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Photo by Flying Focus-Büssum, The Netherlands

CABALLO CRIOLLO

DE HOOP LOBITH DELIVERS 62 M OFFSHORE SUPPORT VESSEL

*Builders: De Hoop Lobith, Tolkamer, The Netherlands
Owners: Oceanografía S.A. de C.V., Mexico City, Mexico*

With oil prices soaring to record heights on a weekly basis, the boom in the off-shore market continues to bear fruit for Dutch shipyards. One of the latest deliveries in this sector came from the shipyard "De Hoop Lobith", which is located in the village called Tolkamer on the banks of the Rhine River. The vessel, named *Caballo Criollo*, had its shipyard flag changed to the Mexican flag of the owners on 29 January 2008 in Rotterdam. The owner, Oceanografía, is a repeat customer for the shipyard. Earlier deliveries include the diving support vessels *Caballo de Mar* (2001), *Caballo*

de Trabajo (2002), and *Caballo Andaluz* (2003). The order for the *Caballo Criollo* was placed on 26th of June 2006 and the keel was laid on 8 June 2007.

General arrangement

The *Caballo Criollo* is a diesel-electric driven Offshore Support Vessel with two azimuthing thrusters aft and two transverse tunnel thrusters forward. The accommodation provides for 46 persons in two single, six double, and eight 4-person cabins. Following are the main spaces onboard: thruster room, engine room, switchboard room, laundry, store, bow

thrusters room, a galley with dry-, freeze- and cold store, mess room, dayroom, change room, 2 offices, diving equipment room, workshop, Novec store, dive control room, AC room, luggage store, emergency generator room, doghouse and wheelhouse/chartroom. The tanks on *Caballo Criollo* are arranged in the double bottom and as wing tanks, resulting in a double hull construction. Under the main deck, between the thruster room and the engine room, is a large store. This space is accessible by a cargo hatch with a 2.5 m x 2.5 m clear opening.



A dive control room overlooks the working deck



Three Caterpillar engines are the backbone of the diesel-electric propulsion

Cargo Deck

The cargo deck is approx. 360 m² and is equipped with a large winch with a pulling force of 60 tons and capacity for 700 meters of 1 1/4 inch cable. The cargo deck is covered with 3 inch thick fir-wood for protection.

On the port side of the cargo deck there are provisions for a deck crane with a capacity of 60 tons at 6 meters, which will be installed after arrival in Mexico. At the stern there is a 25 ton A-frame with a hoist length of 50 meters and an electrically driven winch. Below the A-frame, a large stern roller makes pulling objects aboard easier. Another two rollers are located on starboard and port side of the working deck. Openings in the bulwark at these rollers allow objects to be pulled onboard over the sides. A dive control room is located at B-deck level and provides a 180 degree view of the proceedings on the working deck.

Diesel-Electric

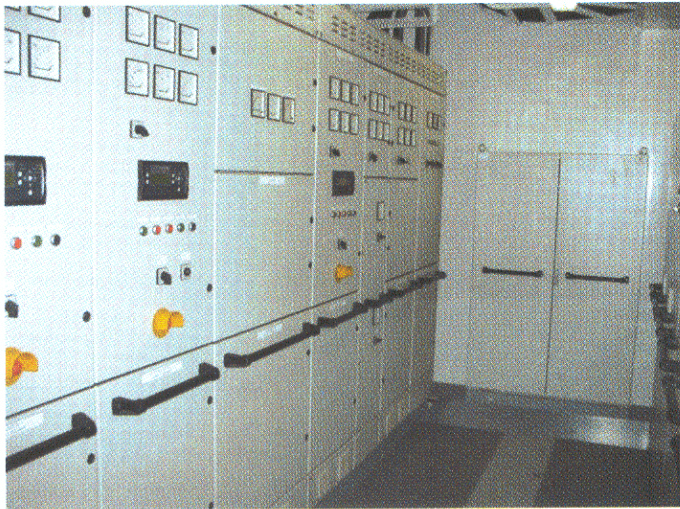
These days, practically every vessel with dynamic positioning is built with a diesel-electric propulsion installation and azimuthing thrusters. The *Caballo Criollo* follows this trend.

