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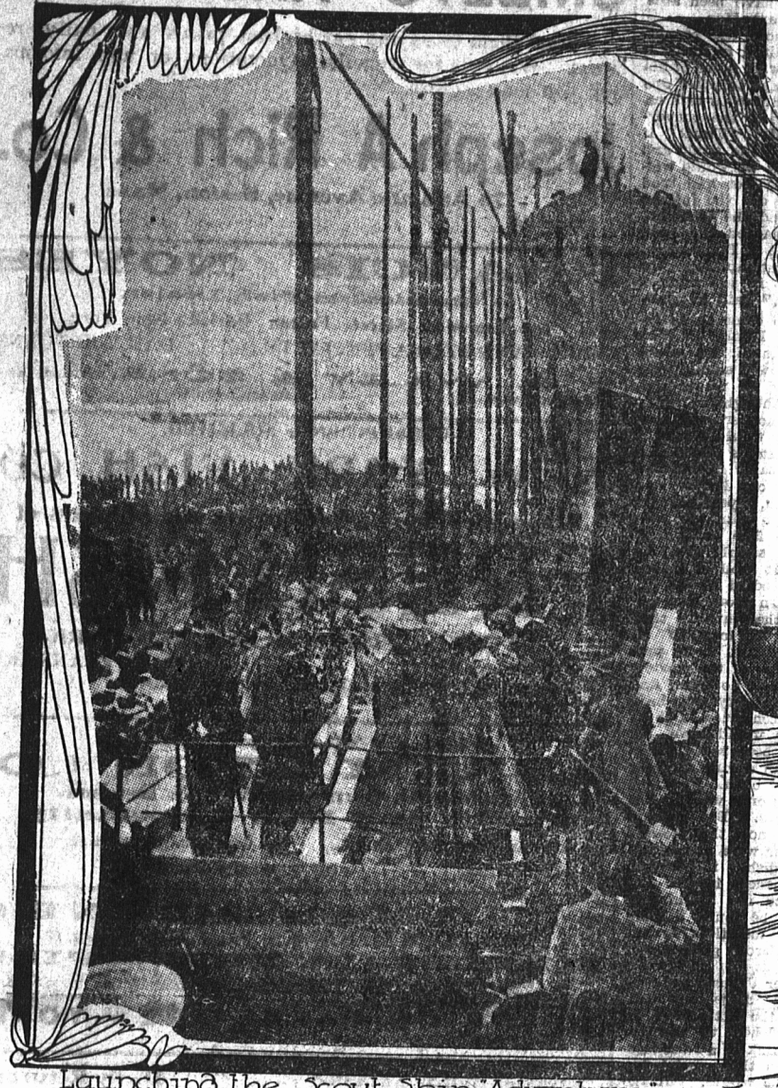
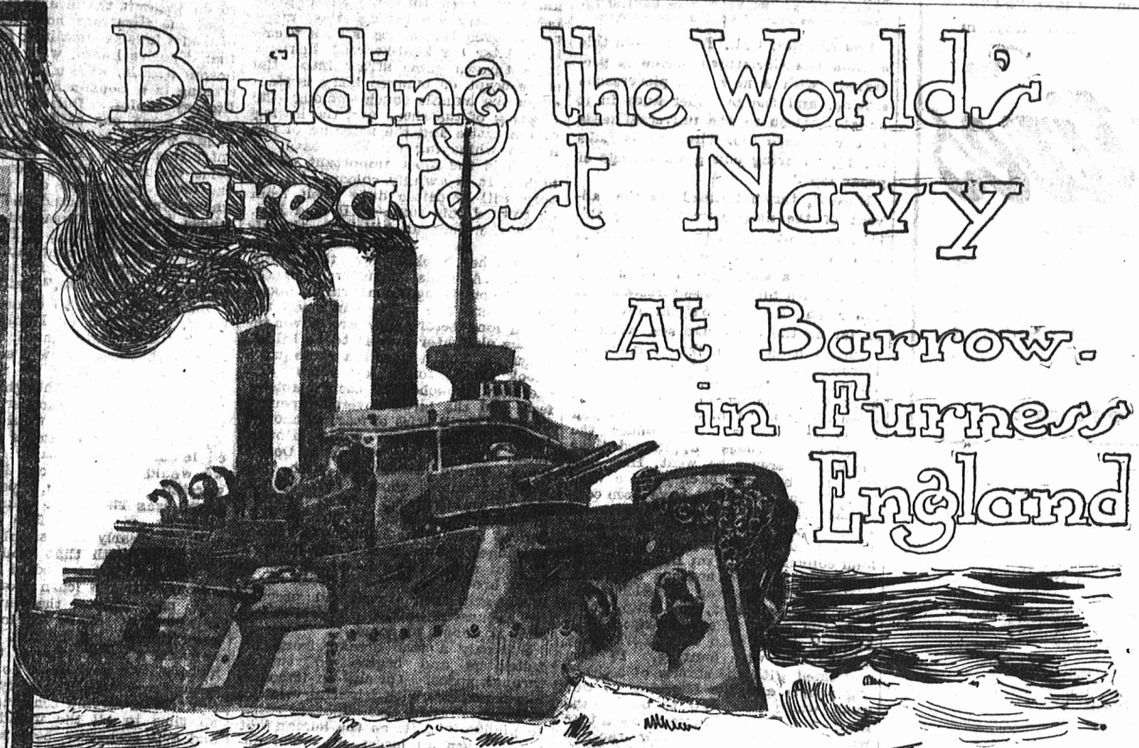
THE GUARDIAN WISHES ALL ITS READERS A VERY HAPPY NEW YEAR.



