

prizes for the greatest improvement in penmanship and mathematics. We will try to stir the boys up to realize the need of a good general education to fit them for any position they may be called to fill in the years to come.

### MODERN APPRENTICESHIP

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The success of any organization is dependent on the success of its individual units, and as such the mechanical organization of a railroad is dependent on the education and training of its men. One of the momentous questions of the day in connection with the efficiency of the mechanical department is not so much that of adequate supply of labor as the proper training of this labor so as to develop into the best mechanics for the future. The apprenticeship system of any organization can be divided into two chief divisions.

- (1) The selection of the apprentice.
- (2) The development or training of the apprentice.

The importance of careful selection of raw material cannot be too strongly emphasized, for upon it depends the ultimate success of the trained mechanic. Raw material suitable for apprenticeship must possess a reasonably good education (by which is meant, at least, completion of grammar school work) and show sufficient interest in the trade to warrant the employer in assuming the burden of training him in his particular trade, and not as is often the case, of merely serving out time and then leaving the service entirely on completion of the period of indenture. By investigating the environment in which a boy has been raised, his natural bents or aptitudes, and the general attitude of the parents or guardians toward the proposed trade a considerable gain can be made in the selection of proper material. Even with this preliminary investigation, a probationary period of service ranging from 30 to 90 days is of advantage to both the employer and apprentice in observing the development of dispositions and temperaments which have hitherto been dormant and which will later on have an important bearing on the quality of apprentice.

Again, it would appear that a systematic method of personal canvass of schools where prospective candidates for apprenticeship are to be found, by officials in charge of apprentice instruction, would be of considerable aid in education of the adolescent to the appreciation of the value of a trade in his life's work. By setting forth the advantages of a trade, the advantages to be derived from the system of apprentice instruction, the opportunities for advancement, and the assurance of steady employment, it is possible to stir up sufficient interest in the trades to guarantee the railroad an ample supply of high class mechanics.

The real work, however, begins after the boy enters the service as a full fledged apprentice, for from then on the quality of mechanic developed lies largely in the hands of the railroad through its instruction staff.

The assignment of the apprentice should, as far as possible, follow a systematic course to eliminate any tendency toward holding the boy too long at a particular machine or job to the detriment of other phases of instruction and to the disadvantage of other apprentices.

It is advisable that, in conjunction with the shop work or manual training which the apprentice receives, a considerable amount of classroom work and instructions should be given, so as to really make the apprenticeship school a sort of continuation school wherein the value of various methods of shop operations and the principles underlying them can be taught.

A regrettable condition of apprenticeship is often found wherein the apprentice is taken on, not so much with a view toward developing a mechanic for the future as toward filling a present day need for low-priced labor to the disadvantage of both employer and employee.

The development of the apprentice rests to a considerable

degree on the personal qualities of the apprentice instructor—his temperament, characteristics and enthusiasm in the work and welfare of those in his charge. By taking advantage of one of the predominating traits of adolescence—imitation—it is possible to thoroughly enthuse the boy in his work and in that way unconsciously have him striving to attain his highest efficiency. Instruction, which fails to include the historical and economic development of railroads, the improvements introduced from time to time, and the needs for future development, fails to give the apprentice a broad view of the field of his chosen occupation and it is not surprising that in such instances gross lack of enthusiasm is to be found.

Personal attention on the part of officials, and especially those from other shops, to the character of work done by the apprentice, as well as the mechanic, is bound to promote enthusiasm.

In order to develop a high grade apprentice sufficiently great incentives must be furnished and, of these, perhaps the most effective is that of increase in wages, or an early release from the period of indenture. Further, scholarships in technical schools are often given as rewards for highly satisfactory service. Incentives of this type are always productive of excellent results, as is borne out by experience on roads offering them.

### GIVE THEM RESPONSIBILITY

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Apprentices should be handled in a manner that will arouse in them a genuine interest in their trade from the beginning, and hold it there. Interest in what they are doing will automatically produce better mechanics than the most painstaking arrangement of duties, which does not consider this as of first importance. It is a rare man, much less a boy, who can concentrate and give his best efforts without possessing some degree of enthusiasm for his work.

How to maintain interest in the apprentice's mind after the newness of things has worn off is the problem that should be constantly before every employer of apprentices. The best way that I know is to place responsibility on the young man, and give him tasks that carry with them an assumption that he has ability and initiative which his boss intends making good use of. The average boy will not betray this confidence; he will put his best shoulder to the wheel to do the job as the boss wants it and will take a pride in the finished work. Here you have the earnest effort that keeps a boy from becoming disheartened, and at the same time molds the best mechanic.

Responsibility should be placed on the apprentice as far as his ability warrants. Good business sense, if no other consideration, demands it. It is essential that the assignor of tasks to apprentices be broad-minded enough to size up the boys and get a fairly accurate measure of each one's ability and then this estimate should be his guide in directing their work.

Feeling as I do that the apprentice problem is more of a human one than of curriculum (the most studied and best organized courses have something lacking) I would warn against tactlessness on the part of the apprentice's immediate boss. Tactlessness, for instance, that goes into minute instructions and even demonstrations when an apprentice is being assigned a task, a task whose main operations the boy must have performed before, or at least observed their performance. A boy who is any good at all likes to do his own thinking—he cannot take interest and pride in a job in which no detail has been left to him to decide.

Keep apprentices away from piece-workers whenever possible; pieceworkers are usually too busy to show things, much less allow the boy to do things for himself. Letting the boys actually perform operations themselves cannot be urged too strongly—it has an influence for which no amount of observing can be substituted. The pieceworker's motto, "Good enough is best," may be permissible from an economic point of view, but it is a bad one to train a good mechanic on.

\*Not written from that viewpoint, however.