ULSTEIN®

TURNING VISIONS INTO REALITY

# M/V "BOURBON ORCA"

## Anchor Handling Tug Supply Vessel with ULSTEIN X-BOW®

## ULSTEIN AX104

**Hull no. 273**
**Designed by Ulstein Design AS**
**Delivered 2006 by Ulstein Verft AS**
**Built for Bourbon Offshore Norway**

**M/V "BOURBON ORCA"** is an Anchor Handling Tug Supply Vessel with **ULSTEIN X-BOW®** designed by Ulstein Design AS. The vessel is built to serve the oil exploration and oil production industry world wide. The vessel is equipped with a diesel electric power plant, large azimuth main thrusters, high capacity AHT winches and safe anchor handling equipment, ensuring the vessel to obtain the best operating characteristics in both sailing, anchor handling and DP/manoeuvering modes.

**BOURBON ORCA – ULSTEIN X-BOW® hull design advantages** as compared to conventional foreship with flare:

- Higher transit speed in calm water due to low angles of entry and increased waterline length
- No bow flare, eliminating bow impact and / or slamming in foreship
- Reduced noise and vibration levels in foreship due to soft entries in waves
- Less spray due to water not being thrown forward
- Negligible occurrences of green water on bridge deck
- Working deck and deck equipment better protected due to hull extended to full beam in accommodation area
- Higher transit speed in head sea, giving reduced power consumption and / or higher fuel efficiency both in waves and in still water
- Lower pitch and heave accelerations due to foreship volume distribution and slender hull lines

**BOURBON ORCA** is designed and arranged for heavy duty offshore operations like:

- Handling of anchors and rig mooring lines in deep water
- Anchor handling and towing winches with large capacity, especially for dynamic braking
- ODIM Safe Anchor Handling System (SAHS) for work deck
- Four off large capacity rig chain lockers

**M/V "BOURBON ORCA"** is built, equipped, and painted (tanks and exterior) in drydock inside covered dockhall, thus ensuring controllable atmosphere and the best quality of work.

BOURBON

*Shipbuilding by Ulstein Verft AS: Ulstein builds sophisticated vessels with a strong focus on innovative technological solutions and methods*

## MAIN DIMENSIONS

| | | |
|---|---|---|
| Length over all | approx. 86,2 | m |
| Length between p.p. | 77,0 | m |
| Breadth moulded | 18,5 | m |
| Depth to main deck | 8,5 | m |
| Draught max | 7,0 | m |
| Design draught | 6,0 | m |

## CAPACITIES

| | | |
|---|---|---|
| Fuel oil (MDO) | 1486 | $m^3$ |
| Fresh water | 503 | $m^3$ |
| Ballast water | 2482 | $m^3$ |
| Brine | 558 | $m^3$ |
| Liquid mud, 4 tanks, 2,5 $t/m^3$ | 530 | $m^3$ |
| Slop | 167 | $m^3$ |
| Base oil | 447 | $m^3$ |
| Dry bulk tanks (4 off) | 254 | $m^3$ |
| Rig chain lockers (4 off) | 626 | $m^3$ |
| Cargo deck area ( 35,0 m x 15,4 m) | 540 | $m^2$ |
| Cargo deck aft of fr. 48 | 10 | $t/m^2$ |
| Deck load (VCG 1,0 m above main deck) | 1200 | ton |
| Deadweight at max draught 7,0 m | 3180 | ton |
| Gross tonnage, international | 4089 | GRT |
| Net tonnage, international | 1226 | NRT |

## CLASSIFICATION / FLAG

DnV ✠1A1, Supply Vessel SF, Tug, E0, DynPos AUTR, CLEAN, COMF-V(3), DK(+), HL(+), NAUT-OSV (LOC).
Flag: NOR. NLS Certificate

## PERFORMANCE

| | |
|---|---|
| Max speed (at d=6.0m) | approx. 17.1 knots |
| Bollard pull | approx. 183 tonnes |

## ACCOMMODATION

Hotel compliment of high standards and with capacity for 35 persons.

- Two one-bed state cabins with day-room and bedroom
- Three one-bed state cabins
- Nine one-bed cabins
- Ten two-bed cabins
- Sick bay (on main deck)
- Day room on C-deck
- Galley, mess / cafeteria, and day room on A-deck
- Lobby, laundry, conference room, office, and trim room on main deck
- Dry provisions, cooler, and freezer rooms adjacent to galley
- Low noise and vibration levels
- The wheelhouse has excellent visibility in all directions
- Direct view of cargo deck area from day room
- Arrangements acc. to ISPS code

## TECHNICAL DATA

### Deck Cranes
- One knuckle boom crane, 10 t - 16 m
- Two deck cranes travelling on cargo rail, 3 t - 10 m

### Dry bulk plant
- Four tanks, each of 63.5 $m^3$
- Duplex BHS compressor, 2 x 30 $m^3$/min, 6 bar
- Two dust cyclones with receivers for vent lines
- Two segregated discharge systems

