



# The Volunteer Review

## AND MILITARY AND NAVAL GAZETTE.

A Journal Devoted to the Interests of the Military and Naval Forces of the Dominion of Canada

VOL. V.

OTTAWA, CANADA, MONDAY, JANUARY 16, 1871.

No. 3.

### HER MAJESTY'S SHIP "CAPTAIN."

PROCEEDINGS OF THE COURT MARTIAL ON THE CAUSE OF HER LOSS.

(From the *Broad Arrow*.)

[CONTINUED.]

On Saturday morning, the 1st of October, Mr. BARNABY continued his evidence:

Believes that the reports of the Controller of the Navy on the construction of the *Captain* were printed by order of Parliament, as well as those of Admiral Symonds. Witness had prepared and now delivered to the Court a diagram—it was what was the right moment at some angle between  $31\frac{1}{2}$ , which he stated to be 5700 foot tons, and  $54\frac{1}{2}$  when the stability vanished. Found that the righting moment at an intermediate position—namely, 40 degrees, was 3600 foot tons. Has not placed that on the diagram, because that diagram does not refer to the ship as she was at the time of her loss, but shows what she would have been had she not had the assistance of her poop and fore-castle. Diagram showing how the poop and fore-castle added to the stability of the *Captain* was produced, showing two curves, identical with that already before the court. Beyond the angle of 14 degrees her stability would have been greatly increased had the side been carried up between the fore-castle and poop.

Mr. BARNES, Assistant Constructor of the Navy, was next examined, and produced and authenticated the report referred to in the printed summary as having been made by him.

By Captain Hancock: Conducted the experiment for inclining the *Captain* for ascertaining the position of her centre of gravity.

After completing the experiment of inclining the ship, was not aware whether the ship had less stability than was intended for her by her designers. Had no doubt as to her being a stable ship. Had a conversation with Captain Burgoyne on the ship being inclined with the ballast. Captain Burgoyne asked witness what inclination. Answered—6 degrees. Captain Burgoyne then said—"Is it so much?" "Yes." Captain Burgoyne then said—"This ship is not so difficult to get over six degrees: beyond that she will not go." Then told him there was on the upper deck 80 tons of ballast; and if there were 80 tons more she would go over to about double that inclination. Witness understood Captain Burgoyne to refer to trials of his ship which had taken place when under sail—8 degrees was the greatest used for the experiment. May mention

that nearly the whole of the ballast had been removed to the starboard side of the ship. The turrots, which were trained about mid-way between the beam and the fore and aft line, fetched away, and after making some oscillations, trained themselves on the starboard or immersed side of the ship. This produced an inclination of, as near as he could state without actual measurement, about 7 degrees. The witness was of opinion that the catastrophe of the loss of the *Captain* may be attributable to her want of stability to bear the angle of heel to which she was thrown and none other.

By Captain Rice: Undoubtedly the safety of the *Inconstant* may be attributed to her high sides when it is known as a fact that on the night of the 6th September she carried double-reefed topsails and foremast staysail, such as the *Captain* is supposed to have had. Yet at a small angle the *Captain* was more stable than the *Inconstant*. Thinks it probable that the loss of the *Captain* (placing aside the question of management) may be attributed to the low freeboard, but there are other circumstances connected with it—as in his report, page 18 of the printed summary.

By Captain Boys: He never contemplated that the *Captain* would go over more than 34 degrees.

By Captain May: As compared to the *Monarch* and *Hercules*, would have hesitated to propose so much sail on his own responsibility, but the *Captain* was an experimental ship. The plan adopted in inclining the *Captain* was the usual one, and which would be applied supposing a ship had only 2ft. freeboard, or even less; but the method adopted for finding the stability in foot tons is a novel one, and would only be used where the ship had a low freeboard. Witness is of opinion that the ship would not very often, if at all, be in such a condition as mentioned in the summary, for when so reduced by loss in weight as to make her stability very slight there is the proviso of water ballast. This formed an important feature in her construction, and was referred to by Messrs Laird in the letter of August 15, 1866, and looking to the fact that the water ballast would be resorted to when only a portion of the coals, &c., would be consumed, and as Captain Burgoyne and his officers on board were well acquainted with this feature, no doubt they would know when to use it. The *Captain* was not considered in the Constructor of the Navy's department as a ticklish craft.

By Captain Commerell: In smooth water, and having no reference to sudden gusts of wind, the *Captain*, no doubt, could have been inclined to 15 or 16 degrees with safety. As

built she was undoubtedly less stable than as designed.

The examination of witness was continued for some considerable time, being wholly of a scientific character as to calculation on design for building ships, ascertaining centre of gravity, &c.

Mr. WILLIAM LAIRD, of the firm of Messrs. Laird, Birkenhead, was examined. He said—The *Captain's* draught of water according to the design, with all her weights on board, was to be forward 22ft. 6in., aft 23ft. 6in. Had not built a ship previously of such tonnage and special arrangement of hurricane deck. The excess in weight over the total weight given in the statement of weights forwarded to Captain Coles on the 12th July, 1866, is spread over the various parts of the structure, and cannot at all be attributed to any one portion. The statement, with all the letters accompanying it, being delivered into Court, the witness said they would not give any clue to the additional weight which at Captain Coles' request was put into the ship. In a ship of a novel type, with a distribution of weight differing in many respects from other ships, it was difficult in the then state of the design—which necessarily left some of those parts peculiar and special to the design in a state subject to further consideration, as the work progressed—to arrive at as accurate results as could have been done if the ship had been of a more ordinary type, or the consideration of a ship was further advanced. From such an estimate as could be made by us, we thought we could place the centre weight 2ft. 6in. below the water line, although having regard to experiments made with other armor-clad ships, and through a communication received from the Admiralty stating they thought the weight would prove to be high, we were prepared to find it considerably higher. The papers handed in were merely as to the extra weight of material; the one now produced contains the principal elements of the ship as designed and as built. As a full power sailing ship considered her perfectly safe, and did not expect the effect of the sail she carried would have put her over to more than the usual angle of heel. Should have expected from 7 to 9 or 10 degrees to have been that angle; and might add that on the voyage from Holyhead to Portsmouth, being on board, she experienced bad weather, with a heavy sea, and from the way in which the ship heaved he was led to feel every confidence in her stability and buoyancy. It was true that on this voyage steam only was used, and no sails; and therefore had no opportunity to judge under what angle she would heel under a pressure of sail, but the reports after-