Launching the Scout Ship "Adventure"

Building the World's Greatest Navy

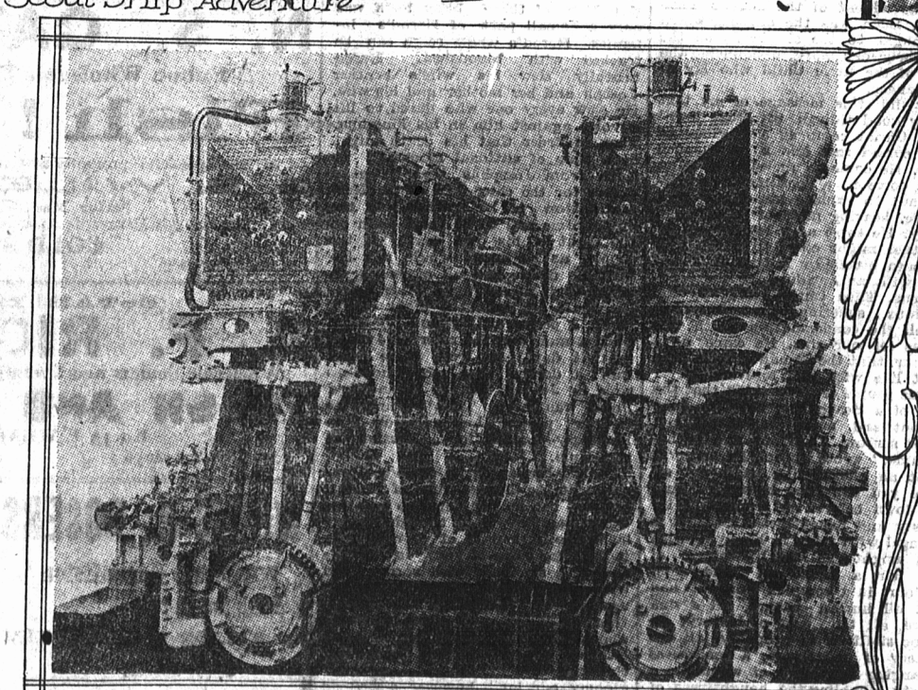
At Barrow-in-Furness England



A Torpedo Tube

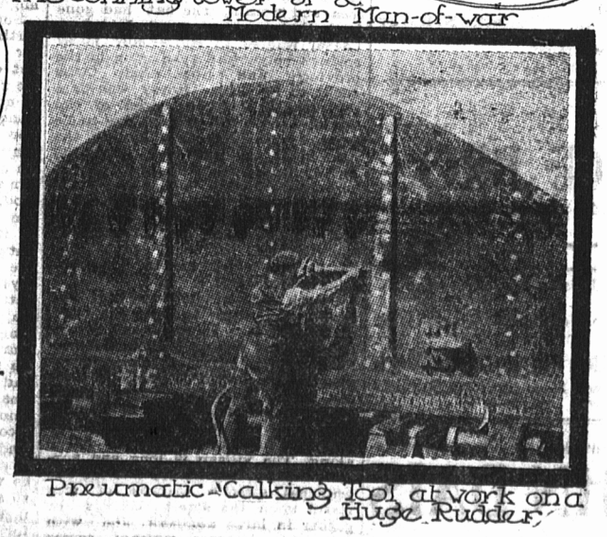
The real heart of the British people beats its strongest and most triumphant note in the vast and ever-increasing naval yards, where every week in every year some war craft dips for the first time into the stormy waters that surround the tight little island kingdom. To this fact and to the intense devotion of every loyal Englishman to his navy, its ideals, its marvelous record, its superb fighting ability and its undoubted superiority to any other modern navy must be attributed the creation and maintenance of the world's greatest navy. This inevitably sketchy outline of the sources, the position and the actual construction of Great Britain's navy will show that, in the building, and arming, and manning of modern deep-sea fighting machines they still maintain as to quantity an overwhelming superiority, while in the quality of the machines themselves and the fighting power of the men behind the guns only the cream of other navies can claim an equal fighting value.

The Navy Department at Washington some months ago instructed its Bureau of Intelligence to gather all possible data and to make an accurate comparison on the basis of number and displacement of warships actually completed and also a comparative valuation of the future navies of the seven great powers. The latter table, as turned out by the Navy Department, shows the tonnage of the war craft of the great powers as they should be when all the vessels now actually under construction and all those vessels for which money has actually been appropriated in the naval estimates of the various nations will be completed. It should be noted that in these estimates no account is taken of gunboats and other vessels of less than 1,000 tons displacement, nor do they include transports, dispatch vessels, converted merchant vessels or yachts or obsolete cruisers. The figures of the department are given here after subtracting the tonnage of the vessels actually lost by Russia since January 1 and the gains by the Japanese of the two purchased cruisers and the losses sustained during the fighting off Port Arthur. It will be seen that Russia drops from her position of third before the war to fourth in the first list and fifth under the second heading. From the table, which is conceded to be accurate by the naval experts of Great Britain and Germany, from both of which countries complimentary statements have been issued in regard to this data gathered by the Navy Department, it is seen that in the matter of tonnage of war vessels Great Britain stands practically alone.



