

**Figure 5 Tabular Comparison of the Successful 30-Knot TB Bid Designs to the Evolving Herreshoff Design**

1 2 3

**5A 30-Knot TBs General Characteristics**

<b>Bid</b>	<b>Torpedo boat</b>	<b>Basis of Design</b>	<b>Displ. (Trial)</b>	<b>Length</b>	<b>Beam</b>	<b>Draft</b>	<b>Officers/ men</b>	<b>Armament</b>	<b>Price</b>	<b>Cost/ton \$</b>
HMCo	Proposed to Secretary Mar. 27, 1896	Not stated, probably rough comparative design estimate	225 tons						Two or more at \$215,000 each	
HMCo	NGH Preliminary design June 26, 1896	Developed from TB-6 /7 by ratios & analyses (See Figure 6)	226 tons	196-1/2 ft	18-1/2 ft	5-1/2 ft				
HMCo	Bid Sept. 18, 1896	Full design developed from towing model tests, TB 6 & 7 experience. (See Figure 8)	225 tons (trial);	LOD 198 ft LWL 192 ft	On deck 18-1/2 ft	5-1/2 ft	4 officers; 4 CPOs; 30 crew	4- 6 Pounder RFG. 2-18 in torpedo tubes; 4 torpedoes	Bid One at \$218,000; Two at \$209,000 each; Three at \$206,000 each	929
BIW	TBs 9 & 10 Bid Sept. 18, 1896	English design. Drawn at BIW Drafting, Southampton, Eng. by English designers.	143.3 tons (trial); 170 tons (Full load)	147 ft	16 ft 4 1/2 in	4 ft 7 1/2 in	29 total	4- One Pounder RFG. 2-18 in torpedo tubes	One boat – Did not bid. Winning bid- Two at \$194,000 each	1325
Union Iron Works	TB 11 Bid Sept. 18, 1896	Based on the Thornycroft English TBD DESPERATE <sup>4</sup>	240 tons (trial); 279 tons (Full load)	210 feet	20 ft	6 ft		6- One Pounder RFG. 2-18 in torpedo tubes	Winning bid- One at \$227,500	815

**Figure 5B 30-Knot TBs Machinery**

Builder	Torpedo boat	Total Installed power-two shafts	Propelling Machinery weight	Boilers	Boiler pressure	Engines	Bunker Capacity	Steaming Radius
HMCo	Proposed to Secretary Mar. 27, 1896							
HMCo	NGH Prelim. design June 26, 1896	5300 ihp		4-	220 psi	Four-cylinder triple expansion	60 tons	285 miles @ full speed; 2650 miles @ 10-1/2 knots
HMCo	Bid Sept. 18, 1896	5400 ihp		4- HMCo design. Total-grate surface- 228 ft <sup>2</sup> ; Heating surface 10800 ft <sup>2</sup> . (See Figure 9)	220 psi	Four-cylinder triple expansion 18 x 25 x 2-28 x 17	60 tons	265 miles @ full speed; 2800 miles @ 10 knots
Bath Iron Works	TBs 9 & 10 Bid Sept. 18, 1896	4200 ihp	78.20 tons (Estimated)	2- Normand Total-grate surface- 110 ft <sup>2</sup> ; Heating surface 6800 ft <sup>2</sup>	230 psi	Three -cylinder triple expansion	32 tons	Limited by small bunker capacity.
Union Iron Works	TB 11 Bid Sept. 18, 1896	5600 ihp	120 tons (Estimated)	3- Thornycroft Total-grate surface- 198 ft <sup>2</sup> ; Heating surface 12000 ft <sup>2</sup>	240 psi	Four-cylinder triple expansion	80 tons	

<sup>1</sup> Technical data for TBs 9, 10 & 11 are as designed and proposed at time of 30-knot torpedo boat contract award Oct. 8, 1896, and displayed in Table No. 1 “Torpedo Boats of the US Navy”, W. G. Gillmor Asst. Naval Constructor, “Torpedo Boat Design”, *Transactions Society of Naval Architects and Marine Engineers*, Vol. V, 1897. Pgs. 51-79.

<sup>2</sup> HMCo 30-knot technical data for the Sept. 18, 1896 bid taken from (1) HMCo document “Specifications for the Construction of Three Thirty-Knot Torpedo Boats. Torpedo Boats Nos. 9, 10 & 11” *Halsey C. Herreshoff Collection* Herreshoff Marine Museum Item MRDW02\_06090. Folder [no #]. Undated. Document marked on first page with US Navy Judge Advocate General stamp “4329 1896” documenting formal submittal to the US Navy. And (2) HMCo documents “Specifications twin-screw Torpedo Boat US Navy” Marked in pencil #13. 18 pages. “Specifications 30-knot Torpedo Boat”, 11 pages. *George Albert Converse Papers and Photographs, 1861-1897*, MSS 0068, Box 1, Folder 10. DeGolyer Library, Southern Methodist Univ.

<sup>3</sup> Pricing taken from “30-Knot Torpedo Boats Nos 9, 10 & 11” *Journal American Society of Naval Engineers*, Vol. 8, 1896 Pgs. 800-801. Pricing data also in “Torpedo Boats for the US Navy” *Army Navy Journal* Vol 34. Sept. 26, 1896, pg. 50 & Oct. 3, 1896, pg. 77.

<sup>4</sup> Cutout from 1896 contemporary unidentified newspaper. “Our Naval Pets in Alien Hands; Fast New Torpedo Boats to be Built Under a British Expert”. Describes English design team creates BIW 30-knot TB design. Claims basis for the design is the British Torpedo Catcher PORCUPINE. See Attachment B.