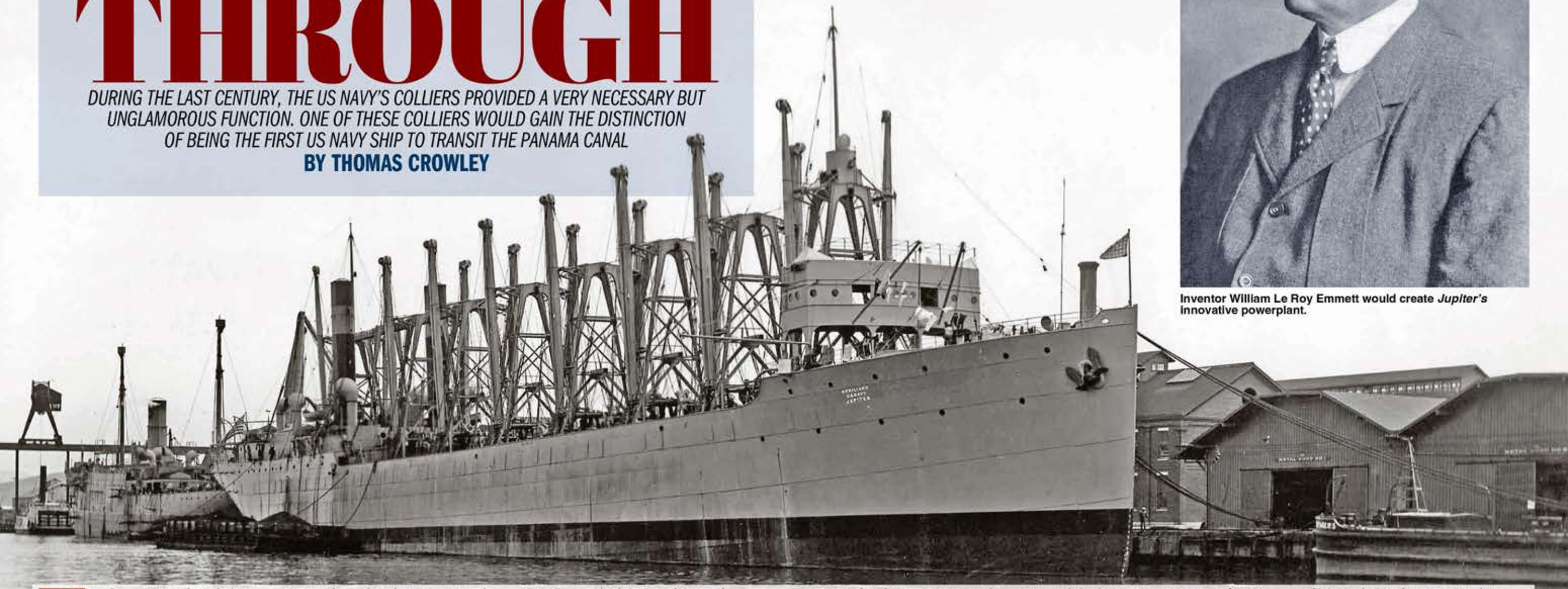
FIRST THROUGH

DURING THE LAST CENTURY, THE US NAVY'S COLLIERS PROVIDED A VERY NECESSARY BUT UNGLAMOROUS FUNCTION. ONE OF THESE COLLIERS WOULD GAIN THE DISTINCTION OF BEING THE FIRST US NAVY SHIP TO TRANSIT THE PANAMA CANAL

BY THOMAS CROWLEY



No one would ever accuse the USS *Jupiter* as being the most attractive ship operated by the US Navy. However, its new powerplant would make her extremely efficient in its mission. Photographed during July 1913 at Mare Island, USS *Prometheus* is aft of *Jupiter*, undergoing conversion to a repair ship. When completed in December 1914, *Ontario* would be renamed *Prometheus*. The bow of *YW-16* is visible forward of *Jupiter*.

Inventor William Le Roy Emmett would create *Jupiter's* innovative powerplant.

For those not working below deck, the crew of USS *Jupiter* (AC-3) lined the ship's deck on the hot and humid morning of 12 October 1914. Sea state was extremely calm as the ship approached a coast heavily overgrown with bright green vegetation but the air was alive with mosquitoes and other biting insects and the sailors needed to keep swatting the blood-suckers away because, to a man, they knew they were making naval history.

As Fleet Collier Number 3, the USS *Jupiter* was not the most glamorous of ships but it was the first vessel in the Navy to be turbo-electric-powered. On 18 October 1911, the keel of *Jupiter* was laid down at Mare Island Naval Shipyard in Vallejo, California, and among the guests was President William H. Taft.

At this point, the US Navy was in transition when it came to methods of power. *Jupiter's* sisterships were *Cyclops*, *Proteus*, and *Nereus*. USS *Neptune* (AC-8) had been constructed with a steam turbine and gear drive but the ship's performance was inferior compared to the earlier *Cyclops*, which had two triple expansion steam engines. William Le Roy Emmet had designed *Jupiter's* electric drive and he came from a gifted family of Irish emigrants. He graduated from the US Naval academy in 1881 and a decade later, went to work for Edison General Electric. Emmet was fascinated with electricity and saw great potential in electrical systems powering Navy ships.

It did not take long before Emmett was the lead advocate for utilizing turbines to generate electricity to power the Navy's vessels. He designed numerous systems while also developing a mercury vapor turbine system for electric power production.

Working very long days (and nights), Emmett began to perfect his system which consisted of two large electric motors with each directly connected to a propeller shaft that was powered by a single Curtis turbine and alternator set. At 2000-rpm and 2200 volts, the set delivered a top speed of 14 knots while the propellers were rotating at 110-rpm. There were few problems with the system and one of the most important features of the powerplant was a massive savings in weight. The Emmett turbo-electric dive system topped in at 150-tons while the engine equipment for USS *Cyclops* hit 260-tons — thus the Emmett powerplant offered a weight savings of an impressive 110-tons.

Sea trials went quite smoothly and but these were not completed since world events demanded that USS *Jupiter* be rushed into commission on 24 August 1912. At San Francisco, the ship took aboard a detachment of United States Marines since the situation in Mexico was heating up. *Jupiter* departed San Francisco to join the Pacific Fleet at Mazatlan, Mexico, on 27 August 1914 to greatly bolster American naval strength off of Mexico's Pacific coast. In what became known as the Veracruz Crisis, *Jupiter* became an important part of the American force. The Mexican-American War (1846/1848) had put a great strain on the political relations between the two countries and there was much political intrigue going on.

Mexico felt entitled to regain the territory that was now Texas and California. The expansionist policies of President James K. Polk clashed directly with Mexico's plans. Mexico's invasion of American territory led directly to war, which resulted in a decisive US victory. This meant