

The HART was powered by a triple expansion engine, with cylinders of 16, 27 and 44 inches diameter and a stroke of 30 inches. Steam, with a working pressure of 180 pounds per square inch, was generated by two single-ended, coal-fired, Scotch boilers which measured 12 feet by 11 feet. The engine and boilers were built for the steamer by the shipyard, and gave the vessel a service speed of about ten knots. The stokehold was fed with coal from two wing bunkers, which were filled by means of a hatch located in the top of the boiler casing in the after cabin.

The usual steam auxiliary equipment was fitted. Steering of the ship was facilitated by means of rods and bevel gearing which operated a Wilson-Pirrie steam steering engine aft. An emergency tiller was located on deck aft, and this could be operated with relieving tackle with leads to the capstan.

JUDGE HART had a hull form which was typical of many canallers of the period. The ship had very little sheer, and there was a straight stem and a severely undercut counter stern with a very fine fantail. In fact, when she and her sisterships were running light, the stem actually pulled back as it rose above the waterline, because the ships rode low in the water aft regardless of whether they were loaded or not. There was a half-forecastle, inhabited by the mates and deck crew, which one entered by going down several steps. On the forecastle head, there was a short stretch of closed steel bulwark near the stem, but for most of the length of the forecastle, there was only an open rail. The anchors were housed in curved-topped pockets set far forward and at the level of the spar deck.

Atop the forecastle was set a rather small, turret-style pilothouse, with an open navigation bridge on the monkey's island above. The master's cabin and office were located in a small texas cabin set abaft the pilothouse, its after bulkhead flush with the break of the forecastle. This navigation arrangement was indeed primitive, considering the time at which these ships were built, and did not prove satisfactory. No doubt the officers complained mightily about their position on the bridge, exposed not only to the natural elements but also to the volumes of water which a loaded canaller would take over the bow in any kind of heavy weather. Accordingly, a small, wooden upper pilothouse, with five windows in its curved front, was added to each of the ten sisterships within a year or so after their arrival on fresh water. Thereafter, the windows in the HART's old pilothouse were plated over and replaced with portholes.

Their rather unusual forward cabin arrangement was to be the trademark of this particular class of canaller, for only they carried it, plus one additional sistership, namely EUGENE C. ROBERTS (25), (b) JAMES B. FOOTE (39), (c) PORTADOC (I), which was built in 1924 to Mackay's own account, allegedly as his payment for the handling of the orders for the ten Eastern ships. Indeed, with the prominent bridgewings which protruded from the sides of the bridge deck, five steps up from the texas roof, the forward cabins of these boats looked rather like elephant ears, particularly on those of the sisters, like the HART, which had the forward bulkhead of the texas extended upward to the underside of the bridgewings, and with angled support struts added beneath the wings.

The foremast was a relatively short and unraked steel pole which rose out of the texas abaft the pilothouse. The mast could not be raked or else it would have interfered with grain loading chutes and elevator unloading legs. There were no cargo booms fitted, nor were there kingposts in the deck. There were seven large hatches down the spar deck, covered by sectional wooden hatch-covers secured with clamps, tarps and battens. The anchor windlass was placed atop the forecastle head, along with a steam snubbing winch, while the double-barrelled steam mooring winches were set abaft the first and sixth hatches.

The quarterdeck was flush with the spar deck, and on it was placed a rather bald-looking after deckhouse, which contained the stewards' and engine