The engine room is located amidships and houses three large diesel generators, based on Caterpillar C32 engines, with an output of 1138 kVA (910 kW) each. The output voltage of the generators is 480 V AC at 60 Hz, which is used as such for the four thrusters and converted into 115 V AC for smaller onboard consumers such as lighting and power sockets. Alarms and controls are fed through a 24 V DC network. A 100 Ampere shore connection is provided for silent and clean harbour time, and battery banks are installed with 200 Ah capacity for emergency operation. A Caterpillar C9 generator is located in a room in between the funnels on the B-deck. This 268 kVA genset is used as the harbour and emergency generator.

Veth thrusters

The propulsion and station-keeping is with a set of four electric thrusters. Two conventional tunnel-type bowthrusters from Veth of the type VT-400 are located in the bow and are each powered by a 350 kW e-motor. Two sternthrusters are Veth Z-drive thrusters of the type VZ-1250 and each driven by a 900 kW e-motor. This arrangement allows for maximum maneuverability with a minimum of components. The control of the thrusters is easy as a Navis DP-2 system is installed, which allows "fly-by-wire" control.

None of the components extends below the keel of the ship, resulting in a robust arrangement. One of the main advantages of an



The electrical installation was done by Droste Elektro



Alphatron supplied the navcom and DP equipment

azimuthing thruster over a conventional propeller and rudder arrangement is that maximum steering power is also available at zero speed.

Equipment

Auxiliaries onboard the *Caballo Criollo* include a Facet bilgewater separator, an Alfa-laval non-selfcleaning fuel separator and a Demitec Sea

Standard reverse osmosis desalination system from Hatenoer Water. All engine exhausts onboard are muffled with sound dampers from Axces Industrial Exhaust Systems, resulting in an increased level of comfort onboard.

Doghouse

To increase the navigation bridge visibility and to provide a convenient space for technical equipment, the bridge is located above a crawling space of 1 m high. This space is called the doghouse.

The bridge is equipped with navigation and communication electronics supplied by Alphatron Marine from Rotterdam. The deliv-

ery includes a.o. two JRC JMA-5310/6 X-band radars, two JRC Inmarsat-C systems and a Fleet 33 Inmarsat-F for satellite communications. For dynamic positioning, Alphatron delivered a NAVIS DP2 system with Lloyd's Register certification, two Alphawind anemometers, two Alphatron gyro compasses and two Novatel DGPS/GLONASS receivers. Theunissen Technical Trading B.V, delivered the Pesch Seematz searchlights for the vessel.

Durable workhorse

The name *Caballo Criollo* (criolian horse) refers to a horse breed native to Argentina, Uruguay, Paraguay and Brazil. The breed is

Principal particulars

Length o.a.	61.87 m
Length WL	59.65 m
Beam mld.	12.80 m
Depth mld.	5.50 m
Design draught	4.50 m
Speed	13 knots

Capacity

Deadweight	1500 ton
Working deck area	360 sqm
Allowable deck load5 ton/sqm
Occupants	46 persons

Tank capacities

Diesel Oil	663 cu.m
Ballast water	487 cu.m
Fresh water	162 cu.m
Lubricating oil5 cu.m



known for its extreme endurance and is used as a workhorse, for rodeos and for long trips. Without doubt the ship will live up to her name and prove to be a durable workhorse for its owners. One week after her delivery, she went on her maiden trip to Mexico where she arrived one month later. During the passage she encountered lots of wind and heavy seas with significant wave heights of more than 10 meters, but she emerged unscathed.

New Foxhol yard

The Hoop Lobith has recently launched the first vessel in its newly acquired shipyard in Foxhol. This yard was taken over from Volharding Shipyards in April 2007. The vessel, called *Caballo Lusitano*, is a 62 m Offshore Support Vessel for the same client, Oceanografia.

