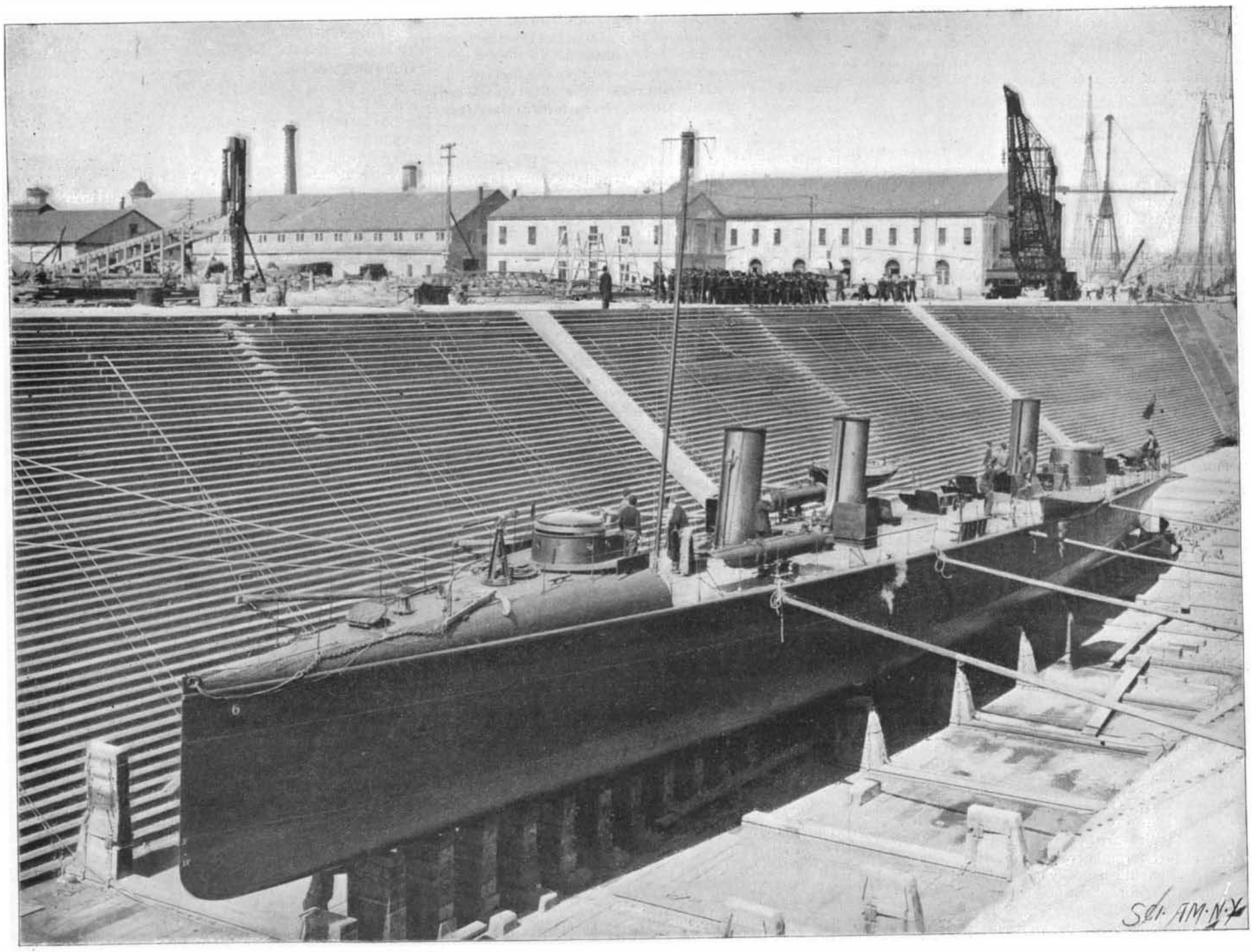
THE TORPEDO BOAT PORTER.

Torpedo boat construction has exercised a powerful influence upon the art of steamship building, particularly in the direction of reducing the weight and improving the quality of the materials of construction and in producing improved designs of engines and boilers. Torpedo boat builders were among the first to make use of high piston speed, and they have contributed more than any other class of engineers to the development of the water tube boiler. In our issue of March 6 we gave an illustration of the torpedo boat Porter, then known as No. 6, which was reproduced from a photograph taken when she was running at full speed; and the accompanying illustration, showing the little craft in dry dock, No. 2, at the Brooklyn navy yard, will give the reader some idea of the beautiful lines upon which the hull of this fleet vessel is modeled. It will be noticed that the water line shows a draft of about four feet at the bow, but when the boat is being driven at its full speed of nearly 29 knots an hour, it settles at the stern and lifts its forefoot clear of the water to such an extent that five or six feet of the keel is visible. This is a common occurrence when the smaller class of light draft torpedo boat destroyers and pleasure yachts are driven at speeds in the neighborhood of 30 knots an hour.

