

PART I

1. INTRODUCTION

1. The first part of this report may be said to provide "background data"—that is to say, it seeks to define the term "professional engineer" and to describe the qualifications required within the terms of that definition.

2. The registration of professional engineers in New Zealand is entrusted to a statutory body, the Engineers Registration Board. The Committee's definition depends upon the qualifications acceptable to this specially constituted Board, so that it is necessary to set out briefly the constitution and function of that Board and to explain its relation to the British professional institutions. As will be seen from what follows, a candidate for recognition by the Board may acquire his basic educational qualifications in two main ways—either through a University course leading to the degree of B.E. or by satisfying examination requirements similar to those necessary for admission to one of the recognized professional institutions. The second of these methods has been subject to some modification in recent years. In order to clear the ground for an evaluation of the present training it is necessary to describe the special engineering schools of the University and to set out in some detail the examination requirements, other than the University degree, acceptable to the Registration Board. Part I of this report is therefore mainly descriptive and offers little by way of comment.

2. DEFINITION OF A PROFESSIONAL ENGINEER

3. It is difficult to find an entirely satisfactory definition of a professional engineer. The Committee decided to adopt the following as defining clearly the scope of the principal inquiry :—

"A 'professional engineer' is one who has the examination qualifications and the experience required by the Engineers Registration Board for registration."

4. These qualifications are considered in more detail later in the report, but they may be regarded as corresponding very closely to the requirements of the British Institutions of Civil, Electrical, and Mechanical Engineers. The above definition, of course, gives little indication of the duties and responsibilities of the professional engineer or of the significance of his work in society. What the Committee has had in mind throughout its deliberations, however, has been well expressed in the following passages :—

(a) Taken from the Charter of the Institution of Civil Engineers, London—

Engineering is the art of directing the great sources of power in Nature for the use and convenience of man.

(b) Taken from submissions made by the American Society of Civil Engineers in connection with legislation—

The term "professional engineer" within the meaning and intent of this Act shall mean a person who by reason of his special knowledge of the mathematical and physical sciences and the principles and methods of engineering analysis, and design, acquired by professional education and practical experience, is qualified to practice engineering as herein defined, as attested by his legal registration as a professional engineer.

The term practice of engineering within the meaning and intent of this Act shall mean any professional service or creative work requiring engineering education, training, and experience, and the application of special knowledge of the mathematical, physical, and engineering sciences to such professional services or creative work as consultation, investigation, evaluation, planning, design, and the supervision of construction for the purpose of assuring compliance with specifications and design, in connection with any public or private utility, structure, buildings, machines, equipment, processes, works, or projects.