### Liquid Cargo Discharge Systems
- One fresh water pump, 150 $m^3$/h – 9 bar, centrifugal
- One brine pump, 75 – 24, screw spindle
- Two ballast / DW pump, 250 – 9, screw spindle
- One fuel oil pumps, 250 – 9, screw spindle
- One base oil pump, 100 – 9, centrifugal
- Two mud pumps, 75 – 24, eccentric screw
- One slop pump, 50 – 5, centrifugal
- All pumps are electric driven with freq. control
- Four agitators, el. driven, for mud and slop tanks
- Tank cleaning system for mud, brine, and slop tanks
- Flowmeter for FO

### Side Thrusters forward
- One tunnel thruster, 1200 kW, cpp, frequency controlled
- Retractable steerable thruster, 1800 kW, cpp, freq. contr.

### Manoeuvering/Positioning
- Joystick
- Dynamic Positioning System dual redundant (IMO Class II) with: Position reference systems: DPS 700, laser reference system. Hydro acoustic reference unit

### Navigation / Communication
- S-band ARPA radar and X-band ARPA radar
- Digital chart system ECDIS (duplo)
- Conning station, VDR, AIS
- Radio installation according to GMDSS – area A3

### Internal Communication
- ULSTEIN COM automatic telephone, data network, and satellite TV antenna signal to all offices and cabins
- TV satellite antenna

### Deck Winches
- One combined windlass / mooring winch
- Two tugger winches, pull 20 t, remote control.
- Two capstans aft, pull 15 t, remote control.
- Two towing / working drums
  Capacity: 2500 m of 77 mm dia. wire
  Brake holding load: 500 tonnes on 1st layer
  Duty in hoist: 400 T at 0 – 18,7 m/min. on 1st layer
  Duty dynamic braking: 90-480 T at 0-88 m/min.
- Two spooling devices for the towing/working drums, side load 40 tonnes
- One anchor handling drum with dividing flange socket part
  Capacity: 5000 m of 77 mm dia. wire
  Duty in hoist: 400 T at 0 – 18,7 m/min. on 1st layer
  Duty dynamic braking: 90-480 T at 0-88 m/min.
- One spooling device for the AH drum, side load 60 tonnes
- Two secondary winches with dividing flange socket part 138 tonnes pull, 170 tonnes dynamic braking at 70 m/min.
  Capacity: approx. 1600 m of 8 in. dia. synthetic rope
- Two spooling devices for secondary winches, side load 20 tonnes
- One storage winch for spare tow wire, pull 10 tonnes
  Capacity: 1700 m of 76 mm dia. wire rope

### Shark Jaws and Towing Pins
- Two anchor handling forks, Ø500 mm, SWL 500 tonnes
- Four towing pins with flaps for horizontal locking, Ø450 mm

### Safe Anchor Handling System (SAHS)
- Two tugger cranes, travelling on top of cargo rail, tugger winch 15 t, crane winch 3 t, max outreach 10 m.
- Stern ram, L6000, B13950, Static max load: 500 t, Dynamic max load: 400 t at 50 m/min.
  Twin inboard stern rollers, L2*3000, D1800
  Twin outboard stern rollers, L2*2000, D1800
- Pennant catcher
- Positioning tool, roller height 600 mm
- Two wire spin tools
- Two chain pulling and laying devices (10 t pulling force)
- Remote control and radio remote control

### Machinery / Propulsion System
Diesel electric power and propulsion plant
- Four main generator engines, each of MCR 2880 bkW at 720 rpm
- Two main generator engines, each of MCR 1665 bkW at 900 rpm
- Tandem electric propulsion motors arrangement:
  Two el. motors, variable speed, 0-3000 kW, 0-720 rpm
  Two el. motors, fixed speed, 2000 kW, 720 rpm
- Twin installation main azimuth thrusters with nozzles, controllable pitch, variable speed, each of 5000 kW diameter 3600 mm, speed 0-173 rpm

### Fire Detection System
Addressable fire detection central

### Video and monitoring system
A colour video camera system (11 cameras) for surveillance of AHT winch, pump room, propulsion room, stern ramp. Surveillance acc. to international ISPS.

### Fire Fighting System
- $CO_2$ protection system for engine room
- Local water mist protection system

### Electric Power Plant (690 Volt AC – 60 Hz)
- Four main generators, each of 3070 kVA, 720 rpm, cosφ 0,9
- Two main generators, each of 1756 kVA, 900 rpm, cosφ 0,9
- Emergency / harbour generator, 370 ekW
- Integrated Alarm and monitoring System (IAS)

**ULSTEIN VERFT AS**

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