The Powerful Engines of a First Class Battleship

The Conning-tower of a Modern Man-of-war



Pneumatic Calking Tool at work on a Huge Rudder

In fact, so much is this the case that the British Navy nearly equals in weight the combined navies of the other six great powers.

The table, as turned out in Washington shows the following figures.

Today	Tons
1—Great Britain	1,516,040
2—France	576,908
3—Germany	387,784
4—Russia	360,391
5—United States	294,405
6—Italy	258,638
7—Japan	222,930

If All Ships Now Authorized Were Completed	Tons
1—Great Britain	1,867,250
2—France	755,757
3—United States	616,275
4—Germany	505,619
5—Russia	474,700
6—Italy	329,259
7—Japan	232,434

It is interesting to note that, despite what this country would consider crushing expenditures for future naval construction, the combined navies of the world are rapidly overtaking the practically isolated superiority of the British Navy. Nevertheless, it will evidently be 50 years before any other two navies would equal that of Great Britain, and certainly a quarter of a century before even three of the combined naval forces of the other powers could equal in tonnage the vast floating fighting forces of King Edward VII.

THE GREATEST SHIPBUILDING PLANT.

To build such a stupendous weight of war craft every year of the very highest class in each and every detail that enters into warship construction has given rise to two marvelous centers of naval architecture, construction and brains. It is, however, of the Vickers-Maxim plant, at Barrow-in-furness, and of the wonderful machinery, the vast number of men employed, the tremendous tonnage actually put together and placed on the bosom of the ocean each year at this plant that this article will treat. Here is undoubtedly the greatest navy yard in the world which, while not so well known to the public, has involved a greater investment of capital, employs a larger number of skilled hands and covers a greater acreage of ground and turns out more valuable finished product each year than the Krupps, of Germany, and employs more labor than any corporation in the world, excepting alone the vast steel combination in the U. S. The latter corporation, however, has half a dozen widely separated plants, and the Vickers-Maxim plant, jutting out on the Lancashire coast, is in every sense the greatest single site of advanced human industry on the face of the globe.

