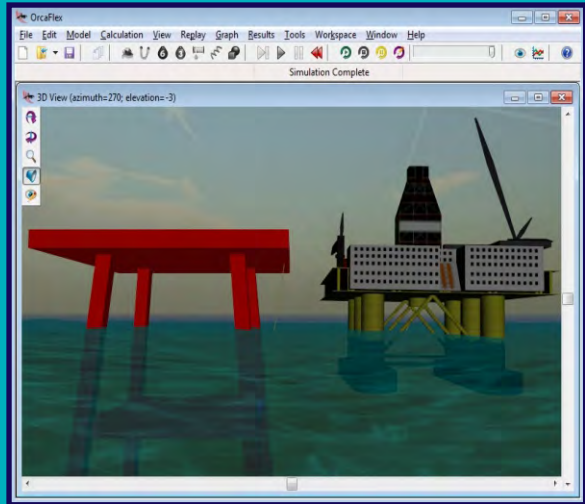
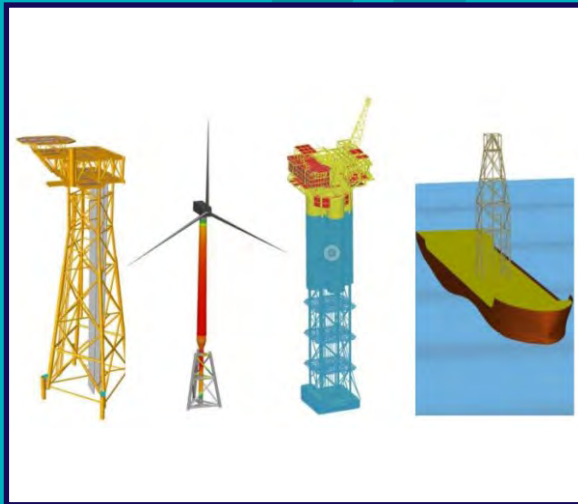


Aryatech Marine & Offshore Services Pvt. Ltd.



Introduction

Aryatech Marine & Offshore Services Pvt. Ltd is a design & engineering company with specialization in the field of marine & offshore technology. Our business is based on efficient management of technical information, state-of-the-art engineering processes, and utilization of modern information technology. Aryatech Marine & Offshore Services Pvt. Ltd has Naval Architects, Structural Engineers and Designers, Programmers, Process & Instrument Engineers, CAD Draftsmen with Marine/Offshore experience.

Aryatech performs Design, Engineering & Analysis of Offshore Pipe Lay Systems using the OrcaFlex and OrcaLay software.



Aryatech is authorized channel partner of the Bentley softwares SACS, STAAD.Pro, AutoPIPE, ProSteel, MOSES & Maxsurf. Aryatech is also the exclusive marketing agent of ORCINA in India & Middle East (UAE, Qatar, Egypt, North Africa & Turkey).

Aryatech is the authorized SACS training center for India & Middle East by Bentley. Aryatech also specializes in providing training to companies & individuals for Marine & Offshore applications

Aryatech's extensive experience with ships, jack-up, drilling units, drillships, risers & pipelines enable us to provide the clients with professional & cost effective solutions.

Aryatech also offers an array of software packages which are used by engineering firms, drilling contractors, oil companies, classification societies, and shipyards worldwide.

Aryatech is associated with Stewart Technology Associates USA (www.stewart-usa.com), a major Marine & Offshore Engineering Consultancy company.

Our Engineering Services

Offshore Engineering

Drill Ships/Semisubmersibles

- General Arrangement & Tank Capacity Plan
- Pontoon, Column & Deck Box Structural Design
- Bracing, Sponsons & Blister Design
- HVAC Design
- Piping System Design



Jack-Up Rigs

- General Arrangement & Tank Capacity Plan
- Hull Structural Design
- Leg & Spudcan Design
- Drillfloor & Pipe Rack Design
- Raw Water Tower Design
- Helideck, Accommodation & Crane Pedestal Design
- Piping System Design



