

Mr. McCarthy objected, however, to the qualification requiring bridge engineers to be college graduates; he thought that it would be somewhat severe to confine future appointments in bridge work solely to men who are graduates of universities. He stated that he knows some very able bridge engineers who are not college graduates. He moved, with Mr. Ambrose as seconder, that the wording "should be a college graduate" be changed to "should preferably be a college graduate," and it was decided to make this change throughout all of the classifications excepting that relating to public works. The public works classification is that which had been adopted by the Civil Service Commission of Canada, and it had been accepted in its entirety by the Salaries Committee of the Toronto branch, therefore no changes were made in the classification relating to that field of work.

#### Discussion on Municipal Salaries

After Mr. Clark had read the schedule relating to municipal work, R. E. W. Hagarty, consulting engineering Toronto, expressed the opinion that the salaries should be increased by 25%, especially the lower salaries. George Hogarth, chief engineer, Ontario Highways Department and R. O. Wynne-Roberts, consulting engineer, Toronto, believed that the salaries of deputy city engineers, first assistants and second assistants should be increased.

Mr. Clark stated that the present depreciation in value of the dollar should not be taken too much into account in determining a permanent schedule of minimum salaries, and that due regard should be paid to the circumstances of individual employment and to the value of services rendered in other fields of engineering work of similar nature. After debate, the members decided to add \$600 per annum to the salary of chief engineers of municipalities of less than 100,000 population, \$400 per annum to the salary of first assistants in cities between 100,000 and 300,000 population, and \$600 per annum to the salary of designers.

F. A. Dallyn, sanitary engineer, Ontario Board of Health, expressed the opinion that the experience required is just as great for cities of 7,000 population as for those of 10,000 population, and he thought the dividing point should be at 7,000 instead of 10,000. No motion to this effect was made, however.

#### Public Works Schedule Altered

The industrial, public utilities and public works schedules were adopted without much discussion, no changes being made in the industrial or public utilities schedules. It was emphasized, however, that the classification and salaries mentioned for public utilities can be considered effective only for the larger type of public utilities, and that it is not practical at present to recommend their strict observance by small public utilities.

In the public works schedule, the following changes in salaries were made: Senior Assistant Engineer, \$3,200 instead of \$2,700; Resident Engineer, \$3,140 instead of \$2,640; Chief Draughtsman, \$2,500 instead of \$2,280; Inspector, \$1,800 instead of \$1,500; Draughtsman, \$1,500 instead of \$1,200; Junior Instrumentman, \$1,500 instead of \$1,200.

Following is the schedule as finally adopted by the Toronto branch, the salary figures mentioned in each case being the minimum salary, which in the industrial schedule is supposed to be graded according to the size of the industry:—

### Railway Schedule

1. Chief Engineer, \$10,000.
2. Assistant Chief Engineer, \$7,200.
- 3a. Engineer of Maintenance, \$6,600. Should preferably be a graduate from an engineering school recognized by the Institute, and should have 8 to 10 years' practical experience in engineering work, or, if not a graduate, should have from 12 to 15 years' practical experience, and should be thoroughly familiar with the mathematics of engineering.
- 3b. Engineer of Construction, \$6,600. Same qualification as for Engineer of Maintenance.

- 3c. Bridge Engineer, \$6,000. Same qualification as for Engineer of Maintenance.
- 3d. Principal Assistant Engineer, \$6,000. Same qualification as for Engineer of Maintenance.
- 4a. District Engineer, \$4,800. Should preferably be a graduate from an engineering school recognized by the Institute, and should have 6 to 8 years' practical experience in engineering work, or, if not a graduate, should have from 10 to 12 years' practical experience, and should be familiar with the mathematics of engineering.
- 4b. Signal Engineer, \$4,800. Should preferably be thoroughly familiar with the theory and practice of signalling, and of train operation, and should have had, in addition, at least five years' practical experience in mechanical and electrical signal work on railways.
- 4c. Architect or Engineer of Buildings, \$4,000. Should have sufficient architectural training to design railway stations, shops, round-houses, dwellings, etc., of normal types, and should have 6 or 8 years' practical experience in responsible design of railway buildings.
- 4d. First Assistant Engineer, \$4,200. Same qualification as for District Engineer.
- 4e. Assistant Bridge Engineer, \$4,800. Should preferably be a graduate engineer with from 5 to 6 years' practical experience in the office and in the field.
- 5a. Division Engineer, \$3,600. Should preferably be a graduate engineer with 3 or 4 years' experience of practical engineering, or, if not a graduate, should have 8 to 10 years' practical experience and should be well grounded in the mathematics of engineering.
- 5b. Second Assistant Engineer, \$3,000. Same qualification as for Division Engineer.
- 5c. Chief Draughtsman, \$2,500. Should have a thorough knowledge of general draughting, but not necessarily knowledge of design, and should be able to control a number of subordinates and supervise their work.
- 5d. Designing Engineer in structural department, \$3,600. Should be thoroughly grounded in the theory of design and detail in his particular department, and should be able to control a number of subordinates and supervise their work.
- 5e. Leading Draughtsman in architectural department, \$2,400. Same qualification as given for Designing Engineer in structural department.
- 5f. Signal Supervisor, \$2,400. Should be thoroughly familiar with the mechanical and electrical details of signalling, should have sound elementary knowledge of the principles of signalling, and should be qualified to carry out and supervise construction and maintenance of all types of signal plants.
- 6a. Resident Engineer (construction only), \$2,700 and expenses. Should preferably be graduate engineer or have 3 or 4 years' practical experience in the junior branches of engineering work.
- 6b. Third Assistant Engineer, \$2,400. Same qualification as for Resident Engineer.
- 6c. Draughtsman, \$1,800. Should be able to plot accurately from field notes or notes and sketches supplied to him by a senior officer.
- 6d. Inspector (class A), \$2,400 and expenses. Should have a thorough knowledge of the class of work that he is employed to inspect, and in the case of steel or reinforced concrete structures, should be a man of sufficient intelligence to understand the elementary principles of design and realize the necessity for close adherence to plans, and must be able to read and interpret plans correctly.
- 7a. Junior Assistant or Instrument Man, \$1,800 and expenses. Should have sufficient training in the use of level or transit, or both, to do accurate work at a reasonable rate of speed, and should be thoroughly grounded in the mathematics required.