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Instruction of Railway Shop Apprentices.

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Apprenticeship in connection with wood and iron working trades has existed in some form from time immemorial, probably ever since men first began to fashion these materials into articles for use and comfort. During the middle ages it was thoroughly established as an institution and very stringent regulations were adopted in some countries to ensure the proper observance of their obligations by the apprentices, and heavy penalties were provided for any violation on their part, but as a rule they did not bear very heavily on the employer when he was at fault. The usual term of apprenticeship was seven years, and during that time the apprentices were subject to the will of the master in almost everything, and they generally lived in his house, as industrial establishments were for the most part small, employing but a few hands. This arrangement possessed the advantage of giving the apprentices the personal supervision of the master, who, having a direct financial interest in making the boys as efficient as possible, took great pains to instruct them carefully in the different processes of the trade.

With the advent of the steam engine and the industrial revolution that followed, this old system passed away. The establishments became much larger, so that it was no longer possible for the owner to give his personal attention to the minor details of the business, and the supervision of the apprentices was therefore delegated to the foremen, who, having no such financial interest in the ability of the boys to perform work efficiently, and generally looking upon them more as a source of

trouble to themselves than anything else, too frequently placed them at work of a simple nature and left them at it, rather than incur the personal trouble of teaching them other lines of work. With the further growth of industrial establishments this unsatisfactory feature of the apprentice system became still more pronounced, and some employers went so far as to abolish the system altogether, while others merely tolerated it as a necessary evil. During the latter part of the last century some enterprising employers in Great Britain and on the European Continent began an effort to educate

apprentices in their employ, this generally taking the form of a free night school, but it is only in recent years that the importance of the matter has been widely appreciated and any really serious effort made to meet the requirements.

In America apprenticeship systems have followed the same general lines as in Europe, but the rules and regulations have not been nearly as uniform, or as rigidly enforced, while the term has

may be said to be auxiliary to certain trades, the general effect was vicious in the final analysis. This, together with the general absence of proper systems for the education of apprentices, is probably responsible for the alleged deterioration among mechanics and the difficulty in obtaining men who are capable of doing everything connected with their respective trades, about which we have heard so much of late. It is likely that on the whole railways have suffered most in this connection, and within the past three or four years a few progressive railway managements have established more or less comprehensive educational systems, and this movement appears to be spreading rapidly at the present time, as all railway mechanical officers are agreed that special instruction outside the shop is necessary, there being only a diversity of opinion as to how this instruction should be given.

About a year and a half ago the C.P.R. management established apprentice classes in the Angus shops at Montreal, and last winter a complete educational scheme was adopted at the Winnipeg shops, following the same general lines, the details being modified, however, to meet the local conditions and also where experience had shown that alterations might be made to advantage. The following is an outline of the system: All applicants are required to pass a physical as well as an educational examination before being engaged. All apprentices receive instruction in both practice and theory during working hours whilst under pay, which can be conveniently divided into two parts, viz., shop instruction and class instruction.

In the machine and erecting shops the boys are placed directly under the supervision of a shop instructor who is an expert machinist, and who personally instructs them how to perform the various operations properly, explains the reasons therefor and also looks after their general conduct. It is also his duty to see that their occupation is changed in accordance with an authorized schedule prepared by the management, this matter not being left to the convenience of the shop foremen, but adhered to as closely as circumstances will permit. The different foremen actually assign the work to them, the inspector merely directing their methods and conduct, and reporting concerning these matters to the supervisor of apprentices, who carefully re-



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been somewhat shorter, ranging between three and five years. The same abuses and unsatisfactory features have existed here also, and many firms abandoned the system and had recourse to the plan of educating unskilled men to perform a single operation, or run one kind of machine, and then keeping them at that particular work for all time. By this means a class of operatives was developed that was highly efficient upon its special lines of work, and the whole proposition looked exceedingly attractive to employers, but with the exception of certain lines of work which