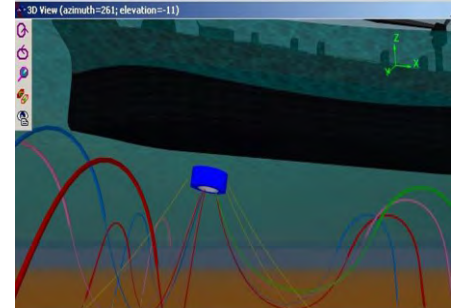
Fixed Offshore Structures

- Hull Structure Design
- Fatigue Analysis
- Accommodation Layout & Helideck Design



Naval Architecture - Offshore

- Stability Analysis (Intact & Damage)
- Mooring Analysis (static, quasi-static, dynamic & fatigue)
- Motion Analysis (diffraction)
- Loadout, Launching & Lifting Analysis
- Longitudinal Strength
- Deadweight Surveys & Inclining Experiments
- Tonnage & Freeboard Calculations



Naval Architecture - Marine

- Deadweight Surveys & Inclining Experiments
- Intact & Damaged Stability assessment to client's nominated rule requirements
- Stability books - production of new & updating of existing books
- Fabrication drawings for ships hull structure, bulkheads sections, including construction details and welding symbols
- Design of up to medium sized marine vessels like tugboats, barges, mini bulk carrier, landing craft, launches, diving support barge etc.
- Propulsion & auxiliary machinery selection and/or replacement studies

Simulators

- Jack-Up Operation
- Semi-Submersible Operation
- Major Emergency Management Training
- Stability Training
- Drilling Operation

We use the following software for our Design & Analysis

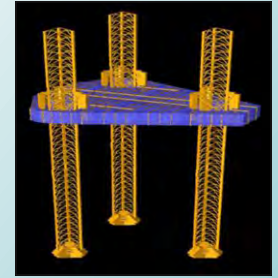
- AutoCAD (Drafting)
- STAAD
- MOSES
- SACS (Structural Analysis)
- OrcaFlex (Mooring Analysis)
- Maxsurf
- VB, VB. Net, Java, C, C++ (Programming)

Aryatech Marine & Offshore Services Pvt. Ltd

Specialist Software -Authorized Representative in India & MENA

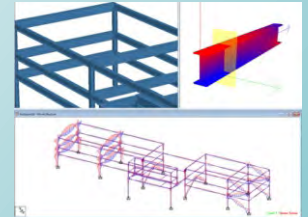
SACS

SACS is an integrated suite of software that supports the analysis, design, fabrication, and installation of offshore structures, including oil, gas, and wind farm platforms and topsides. Its ability to dynamically iterate designs allows users to perform advanced analysis, comply with offshore design criteria and visualize complex results.



STAAD.Pro

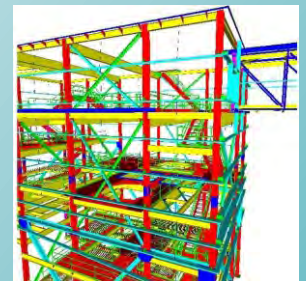
STAAD.Pro V8i is the structural engineer's software choice for steel, concrete, timber, aluminum and cold-formed steel structure design of low and high-rise buildings, culverts, petrochemical plants, tunnels, bridges, piles, aquatic structures and much more!



PROSTEEL

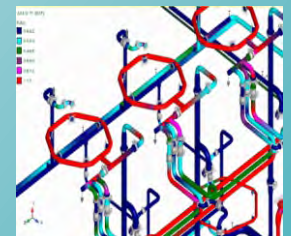
Bentley's ProSteel is a 3D modeling environment for structural steel and metal work supporting your construction and planning tasks.

Working on the AutoCAD and Microstation platform, you get an intuitive and integrated multi-material modeler perfectly suited to layout complex structures, produce shop drawings, assemble all your connections and manage your bill of materials



AutoPIPE

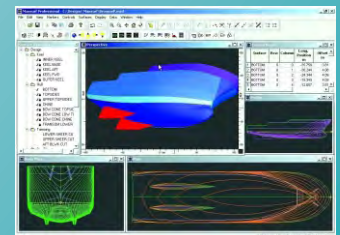
AutoPIPE is the choice of leading EPCs worldwide. The most comprehensive piping analysis software for 20 years in small to high-end piping projects worldwide for the power, oil and gas, petrochemical, offshore, and nuclear markets. Faster engineered piping systems backed by nuclear Quality Assurance to ISO9001.



