

THE TORPEDO BOAT DESTROYER FERRET.

The third of the large fleet of torpedo boat destroyers built for the British government has just completed her official trials, and the builders, Messrs. Laird, of Birkenhead, have to be congratulated on a highly successful issue.

The Ferret is 194 feet long between perpendiculars, with 19 feet 3 inches beam, the ratio being, therefore, about 1 to 10, and at a draught of 5 feet the displacement is 220 tons. The hull is divided into twelve main compartments by water-tight bulkheads, and a water-tight lower deck is built forward of the machinery space, below which there are eight separate water-tight magazines and storerooms, and a water-tight flat is fitted aft of the machinery space. Aft of the machinery 40 feet is devoted to the wardroom and cabins where the officers are berthed, and the crew is accommodated forward. The bunker capacity is 70 tons. The armament consists of one 12 pounder and three 6 pounder quick-firing guns, one pair of torpedo tubes on the deck, and one tube in the bow. She carries the new 18 inch torpedoes.

The engines are of Messrs. Laird's fast running tri-compound type, the cylinders being 19 inches, 29 inches and 43 inches in diameter by 18 inch stroke, and it is worthy of notice that all parts of the engines are accessible when working at full speed, as Messrs. Laird have been able to arrange a good passage at the back of the machinery, which will no doubt be found of great advantage compared to the ordinary torpedo boat type of engine room. The two circular condensers are placed forward of the main engines instead of in the wings, which involves an increase in length of engine room, but gives a wider platform between the engines and a good passage all round, as indicated.

The average speed of six runs on the measured mile was 27.612 knots per hour. Mean indicated horse power, 4,507.

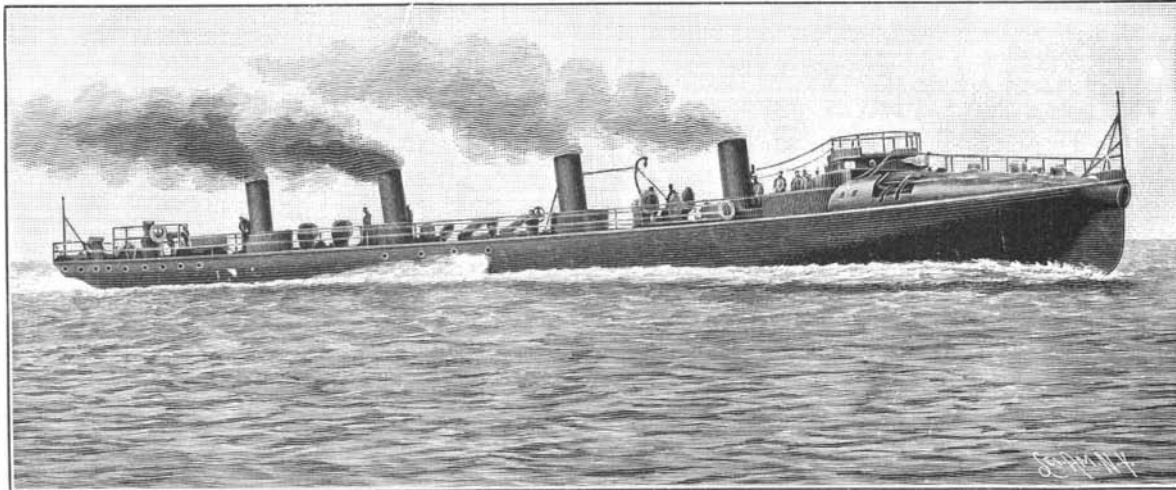
When considering the design of the boat, it became necessary to adopt the water tube type of boiler on account of the saving of weight which it admits of as compared with the locomotive or any other type, and, after careful consideration, Messrs. Laird decided to adopt the Normand type, which has been proved in the numerous torpedo boats built by Messrs. Normand at Havre to give excellent results. The Ferret's performance has fully justified the selection, no difficulty being experienced throughout the three hours' trial in maintaining the steam at the intended pressure. There was no indication of priming, either on the official or any of the preliminary trials, and, therefore, one of the principal difficulties of the water tube type has been overcome.

