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Caballo As de Oros

SHIPYARD DE HOOP DELIVERS PLATFORM SUPPLY VESSEL TO REPEAT CUSTOMER

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Photo by Flying Focus-Bussum, The Netherlands

CABALLO AS DE OROS

A new Platform Supply Vessel from Shipyard De Hoop

Builders: Shipyard De Hoop, Foxhol,
The Netherlands
Owners: Oceanografía S.A. de C.V.,
Mexico City, Mexico

Caballo as de Oros is a 67 meter Platform Supply Vessel with yard number 430, built for Oceanografía SA, de CV. It is the first of a series of 2 similar vessels.

The vessel was side-launched into the Winschoterdiep on 27 June 2009 and is planned for delivery later this year. The ship will, upon arrival in Mexico, start working for Pemex, short for Petróleos Mexicanos.

Design and construction

Caballo as de Oros is a lengthened version of the previous delivered PSV Caballo Lusitano.

The lengthening of abt. 5 m results in higher deadweight and larger cargo deck area, while speed and sea-keeping performance are equally or better.

The profile is characterised by a high superstructure forward towering above a long and low aft deck. The wheelhouse has a vantage point with full-height windows protruding towards the aft. Two strong bull-bars protect the wheelhouse

from swinging loads above the cargo deck.

The vessel is designed to transport drilling mud, brine, mud as well as cargo and supplies to oil- and gas platforms. The tanks are ventilated on deck with tank vent check valves from Winel, providing a watertight closure in the case of heavy waves. Winel also supplied the watertight doors.

Cargo and supplies can be loaded onto the large cargo deck area of abt 430 m². The cargo deck is covered with 76 mm (3 inch) thick fir planking for protection and is strengthened for loads upto 5 t/m².

The integral tank arrangement makes it possible to carry several types of liquid- and dry bulk products. The vessel was built on the slope at De Hoop Foxhol using steel from De Boer Staal. Some blocks of the hull were prefabricated at Roden Staal BV.

The anchors and chains were supplied by Wortelboer. The ship has the following class notation: \star 100A1, Fire Fighting Ship 1 (2400 m³/h) with water spray, \star LMC, DP(AA), Unrestricted navigation. The build is conform the latest Solas and Marpol regulations, including IMO 673 (16).

Propulsion

A fuel efficient diesel-electric machinery and propulsion plant is centred on 3 Caterpillar C32 generator sets each with an output of 1138 kVa, 480V AC, phase,

Principal particulars

Length o.a.	66.6 m
Length, waterline	64.5 m
Beam, moulded	12.8 m
Depth, moulded	5.50 m
Draught, design	4.55 m
Draught, summer	4.65 m

Capacity

Deckload	600 ton @ 1.0 m
Deadweight	2000 t
Working deck area	430 m ²
Speed	12 kn

Tank capacities

Fuel	600 cu.m
Fresh water	93 cu.m
Drilling water	700 cu.m
Liquid mud	430 cu.m
Brine	116 cu.m
Dry bulk	225 cu.m



The wheelhouse features 360-degree views

60 Hz, at 1800 rpm. The electrical power-generation and distribution system is split in two for redundancy reasons.

The propulsion machinery consists of two azimuthing thrusters with fixed pitch propellers rated at 900 kW each in the aft and two transverse thrusters also with fixed pitch each of 450 kW forward, which are driven by frequency controlled induction type E-motors. Both the Z-drives in the aft and the tunnel thrusters forward were delivered by Veth.

The emergency diesel generator is a C4.4 genset, also from Caterpillar, and delivers 119 kVA.

Dynamic Positioning

The dynamic positioning system is supplied by Navis and meets the requirement of the LR DP (AA) notation. The DP system enables the vessel to maintain precise position and come alongside rigs or platforms to offload cargo, even in adverse weather conditions. Alphasron Marine Rotterdam delivered the DP system/sensors:

- NAVIS DP2 LR class DP(AA);
- Alphasron Windsystem Alphawind MF (2);
- Guidance Navigation Cyscan Laser radar;
- CNAV-2050 DGPS;
- Trimble DGPS;

The electric installation was carried out by Eekels Electrotechniek. The delivery included special items such as the automatic clutching and declutching of the

firefighting pumps and the main and emergency switchboards. The searchlights are remote controlled from the wheelhouse. Eekels also supplied the bridge navigation desk and aft desks.

