

From *Broad Arrow* of 13th July the details of the experiment on the value of the *Glatton* as a floating battery; the strength of her armor, the power of resistance to the impact of a 600 lb. shot as tested by the 25-ton gun of the *Hotspur*; is given to the readers of the *VOLUNTEER REVIEW* in this issue, and the editorial remarks of our contemporary are also re-published.

Everything connected with the British Army and Navy possesses interest for the people of Canada, we are an integral portion of the Empire, and therefore cannot be supposed to look on quietly while the whole system of offensive and defensive warfare as far as its machinery and man power are concerned is undergoing a practical revolution with nothing but the vaguest and most unsatisfactory theories to base its details on.

In the present case it has been proved that armor can be built of sufficient strength to resist any gun power in existence, but that is only one step towards the solution of the problem before us.

A ship to be an effective war machine, must have mobility and be able not only to live in any sea-way but be easily manœuvred, as well as capable of fighting her guns at all times.

During the days of the glory of England's Navy, the captains of her wooden ships never hesitated to engage in a gale of wind and on more than one occasion made that very circumstance the agent of victory in the face of great disparity of strength.

Now would the *Glatton* be able to fight in a heavy sea? Her free-board is not above three feet over the water line, vessels of her class will not rise to a sea, and in a gale it must wash high up on her turret, so that her adversary had only to keep to windward and pelt her at his leisure, she could not return a shot, in this case the old question of the weather gunge would be revived.

The *Hotspur* has a free board of nine feet, not much to boast of in a similar case, but it would secure the advantage of an occasional shot being fired provided she did not heel over beyond eight degrees; a very unlikely contingency.

But the most extraordinary portion of the late experiment is the fact that at a cable's length the finely and expensively wrought rifled gun could not make as good practice as the old 68 pndr. smooth bore.

Anchored inside the break-water with only the expended power of the inshore beave of the sea to deal with in water as smooth as a mill pond, with the loading, training and pointing of the gun effected by the nicest machinery, with *bull's eyes* painted on the target and training marks carefully laid out, the distance known to an inch, with her antagonist attached by two hawsers, five trial shots were required before the turret was hit a couple of feet below the point indicated, a second venture and the shot still was untrue but struck the turret in a weak

place, but neither of the hits penetrated the backing and beyond starting a few rivets and bolt heads on the inside, no damage of a serious nature had resulted.

But what is the value of such an experiment, it never could occur in all its incidents in a naval action, and it might as well have been tried on the sands at Shooburness, the 25 ton gun might at least in that case have borne out the theories of its projectors, that with rifling and careful sighting its practice would be infallible, the experience gained just amounts to this that as far as accuracy is concerned rifled guns are useless at sea.

Put those vessels outside the break water in an open sea-way where a naval action will occur and instead of two shots out of six hitting, the average would be under one in a hundred, a cable's length was the favorite fighting distance close hauled on a wind, French, Spanish and Yankee vessels can tell the proportion of shot from the old 32-pndrs. which British seamen could plant in their counters at that distance, and how many times shot after shot was sent into the same port sills and jamb till the gangways were laid open and the guns of the batteries of the exposed quarter dismounted or silenced because their tackles and fighting bolts were shot away.

We would ask what chances are there for such effective work being done by any of those costly experimental vessels, the offspring of Mr. Reed's genius and ability, will they ever be able to render any such service to the country, and what particular kind of artillery should they be armed with? All those questions are suggested by the experiment of the 5th July, for we hold it to be indisputable that in every respect but one it was a failure, and that was that a 600lb. shot fired at 200 yards was unable to damage materially the *Glatton's* armor or machinery.

If the British authorities are really desirous to arm their fleets with effective weapons it must be with those of more power at 200 yards than the 25 ton gun has shown, and the shot must not punch rivet holes but smash a plate to shivers or drive it bodily in-board, so that a second shot planted in its neighborhood will search the inside of the bulwark opposed to it.

A rifled gun will not permit such a projectile to be used and a resort to the smooth bore is a necessity. As long as mere artillery officers are consulted as to the proper armaments for the navy and their opinions alone considered, the English people may be prepared for failures like the *Hotspur* 25-ton gun, and for one of the chief problems connected with her navy remaining unsolved.

(From the *Broad Arrow*)

Some interesting particulars will be found in our intelligence columns relative to the important experiment off Portland, on Friday,

the 5th instant, but there are some points which call for our special notice in connection with the general subject of naval gunnery, which has recently occupied our attention. We propose, therefore, to use the judge's privilege of summing up previous to passing judgment, promising the reader that we will not recapitulate more than is necessary to make what we have to say intelligible.

The morning broke bright and serene, ushering in a lovely summer's day. To the ordinary eye the sea was perfectly calm, but it would be an error to suppose that it presented a platform that was perfectly at rest, and that no movement occurred that could be supposed to affect the sighting of the *Hotspur's* gun. The bay wore an unusually animated appearance, the Admiralty flag flying in the *Vigilant*, and that of Admiral Sir Rodney Mundy, in the *Black Eagle*, whilst Admiral Sir Henry Codrington, without a flag, was present in the *Princess Alice*, and the *Discepoli* and *Salamander* lay in positions convenient for visitors to observe the experiment at safe distances. When, at 8.30 a.m., the naval, military, and civilian visitors embarked for their respective ships, they found the *Glatton* moored head and stern inside the breakwater, with the *Hotspur* attached to it by two hawsers, moored broadside on at the distance of 200 yards. The programme was issued for the single 25-ton gun of the *Hotspur*, mounted on Scott's broadside carriage, on a turn-table, with the view of ascertaining the endurance of the working machinery of the latter vessel. The turret contained two 25 ton guns, mounted on Scott's carriages, the order for their removal, to which we alluded to in our editorial columns last week, having been rescinded at the last moment. The ports were closed by iron shutters, backed with heavy timber, supported by struts. A live kid and some basins of water were placed inside the turret, but there were no representatives of the gun's crews such as hammocks, screens, or arrangements might have afforded. Mr. Eames, the chief engineer at Chatham Dockyard, and a party of officers and men, remained on board during the experiment.

Bull's eyes were marked 18 inches below the top of the turret to the proper right of the right gun, and the centre between the two guns, 14 inches of solid iron plate, 12 inches of armor, and half an inch of inner skin protecting the weapons. At these spots 600 lbs. Palliser shot were eventually fired with 85 lbs. of pebble-powder charges, by the most skilful marksman of the *Excellent*, a chief petty officer of much experience in armor-plate experimental firing, acting under the guidance of the warranted gunner who usually conducts such experiments, being under the direction of Captain Boys, R.N. As was anticipated by experienced artilleryists, the process of hitting a bull's eye at 200 yards proved by no means so easy a matter as, under the exceedingly