MAXSURF

Naval architects use the Maxsurf suite of software to model vessels and floating structures, assess stability and strength and predict motions.

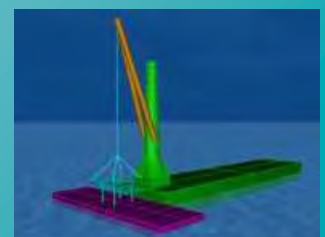
Engineers use Multiframe for general structural analysis, lifting analysis, calculation of motion induced loads, wind loads, hydrostatic loads, stiffened plate analysis and steel code checking.



MOSES

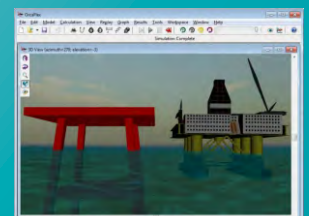
Hydrostatic and Hydrodynamic Analysis Software for Offshore Installation and Platform Design.

MOSES is an advanced suite of Hydrostatic and Hydrodynamic Software that provides the accurate calculation and simulation of Offshore floating systems. Intact & Damage stability analysis, Transportation, sea keeping, Upending Lowering, Deck Installation, Load Out, Float Over, Jacket Launching etc.



OrcaFlex

OrcaFlex is the world's leading software package for the design and analysis of offshore marine systems, including all types of Marine risers, Mooring systems, installation procedures and towed systems.

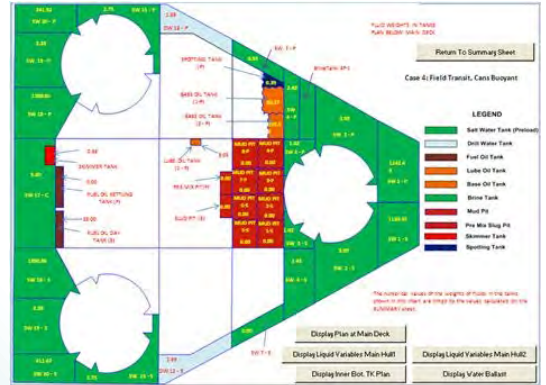


Projects undertaken

ABS classed Jack up Rigs

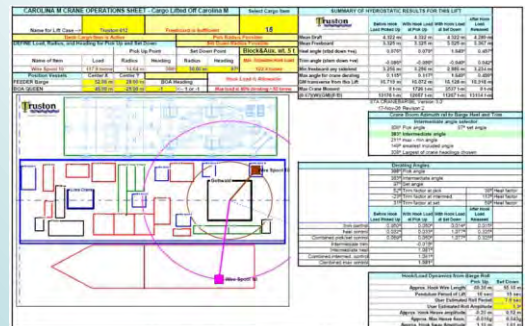
STA JACKLOAD

- This is the onboard stability software developed especially for jack-up rigs.
- Various load cases of the jack-up have been simulated for the crew using the software.
- Using this software the crew will get an idea of how the ballasting must be done, so as to bring the vessel into even keel.
- The plan view, front view, and side view of the vessel has been incorporated in the software to show the trim & heel of the vessel, position of legs with respect to the hull & sea bed and to show the position of each tank.



STA CRANE BARGE

This program may simply be used for assessing and storing barge hydrostatics and stability for any load case. However, it is intended to do this while simultaneously investigating lift case scenarios where the crane limits are also determined.



