

Pre-installation of an FPSO mooring system

Project Deliverables

- Project Management & Engineering (PM&E)
- Setup of Project Operating Base (POB) and mooring equipment storage facility
- Boulder and debris clearance
- Survey of mooring line corridors
- Installation of anchor piles and ground chain

Maersk Supply Service (MSS) was awarded a turn-key contract by an Energy Major company in the North Sea for the Transport and Installation (T&I) of an FPSO mooring system.

This Fact Sheet focuses on the installation of Anchor Pile (driven) and Ground Chain. In this integrated solutions project, MSS was responsible for delivering all aspects of PM&E, storage and inspection, procurement, mobilisation of the installation vessels and completing T&I of the piles and ground chain.



One Team Approach

Enabling projects to run smoothly

The MSS Project Team and the Client established a collaborative and transparent relationship that resulted in efficient scheduling of operations and timely resolution of issues. There was a primary focus on maintaining an integrated team approach between MSS and the Client. We had jointly developed a project safety charter utilised to enhance HSSEQ initiatives and induct the Subcontractors into the collaborative 'One Team' philosophy.



Efficiency of combined Vessel Operations

Superior capabilities

By working in tandem, the Maersk L-Class (Lifter) and Maersk I-Class (Inventor) efficiently performed the challenging installation of the anchors and ground chain. The vessel mobilisations were completed side by side at the project operating base. Together, the vessels transported and installed the anchor piles, in groups of four anchors, in three cluster segments.



Agile Working

Active collaboration, problem solving and integrated solutions finding

Maersk Supply Service brings over 50 years of hands-on offshore experience to every project scope. With a high regard to quality, the on and offshore project team addressed the associated challenges from COVID-19 and ensured the installation was completed safely and efficiently.



Project Details

Client:

Energy Major in the North Sea

Project Location:

UK North Sea

Project Scope:

Anchor Pile & Ground Installation

Project Timeline:

January - July 2020

Number of Vessels:

2 Maersk vessels - I-class and L-class

Water Depth:

165 m

Number of Piles:

12, each 2.44m Ø, and 30m long

Length of Chain:

177mm (R4) Bottom Chain, 210 long



MAERSK
SUPPLY SERVICE

Integrated Project Work Scope Summary



End-to-end Project Management of:

Equipment spread procurement, inspection, storage and pre-installation interface checks

- Anchor Piles, shackles, chains and mooring component storage in accordance with design requirements
- Anchor Piles and Mooring chains mobilised from the Project Operating Base established in Lerwick, specifically for this project
- Dimensional survey of pile spread guide frame, pile follower and anchor piles, to complete worst case dimensional interface checks
- Onshore pile/shackle and chain dimensional testing, providing set offshore couplings for installation

Boulder clearance and survey of mooring line corridors operations

- Mobilisation of survey system including MBES, and 15te orange peel grab
- Clearance of boulders (134 cleared) from along the mooring leg corridors
- 2 x Oceaneering Millennium ROV's on the Maersk I-Class

Anchor Pile mobilisation and installation

- Anchor pile installation preparations and installation from the Maersk I-Class
- Combined operations, for the chain to pile handshake and connection
- Anchor Piles c/w connected ground chain overboarded using both I-class cranes in a tandem lift. Piles fitted vertically into the pile guide frame
- Overboarding and operation of the pile hammer and follower system to drive the anchor piles flush with the seabed
- Heave compensated 400te crane assistance for pile follower/hammer removal in difficult soil conditions

Chain mobilisation and installation

- Transportation and installation by Maersk L-Class, 177mm Bottom Chain x 210m
- Chain lowering and catenary management throughout the installation
- HP Dredging assistance provided for soil removal from pile core by WROV on L-Class



Trial Fit of the Pile Follower to Anchor Pile



Anchor Pile being over boarded by the two cranes aboard Maersk Inventor



Anchor Pile Deployment

Maersk Supply Service - Provider of vessels and full service solutions to the energy sector

Maersk Supply Service is a leading provider of marine services and integrated solutions to the energy sector worldwide with a large fleet of anchor handling tug supply vessels and subsea support vessels. The company provides solutions to the oil and gas industry in areas such as towing and mooring installation, subsea construction, and light well intervention services, and supports other industries such as offshore wind, deep sea mineral recovery and ocean cleaning.

Maersk Supply Service employs an international staff of approximately 1100 offshore and 250 onshore people. Headquartered in Lyngby, Denmark, Maersk Supply Service is represented globally with offices in Aberdeen, Accra, Luanda, Manila, Mexico City, Perth, Rio de Janeiro, St. John's, and Singapore. Maersk Supply Service is a part of A.P. Møller – Mærsk A/S which employs roughly 70,000 employees across operations in 130 countries.

For more information visit www.maersksupplyservice.com

 **Safe hands.** Sound business.