WHERE A BATTLESHIP IS BORN.

The history of a battleship begins in a long, comparatively narrow and very lofty wooden shed, roofed in so that the work can proceed in all kinds of weather. This is where its history commences, but its actual birth takes place in a dingy little office surrounded by towering pieces of machinery, where the naval draughtsmen, working continuously under electric light, map out in detail the lines and curves of the hundreds of sections into which the architects divide any war craft of importance. In the carpenter shed the lines of the ship—those fateful lines upon which its speed and ability to fight, after all, primarily depend—are decided upon. The long, delicate curves of the warships are laid down on full scale—that is, the actual size of the ship is placed on a specially prepared floor with wooden materials, and the entire frame work of the ship is formed out with absolute accuracy in wood before a single stroke is done upon the battleship itself. While this entails a vast amount of labor and some expenditure, the absolute accuracy which the ideals of this shipbuilding plant demand require that this be done. The vessels themselves are laid down on the west side of the works. Here, after the keel has been jointed together, the curved ribs are gradually built up by hundreds of workmen, who, assisted by giant cranes worked by hydraulic power, bolt together the various joints of curved steel which go into the ribs of the ship.

THREE MODERN MOTIVE POWERS.

Modern science has come to regard steam as of secondary utility, although of first importance. The, steam is turned into three phases to suit the position and requirements of the special machines.

The steam may first compress water, and although water itself is nearly incompressible, it is capable of being forced with such enormous energy that the hydraulic machinery at Barrow is called upon when an almost supernatural amount of applied energy is required at any one point in naval construction. For instance, to lift a very heavy gun, an electric crane would be used, to which the power is supplied by slender copper wires from the dynamo-house, but in lifting the heaviest plates of armour, which are capable of throwing off a dynamite shell almost the size of a man, the workman calls upon the hydraulic energy. But the compressed water mechanism is difficult to carry any long distance and is much more expensive in operation. After the vessel is launched there are thousands of little jobs in turning off and shaving steel, in boring holes for the smaller attachments to the vessel and for clamping points high up on the vessel. Here the electrical machinery comes into play. While incomparably less powerful than the hydraulic apparatus, a workman can carry his electric drill, hammer or riveter, climb to any point on the vessel, and only needs to drag behind him intact the two slender wires that run back to the whirling dynamos in the electric power-house.

Compressed air is the third motive power. In putting warships together this keeps the middle ground between the tremendous, but unwieldly hydraulic force and the easily movable, but decidedly weaker, electric power. The compressed air is sent through rubber tubes in which wire has been woven into the rubber covering. This can do jobs which require an energy between that of the hydraulic and the electric force. More than that, pneumatic power has been found to be capable of a much more rapid operation even than the electric. It is with the compressed air that the majority of the rivets are driven into the battleships, and the "thud, thud, thud" of the pneumatic riveter, going at full speed comes in such rapid succession that the ear can hardly distinguish any separate stroke of the vibrating hammers.

The pneumatic tools come largely into play in the finishing off of the steel hull. The electric current is especially valuable in giving rotary power of enormous strength This enables the workman to operate huge lathes that cut through hardened steel as easly as yellow pine, and form the fittings of every description. The lighter blows of the pneumatic tools are, of course, given at a pace quite impossible to the man who handles the machine, and at the same time furnish an evenness of stroke and a softer blow than would be possible for any human arm going at any considerable rate of speed.

WISE MEN RUN NO CHANCES.

Wise—I want to take out an accident insurance policy.

Agent—Going away?

Wise—No. My wife has fired the cook.

WANTED—A case of headache that Kumfort Headache Powders will not cure in ten minutes.

SUCCESS is generally merited. The Success of LIBERTY TEA is due to superior QUALITY