Offspring International

Offspring International Limited (OIL) is a leading supplier of high quality Single Point and Conventional Buoy Mooring and offloading systems, Quay Reel® loading and unloading system, hoses, breakaway couplings, pressure surge protection and navigational buoy moorings.

Based in Dudley near Birmingham, UK, and with a subsidiary office in Laguna Niguel, California, OIL is a dedicated team of mooring professionals, bringing together over 150 years combined experience in the supply and deployment of offshore mooring systems. We are an active member of the Oil Companies International Marine Forum (OCIMF), contributing our knowledge and experience to Single Point Mooring (SPM) and Conventional Buoy Mooring (CBM) Best Practice.

OIL supplies a range of SPM and tandem offtake mooring systems following the OCIMF 2018 “Guidelines for Offshore Tanker Operations”, including single or dual hawser configuration, single leg-type mooring hawser and grommet-type mooring hawser manufactured and supplied in strict accordance with the OCIMF 2000 Guidelines for the Purchasing and Testing of SPM Hawses.

Integrated SPM & CBM supply
OIL offers a comprehensive service for Single Point Mooring and Conventional Buoy Mooring systems, from provision of the entire offtake system, to replacement of mooring hawsers, hoses and associated hardware. Our approach is based on experience of providing offloading systems across the globe; we take a systematic approach to assessing the offshore environment, hawser and hose design, testing, and installation conditions.

All OIL offloading systems and products offer outstanding operational performance, reliability and safety, and include chafe chains, mooring hawsers, pick-up and messenger ropes, support buoys, shackles, associated fittings and load-monitoring equipment. Additionally, OIL is able to supply single and double carcass floating marine and submarine hoses, dock hoses and long length conduit hoses in accordance with GMPHOM 2009.

OIL is also the exclusive worldwide agent for Lankhorst Euronete Portugal (part of the WireCo WorldGroup) for SPM systems, international agent for Manuli Hydraulics - Oil & Marine division floating marine and submarine offloading hoses and primary agent for Techflow Marine’s Quay Reel® flexible loading and unloading system.
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Quay Reel® - Tanker Loading & Unloading System
The Quay Reel® system offers significant improvements over conventional port and terminal fluid transfer systems resulting in reduced loading times, reduced demurrage, smaller footprint, and increased safety and reliability.

Offshore Ops - Integrated Terminal Management
In keeping with tanker loading Best Practice, Offspring International, working in partnership with Offshore Ops, offers industry leading software and technologies for better managing mooring and offloading operations. The compact modular system offers a range of terminal management, environmental and equipment monitoring devices, seamlessly integrated into a single, secure software package.

In addition, the software enables improved efficiency in terminal management by allowing comprehensive monitoring and control over consignment scheduling, asset management and policy and procedural adherence.

Navigational Moorings
Offspring International has supplied navigation buoy moorings for over 20 years. It offers the complete mooring assembly, comprising: sinkers, shackles, swivels, briddles and pendant chain. Mooring Buoys are available in several designs: inflatable, rotationally moulded, PU elastomer coated foam filled, modular and steel.

Offspring International - Strength and Depth
OIL has a worldwide customer base together with a comprehensive international network of agents. OIL values long-term, customer relationships and so a commitment to excellence in customer service is one of our key strengths. We go beyond the normal pre-sales technical advice and project management expected when delivering mooring and offloading systems on-time and within budget. Our service also includes post-installation reviews and through-life support.
Established in 2005, Techflow Marine provides a range of specialist products to the Offshore Oil & Gas and Marine industries including the innovative Quay Reel® tanker loading and unloading system.

Quality
All activities are performed in accordance with ISO 9001:2008, and accredited by LRQA (Lloyds Register Quality Assurance). Techflow Marine’s highly qualified team of design and project engineers has extensive experience and knowledge of the design and supply of fluid transfer systems and associated mechanical, electrical and hydraulic equipment to the Offshore and Marine industries. This quality system is a key factor in consistently providing products and services that satisfy the needs and expectations of customers.

