

The Canadian Engineer

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GREAT BRITAIN'S MIGHTY WARSHIPS SOMETHING ABOUT THEIR ENGINEERING FEATURES

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Owing to the political situation in Canada at the present time, the navy of Great Britain is now very much before the public, and from recent actions, it might be intimated that the time is not far distant when the navy of Great Britain will be the navy of Greater Britain and become an imperial affair.

The columns of a technical newspaper are not a proper place to discuss the question from a political or patriotic viewpoint, but there are so many phases and aspects of the British navy and so little, apparently, known in Canada regarding its workings that it is but reasonable to assume that certain mechanical features will prove interesting reading to the patrons of *The Canadian Engineer*.

The fighting ship of today is a distinctly modern creation, and holds nothing in common with its predecessor excepting the ability to float. It is designed for one specific purpose, fighting only, and toward the accomplishment of that purpose the entire design is directed, but the following factors must receive due consideration:—

(1) The ship must carry sufficiently heavy armament to give a degree of striking power equal to anything that is likely to be met with in opposition during a time of action.

(2) The ship must have armor of sufficient strength and disposed about the vital spots in such a manner as to withstand sustained gun fire.

(3) The ship must have speed enough to enable it to manoeuvre against any hostile ship of its own type on terms of equality, if not superiority.

(4) The ship must be given sufficiently large storage of fuel—technically known as coal endurance—to

enable it to keep the sea for lengthy periods and make long passages without the need of replenishing the bunkers.

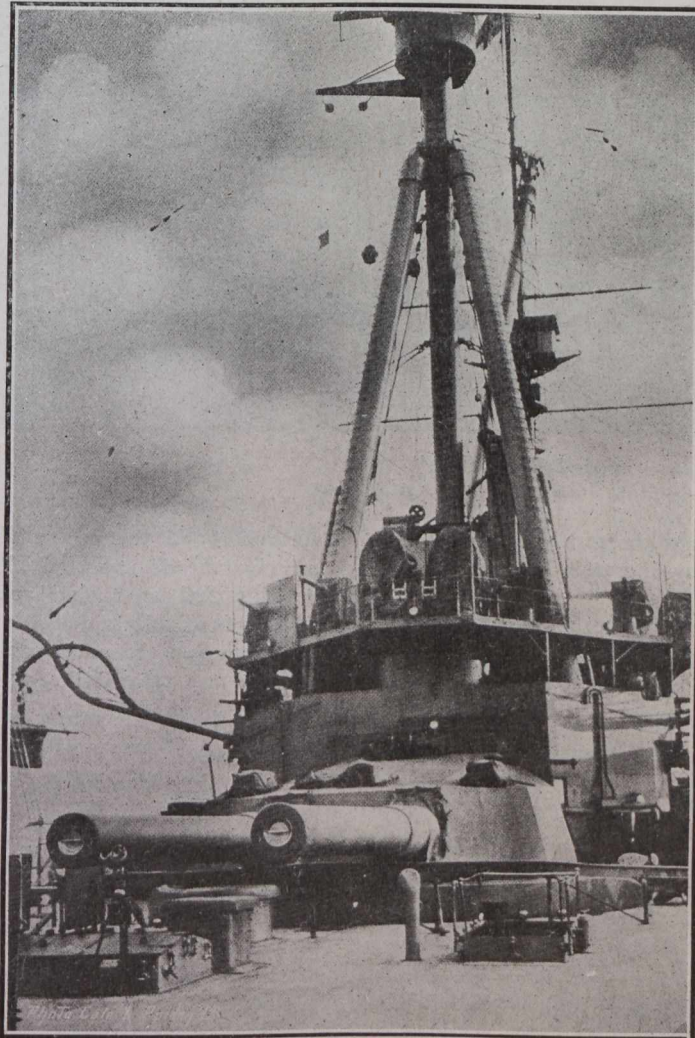
(5) The ship must be given an ample ammunition endurance.

(6) The living quarters of the crew must be of the best, especially regarding sanitation.

(7) The ship must be absolutely seaworthy; this is the most important consideration of all, for after the entire matter is threshed out a battleship of the present day is only a floating foundation for heavy guns.

The naval designer has a difficult task before him when he attempts to reconcile all the foregoing conditions in the design of an ideal ship, as they are of such a contradictory nature, and if a battleship of given tonnage were armed more heavily than any ship previously afloat, the additional weight imposed by guns and mountings would have to be saved in some other point—in armor, for instance. The result of such a design would give a ship of great aggressive powers, but exceedingly limited in its own powers of resistance. If unusual speed is desired this involves increases in engine room, increased boiler space, and increased coal storage to maintain the steaming requisitions of the design. As the total ton-

nage is a given factor it follows that when one phase of the ship is made abnormal some other phase must be weakened; just which factor he may best reduce and in what manner the reduction may best be brought about are a few of the problems that the naval architect must contend. Some of these problems, however, solve themselves; an example will make this clear.



A Battery of Twelve-inch Guns and Their Fire Control Station in the Rear.