  | -  | -  | -  | - | -  | - | -  | 1  | - | -  | -  | -  | -  | -  | - | -   |
|  |  | -   | -  | -  | -  | -  | - | -  | - | -  | 7  | - | -  | -  | -  | -  | -  | - | 7   |
| Planning and Dev.<br>Course                          | Not Relev.                               | -   | -  | -  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | 1 | 1   |
| Total :  |  | -   | -  | -  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | - | -26 |

A = 1+2+3+4+5

D = A+B+13

B = 7+8+9

E = 6+C+D

C = 10+11+12

TABLE III-13: FOREIGN TRAINING OF ENGINEERS

| PARTICULARS OF FOREIGN TRAINING   | DEPT CODE<br>SAMPLE SIZE | 1 | 2 | 3  | 4  | 5  | A | 6  | 7 | 8  | 9  | B | 10 | 11 | 12 | C  | 13 | D | E  |
|---|--------------------------|---|---|----|----|----|---|----|---|----|----|---|----|----|----|----|----|---|----|
|   |                          |   |   | 56 | 49 | 36 | 8 | 14 | - | 16 | 88 | 9 | 27 | -  | 66 | 25 | 17 | - | 18 |
|   | RELEVANCY                |   |   |    |    |    |   |    |   |    |    |   |    |    |    |    |    |   |    |
| Highway Construction, France Irrigation Projects, USA Adv. Mechanical USA Draglines, JAPAN. | Relevant                 | 1 | - | -  | -  | -  | - | -  | - | -  | -  | - | 1  | -  | -  | -  | -  | - | 1  |
|   | "                        | - | - | -  | -  | -  | - | -  | 1 | -  | -  | - | -  | -  | -  | -  | -  | - | 1  |
|   | "                        | - | - | -  | -  | -  | - | -  | - | 1  | -  | - | -  | -  | -  | -  | -  | - | -  |
|   | "                        | - | - | -  | -  | -  | - | -  | - | 1  | -  | - | -  | -  | -  | -  | -  | - | -  |
|   |                          |   |   |    |    |    |   |    |   | 2  |    |   |    |    |    |    |    |   | 2  |
| SEATO, SOIL Mech, Bangkok Roads, Country N.M.   | "                        | - | - | -  | -  | -  | - | -  | - | -  | -  | - | -  | 1  | -  | -  | -  | - | -  |
|   | Not Relev.               | - | - | -  | -  | -  | - | -  | - | -  | -  | - | -  | 2  | -  | -  | -  | - | -  |
|   |                          |   |   |    |    |    |   |    |   |    |    |   |    | 3  |    |    |    |   | 3  |
| Sanitary Engg, Beirut<br>Public Health Engg Beirut.   | Relevant                 | - | - | -  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | 1 | -  |
|   | "                        | - | - | -  | -  | -  | - | -  | - | -  | -  | - | -  | -  | -  | -  | -  | 1 | -  |
|   |                          |   |   |    |    |    |   |    |   |    |    |   |    |    |    |    |    | 2 | 2  |
| TOTAL :   |                          |   |   |    |    |    |   |    |   |    |    |   |    |    |    |    |    |   | 9  |

A = 1+2+3+4+5  
B = 7+8+9  
C = 10+11+12

D = A+B+13  
E = 6+C+D