140. During this period the student should be employed at various trades, and an endeavour should be made to include as many of the following trades as possible: patternmaking, foundry, smithy, welding, sheet-metal work, structural steelwork, erecting or assembly, bench fitting and machining. Conditions are such that it is not practicable to detail the amount of time that should be spent at each trade.

141. Degree students are also required to spend three months in approved practice. This should be carried out on approved civil engineering works such as a civil engineering construction job or a large building contract, with the Ministry of Works, with a harbour board, city council, or other public body, or with a contractor. During this period the student should work at more than one task such as concreting, erecting or placing steelwork, or carpentry.

142. The diploma student will have a longer period of civil engineering training, and this should include a variety of tasks. He should be engaged on setting out, measuring up, and on such tasks as are normally performed by an engineer's assistant. In addition to work of this nature, the diploma student should, if possible, spend a period of at least one year in a civil engineer's office, where he would gain experience in design work.

(*b*) Electrical Engineering

143. Many potential electrical engineers aspiring to Institution qualifications have spent a great period of their time in acquiring sufficient manual dexterity to secure a pass in the Wiremen's Registration Board examinations. Too much of this type of training the Committee considers to be of only limited value for the potential electrical engineer. Degree students, on the other hand, are required to spend six months in approved workshops and three months either in approved workshops or in approved practice. The Committee considers the degree type of training is preferable.

144. The workshop period should be occupied in the same manner as is suggested for civil engineers. If three months are spent in approved practice it should not include office work, but preferably one or more of the following: communications, power-station or substation erection and installation, power-station maintenance and operation, construction of transmission and distribution lines, factory and domestic installations. In addition to work of this nature the diploma student should spend a period of at least one year in an electrical engineer's office, where he would gain experience in electrical design and specifications.

(*c*) Mechanical Engineering

145. It has been customary for mechanical engineers who are not taking a degree to rise from apprentice fitters. These men have spent five years learning a trade, and during that time will have acquired a fair standard of manual skill. The Committee considers that the apprentice type of trade training is not the best suited for the future mechanical engineer as the emphasis is necessarily on the acquirement of manual dexterity and the scope of training is apt to be too narrow. The Committee thinks that apprenticeship regulations should be altered, if necessary, so that future mechanical engineers who are not taking a degree can be apprenticed to mechanical engineering or take up a mechanical engineering cadetship. This would allow a widening in the scope of training which should include a certain amount of time engaged in such processes as patternmaking, moulding, forging, and sheet-metal working. Provision should also be made for apprentices to one particular mechanical engineering trade who have completed the first three years of the diploma course to change over to a mechanical engineering apprenticeship. During the last two years these apprentices would be given training in the basic trades of the foundry, where necessary.