Owing to the altitude from which the photograph was taken, we get an excellent idea of the arrangement of the deck. It will be noticed that a turtle back deck extends from the bow aft as far as the rear of the forward conning tower. This is intended to give the boat increased buoyancy when she is running against a head sea. Just forward of the conning tower is a one-pounder rapid fire gun on a tripod mount. Two other one-pounder guns on similar mounts are located on either beam on the after part of the deck. The long cylindrical object seen on the port side of the boat in front of the forward funnel is a torpedo launching tube. There is another one amidships on the starboard side, and a third tube is located at the stern on the center line. The launching tube is nothing more nor less than a gun, of which the torpedo is the projectile. The latter, loaded with its charge of explosive, and with its air reservoir charged with compressed air, is thrust into the gun, or tube, at the breech; the breech block is then closed and the torpedo is ejected by firing a small charge of powder or releasing a charge of compressed air. The launching tube is carried upon a central pivot mount, and may be elevated or depressed in the same way as an ordinary gun. In making an attack, the torpedo boat would charge upon the ship at full speed, and when she was within torpedo range she would swing round to port or starboard so as to bring her launching tubes to bear. If the bow torpedo or that amidships failed to reach the mark, she would have another chance with the tube that is located at her stern.

As the Porter is built of the very thinnest kind of plating, she would be penetrable by the smallest rapid fire guns of the enemy, and the mad charge through the hail of bullets and shells that would be rained upon her would evidently be somewhat of the nature of a forlorn hope. However, it is not likely that torpedo boat attack will often be carried out in broad daylight. The best work of these little boats will be done on dark nights and in foggy weather; and even if they never strike a blow, the moral effect which they will exercise upon the enemy will be well worth the cost of their construction and maintenance.



THE TORPEDO BOAT PORTER IN DRY DOCK AT BROOKLYN.

Solution for Chromatizing Dry Plates for Red.

By treating alizarin blue with bisulphite of soda a salt is formed which is very soluble in water and crystallizes in brown needles. On adding ammonia to the solution, the latter changes from brown to a greenish-blue color. This, however, cannot be kept for longer than a day. To sensitize plates, they are plunged into the following solution for three minutes:

Solution of bisulphite of alizarin blue of a strength 1 in 500	20 minims
Ammonia	5 minims
Water	1 ounce

Then allow them to dry.

These plates are extremely sensitive to the radiations comprised between C and A, with a maximum between B and C and a minimum toward A of the spectrum. By prolonging the exposure, the action extends toward the ultra-red. From the blue, where the action is very energetic, the sensibility diminishes, at first slightly, just toward E, then very rapidly to a minimum near D; but the general sensitiveness of the plate is slightly diminished. The presence of a little nitrate of silver in the solution increases the sensitiveness and extends it just up to the infra-red. To produce this effect 30 to 50 minims of a solution of nitrate of silver (1 in 40) are added to the bath given above.

To make the alizarin salt, mix the commercial paste containing 12 per cent of dry alizarin blue with 35 per cent of a solution of bisulphite of soda of 30° Be. Allow to macerate for ten or fifteen hours, and filter off the blue that remains unacted upon, which can be used for a future operation. The solution is now ready for use.—Trans. C. F. T., from Moniteur de la Photographie for the Photogram.

Removing Paint by the Sand Blast.

Removing old paint from metal surfaces in structural steel and iron work—bridges, for example, and the like—previous to repainting, involves an expenditure of time and money quite beyond the conception of anyone who has never given the matter serious consideration, says Kuhlow's German Trade Review. Whether the sand blast, which is so efficient is cleaning castings, would perform satisfactorily in this direction is, therefore, a question of considerable economic interest. Whatever experiment has thus far been made has shown what was to be expected, that when the paint is reasonably new and the oil is in a slightly elastic state, it is exceedingly difficult to remove it by sand blast, though later, when the oil has become more oxidized from longer exposure to the air, it yields more readily to the attack of the process. Paint, therefore, which is old enough to warrant its removal and replacing by a fresh coat would probably give way before the sand grains in an encouraging manner. In one instance the sand blast was used to clean between decks of a cattle steamer, which was in an exceedingly bad condition, with many coats of old paint on the ironwork. The results were highly satisfactory as to the quality of work done, but the time consumed was excessive. The air pressure used was, however, only about ten pounds per square inch, and it is, therefore, reasonable to suppose that if, say, from forty to fifty pounds pressure had been used, the results might have been satisfactory in point of both quality and economy of work. At any rate, it would seem worth trying the process further. The promise of money saving that it holds out is certainly seductive.

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