

NEW BATTLE SHIPS OF LIGHT DRAFT

ENGLAND'S NEW MODEL

Borrowed From the Experiments of the United States and Other Countries.

From the best information obtainable it is ascertained that the light draught feature of the new British ships has been secured by incorporating the prominent ideas which prevailed in the Russian yacht Livadia.

The Livadia was built in Scotland for the imperial Russian household. As the prince who was most directly interested in that craft was easily rendered seasick, it was ordered that the Livadia should be built so as to possess the maximum degree of steadiness.

The principal dimensions of the Livadia were: Length, 190 feet; beam, 120 feet, and extreme draught, about 12 feet. The hull proper resembled an oval. Around this oval was built a cofferdam, which was secured to the hull.

The sides of the Livadia rose to a height of twenty feet above the water. On the upper deck was built a superstructure in salient form. Powerful engines were fitted, and despite the oval shape of the hull the under-water lines had been so well laid off that a speed of 15 knots an hour was actually obtained.

The light draught of the Livadia was assured by the great beam of the craft, supported by the additional flotation power of the cofferdam. This cofferdam was divided into longitudinal and athwartship compartments, and had a width at the widest part of fifteen feet.

No stores or weights of any kind were carried in the cofferdam. The outside shell, as it might be termed, served wholly to break the force of the waves and to lighten and steady the ship. Even with the cofferdam pierced and with every cell filled with water, the draught of the Livadia is increased only twenty-two inches, while at the same time the ship is rendered steadier.

The Livadia encountered a terrible storm in the Bay of Biscay while en route from Brest to Ferrol. The steadiness of the ship was remarkable. The greatest angle of roll recorded was four degrees, and the greatest angle pitch five degrees. This is trifling when compared with the thirty degree angle of roll each way from the vertical which has frequently been recorded on naval ships.

In point of steadiness and seaworthiness the Livadia demonstrated that she was a remarkable craft. The experience gained in the Bay of Biscay taught the value of the cofferdam arrangement, while additional ideas were gleaned as to the best methods for securing to the hull proper the outside protection.

In the new British battleship the design, it is said, first call for a hull proper with very pronounced sloping sides. Around this hull will be placed a cofferdam construction, reaching from well below the water to the level of the main deck.

The cofferdam is expected to serve the same as would pontoons if lashed alongside. When a vessel's draught is to great to permit her crossing a bar or shallow spot a common recourse in to lash pontoons alongside filled with water. When firmly secured the pontoons are pumped out and the additional flotation power causes the vessel to rise in the water.

A vessel's draught is lessened when the beam is increased. In their new design the British architects have built a vessel proper according to standard rules, though with perhaps more slope to the sides than would be the case were no outside hull provided. The steadiness of the ship has been increased by building a jog in the under-water hull on each side, which serves the same purpose as bilge keels. A bilge keel, it should be known, acts as a steady power much the same as a balance pole does for the tight-rope walker.

In adopting the "break-in-the-hull" feature the English designers have appropriated an essential American idea. It was Ericsson, the inventor of the Monitor, who originally incorporated a projecting overhang to a hull in order to secure greater righting qualities. In the ill-fated British warship Captain the English designers attempted a low freeboard vessel without an overhang, and with the result that that ship succumbed at sea. Where there is no overhang stability is secured by building high sides.

A high-sided ship, which is further made steady by reason of bilge keels, possesses the advantage of carrying her battery well above an ordinary sea. In slow freeboard vessel of quick movement it might often happen that the gun could not be worked in even a sea of moderate height.

Additional data regarding the new British battleships give the length of each craft as 425 feet, beam 85 feet and draught 22 feet. The displacement will be about 13,000 tons. The engines, it is said, will develop about 18,000 horse power, and it is expected that the speed will approach closely to nineteen knots.

The reported horse-power development planned for the new British ships is a great advance on the power generally planned for battleships. The engines of the new Maine are calculated to develop 16,000 horse power more than the engines of the Indiana, Massachusetts and Oregon type.

In the case of the Livadia the outer cell compartment was made of comparatively light material. It was intended to take up the vibratory effects of each wave shock, while at the same time adding to the flotation qualities of the ship.

The cofferdam arrangements of the new British ships, it is understood, will be constructed with special reference to strength. The armor will be placed on the outer skin, and this when backed at the water line vicinity with corn pith serves to close any opening occasioned by the entrance of a shot. This is effected through the medium of the expansive properties of the corn pith matter when brought in contact with water.

The first of the new British battleships will be laid down in about four weeks time. The prototype of the class is expected to be finished in one year hence.

The new Maine is now building at the yards of the Cramps at Philadelphia. Owing to the trouble at present experienced in the United States in securing prompt delivery of steel it is feared that the Maine will be delayed fully six months in her completion. A conservative estimate places the completion of the Maine at early in the summer of 1901.

AFTER PACIFIC COAST BUSINESS.

San Francisco Bulletin.

The jobbers of St. Louis and Chicago through the St. Louis Traffic Bureau have brought suit before the Interstate Commerce Commission against the transcontinental railroads, the purpose of which is to secure for Eastern jobbers the same rates of transportation for small shipments as for carload shipments. If the Interstate Commerce Commission can be persuaded to comply with the request of the Eastern jobbers the trade of Pacific coast jobbers will largely fall into the hands of the Eastern firms. The St. Louis and Chicago jobbers made their claim for equal rates last year before the transcontinental railroad companies and were defeated. The advantage of lower rates to carload shippers than to the retail trade is about all that enables local jobbers in any section of the country to hold a trade that is often secured at a considerable outlay. If the St. Louis or Chicago jobber is given the same rates for hundred-pound shipments that the jobber has for a carload, the former can supply retail dealers right up to the doors of the jobbers. The Pacific coast jobbers and the Eastern or Middle West jobbers buy in the same market and the cost of transportation is the principal factor in determining points of supply. The suit commenced by the Middle West jobbers is an attack upon Pacific coast business all along the line, and will doubtless unite Pacific coast jobbers in defense. The railroad companies are not nominally defendants, as the proposition is not to reduce rates, but to abolish distinction between carload and package shipment.

Frank Braugwin of London, who was recently elected a member of the Pittsburg Carnegie Institute International Art Jury, has cabled that he will be unable to come to America at this time. William Stott, of Oldham, the eminent English painter, has been selected to take his place.

BUSINESS POINTERS.

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