

enlarged by the addition of two new members. After further and careful consideration, the committee confirms the report presented at the last convention.

Because of the difference in size of couplings and number of threads used by the several manufacturers, it is not possible to select a set of common standards which will interchange with all the individual standards of the several manufacturers. Realizing this, the committee selected a set of dimensions representing practices most common to the greatest number of railways and based its original report on these dimensions. There is no doubt that the proposed dimensions are thoroughly satisfactory in providing for mechanical strength and in meeting all injector conditions, for a large proportion of the roads are now using couplings conforming practically to the dimensions proposed. The principal differences between the proposed standards and the 10-thread couplings commonly used is in the shape of the thread, and the proposed shape was selected because of its interchanging most satisfactorily with all other shapes used.

It is not unusual for the principal manufacturers to make injectors to suit connections of different standards, and at least some, if not all of the manufacturers now have injector connections in service which will interchange with the proposed common standards.

It is not to be expected that manufacturers could immediately discontinue their individual standards in favor of a common standard or that the different railways would attempt to modify the couplings on present injectors to conform to a new common standard. It would be more natural to expect the gradual adoption of a common standard as new injectors are applied to locomotives under construction and to some lesser extent as old injectors are replaced by new ones during repairs. It is, therefore, a matter of the pleasure of the Association to decide whether a common standard should be adopted for flange and screw couplings for injectors. At the 1914 convention a motion was made to appoint a committee "with a view to preparing a standard and recommended practice." This committee has investigated the subject and has been guided in its recommendation by the information submitted by the railways. It has been the duty of the committee to analyze this information and place the facts before the Association, and the committee feels that it is now the office of the Association to decide whether it wishes a standard.

Settlement Prices for Reinforced Wooden Cars.

The Master Car Builders' Association committee, John McMullen, Mechanical Superintendent, Erie Rd., Meadville, Pa., chairman, reported as follows:—Your committee recommends that rules 115, 116 (except that part relating to trucks), 117 and 118 of the Code of 1915, be eliminated, and that new rules be substituted therefor, covering the settlement for cars destroyed on foreign lines.

Your committee further recommends the following in connection with determination of prices and depreciation:

(a) The original cost of a unit of equipment, inclusive of body, trucks and air brakes, shall be used as the basis for settlement, from which will be deducted depreciation figured from the date of the original cost to the date of destruction. If, however, betterments have been added during the life of the car, and added to

the book cost, depreciation on such betterments shall be figured from the date when made and deducted from the cost of such betterments. The total of the depreciated first cost and of the depreciated betterment cost will be the amount to be paid in settlement for the destroyed car.

(b) A car will be considered as new when written out of service and rebuilt, when the cost of renewals (repairs, renewals or betterments made at the same time) constitutes the major portion of its value as renewed, and settlement will be made as in the case of a new car. In no case shall the charge for the rebuilt car exceed the cost at current market prices for labor and material of new equipment of similar type, equal capacity and equal expectation of life in service, less a suitable allowance on account of the second-hand parts remaining therein.

(c) In order to provide uniform rates of depreciation for the settlement of cars destroyed on foreign roads, your committee would recommend the following:

Wooden cars, all classes, except refrigerator cars 5 per cent.

All-steel cars, all classes, including steel tanks of tank cars 3 per cent.
 Wooden cars, steel-framed or steel-underframed, or both 4 per cent.
 Refrigerator cars, all wood 7 per cent.
 Refrigerator cars, steel-framed or steel-underframed, or both 6 per cent.

The above rates are to be applied on the so-called straight depreciation basis. For example, the depreciation on a wooden car, 10 years old, at the rate given above (5%), which cost originally \$1,000, would be \$500. These rates apply to body, trucks and air brakes; but depreciation shall in no case exceed 80% of the value upon which it is based.

(d) In order to provide for settlements for trucks, when trucks only are destroyed, prices headed "Trucks," rule 116, page 204, 1915 Code of Rules, and paragraphs of the rule following the table, should be retained. Depreciation to be figured at the rate established for the type of car the trucks were under when destroyed.

(e) Rules 112, 114 and 120 to be rewritten by the arbitration committee to conform to the recommendation in this report.

Report of Committee on Mechanical Stokers.

The American Railway Master Mechanics' Association committee, A. Kearney, Assistant Superintendent, Motive Power, Norfolk & Western Ry., chairman, reported as follows:—Your committee a year ago shared the opinion of your executives that it would be interesting and none the less valuable if further data could be secured (preferably on a laboratory test plant) to show the relative efficiency of at least the prominent types of locomotive stokers, using the different grades of fuel under the usual range of operation; at the same time they fully realized that to make the work complete a great deal of time and labor would be necessary—perhaps much more than any railway officer not having a plant could afford to spare. Your committee has given this matter a great deal of thought without being able to determine as yet where and how the work could be undertaken, but further than that they feel confident that even if the opportunity presented itself it would be better and very much more satisfactory in the end to postpone the work until the machines more nearly approach standard designs.

Relative fuel consumption and cost figures would, of course, be pertinent, but as the records already obtained in connection with the general performance of stokers under service conditions (a good deal of which has found its way into print), is not only complete but comprehensive, embracing considerable information upon the efficiency as affected by the use of many of the grades of coal commonly offered for fuel purposes, some tests being conducted to show fuels especially prepared with respect to their condition—a factor of considerable importance—and figures pertaining to the cost of maintenance and durability being available, your committee, after taking all things into consideration at this time, does not deem it expedient to advocate going to the expense of getting figures for any of the machines in their present transitory stages, especially since so many of the extensive improvements now under way may materially alter their standing for accurate comparative purposes.

Furthermore, the stoker field is gradually narrowing itself down to a few types. Those that have withstood the storm and continue to show merit are

practically embraced in the Street, Hanna, Standard and Crawford machines; at the same time even these machines are undergoing alterations for higher efficiency and greater range of adaptability, though not necessarily departing from the general principles upon which the machines were originally laid down. The first three machines, the Street, Hanna and Standard, belong to the scatter or overfed group, while the Crawford is the only distinctly underfeed machine in the field.

As time and opportunity have shown wonderful advances in nearly every known device, it is safe to assert confidently that the full development of the mechanical stoker has not yet been reached. At the same time some of the original designs of the four prominent types mentioned have been in service some four or five years, or longer, and are still doing good work. As of April 1, 1916, the following number of machines of the four named types were in service and on order:

	In service April 1, 1916	On order April 1, 1916
Street	866	152
Crawford	413	63
Hanna	39	39
Standard	100	125
Total	1418	379

In order to show the headway made in stoker designs and improvements during the past four years records of those in service have been prepared as shown in tabulation. The figures are interesting as they show how the number of machines in service has increased by years to date. The following table shows the total of all mechanical stokers in service as of April 1, 1916. As mentioned in your committee's last year's report there are other machines in service undergoing trial, still others in contemplation, but your committee has been advised of none beyond those alluded to in their last report.

Year.	Street.	Crawford.	Hanna.	Standard.	Ttl.
1910	5	1	6
1911	10	1	1	..	12
1912	165	46	1	..	212
1913	173	153	2	..	328
1914	418	301	3	2	724
1915	531	301	18	22	872
1916	866	413	39	100	1418

The practicability of the stoker, as well as its range of value and adaptability, depending upon local conditions of opera-