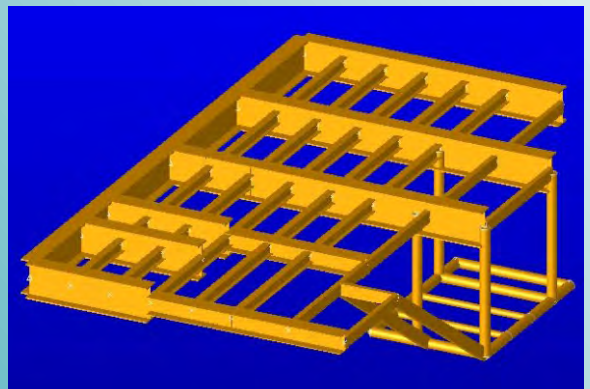
Projects Completed

We have carried out a number of structural analysis & SPM design verification all over the world in partnership with our associate company, Stewart Technology Associates USA. Recently various projects involving mooring analysis, SPM design verification & analysis review were completed for Indian & international clients:

Analysis & Design calculations of Macerator Skid Platform - QATAR & KENTZ

The platform PS-2 (MaydanMahzam) oil field is owned and operated by Qatar Petroleum (QP). KENTZ Engineers & constructors had been contracted by Qatar Petroleum (QP) to provide the EPC services for a New Macerator Platform. A new deck was required below the new instrument workshop to accommodate the macerator unit with an access staircase from the current deck. This macerator platform was to be supported by hanging supports taken from main deck beam.

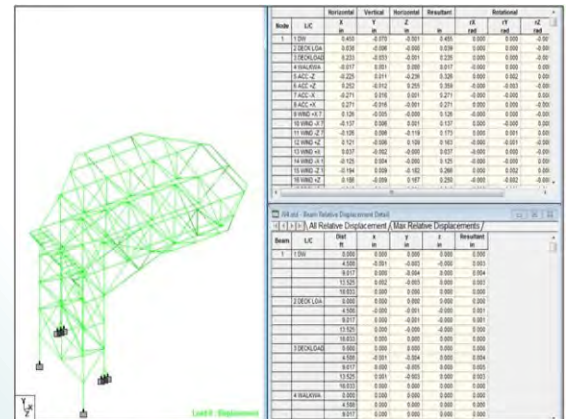
Aryatech carried out the structural design & analysis of the Macerator platform using SACS software.



Projects undertaken

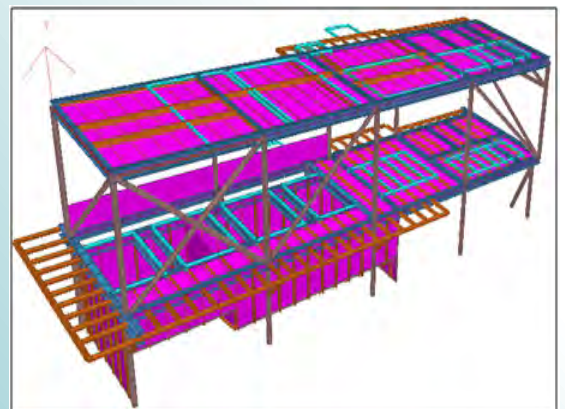
Helideck Analysis

The company is upgrading its mobile, offshore, self-elevating, drilling unit. The Rig needed upgradation to handle MI-17 Helicopter (13T Version). Aryatech provided complete engineering support consisting of structural analysis using STAAD.Pro, reinforcements details and complete detailed drawings package.



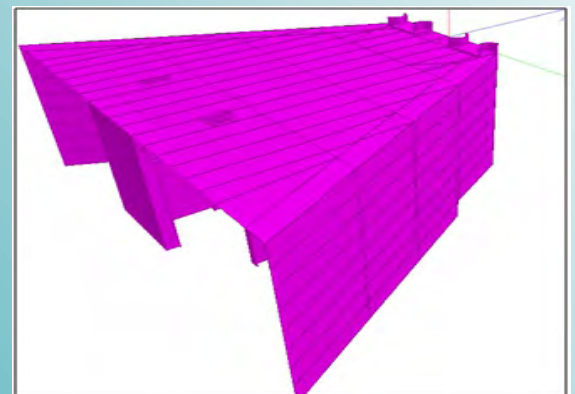
Mud Processing Unit

The rig was undergoing refurbishment. Aryatech carried out analysis using STAAD.Pro to check the strength sufficiency of mud processing unit due to up gradation of equipments and relocation of vertical column supporting platform. The analysis was supplemented by detailed drawings package.



