

'Shearwater'

Latest Teknicraft catamaran will support research in California's Channel Island Marine Sanctuary

By MARK CLEVINGER



View from above clearly shows the roominess permitted by the catamaran configuration

The latest Teknicraft-designed catamaran built by All American Marine, Inc., in Bellingham, Washington, headed for its home port in Santa Barbara, California, in December. Built for the National Oceanic Atmospheric Administration, the 18.5-metre 'Shearwater' will be primarily employed for research duties in the Channel Islands Marine Sanctuary.

For All American, the vessel was the ninth of a series of foil supported catamarans since the company acquired an exclusive license to build designs of Teknicraft Marine. The delivery presaged a move by All American into a spacious new plant to accommodate orders expected to double the firm's 25-man workforce.

Prior to its delivery voyage down the Pacific Coast to Santa Barbara, the vessel demonstrated its capabilities for teams of users and other observers from NOAA and other organizations. Also on hand was Nic de Waal, Managing Director of Teknicraft Design and developer of the particular catamaran design. Their headquarters are located in Birkenhead, Auckland, New Zealand.

With a capacity for 24 passengers for group voyages, the 'Shearwater' will berth 10 persons. It will usually be operated by a crew of two. Facilities include a full galley, wet and dry oceanographic labs, a freezer for samples, and an array of computer outlets. Deck equipment includes an A frame aft, Morgan Marine crane, Markey Com 7 scientific winch, and Kolstran anchor winch and capstan.

All American installed the hydraulic, electrical, and electronic systems. Electronic



Wheelhouse is spacious with excellent all-round visibility

equipment was provided by Radar Marine. The list includes Furuno FR1942 and FR1932 radars, Comnav 2001 auto-pilot, Diego P-66 compass, Furuno GP-36 GPS, and ICOM M-50 radios.

While previous articles have described the unique design features of the Teknicraft hulls, briefly they are semi-planing with a combination of symmetrical and asymmetrical sponson shapes. A symmetrical bow section ensures directional stability in short swell conditions and following seas, according to de Waal. The asymmetrical midship and aft sections ensure softness of ride. Company literature points out that hydrodynamic lift is produced by a hydrofoil that is installed amid-ship between the two hulls. This reduces water displaced by the hull, resulting in a smaller wake wash, increasingly an important advantage for high speed vessels operating near shore.

The boats feature a wide tunnel with a high ceiling between the semi-planing demi hulls. De Waal says this allows free passage of wind waves underneath without slamming. In addition to the foil midships, stern foils are installed inside the hulls to control the ride attitude at lower, semi displacement speeds.

Crew comfort is further enhanced by a series of longitudinal chines on the inside of the tunnel walls and one on the outside of the hulls. These add strength by bending the steps into separate sections of the hull plating. They also create a cushion for the boat to ride on by forming a high density air/water medium inside the tunnel.

According to de Waal, the longitudinal chines break up solid green water into spray while being deflected from the hull. It mixes with the air streaming between the hulls. This mixture of spray and air creates a high-density medium inside the tunnel, dampening the motion of the boat when it moves through a trough of a wave.



Left, Nic de Waal of Teknicraft Design with builder Matt Mullett of All American Marine

'Shearwater' SPECIFICATIONS

Type of vessel:	Research
Home port:	Ventura, California
Owner/Operator:	NOAA
Designer:	Teknicraft
Builder:	All American Marine
Length overall:	18.5 metres
Length waterline:	17.3 metres
Beam:	7.6 metres
Draught:	0.9 metres
Construction material:	Aluminium
Displacement:	39 tonnes
Main engines:	2 x Detroit Series 60 each 447kW
Generator:	Kohler 20EOZ 20kW
Gearboxes:	2 x Twin Disc 5114A
Propulsion:	Dafoe shafts Osborne Prop SS
Maximum speed:	24.5 knots
Cruising speed:	22 knots @ 90% power
Hydraulic equipment:	A-frame
Hydraulic equipment installed by:	All American Marine
Electrical installation:	All American Marine
Electronics installed by:	All American Marine
Electronics supplied by:	Radar Marine
Radars:	Furuno FR1942 & FR1932
Depth sounders:	Simrad EQ-60
Radios:	Icom M-502
Autopilot:	Comnav 2001
Compass:	Dirego P-66
GPS:	Furuno GP-36
Integrated electronics by:	All American Marine
Steering system:	Jastram
Alarm systems:	Hiller fire alarm system
Paint/Coatings:	No foul SN-1 Bottom paint
Windows:	Diamond seaglaze
Interior fitout/furnishings:	Teak finish
Winches:	Kolstran Anchorwinch
Capstan:	Kolstran
Cranes:	Morgan Marine
Deck equipment:	Markie Com 7 scientific winch
Rope/Chain:	1/2 Plough wire and 3/8 chain
Anchor:	Bruce 50kg
Safety equipment:	Life jackets and life rings
Liferrafts:	3 x 8 man DBC Solas A Rafts
Fresh water:	675 litres
Hold capacity:	675 litres
Deck cargo capacity:	1,300kg
Fuel:	6,750 litres
Fuel consumption:	180 litres/hour
Range:	400nm
Crew:	2
Passengers:	22
Operational area:	Channel Islands, California
Date of delivery:	November 2002