Manufacturing
Manufacture, assembly and testing of equipment is primarily carried out at Techflow’s 198,000 sq. ft. UK manufacturing facility, located in the North East of England near Newcastle upon Tyne. The main through-put of this facility is that of high quality bespoke mechanical handling equipment with electrical, pneumatic or hydraulic power and control systems for the international Offshore and Marine industries. This facility also specialises in the design, manufacture and supply of all types of drilling, production, industrial and special application hoses to the Oil and Gas Exploration and Production industries.

In addition to UK manufacturing facilities, Techflow Marine has close relationships and working partnerships with a number of strategically located fabrication sub-contract facilities within mainland Europe, Singapore, China, South Korea, the USA and Brazil, with extensive experience and proven track record. All suppliers and manufacturing partners have passed a full audit by Techflow Marine staff, ensuring capability and facilities meet the high standards expected.
The ability to use local manufacture, whether by customer requirement or preference, allows Techflow Marine to provide more cost effective solutions, often eliminating expensive additional shipping costs post manufacture. After-sales technical support and services are provided from both UK and Far East locations.

All system components are selected from market leading suppliers allowing a superior end product to be delivered to clients, minimising system maintenance and maximising performance. Safety and environment critical components are manufactured in-house using proven materials, processes and test procedures.
Quay Reel®: A New Efficient Tanker Loading & Unloading System

The Quay Reel® system offers significant improvements over conventional port and terminal fluid transfer systems including reduced loading times, smaller footprint, and increased safety and reliability.

Conventional systems utilising loading arms are prone to high loading times as the arms cannot cross each other, limiting the number of products that can be loaded at any one time. The rigidity of conventional loading arms also means tankers must move to load other products.

Working together with an international petrochemical company, Techflow Marine has developed a more efficient loading and unloading system facilitating shorter loading times, reduced demurrage and future increases in volume. The resulting Quay Reel® loading system allows simultaneous and safe loading of fluids to product tankers fulfilling the client’s key project drivers.

The technology used in the Quay Reel® loading and unloading system is proven across 100+ separate projects in the Offshore Oil and Gas industry where over 1000 reels of this type have been supplied.

The equipment is often installed in extreme and harsh environments with some of the world’s toughest safety requirements. For over 20 years this type of package has provided a safe, reliable and robust method of product transfer and been shown to reduce lifetime costs and improve hose life and integrity whilst providing a flexible, efficient loading solution.
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**Key Features & Benefits**

- **Marine Break-Away Couplings**
  - Weak link dry break couplings between hose sections.

- **Hose Auto-Wind Feature**
  - Automatically deploys hose if vessel moves away.

- **Suction & Delivery Hoses**
  - Custom made to suit product.

- **Power & Control**
  - Hydraulic, electric or pneumatically driven.

- **Raised Quay Reel Platform**
  - Bespoke design to suit site application.

- **Wireless Control Unit**
  - Improves operator visibility & safety.

**Envelope & Footprint Reduction**

- **Envelope Size Reduction**
- **Footprint Size Reduction**
- **Minimizes Spillage Risk**
- **Maintenance Reduction**
- **Reduces Operation Times**
- **Reduces Port Occupation**
- **Tanker Fuel Savings**
- **Reduces CO₂ Emissions**

**Patent Applied** 14382336.7
CEPSA Tanker Loading Case Study

This is the first system of its kind and was developed for multinational petrochemical company CEPSA in order to replace their existing loading arms.

2014 THE DELAYS IN OPERATIONS ON THE PIER REACHED THEIR LIMIT

The increase in volume caused delays of up to 3,000 hours between 2010-2011
The port suffers delays when it operates at over 50% capacity
The impact of delays increases exponentially with occupation rates

Loading and unloading of tankers would no longer be viable in 2015 without a new system

NEW SYSTEM IN DETAIL

1. Exterior coating - EPDM rubber
2. Synthetic textile reinforcement
3. Steel wire spiral
4. Antistatic copper wire
5. Transparent UHMWPE liner

EXAMPLE HOSE SECTION

Suitable for working with 98% of existing chemical products.