The official trial took place on the measured mile at Skelmorlie, on the Clyde, on the 10th of July, in the presence of Mr. Deadman and Mr. Pledge, representing the Constructor's Department of the Admiralty, and Mr. Ellis, the engineer-in-chief, and Mr. Hobbs, of Devonport Dockyard. The builders were represented by Mr. J. M. Laird and Mr. R. R. Bevis, Jr.

The three hours' trial was commenced at 10:15 A. M., the vessel having on board her full normal weight, the coal in bunkers being 26 tons, and the average speed for the whole time was found to be 27.51 knots with 361 revolutions. After the run the usual trials as to maneuvering were made—the helm was put from hard over to hard over both ways in less than 12 seconds each at full speed, and the steering was proved to be entirely satisfactory. There was a remarkable absence of vibration when running at full speed, and no hitch

of any kind occurred in the machinery. The speed for the six runs on the measured mile is the highest ever yet recorded by any vessel for Her Majesty's navy on the Admiralty official trial, and, seeing that the speed of the engines was only 361 revolutions per minute, there seems no likelihood of there being any difficulty in maintaining this at future times when the vessel is in commission.

We are indebted to Engineering for the foregoing

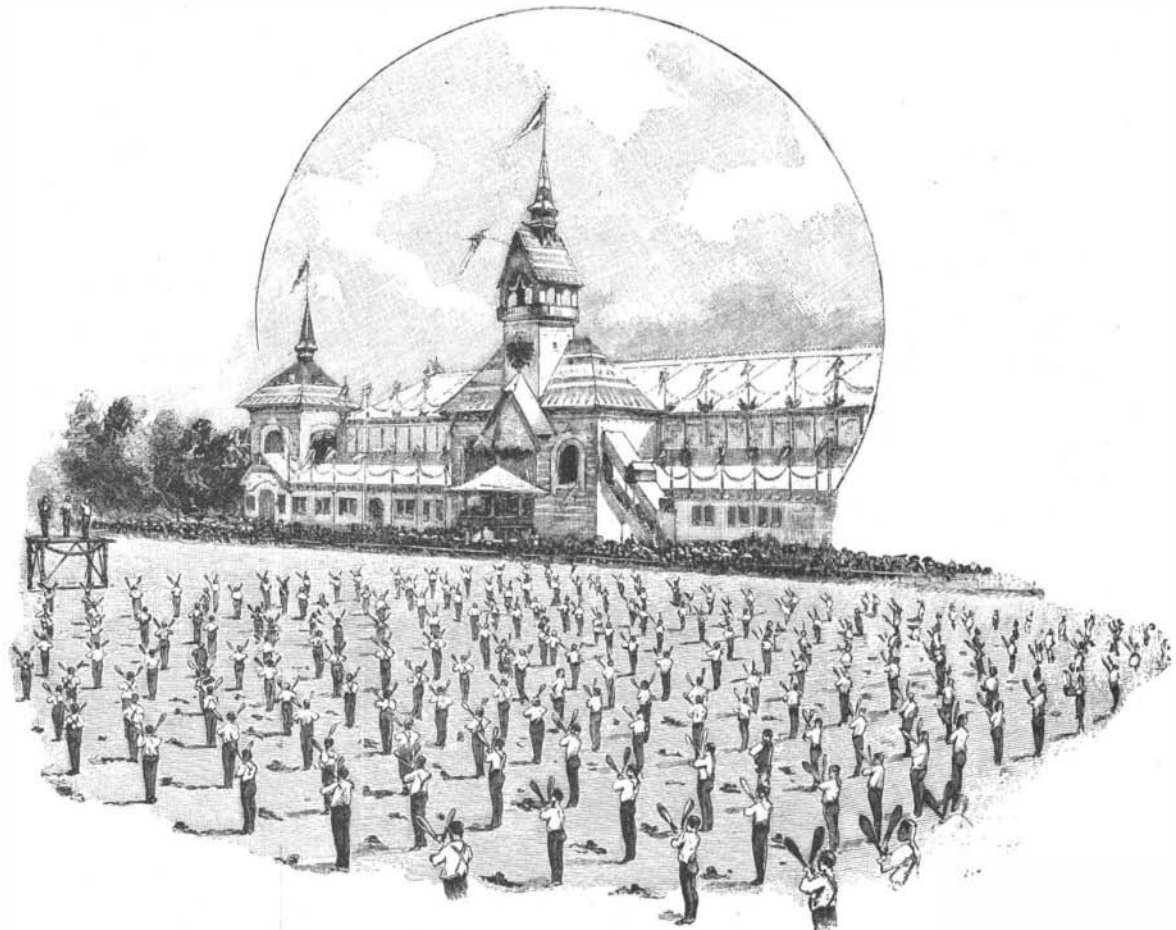


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particulars, and to the Engineer for our engraving, which is from a photograph of the vessel taken when going at highest speed.

