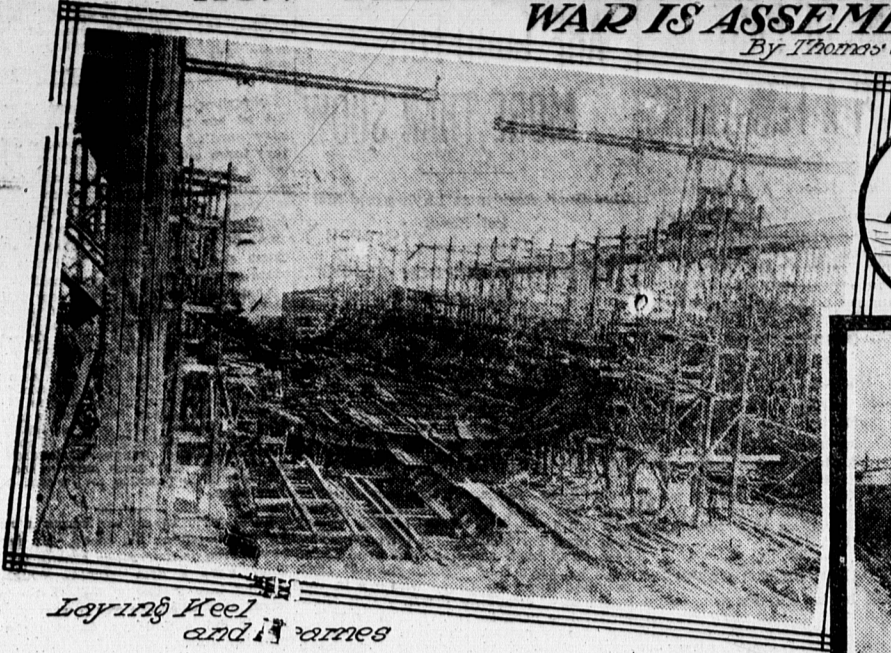


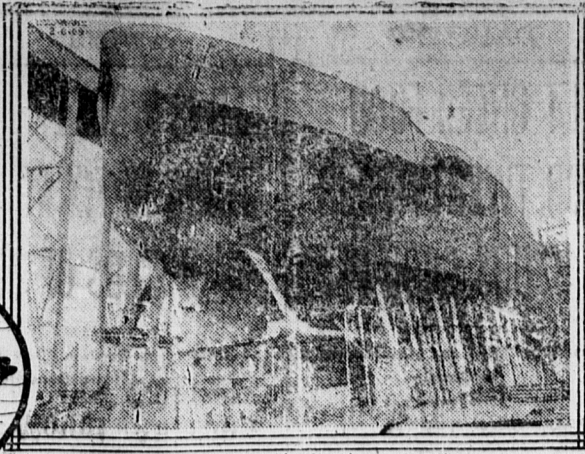
THE BUILDING OF A BATTLESHIP

HOW THE MODERN ENGINE OF WAR IS ASSEMBLED

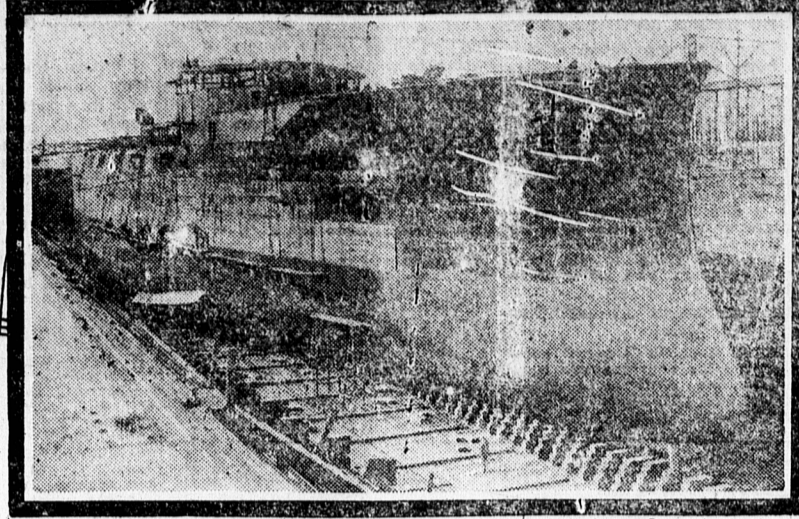
By Thomas Wilson



Laying Keel and Frames



View From Aft Showing Supports



In the Drydock after the Launching

Of the millions of people living far and wide in this country who have never seen one of the great fighting ships of our Navy, save in pictures, few can appreciate the vast amount of time and labor involved in the construction of one of these modern vessels; indeed, those who live within a few miles of the coast hardly realize what it means, and to the average person three years for the building of one of these floating fortresses seems like an exceptional time when it is taken into consideration the rapidity with which huge skyscraping buildings are erected.

In the battleship, however, not only do all the elements of the construction of an edifice ashore enter, but there are all the elements of building for the sea, ever a redoubtable foe in itself, but this vessel must be an embodiment of even more.