WEAK LINK, THE KEY TO SAFETY

The new hose’s safety fitting system reduces any risks to a minimum

Open flow
Closed flow

LOADING ARMS
- Only one can be connected at a time
- They cannot cross each other’s paths
- The tanker must be moved to fit each arm

WHY DO THEY CAUSE DELAYS?
- There are only two berths for tankers
- Not all products are available at each berth
- Distant and rigid loading arms
- High loading times
- Limits on loading of combined products
03. CURRENT

HOSE SYSTEM

04. RESULTS

AFTER ROLL OUT

1. MAXIMUM SAFETY: MINIMIZES RISK OF ACCIDENTAL SPILLAGE

0%

2. OPERATION TIMES ARE REDUCED BY 60%

-60%

3. HUELVA REFINERY PORT FACILITIES OCCUPATION RATE IS REDUCED BY 20%

-20%

4. LOADING OPERATIONS ARE FASTER (M³/HOUR) WITH SIMULTANEOUS LOADING

125% FASTER

5. FUEL SAVINGS FOR TANKERS

400 T/YEAR

6. FUEL SAVINGS MEAN A REDUCTION IN CO₂ EMISSIONS

-20%

LOCATION

Start of project: OCTOBER 2013
Start of operations: MARCH 2015

HOSE REELS

- System untried in ports until now
- Proven robustness in all types of conditions
- Certified by classification associations

WHY IS VIABILITY GUARANTEED?

- Allows for simultaneous loading with complete flexibility
- Less complex system than loading arms
- Incorporates innovative safety measures
- Includes additional protective “shell”
- System features Wi-Fi control

HOSE WINDING REELS

- A system of 3, thirty metre long hoses
- Electro-hydraulic drive
- Activated by remote control

CEPSA

Cepsa has patented the technology used in collaboration with Techflow Marine

QUAY REEL LOADING AND UNLOADING • WWW.OFFSPRINGINTERNATIONAL.COM
Ancillary Items

Offspring International supplies a range of ancillary items enabling safe loading and offloading operations.

**Hose Pick-up and Hang-off Chains**
Used to lift and secure the Floating Hose oil transfer system in place, the Hose Pick-Up and Hang-Off chain can be configured to accommodate both standard and project specific loading hose sizes. The galvanised chains are resistant to seawater corrosion.

**Hose Floats**
Manufactured from polyethylene foam covered with a seamless polyurethane elastomer skin, the hose floats are resistant to impact, abrasion, UV degradation and chemical attack - making them extremely durable in service. Designed for ease of deployment and installation, the floats can be customised for both surface and subsea applications.

**Spool Pieces**
Spool Pieces are manufactured from galvanised steel and suitable for Class 150 ANSI, Class 300 ANSI, and other flange types. Comprising two WNF Flanges, the spool pieces are supplied with or without lifting lugs.

**Camlock Couplings**
The Camlock Coupling flanges are designed to enable automatic location of the hose flange within the cam blocks, enabling a quick and hazard-free connection and disconnection. It is suitable for Class 150 ANSI flanges, Class 300 ANSI, DIN and other flange types.

**Butterfly Valves**
Rubber Lined, Type ITS (Wafer Type) Butterfly Valves are available for Class 150 ANSI, Class 300 ANSI, DIN and other flange types. Available in a range of sizes to suit specific project requirements, with elastomeric rubber seals resistant to the product in transfer.

**Blind Flanges**
Available in aluminium and galvanised steel, blind flanges protect the hose when not in service by preventing seawater entering. Designed for Class 150 ANSI, although available for Class 300 ANSI, DIN and many other flange types.

