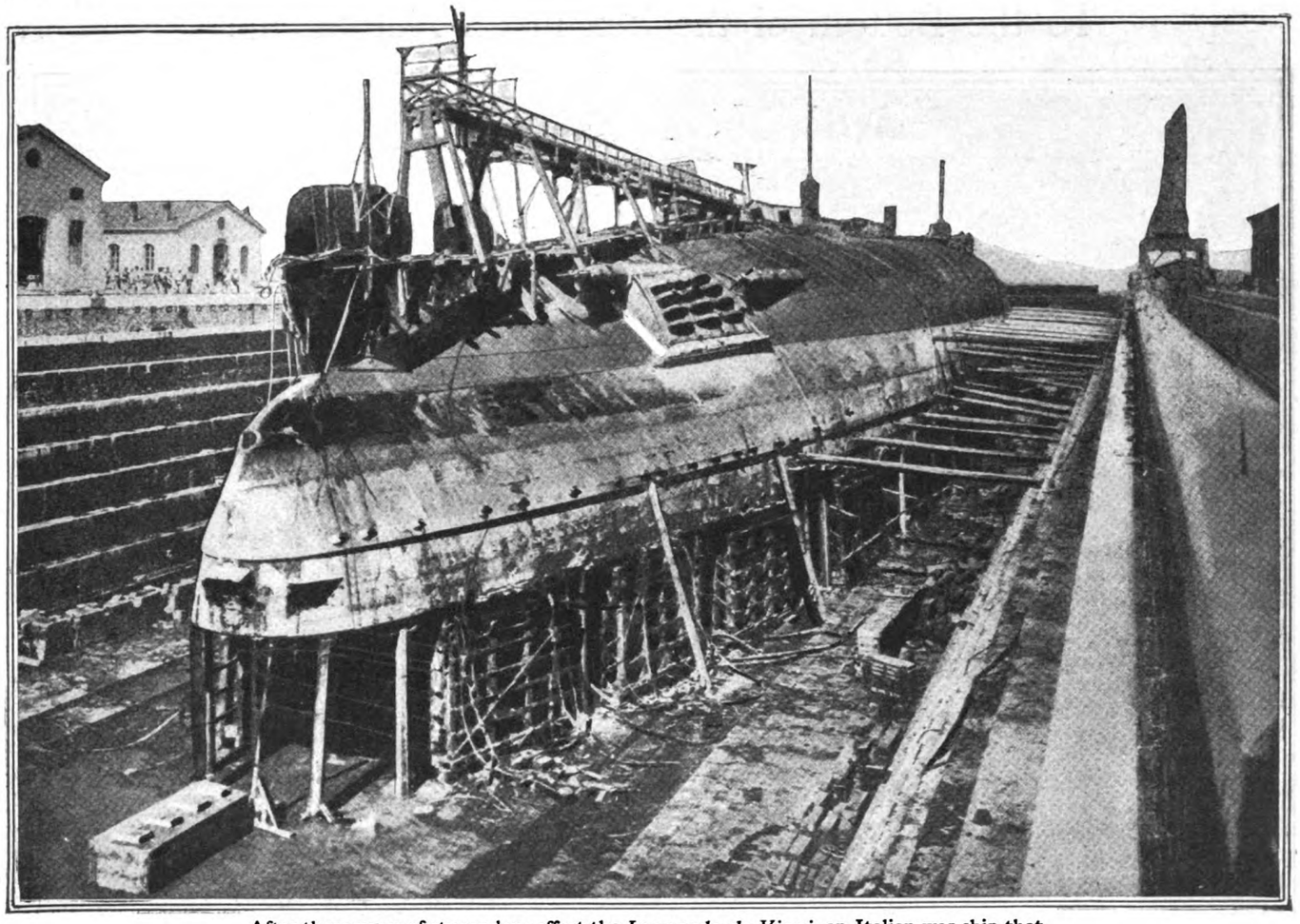

After three years of stupendous effort the *Leonardo da Vinci*, an Italian war-ship that had foundered as a result of an internal explosion, was towed to its dry-dock upside down

# Upside Down to the Dry-Dock

WHEN a huge vessel, such as a war-ship, is brought to the dry-dock upside down, one can imagine the magnitude of the calamity that caused the wreck. On August 2-3, 1916, when the Italian war-ship, the *Leonardo da Vinci*, was resting at anchor in the channel of the Mar Piccolo, a fire broke out in the munition stores in the stern. Immediately there occurred a gigantic explosion, tearing two great holes in the vessel and causing it to founder. More than two hundred seamen were killed, and twenty-one officers were among the missing. Subsequent inquiry attributed the cause of the disaster to two Italian workmen employed in the arsenal, and the men were consequently shot as traitors.

The holes in the war-ship torn by the explosion were about thirty-two feet in length and sixteen feet wide, and were open mouths into which the turmoil of swirling water poured, the inrushing currents causing the vessel to capsize. The turrets and upper works rested finally in the soft mud on the bottom of the channel. The keel and part of the bow remained above the water, the depth being about thirty-six feet.

What would be the quickest way to get rid of the obstruction? At first the ship was regarded as lost. But, being in sheltered water not far from the arsenal, the officers in charge began to consider proposals as to how the wreck might be salvaged. One suggestion was to build a dike around the ship or to roll it over on the bottom until it assumed an upright position. The task of salving the war-ship was given to General Ferrati. He suggested that, instead of trying to turn the ship over, it could be floated in its unfortunate position, and upon this plan the work was started.

Divers found that in "turning turtle" the ship had nearly severed the firing turrets. These were removed, and some of the cannon were raised from the mounts. Then the explosion holes were plugged. After this extensive preparatory work, pumps removed the water from within the hull. The water was brought down to twenty-six feet in almost the entire ship, and the munitions in the central and foremost stores were saved. Then a successful attempt to save the coal was made.

The portholes and other openings had been plugged when the large rents torn by the explosion were closed, and with the removal of the water came the next step—floating the vessel. Compressed air was pumped into the hull, making it a huge caisson in which workmen could continue their work.

After twelve months of stupendous effort the weight of the vessel, after the removal of its exterior detachable parts and its munitions and coal, was reduced from 24,000 tons to 18,000 tons. Then eight cylindrical barrel-like tanks were employed to lift the ship from the bottom and make it ready to be towed to the dry-dock.

Four tanks, each weighing four hundred tons, were attached to the bow, and four were attached to the stern to give the necessary stability to the ship while being lifted. The bastion of the second turret was removed with great difficulty during the lifting of the stern of the war-ship. When the decks, upside down, were cleared, the work of actually floating the ship in its curious position was completed, and the towing to dry-dock began. It was at the beginning of September, 1919, more than three years after the disaster, that the ship was finally towed upside down to its dry-dock.