

through the collection of complete data and careful analysis. This would seem to offer an early and fertile field for study.

Snow Removal

One other phase of street cleaning is of especial interest to the northern cities—that of snow removal, in connection with use of motor vehicles.

In case of heavy snow falls, usually the first streets opened to traffic are those containing surface car tracks, and the northern cities are mostly equipped to keep their tracks clear. The result is that motor vehicle traffic is at once diverted to these streets with resulting congestion and delay in traffic. The universal use of motor vehicles for all classes of traffic warrants the provision for its accommodation, and cities must be equipped and ready to keep thoroughfares open for this traffic while snow is falling and afterward to make viable streets.

Often the motor equipment provided for other phases of cleaning is most applicable and available for this work, and any consideration of motorizing in these northern cities should include the use and availability of such in solving the snow problem.

Collection and Disposal of Rubbish and Garbage

The collection and especially the disposal, of rubbish and garbage, has been materially effected by war conditions.

The demand for utmost economy in these trying times has made it evident to cities not fully utilizing these sources of saving that they are to an extent wasting; that much of the various materials which would be of service to the cause are being wasted. But this has been so thoroughly impressed on the public that the individual economy in saving paper, rags and metals, and especially in squeezing the plethoric American garbage can, has most materially affected the various plants in operation for these purposes. The general individual saving and sale of rags, waste paper, etc., and more particularly, the very general elimination of grease content from garbage, make any studies of operation of these plants under present conditions of little comparative value unless we assume that the American public has learned lessons of economy which may be enduring.

More than a word of caution therefore should be given to those who may now study past and even present quantities and recoverable values in refuse that neither may safely be used for estimates of the future. No one can predict how far our lesson of economy under trying war conditions may be remembered or practiced under a return to what we may hope will be a condition of happy prosperity.

RECOVERING FROM LIQUIDATION

Despite the falling off of construction work caused by the war, the firm of Mussen, Ltd., Montreal, which has been in liquidation since March, 1915, has up to date repaid 80 per cent. of its total liabilities, and, according to a circular letter issued by W. H. C. Mussen, president of the firm,—it will be a matter of but a short time when the firm will repay the remaining 20 per cent. and the liquidation proceedings will be terminated.

This will be very good news to Mr. Mussen's many friends throughout Canada, who never lost their faith in his ability to pay his creditors one hundred cents on the dollar.

With the boom in construction business which is anticipated after the war, Mussen, Ltd., will no doubt again occupy the high place among machinery and equipment firms which they held before the war.

REINFORCED CONCRETE SEA-GOING CARGO STEAMERS NOW BEING BUILT IN GREAT BRITAIN*

By T. G. Owens Thurston

WHEN in April, 1914, I had the honor of reading before this Institution a paper on "Some Questions relating to Battleship Design," I would never have imagined that my next contribution would be on the construction of ferro-concrete ships. For years past one has heard of the construction of small vessels or barges of ferro-concrete, but these were never of sufficient size or importance to warrant closer investigation, and the whole subject appeared to be one that could safely be ignored so far as ocean-going ships were concerned.

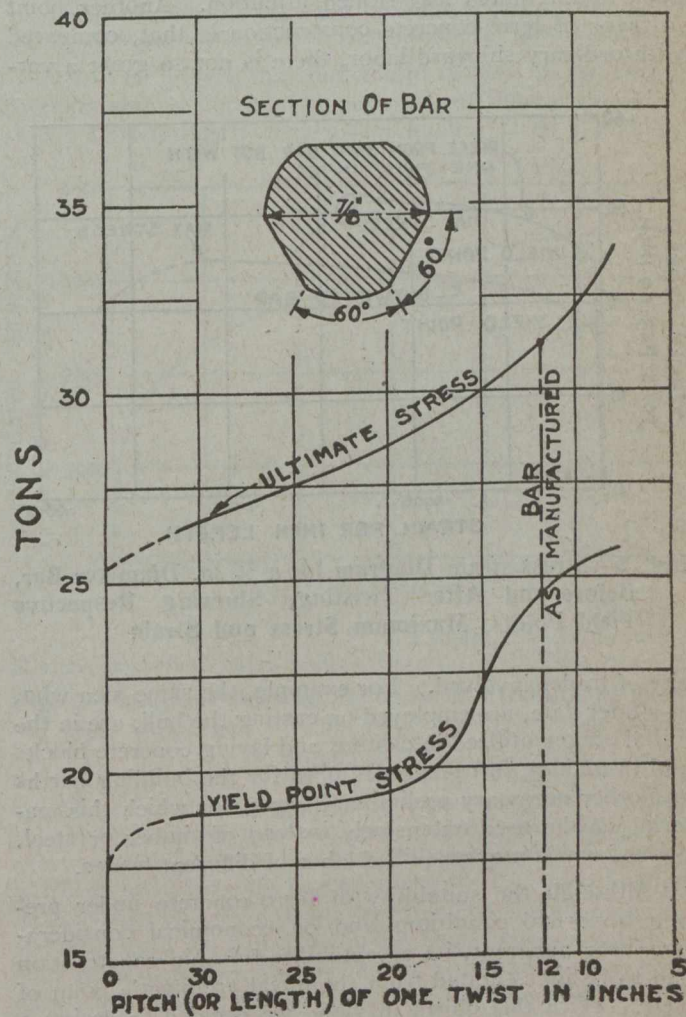


Fig. 1—Curves Showing Comparison between Rates of Increase of Yield Point Stress and Ultimate Stress for a $\frac{7}{8}$ in. Diameter Bar, By Actual Test, of Piece Cut from Same Bar, but with Different Length of Twist

The enormous losses of cargo-carrying ships during the war, coupled with the great scarcity of steel for shipbuilding on account of the diversion to other uses, have made shipbuilders endeavor to find some other material to replace steel for ship construction, even if only as a temporary measure; in this particular direction, shipowners have perhaps been really more progressive in their ideas

*Extracts from paper presented at Spring Meeting of the Institution of Naval Architects, London, Eng.