The shipyards order book is well filled with 12 contracts, including six 60 m Offshore Support Vessels and three Diving Support Vessels. The yard also does the engineering for a Diving Support Vessel which will be built in Japan.

Subcontractors and suppliers of equipment fitted on board the 'Caballo Criollo' (partial list)

- Alfa Laval Benelux**, Breda: fuel oil separators; fresh water generator
- Alphatron Marine**, Rotterdam: navigation, dynamic positioning & communication equipment
- Axces Industrial Exhaust Systems**, Schiedam: exhaust silencers
- Boer Staal, De**, Uitgeest: steel plates & profiles
- Bovi**, Tubbergen: upholstery
- Droste Elektro**, Lobith-Tolkamer: electrical installation; motors, drives, transformers propulsion
- Econosto Nederland**, Capelle a/d IJssel: valves
- EMCE, Machinefabriek**, Voorhout: lifting winch
- ESI-Trade**, Oosterhout: accommodation-, engine room-, flood- & navigation lights
- Facet International**, Almere: bilge water separator
- FFS**, Moss (N): FFI pumps
- Frank Mohn**, Bergen (N): deepwell cargo pumps; anti heeling system
- GTK**, Dieren: galley equipment
- Hatenboer-Water**, Schiedam: Demitec Sea fresh water generator
- Hendrik Veder**, Rotterdam: mooring ropes
- Heinen & Hopman**, Spakenburg: chiller
- Inexa**, Hedehusene, (DK): modular bulkheads
- Kraaijveld, Machine & Lierenfabriek**, Sliedrecht: anchor- & mooringwinch; capstans
- Kroon Technische Groothandel**, Hoogezaand: Alvedoor fire doors; TNF accommodation systems; Wetcab prefab wetunits
- MacGregor**, Kaarine, (FIN): lashing equipment
- Marioff Corporation**, Vantaa (FIN): water mist system

- Materiaal Metingen Europe (MME)**, Ridderkerk: gangway
- Medisa**, Santa Catarina (MEX): Caterpillar generator sets
- Nautische Unie Hunfeld**, Farmsum: firefighting-, nautical- & safety equipment
- Nicoverken Marine Services**, Schiedam: Blücher marine pipes, fittings, drains & channels; stainless steel sanitary discharge system
- Ned-Deck Marine**, Barneveld: MOB & rescue boat, inclusive davit for both
- NRF**, Mill: coolers
- Pon Power**, Papendrecht: Caterpillar harbour diesel generator
- QUA-VAC**, Almere: sewage plant, Electrolux washing & drying machine
- Reikon**, Spijkenisse: Azcue pumps
- Roden Staal**, Drachten: ship sections
- Ship's Equipment Centre (SEC)**, Groningen: bollards; fairlead; chocks
- Smits Neuchâtel**, Utrecht: underfloors
- Sperre Rotterdam**, Ridderkerk: Sperre starting air- & TMC working air compressors
- Temaro**, Rotterdam: Solasafe anti glare sunblinds
- Theuissen Technical Trading**, Malden: Pesch Seematz searchlights
- Tyco Intergrated Systems**, Woerden: fire extinguishing
- Unitor Ship's Service**, Spijkenisse: FI-FI monitor
- Veth Motoren**, Papendrecht: Veth-Z-drives; Veth- tunnel thrusters
- VDI**, Rotterdam: insulation
- Veld Koeltechniek**, Groenlo: provision cooling
- Vries Gesta, Jac. De**, Middenbeemster: hotwater boiler
- Wesco Navy**, Hamburg (GER): washing- and drying machine
- Wetcab**, Gdansk (POL): wet units
- Winel**, Assen: musketeer doors; tank vent check valves
- Wingerden en Zonen**, Gorinchem: portholes & windows
- Wortelboer**, Rotterdam: anchors & chains

GENERAL ARRANGEMENT