Smit Bracket Replacement

Company is upgrading its Jack-up Rig. The SMIT Bracket, Panama Chocks & Bollards are being replaced with higher capacity ones. Aryatech carried out analysis to check the strength sufficiency of the new SMIT bracket supporting structures, Panama chock and the existing bollard supporting structures and proposed reinforcement.

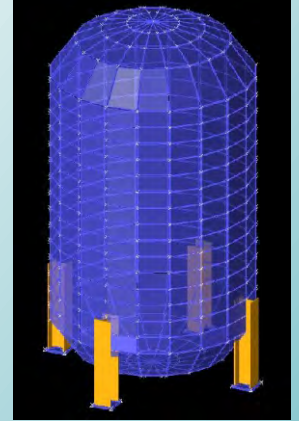


Linear Static & Transportation Analysis of Bulk Storage Tank

The Bulk Storage Tank with maximum operating capacity of 2100 cubic feet was to be used on the Mad Dog Platform for the storage of a liquid having density 135 lb/cubic feet.

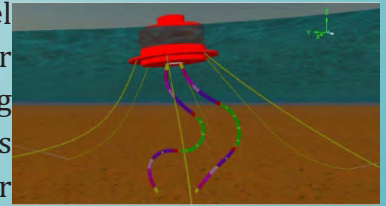
The scope of work included performing Linear Static Analysis of the bulk storage tank under environmental loads (wind load) after the installation of tank assembly on the platform. SACS software was used.

Also transportation analysis of the same tank during transportation on a barge was carried out using SACS software.



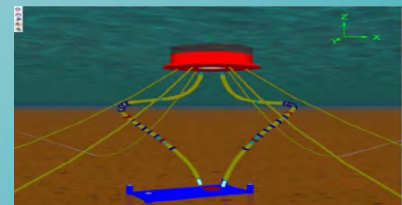
IOC Paradip SPM

The objectives of the study were to model the Paradip SPM system with CALM (Catenary Anchor Leg Mooring) arrangement in OrcaFlex, matching the SBM model as closely as possible and then assess the extreme response of the system under various load cases on the submarine hoses, the floating hoses and the mooring hawsers. The results and the operating conditions were compared with the reports provided by SBM. The work was completed and suggestions were made for improvements to the system based on the investigation and identification of the causes of failures of the subsea hoses and mooring hawser.



HMEL Mundra SPM

Scope of work was to carry out independent Sub Sea hose analysis of the Mundra SPM due to failure of the recently installed Sub Sea hoses. The work was completed and solution for installation of new Sub Sea hoses provided to the owners.



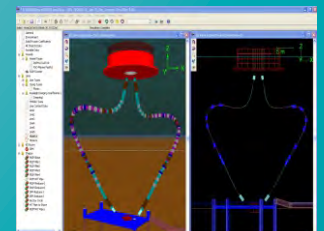
Mooring System for SESA GOA

Scope of work was to carry out design analysis of four sets /configuration of mooring buoy system to include the anchors, buoys, chain, connective jewellery and hawsers to the standards set by ABS Rules for Building and Classing Single Point Mooring. OrcaFlex software was used.



Single Point Mooring Verification for ESSAR at Vadinar

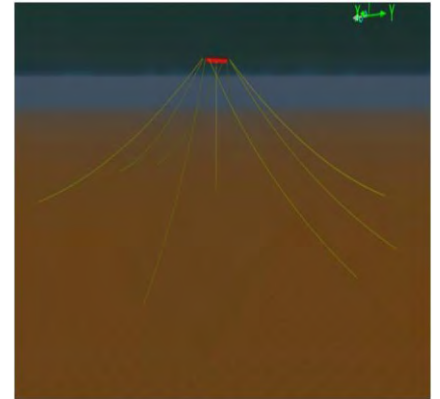
Scope of work was to carry out independent Sub Sea hose analysis of the ESSAR Single Point Mooring installed at Vadinar to transfer fluids of different density using the as installed Subsea hoses configuration. OrcaFlex software was used.