Fire-fighting

Caballo as de Oros is equipped with two fire monitors on the top-deck with a capacity of 1.200 m³/h each. The monitors are fed by diesel driven fi-fi pumps and have a reach of abt. 100 m horizontal and 45 m vertical. To keep the vessel cooled during fire fighting a central diesel driven water spray pump with a capacity of 1100 m³/h, sprays the entire hull with sea water.

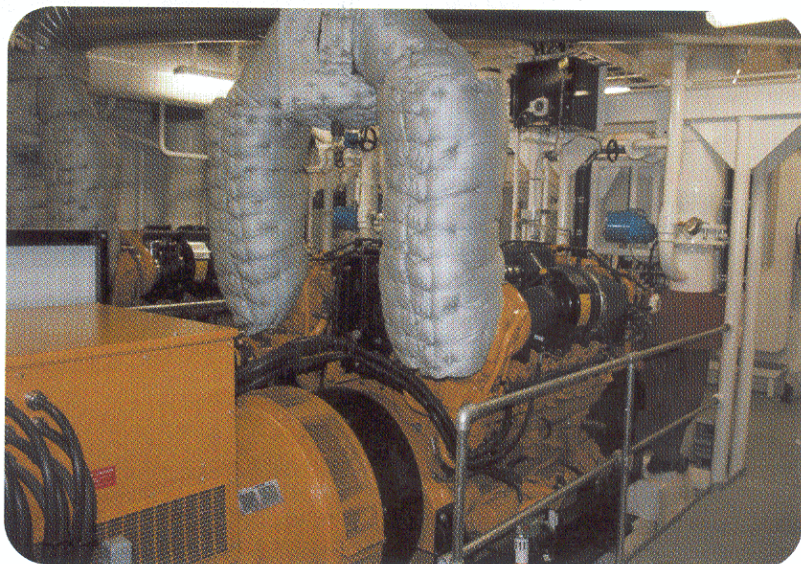
Accommodation

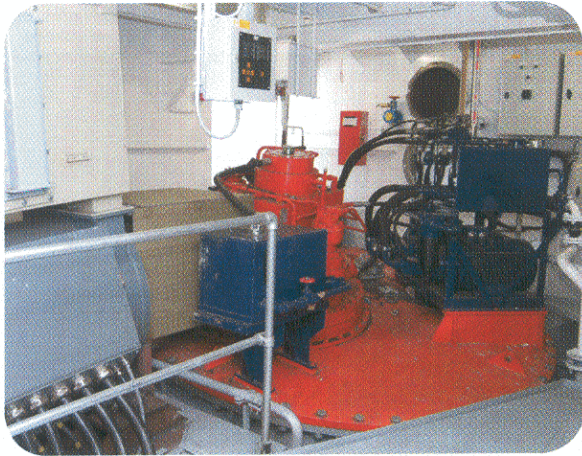
The vessel has a fully air-conditioned accommodation for a total of 30 persons in two single, three two-person, four four-person and one six-person cabins. The main spaces on board include: thruster room, engine room, switchboard room, bowthruster room, laundry, changing room, a galley with cold store, a mess room, emergency generator room, stores and the wheelhouse/chart room. The doors and hardware on board were supplied by Kroon. The fire doors are of the Alvedoor type.

Wheelhouse

The wheelhouse features 360 degrees

Three C32 Caterpillar engines are the basis of the diesel-electric propulsion





Veth supplied the azimuthing thrusters



The foam monitors are located on top of the wheelhouse

view, as the closed part of the funnels stops below the windows of the bridge. The visibility is assured also in rough weather with window wipers from Observer. Alpatron Marine Rotterdam delivered the navigation and communication equipment, including the following items:

- Alpatron Alphaminicourse, maintenance free gyro system (3);
- Alpatron gyro switch/comparator system;
- Cassens&Plath magnetic compass;
- JRC X-band radar JMA-5310;
- JRC S-band radar JMA-5332;
- JRC AIS JHS-182;
- JRC VHF JHS-770 (2);
- JRC MF/HF JSB-196;
- JRC Satcom C JUE-85C (2);
- JRC Navtex NCR-333;
- JRC F33 satcom JUE-33;
- JRC echolood JFE-380;
- JRC speedlog JLN-205;
- McMurdo EPIRB E5;
- McMurdo SART S4 SART (2);
- McMurdo GMDSS VHF R2 (3).

The mast, which holds the navigation lighting, can be lowered to reduce the air draught thanks to its hinged foundation from Börger.

KISS

Shipyard De Hoop has, over the last half year, developed a completely new design for a 67 meter platform supply vessel. The "KISS" design is De Hoop's answer to the developments in recent years whereby more and more expensive vessels were developed for in fact the simple tasks which most supply vessels do.

The KISS design goes more back to the basics, but using modern techniques it outperforms most in this class.

The developed hull shape has a 20% lower wave resistance (so it can do the same with less power and fuel costs) and has 30% more tank capacity than its nearest competitors. Four vessels of this type have been ordered by Oceanografía, the first vessel to be delivered in 2010.

Activity

The shipyard in Foxhol is brimming with activity. The *Noordhoek Pathfinder*, an off-shore vessel, is currently in the outfitting phases. Also the first sections of the sister vessel of *Caballo as de Oros* are on the quay side. The construction of section blocks of the *Amadeus Elegant*, a river cruise vessel for a repeat client, which will be completed in Tolkamer has just started. Moreover, large parts of the *Caballo Siete Leguas* (a sister vessel to the *Caballo as de Oros*) are also ready on the slipway. Simultaneously the first four KISS suppliers are under construction. At the yard in Tolkamer the building of a second diving support vessel, for Oceanografía is in an advanced stage. On this yard the main steel construction currently focuses on building the river cruiser *Amadeus Elegant*. Thereafter, a third diving support vessel shall be built. And recently, the yard completed the conversion of an inland waterway barge into an accommodation vessel for Kazakhstan.



Photo by Flying Focus-Bussum, The Netherlands

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

Alphatron Marine, Rotterdam navigation, dynamic positioning & communication equipment

Acces Industrial Exhaust Systems,

Schiedam exhaust silencers

Boer Staal, De, Uitgeest steel plates & profiles

Börger Machinefabriek, Hoogezaand mast foundation

Bovi Staal Meubelfabriek, Tubbergen upholstery

Datema Delfzijl, Delfzijl firefighting-, nautical- & safety equipment
air compressors

Econosto Nederland,

Capelle a/d IJssel valves

Eekels Elektrotechniek,

Hoogezaand complete electrical installation;

Electrolux, Diemen washing- and drying machine

Facet International, Almere bilge water separator

Faro Benelux, Eindhoven modular bulkheads and ceilings

Gebr. De Haan, Hoogezaand chiller

GTK, Dieren galley equipment

Kraaijveld, Machine & Lierenfabriek,

Sliedrecht anchor- & mooringwinch

Kroon Technische Groothandel,

Hoogezaand *Alvedoor* firedoors, locks, hardware

MacGregor, Antwerp (B) lashing equipment

Nautische Unie Hunfeld, Farmsum liferafts

Ned-Deck Marine, Barneveld MOB & rescue boat, inclusive davit for both

Nicoverken Marine Services,

Schiedam *Blücher* marine pipes, fittings, drains & channels; stainless steel sanitary uitsluiting system

Noordhof, Kropswolde painter

NRF, Mill coolers

Observer Instruments, Rotterdam windowwipers

Pon Power, Papendrecht *Caterpillar*, generator sets and harbour diesel generator

QUA-VAC, Almere sewage plant, *Electrolux* washing & drying machine

Reikon, Spijkenisse *Azcue* pumps

Roden Staal, Drachten ship sections

Rolls-Royce, Rotterdam propellers, thrusters, winches, steering gear,

control systems, dynamic positioning
Rubber Design, Heerjansdam pendel points
Scheen B.V., Hoogezaand ship carpentry

Seafix Fire Fighting Systems, Rotterdam *Novex* system

Ship's Equipment Centre (SEC), Groningen bollards; rollers; chocks

Smits Neuchâtel, Utrecht AGO floors, *Solvolan* floors

Temaro, Rotterdam *Solasafe* anti glare sunblinds

Toekomst, Ridderkerk gangway

Tyco Integrated Systems, Woerden fire extinguishing

Umor Ship Service, Spijkenisse fire monitor
Veth Propulsion, Papendrecht *Veth-Z* drives; *Veth-* tunnel thrusters

Veld Koeltechniek, Groenlo provision cooling

VDI, Rotterdam insulation

Vries Gesta, Jac. De, Middenbeemster hotwater boiler

Vries de R.J., Delfzijl mooring ropes

Wetcab, Gdansk (POL) wet units

Winel, Assen watertight musketeer doors; tank vent check valves

Winteb, Winschoten air pipe heads

Wingerden en Zonen, Gorinchem portholes & windows

Wortelboer, Rotterdam anchors & chains

FFS.
H.W. Cadsee
MSW
BHP

GENERAL ARRANGEMENT