First it must be a craft so designed as to be seaworthy and speedy. Secondly, it must be the home of 1,000 or more men, form the crew. It must have the necessary apartments for the officers, with spacious office for the commanding officer, and should she be intended at any time to be a flagship, apartments for the commander of the fleet must be provided.

This alone represents practically all the features of a hotel ashore except that, for lack of space and facilities afloat, every-

thing must be condensed into as small a space as possible. After this comes the subject of weapons and the heavy belt of armor that plate her sides and make of the ship a fighting vessel fully capable of engaging with equal chances any other vessel of similar size and equipment.

A battleship is born, not in a shipyard, as many suppose, but in the drafting rooms of the Navy Department. The first lines of the vessel are of the hull, the number of tons of displacement having already been provided for in a proper bill that has been passed by congress. To the members of the Naval Board is left the settlement of the question of length, breadth and depth which will give the necessary tonnage.

Working on the basis that a vessel is to be so many feet long, so many feet wide and so many feet deep, the requisite lines are drawn to prescribe the shape of the vessel. After the lines have been examined a model is made from them. This model is made of wax, upon a scale of so many inches to the foot and is as accurate as it is possible to make it.

Then follows the trying of the model. In a huge tank of water and with mechanism of special make, the model is towed rapidly from one end of the tank to the other while experts watch the waves. By these waves can be told whether the

lines are too full for high speed or whether they are just right. To get the speed lines just right sometimes requires that the model be changed again and again by shaving off a little wax here and there or by adding a little more where the lines are thought to be too fine. This testing tank of the Navy Department is one of the most interesting features of the Bureau of Construction and it is believed that this country possesses the finest equipment of that kind ever made.

When the waxen model has been judged to be perfect a set of lines are then made from it and upon these lines is the foundation of the great ship that is to be built.

While all this is being done the greatest of all questions—that of armament

is being discussed. How many guns and of what calibre shall they be and what shall be the thickness of the armor belt are questions that are problems indeed, and in course of time they are disposed of and in the drafting-room the men take up the designing of the vessel to meet the requirements of the fighting equipment.

In the plans of a warship, as in the plans of a large building, nothing is left to guesswork. Everything is planned and there is a drawing for everything. There is not a rivet but what is shown, and from the huge smokestacks to the lowermost part of the keel there is absolutely nothing but what has been provided for.

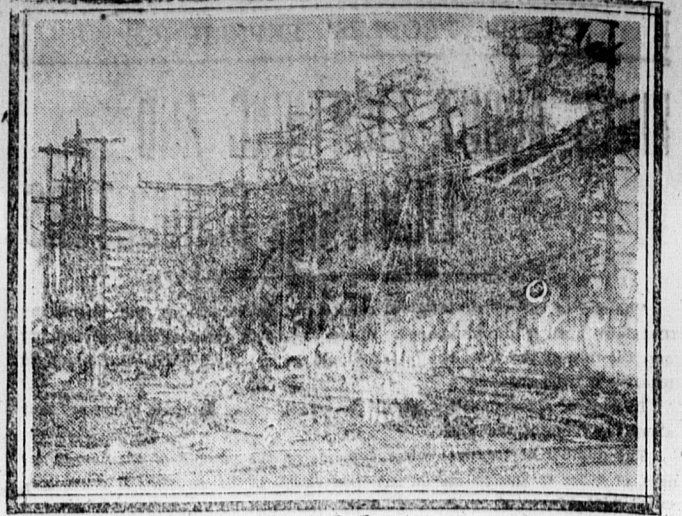
The division of the space within the hull, the parts of the ship that are to be set aside for living quarters, coal bunkers, water tanks, main engines, auxiliary

engines, refrigerating plant, laundry, etc., are all carefully studied and provided for until the whole ship, including everything except coal, water, provisions and crew, is on paper.

These drawings showing the vessel as she will appear as a whole—the profile—drawings of the various cross sections at various points from the bow to the stern showing the plain steel work.

Then there similar plans that show the interior arrangements, a mass of paper that weighs hundreds of pounds and represents an outlay of thousands of dollars.

Besides the plans there are the specifications, hundreds of typewritten pages giving, in minute detail, descriptions of everything in wood and metal that enters into the construction of the vessel. This data, after being revised over and over,



Placing the Plates

is finally printed, and makes up a volume of considerable size.

This might be called the preliminary work, for all this is done before even the contract is let. When the bids have been received and the contract is signed by the actual building of the vessel, which is none the less interesting than the designing.

A shipyard where a first-class fighting ship is built is a marvel in itself and the splendidly equipped establishment at Newport News, the natal place of so many of our finest vessels, is a city within itself, where several thousand men, representing a score or more trades find employment.

When the hundreds of sheets of plans have been received in the office they are divided among the various craftsmen, who will each do their share of the vast work. The greater number of the plans are sent to the pattern shop, where there are fashioned full-sized models of the pieces of metal that enter the construction of the hull. Other plans are sent to the rolling mills, where their pattern-makers do likewise, until at the different pattern shops there are cut out of light wood the exact size and shape of the ship.

