

Caballo de Troya

In April 2002, De Hoop received a new order for the construction of an offshore support vessel, newbuilding 400, Caballo de Troya for Otto Candies Mexican Investments. The vessel was delivered 1st of September 2002 and has been built in a record time of 15 weeks, including the design and engineering.

Design

The Caballo de Troya has been designed for hose handling operations in offshore fields in the Gulf of Mexico. She is equipped with an A-frame of 25 ton and a towing winch of 60 ton.

The hull design of fore and aftship is identical to the supply vessels under construction at De Hoop's Houma yard. In order to reach the required delivery date, the critical components were taken from the first supplier to be delivered in Houma.

The main particulars of the vessel are:

Length over all	56.47 m.
Length between p.p.	51.70 m.
Beam	12.80 m.
Depth moulded	5.50 m.
Design draught	3.50 m.
Scantling draught	4.65 m.
Deadweight, max.	1,500 t.
Gross Tonnage (estimate)	1,211 .
Cargo deck area	320 m ² .
Speed at 3.5 m draught	12 kn.

Capacities:

Fuel Oil	625 m ³ .
Fresh water	50 m ³ .
Ballast water	625 m ³ .
Sewage water	25 m ³ .

General Layout

The layout is as for a typical supply vessel, with machinery and accommodation forward and a large open aft deck. The accommodation has been increased to 32 berths for offshore personnel.

The mud- and cementtanks in the midship have been removed and replaced with a cargo hold and moonpool for air-diving operations. Forward on the tanktop is an auxiliary engine room with the main switchboard. Aft of the switchboard room is the main diesel generator room. Aft of the 'hold' is the aft thruster room with the two azimuthing thrusters and the frequency converters for these.

On the main deck, PS aft, a telescopic crane is installed for handling of hoses on deck.



The Caballo de Troya.

Forward, in the forecabin and on top of the forecabin is an accommodation for a total of 32 persons, in one, two and four man cabins.

Power plant and electrical distribution

The diesel electric power plant consists of three diesel generators in one engine room and a 100 kW harbour/emergency generator in a separate space on the main deck level.

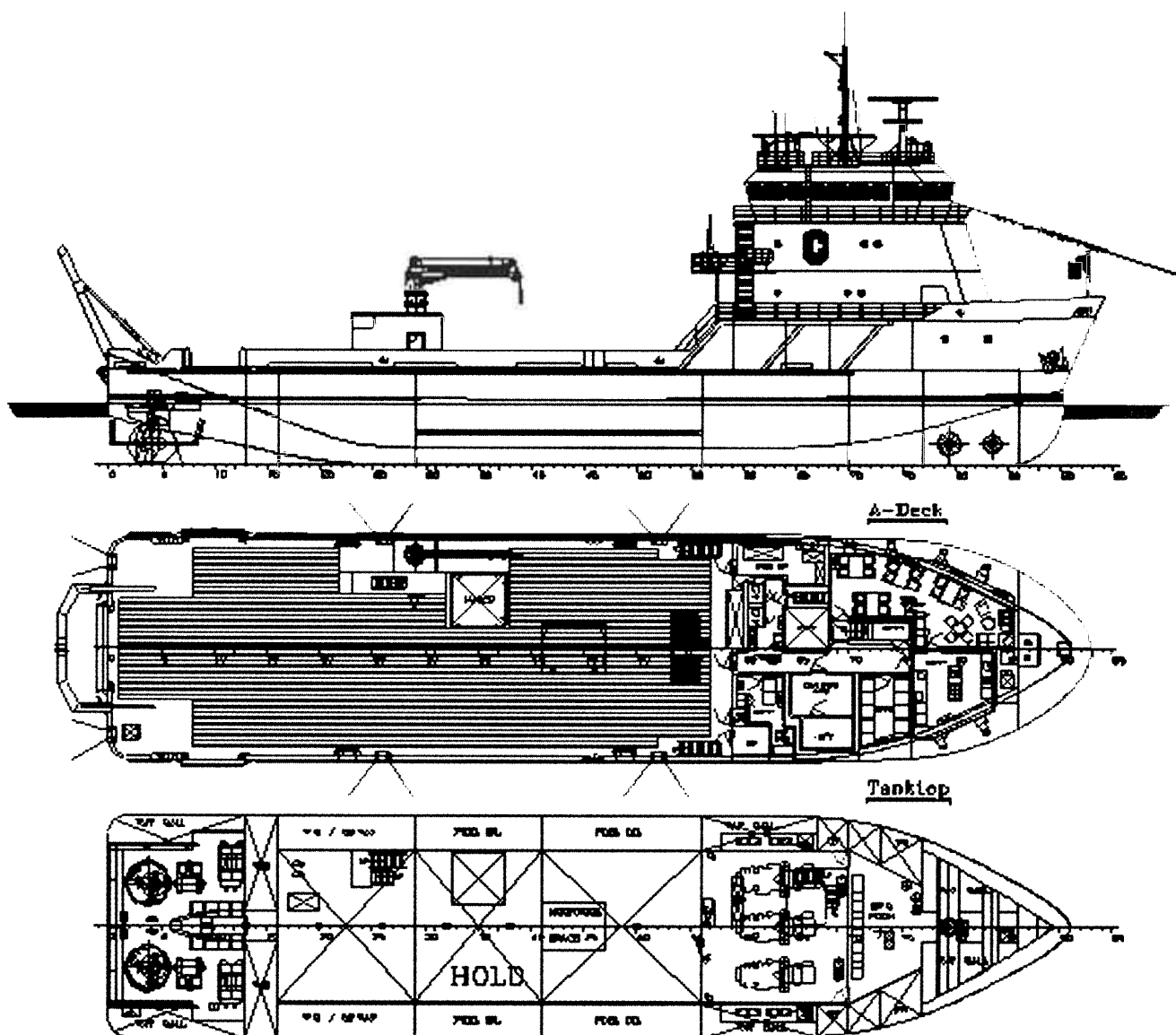
The three Caterpillar engines are of the type 3508, each developing 968 kW.

