(2) Having served for three years as a journeyman engineer in a workshop or workshops as above:

(3) Having, while holding the second-class engine-driver's (or equivalent) certificate, efficiently driven for twelve months a steam-engine the cylinder-area of which exceeds 144 but does not exceed 200 circular inches:

(4) Having, while holding the second-class engine-driver's (or equivalent) certificate, had actual charge, for twelve months, of a boiler over 15 horse-power:

(5) While holding the second-class engine-driver's (or equivalent) certificate, having, for twelve months, fired and attended a boiler over 15 horse-power, under the supervision of a first-class certificated driver:

(6) Having, for at least three years outside of New Zealand, been in charge of an engine the cylinder-area of which exceeds 144 circular inches, and having passed the examination for the second-class engine-driver's certificate:

Scope of Examination.

(*e*) Be able to work out arithmetical questions connected with safety-valves and connections, capacities of coal-bunkers and oil-tanks, levers, areas of flat surfaces, and consumption of stores:

(*f*) Boilers: Be able to give a satisfactory description of all types of boilers in use on land, how they are stayed and put together; be acquainted with the uses and management of the different valves, cocks, and connections on boilers; be acquainted with the causes and effects of and the usual remedies for incrustation and corrosion in boilers; be able to explain fully how defects that might arise in the working of boilers should be overcome, and how to effect the necessary repairs both of a temporary and permanent nature; be able to calculate the amount of heating-surface of a boiler, and to explain the relations governing the safety-valve and grate-area:

(*g*) Engines: Be able to work out questions in arithmetic such as addition, subtraction, multiplication, division, proportion, vulgar and decimal fractions, and extraction of square roots; be able to work out questions as to coal-capacity, store-consumption, lever safety-valve questions, and capacity of tanks, &c.; be able to describe the different parts of steam-engines used on land, and how he would remedy defects that might arise in their working; be able to describe the use of auxiliary appliances used with modern engines, such as condensers, different kinds of pumps, &c.; be able to explain and calculate indicator diagrams, and to correct and set slide-valves:

(*h*) Be able to make an intelligible hand-sketch or a working-drawing of some one or more of the principal parts of an engine or boiler, and to mark in, without a copy, all the necessary dimensions in figures so that the sketch or drawing could be worked from.

SECOND-CLASS ENGINE-DRIVER (COMPETENCY).

27. This certificate entitles the holder to drive and have charge of any steam stationary engine (except winding), the cylinder area of which does not exceed 200 circular inches, and of its boilers, or of any boiler to which no machinery is attached.

28. An applicant for examination for the second-class engine-driver's certificate must—

(*a*) Be at least nineteen years of age:

(*b*) Forward with his qualification a fee of £1:

(*c*) Furnish a testimonial as required by Regulation 15 (*c*):

(*d*) Produce satisfactory proof of one of the following service qualifications:—

(1) Having, for at least six months, driven or assisted to drive a steam-engine or attended or assisted in attending a boiler;

(2) Having worked for at least two years as an apprentice engineer or as a journeyman mechanic in a workshop or workshops where engines are made or repaired or where work of a similar nature is performed: