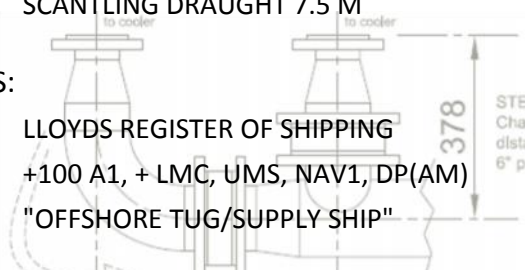

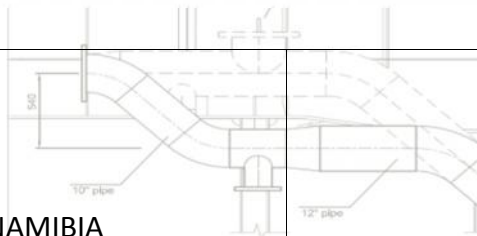



INSTALLATION AND ALIGNMENT OF 2 X ELECTRIC 170 TON WINCHES

INSTALLATION OF THE WINCHES SUPPORTING SUPERSTRUCTURE (70 TON)

PIPING OUTFITTING AND INSTALLATION OF ALL WINCHES AUXILIARY MECHANICAL AND ELECTRICAL MACHINERY

<p>SHIP: MAERSK BATTLER</p> <p>SHIPOWNER: MAERSK SUPPLY SERVICE</p> <p>MAIN DIMENSIONS:</p> <ul style="list-style-type: none"> - LENGTH, OVER ALL 84.6 M - LENGTH, BTW. PERP. 75.0 M - BREADTH, MLD. 18.8 M - DEPTH, MOULDED 9.0 M - SCANTLING DRAUGHT 7.5 M <p>CLASS:</p> <ul style="list-style-type: none"> - LLOYDS REGISTER OF SHIPPING - +100 A1, + LMC, UMS, NAV1, DP(AM) - "OFFSHORE TUG/SUPPLY SHIP" 	
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<p>SHIPYARD: EBH NAMIBIA</p> <p>LOCATION: WALVIS BAY, NAMIBIA</p> 	
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STEP 1 - SITE SURVEY AND WORK PREPARATION

While the ship was sailing from Angola to Namibia, a small qualified travel squad joined the ship in Luanda for dimensional control and to start dismantling the equipment and cutting the steel – All executed work done onboard was under Class approval.

At the same time the management team settled in the shipyard for site preparation, kick-off meetings, logistics and production plan definition between all parties.

Also a team of pipe fitters and TIG welders started the pipe spools prefabrication (CuNiFer and ASTM A106 pipes) on the shipyard pipe workshop under supervision of the Client Welding Inspector.

STEP 2 – CHALLENGES

- Reduced time frame
- Level of Quality under Class Rules and IACS Recommendations
- Local resources
- Supplied Outfitting/Piping Project without a proper collision analysis

STEP 3 – ACTION

STEP team (a total of 30 technicians) was able to:

- Remove the existing equipment and cut the existing structure
- Install 9 structural blocks above the main which, including a structural fresh water tank
- Install and aligned the 2 secondary winches
- Prefab and fit new sea water and fresh water lines
- Modify and loop existing main hydraulic lines and fire lines
- Fit on site 12 new switch boards and 80 meters of cable trays

STEP 4 – RESULT

- Completion 22 days
- 2 x 170 ton Winches installed and aligned
- + 70 tons of steel installed
- Class approved
- All steel works and manufactured items approved by Class and 3rd party Inspection
- Satisfied Client

