Lightweight Motoryachts: A Brief Background

The history of lightweight fast boats with serious cruising range goes back almost 100 years, in the early part of the last century, motoryachts such as the 79’ 14” (23.9m x 4.3m) Nekoma, built in 1903, began as refinements of fashionable and elegant yachts. These became the runabouts and fast cruisers of the Roaring Twenties. Engines of automotive and speedboat design were limited to the day was of fairly limited power, so efficiency was

achieved with long, lean hullforms. Marin, built in 1920 by Eitel Ford to a design by Walter Mohnsen, is an example of this type. Measuring 51’ 8” x 12’ 8” (15.7m x 3.8m) with 3’ 7” draft, the boat was powered with two 245-hp Sterling gas engines producing a top speed of 24.5 knots at 1,500 rpm. The design was an interesting concept and the crew was capable. Marin was capable of 24 knots springs up Long Island Sound, but most of its cruising would have been at 14 to 15 knots. It is at this speed that the vessel would have been headsed offshore in search of swordfish. Mohnsen was well known as a runabout designer and Marin’s design included high-speed cargo boats, as well as the fast yachts Nekoma had created while working at the row long gone Lawley and Rock yard earlier in his career.

These lightweight displacement yachts of a more refined style were, to quote L. Francis Herreshoff, “better suited to the conveyance of ladies and gentlemen than dead fish.” Their hulls were designed to derive excellent performance from a limited amount of power, whereas current powerboats start with a given accommodation plan and wrap hull around it, then try to improve performance with various bits, fins, or by just adding horsepower.

Transoceanic cruising in powerboats began in 1937 when French yachtsman Martin Marie crossed the Atlantic alone in Transoceanic cruiser, but his 30’ 6” (9.3m) sloop was not nearly as capable as Marin. He was near his limit of speed and capability, but he was in the boat, and he sailed the entire distance. The designer’s performance claim was 18 knots, however, when the boat averaged 6 knots over 1,000 miles (1,600.9 km), mostly in heavy seas under reduced sail.

Avoard Fuller, an amateur designer, saw potential in long, lean hulls, as well. While working with builder Bob Derecktor, Fuller developed a series of lightweight displacement motor yachts. One example of Fuller’s work is Jim Hawkins, a 61’ 13” (18.6m x 4m) yacht launched in 1969 that displaced 52,000 lbs (23,545.6 kg), fully loaded. With a 58’ 4” (17.8m) LAL, the displacement/length ratio is 107. Two Volvo Penta MD2016 engines generate 545hp each and push the boat at a maximum of 9.5 knots (17.8 km/h) and a speed/length ratio of 0.98, the engines are running at 1,800 rpm and burning 2 gal/hr (7.6 lph). A 330-gallon (1,233.6 l) fuel tank is utilized. Average speed was 8.5 knots and fuel consumption was just over 4 gal/hr (15.5 l/hr). For a profile of Bob Derecktor, see PBN No. 75, page 126 (+).

Jim Hawkins’ design included several innovative features, the first being Bob Derecktor’s spray rail, which is a wide horizontal shelf well above the DWL. The idea was to achieve fine waterlines down low for minimum resistance, and to add buoyancy in the topsides. At higher speeds the spray rail is also necessary to stop the wake from running up the topsides. Jim Hawkins’ “shelf” is 6” (15.2 cm) wide at the stern, tapering to nothing at sternlight. Fuller also included two methods of roll stabilization: therefore the fact that the vessel carries 812 sq ft (75.4 sq m) of sail. Herreshoff claimed it would sail well in moderate and heavy weather, as well as go farther and faster than many pure powerboats.

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Hersheff’s Marco Polo influenced the thinking of a number of designers, including Robert Beebe, who wrote the book Voyaging Under Power (International Marine, 3rd edition, 1994). After a 1997 voyage from New York to the Bahamas in a Marco Polo, Beebe wrote in The Rudder magazine, “The hull is terrific. The action of the boat in a seaway was a joy to behold.” There was also that talk of the boat’s motion and speed were too lovely, and that it was uncomfortable. But, it seems this may have been a function of short, steep seas. Also, that particular...