These wooden models are then sent to the steelworkers, who, with large lathe and trip hammer, make in duplicate of the wooden pieces huge pieces of metal, each pierced with the requisite number of holes so that they may be fastened together without loss of time.

It is really marvellous how great slabs of steel, many inches thick, are rolled and pounded into shape to fit one to the other with absolute exactness so that the holes in one correspond with the holes in another. The plates for the hull, under the water and above the armor belt, are gotten out in one part of the mill, while the smaller pieces, stringers, bolts, etc., are gotten out in another part. Perhaps the conditions are such that three or four mills in different parts of the country are

working at the same time, each mill having its share.

In the meantime the shipyard hands are not losing any time. Whatever part of the work that can be done there, in the forges, in the joiner mill, or in other departments, is being carried on as rapidly as possible under cover.

Out in the yard, at the spot selected for the erection of the vessel, the railway gang is busy. Between two high, low steel piers, on which are far-reaching traveling cranes, the blocks on which the keel of the ship will rest are placed. Great timbers, 12 inches square, are first laid lengthwise to form a platform on which in pyramid fashion, are laid crosswise the keel blocks. Beginning these blocks near the water, the foundation is carried up land on a rise until it terminates where the bow of the vessel will be.

In giving out the work arrangements are made for the receipt of the material. Every piece of the metal or wood is given a number to represent the number of the battleship, for all ships are known by numbers before they are named, in addition to which each piece is given a serial number so that there will be no mistake in the assembling.

By the time the keel blocks have been prepared the first of the steel, the keel and frames arrives. Picked up by the long-armed cranes, the pieces of steel are swung through the air and laid on the blocks. Then begins the work of construction in earnest. A dozen portable forges, a score of pneumatic hammers and half a hundred men are engaged putting down the piece of the keel and the section of frame or rib. From that moment the work goes on apace, man after man is added to the force and bit by bit the keel extends and the great ribs rise.

As the ribs extend forward and upward carpenters erect the staging around the vessel until it is incased in a network of timbers.

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CONVENTION OF LIFE INSURANCE MEN OPENED.

ST. JOHN, Oct. 13—A meeting of the life underwriters of the maritime provinces took place this morning in Foresters' Hall, Charlotte Street. There was a large attendance from Nova Scotia, P. E. I., and outside points in New Brunswick, and much business was done, of interest principally to insurance men.

G. C. Jordan addressed the delegates, welcoming them to the city, and he was followed by Mayor Bullock, also in an address of welcome.

A. H. Chipman, of the N. B. Association, read a paper on "The Obligations of an Agent to his Company, his clients and to himself," which was favorably received.

It was spoken to by W. R. C. Hewatt, of the N. S. Association and L. H. Beer, of the P. E. I. Association, and a general discussion followed.

S. M. Beardsley read an interesting paper on "Lapsing," its Causes, Effects and Prevention," which was listened to with attention and followed by a general discussion, among those speaking being F. S. Farris and T. J. McCarron, N. B. Association.

THINKS BEDFORD IS A FAKIR.

MONTREAL, October 13—From evidence collected in this city it is believed there is ample ground for pronouncing the story of Edward Williams, Bedford, about his having murdered Ethel Kirade, at Hamilton, a fake. This evidence has been secured at the office of the White Star Dominion line here. Bedford stated to Scotland yard officials that he sailed from Montreal after committing the murder, on the steamship Laurentic under the name of Christopher. The murder was committed in February and the Laurentic did not make her first trip until April, and although the lists have been searched since she made that trip, no such name as Christopher is to be found.

EXPLOSION CAUSES DEATH.

MONTREAL, Oct. 14—With a roar which started all the inmates of the Bath Hotel, one of the boilers in the cellar blew up and Arthur Willet was so seriously injured that he died half an hour afterwards. Chas Bourke, a fellow-fireman was badly shaken, but is expected will recover in a few days.

A STAVE AT PARTING.

Good-night! the horn's faint music
Through the twilight fades away;
The cold night winds come creeping
O'er the fields we've ranged all day.
Now red o'er the hilltops smoulders
The last of the wintry sun,
And here's a stave at parting
For the gallant day that's done!

A chill wind moans from the sunset,
There's a thrush of rain from the west,
And horse and hound and rules
Jog homeward now to rest,
To rest and drowsy dreaming
Of many a long-past run,
And the wind on the well-loved moor-land
And the gallant day that's done!

By Cicely Fox Smith.

ALLIANCE WOULD SUE RAILWAY.

COBALT, Oct. 13—The Cobalt branch of the Dominion Alliance is applying to the attorney-general for permission to use the Temiskaming & Northern Ontario Railway for breach of the Lord's Day Act.

Dr. Munro and R.P. Rogers went down last Sunday where a steam shovel is excavating for new freight sheds and stopped the men working there. They appeared in the Cobalt court yesterday with a typewritten statement setting out a case against the government railway. They wanted to know how they should go about issuing a summons against the commission.

Magistrate Atkinson suggested they should apply to the attorney-general and it is understood this action is being taken.

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