Main distribution voltage is 480 V, 60 Hz. Secondary voltage is 110 V in all cabins. The distribution system is divided in two halves, with the auxiliary systems following suite. This means that no single failure, excluding fire, explosion or flooding, will cause the vessel to loose position.

Droste B.V. was the main electrical contractor responsible for the engineering, installation and commissioning of the electrical distribution, control and monitoring system.



View on aft deck.



Alstom has provided the thruster motors and the frequency drives for the aft azimuthing thrusters. The drives are of 12-pulse type, with pseudo-24 pulse when two azimuthing thrusters are in operation simultaneously. The 12-pulse drives together with the transformers and generators have been tuned to limit the THD (total harmonic distortion).

Dynamic Positioning System and station keeping capability

The vessel is fitted with a simplex DP system, delivered by Alstom in the UK and prepared for later upgrade to DP class 2. The DP system is using two reference systems, two DGPS via separate receivers and correction signals.

When all systems are working the vessel can keep its position, regardless of heading, up to a significant wave height of 2.5 meters, a windspeed of about 10 m/second and a current of 1.5 knots, all acting on the beam.

During trials a maximum transverse speed of 2.1 knots was measured. The maximum transverse speed (in DP mode) is favoured by us as a parameter to compare the DP capability of various vessels (monohulls). It is easy to measure and is a practical figure compared to the theoretical determined ERN, or PCR figures.

Similar to the system installed on previous vessels, the DP system is controlling the vessel in all modes of operation. In case of insufficient power it will automatically reduce the power output to the thrusters. Emergency steering can be performed from the aft thrustersroom (steering and rpm control). Generators can be remotely started/stopped from the bridge.

Thrusters

The aft thrusters, 900 kW each, are from Aquamaster and are of fixed pitch type with controllable speed.

The forward tunnel thrusters are from KaMe-

Wa (400 kW) and Jastram (250 kW) with constant speed and controllable pitch. The latter thruster is not connected and has been fitted only for a possible later upgrading to DP class 2.

This combination has been selected as the best compromise between cost, space available onboard, fuel consumption and manoeuvrability.

Building

Building of such a complex vessel in such a short period (including Holiday period) is only possible with the help of all people involved.

Lloyd's Register has proven of great assistance by shortening the approval procedure for most of the drawings to 1 week. The vessel left Rotterdam with all (Mexican) statutory and class certificates in place.

The Class notation is: LR \otimes 100 A1 Offshore Supply Vessel \otimes LMC.

A lot of people have sacrificed their holidays for this Horse from Troya. Thanks!