THE FESTIVAL OF ATHLETES IN BRESLAU.

Every four or five years there is a review of the disciples of Jahn, in the form of a universal German "Turnfest," or festival of athletes. The eighth of these festivals was held in Breslau from the 21st to the 25th of July, and was attended by thousands of athletes from all parts of Germany and other European states, and even from far-off America. About 12,000 guests marched from the railroad station through the richly decorated streets of the Silesian capital. In the southern part of the city, at the end of the beautiful Kaiser-Wilhelm Street, is a fine square of twenty-nine acres, that was given up to athletic sports during the festival. On the south side of this square a fine hall was erected which commanded the whole square. It was built entirely of wood, ornamented with towers, and the interior was handsomely decorated. The windows reminded one of painted church windows, but really were only canvas saturated with oil. The



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first evening there was a fine reception, and the next day a long procession marched through the city. Fifteen thousand men took part in this and about 600 were dressed in fancy costumes, thus varying the monotony which must have prevailed if the procession had been composed entirely of the different clubs in their gymnastic suits. After the procession the athletic sports began with a club swinging performance by 250 men from Saxony. This is shown in the ac-

companied illustration, for which we are indebted to the Illustrirte Zeitung. There were performances by specially fine gymnasts, and contests of various kinds, including a game of football. On the last afternoon the prizes were distributed, bringing the festival to a happy close.

Death from Acid Fumes.

The Druggists' Circular tells of a gentleman of this city who lost his life some weeks since by a rather uncommon accident. In the prosecution of his business he occupied a portion of a building so constructed that to reach a floor occupied by another tenant it was necessary to pass through his premises, and this tenant used large quantities of nitric acid in a manufacturing business in which he was engaged. While two men were carrying a carboy of this acid through the store of the gentleman mentioned it was broken in front of his private office. As the fumes be-

came manifest all other persons in the vicinity fled, but the gentleman, fearing that fire would result, insisted on remaining and attempting to prevent further damage. This delay proved fatal. He inhaled enough of the deadly vapor to induce such extensive injury of the lungs that he died the next day.

Had the unfortunate man been more familiar with the extreme danger of inhaling the vapor of nitric acid, he would doubtless have escaped with his life, but he evidently failed to understand or realize the fact that its immediate effects are not always its worst ones.

It is doubtful if even many druggists and chemists are fully aware of the risk involved in the inhalation of this or similar corrosive vapors. When any of the liquids from which they may arise happen to be spilled in appreciable quantity, prompt retirement from the scene is necessary to insure escape from severe if not fatal injury.

Preservation of Wood.

The wood is impregnated through its pores, under any well known process, first with a strong solution of calcium bisulphite and then with a corresponding solution of caustic lime. A monosulphite is formed, which is subsequently oxidized by the action of the air to calcium sulphate, and becomes practically part of the ligneous structure. — A. A. Hely, Westminster, Eng.

Sensitizing Canvas, Silk, and Paper.

A mixture of bromide and iodide of silver is precipitated at a temperature of 28° C. in the presence of a trace of gelatine, and is maintained at that temperature for an hour or so with constant agitation, so as to prevent the precipitate from coagulating. It may then be washed in a centrifugal machine to remove the alkaline nitrate, and is finally well mixed with a cold solution of arrowroot which has been boiled in water till perfectly clear. The fabric or paper to be sensitized is then coated by means of a sponge in the dark room and dried, and if the emulsion has not been washed it is soaked in water for an hour and dried again. Development takes place as for an ordinary gelatino-bromide emulsion. Prints so made lend themselves far more readily to finishing in crayons, oils, or water colors than when the fabric has been coated with an emulsion in gelatine, as there is no fear of the whole film stripping off the canvas. Paper prints made with the arrowroot emulsion may also be finished both with chalk and the brush, which was impossible before, "owing to the impenetrable nature of the gelatine film." — G. J. Junk, Berlin.