

All firemen, &c., appointed *after the passing of the Act* (i.e., after the 16th December, 1911) have to obtain the full certificate, with the exception only of firemen, &c., employed in mines in which inflammable gas is unknown, who are required to obtain a certificate as to (2) and (3) only, and not as to (1).

On the other hand, firemen, &c., who were appointed *before the passing of the Act* are exempted from obtaining a certificate as to (2), and need only obtain a certificate as to (1) and (3), or (if employed in a mine in which inflammable gas is unknown) need only obtain a certificate as to (3).

2. The certificate can only be obtained from one of the mining schools, institutions, or authorities approved by the Secretary of State, and in order to obtain it a candidate must pass an examination in the subjects mentioned in paragraph 4 below. A candidate is allowed to sit at any examination for the purpose held by any of the approved schools, institutions, or authorities; and the approved schools, institutions, or authorities have been asked to arrange to hold examinations as far as possible locally in centres convenient to the workers. For information as to the times and places of examinations held by any such school, &c., write to the secretary of the school, &c.

3. *It is not necessary that a candidate before examination should have attended the classes of the school or institution or authority to which he presents himself for examination or the classes of any other school, institution, or authority.* The examination is mainly of a practical character, and only requires such knowledge as a fireman of experience should have already acquired.

Men, however, who have not previously held the post of fireman, examiner, or deputy, and no doubt many also who have held the post, will require, before going in for the examination, to have some instruction; and classes have been formed in most mining districts for the purpose of giving instruction in the subjects in which candidates for certificates will be examined.

A word of explanation may be useful here, as there has been some misapprehension among firemen, &c., as to the nature of the instruction required.

In some districts where classes of an advanced character have been formed it has been supposed that it was necessary to attend these classes in order to qualify for a certificate. This is a mistake. The duties of a fireman, examiner, or deputy include, indeed, other matters besides the detection of gas and the measurement of air, and it is very advantageous that a fireman, &c., should have as thorough a knowledge as possible with regard to all matters which may bear upon his duties; but it should be clearly understood that this advanced instruction is not required for the fireman's certificate under the Act, and that the only matters in which a candidate need obtain instruction for the purpose of getting a certificate are the subjects mentioned in paragraph 4 below.

4. *The subjects of examination will be those set out below in this paragraph, and those only. A candidate will not be asked any questions in regard to any other matter.*

PART I.—GAS-TESTS.

A candidate will be required to show that he is able to make accurate tests for inflammable gas, and that he can do this with any of the various kinds of safety-lamp, and with any of the various kinds of oil, *in use in the district in which he is employed.* For this purpose he will be required, *first*, to show to the examiner that he understands the method of detecting inflammable gas by means of a safety-lamp; and, *secondly*, to make correct observations of gas-caps as they appear on the flames of various kinds of safety-lamps burning the various kinds of oil. By a correct observation is meant that the candidate must be able to judge by the size and appearance of the cap how much gas approximately is present. He will be tested with percentages of gas from 2 per cent. upwards, and no candidate will pass who is unable to see a 2-per-cent. cap.

A candidate who ordinarily wears glasses will not necessarily be called upon to make the observations without them, but it will rest with the examiner to decide by such test as he thinks fit whether the eyesight is so defective that under the working-conditions in a mine a candidate would not be able to make accurate observations.

PART II.—AIR-MEASUREMENTS.

A candidate will be required to show that he can measure the quantity of air in an air-current. The quantity of air, in cubic feet per minute, passing through the airway of a mine being found by multiplying the number of square feet in the cross-section of the airway by the speed of the air-current in feet per minute, the candidate will be required, *first*, to measure the speed of the air-current passing through the airway of a mine, or through some gallery corresponding to or representing the airway of a mine, both (i) by means of an anemometer, and (ii) by observing the speed at which dust or smoke is carried by the air-current; and, *secondly*, to calculate from measurements the size (i.e., cross-sectional area) of the airway or gallery in which the air to be measured is passing.

PART III.—HEARING.

The candidate's hearing will be tested. The Act requires that his hearing should be such as to enable him to carry out his duties efficiently. This does not mean that a fireman must possess a standard of hearing above that of the average man, nor is it required that his hearing must be up to the standard in both ears. If the candidate is able to hear sounds audible to the average man it will be sufficient. The tests will usually be of a simple nature, and will naturally be varied by the examiner with different candidates and at different times.

5. A candidate who claims to be exempted from Part I of the examination must produce to the school, &c., to which he presents himself for examination a certificate from the manager of his mine that he is employed in a mine in which firedamp is unknown. Note, however, that a fireman, &c., employed in a mine in which gas is unknown, who claims exemption from Part I., would have to pass this part of the examination afterwards if at any time he obtained employment as a fireman, &c., in a gassy mine.

A candidate who claims to be exempted from Part II must produce a certificate from his manager that he was employed as a fireman, examiner, or deputy on the 16th December, 1911.