

one machine or department to another. When you specialize work in different gangs or departments, as before stated your men become thoroughly acquainted with work they are doing, they are able to look ahead for stock material, and as a rule they are concentrated on that one class of work and are able to figure out the tools or templates which will enable them to do the work more expeditiously. This is more readily done than if they work from one different class of work to another repeatedly. With this system there should be inaugurated a first-class layer-out or template room, so that blue prints when they come to shop should be sent to template room and checked and all templates made that are necessary. This prevents employees spending time over blue prints in shop laying out work, instead of which they simply get templates where necessary and apply them either for machine work or for work that may be required. One of the best foundations for shop practice is to have a good layer-out and template room.

As all men are not equal in ability it is not always necessary for a man to be a first-class mechanic to become a good specialist, but it is a good principle to have a first-class skilled man at head of each gang, and a second man following up, in case position becomes vacant at any time, so that in conjunction with this specialization it is of good advantage to have an apprenticeship system and when apprentices are admitted they should have a fairly good education and be in good physical condition to justify their being employed and trained as mechanics. The apprentices should be put through all the different departments and gangs as far as practicable, a proper record kept of them, and when a charge hand is required you would always have a corps of well trained young men to fill any of the positions. The apprentices should only be specialized after coming out of their apprenticeship and after having received a thorough all-round training. Consequently it is necessary to extend the apprenticeship longer than three or four years when apprentices are to get this training. In the shop where I work the course extends to five years, and in that time apprentices get training in both machinery and fitting departments.

To enable us to specialize in our erecting department when engines are rebuilt, that is, when new boiler is being applied to an engine, it is usually put into what is called a Rebuild Gang. This is almost entirely composed of apprentices who move over from machine shop. They start in this gang and get general all-round erecting work. After these engines are prepared to about the extent that an engine is in when it comes to shop for general repair, it is handed over to the erecting gangs to complete, so that as a rule the main erecting gangs are always turning out general repairs, which is one line of work. If an