**Hose Repair Kit**
Inevitably hoses will incur some damage during service. Major damage should be cause for immediate retirement of the hose. However, minor damage to the outer cover can be successfully repaired using a variety of hose repair techniques.

**Quick Release Hooks**
Available in several arrangements and for a range of loads, Quick Release Hooks allow mooring lines to be secured safely as recommended for oil and gas terminals by both the OCIMF and The Society of International Gas Tanker and Terminal Operators (SIGTTO).

**Mooring Bollards / Capstans**
Offspring offers a range of bollards and capstans with sizes, designs and mooring line capacity to meet the requirements of all applications. OIL can provide capstans suitable for both non-hazardous and hazardous areas where additional safety features are required.

**Tugger Winches**
Offshore support vessels use tugger winches for a variety of handling applications. Offspring provides a range of electric / hydraulic winch systems able to pull up to 30 tonnes. OIL offers multiple control options depending on project requirements.

**Marine Fenders (Foam, Pneumatic and Rubber)**
Offspring offers a range of foam, pneumatic and rubber fenders for a number of marine environments. Fenders can be tailored to meet the needs of particular applications. PIANC (International Navigation Association) guidelines are followed in the design of OIL fenders.

**Lifting Slings / Handling Equipment**
Using the correct lifting equipment is essential as improper handling can lead to damage and premature hose replacement. Offspring can supply a variety of lifting and handling equipment, including slings, for various types of onshore and offshore loading equipment.

**Docking Aid Systems**
Docking aid systems provide the ship's pilots and jetty operators with data and a visual representation of the speed, angles, and distances between the vessel and dock, allowing mooring to be safely achieved.

**Environmental Monitoring**
Offspring offers a number of oceanographic and meteorological systems for monitoring the local environmental conditions around mooring sites and oil & gas and petrochemical terminals, maximising safe operating time.
Offshore Ops’ Terminal Management System allows operators to maximise terminal availability and efficiency, increase safety, reduce operating costs and reduce environmental incidents.

Offshore Ops, working in partnership with Offspring International, offers industry leading software and technologies for mooring and offloading operations. Offshore Ops’ fully OCIMF SMOG 2015 compliant Integrated Terminal Management System has been systematically developed over 13 years to provide ‘live’ data on a wide range of operational and environmental factors, as well as effective operations management, significantly reducing risk and enhancing mooring and offloading safety and performance.

Part of Offspring International’s growing range of equipment for SPM and CBM terminal systems, the compact modular system offers a range of terminal management, environmental and equipment monitoring devices, seamlessly integrated into a single, secure software package. In addition, the software enables greater efficiency in terminal management by allowing comprehensive monitoring and control over consignment scheduling, asset management and policy and procedural adherence.

Offshore Ops - Enhanced Terminal Monitoring
Offshore Ops’ Integrated Terminal Management System has been developed based on the needs of single and multi-operator terminals. It comprises an array of sensors on the offloading buoy, together with a portable monitoring unit used by the mooring master on the tanker, providing ‘live’ data on all aspects of offloading operations.

Benefits of the system include the ability to maximise Uptime and minimise Downtime, by monitoring various offloading and weather conditions to ensure it is safe to continue to operate.

Improved Mooring Operations
Combined GPS and compass heading monitoring of both the buoy turntable and tanker ensures trouble-free moorings. Tanker disorientation can be picked up early, allowing corrective action to be taken. In the event the buoy moves off-station, indicating a possible mooring chain failure, the integrated system will automatically issue an alert.

Offshore Ops’ modular Integrated Terminal Management System enhances offloading operations by offering the ability to monitor operations from anywhere, including inspection and maintenance schedules to ensure equipment performance, as well as, providing real-time data to the tanker, allowing safer mooring. All buoy and tanker data is encrypted during transmission.

Offshore Ops software is accessible from a variety of devices.
For more information on Offspring International Offloading Systems
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email: mail@offspringinternational.com
or visit www.offspringinternational.com