Riser & Mooring Analysis of Drillship (ONGC)

Aryatech is having expertise in the Riser and Mooring analysis using OrcaFlex software. We completed Riser and Mooring analysis for ONGC drillship at water depth of 265m along the Eastern Coast of India. Analysis is done following the global standards API RP 16Q and API RP 2SK.

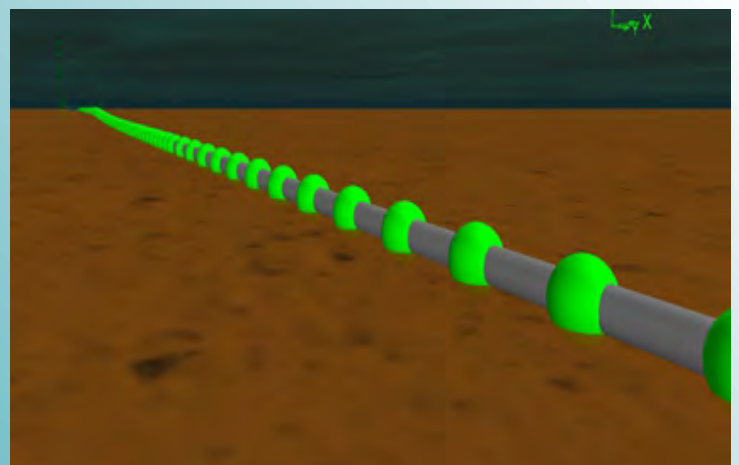
Scope of the work included checking the feasibility of existing riser capability of ONGC for the said location and designing a feasible mooring configuration. A workable mooring pattern was designed considering the environmental loads and the operational constraints of the drillship. Damage mooring analysis was done to check for the critical cases when one or more mooring lines are broken.



Riser & Pipeline Installation for Union Dredgers

Scope & Objective-24" existing pipeline is to be replaced by HDPE pipeline, to analyze the various stages of Installation for critical parameters involved and simulating the real time environment for the pipeline installation.

Analysis-Re-modelled 690m existing subsea pipeline sections to satisfy the new installation methodology acquired by the client and carried out the installation analysis and abandonment & recovery analysis using OrcaFlex to sustain the environmental conditions of the location Halul island, Qatar



Aryatech Marine & Offshore Services Pvt. Ltd

Projects Executed for – Jack-up Rigs

SWACO Air Compressor Platform (Removable Type)

- Concept Design
- Detailed Engineering
- Structural Analysis Report

Adjustable Height Stair Ladder

- Detailed Engineering

Catwalk Casing/Pipe Stopper

- Detailed Engineering
- Concept Design

Hull Gauging Engineering Support

- Detailed Engineering
(Engineering Support)
- Engineering Check report including
fabrication drawings

Helideck Global Analysis

- Detailed Engineering
(Engineering Services including design
drawings)
- Structural Analysis and Design Drawing

Helideck foam System

- Detailed Engineering
(Detailed & Fabrication Drawings)

Lifeboat & FRC Installation

- Concept Design
- Detailed Engineering
(Detailed & Fabrication Drawings)
- Structural Analysis

BOP Trolley Beam & Lifting Frame

- Detailed Engineering
(Structural Analysis with Detailed Drawings)
- Structural Analysis with fabrication drawings

Spudcan Analysis

- Structural Analysis

Accommodation Upgrade

- Concept Design
- Detailed Engineering
(Detailed & Fabrication Drawings)
- Structural Analysis

Towing Arrangement

- Concept Design
- Detailed Engineering
(Detailed & Fabrication Drawings)
- Structural Analysis

Emergency Generator Module

- Concept Design
- Detailed Engineering
- Structural Analysis Report

New SeaJet Pumps Platform

- Detailed Engineering
(Structural Analysis with Detailed
Drawings)
- Engineering Analysis with fabrication
drawings

Crane Boom Analysis Post Damage

- Detailed Engineering
(Structural Analysis)
- Engineering Analysis

Raw Water Piping

- Detailed Engineering
(Engineering Calculation with P&ID)

General Arrangement, Fire Fighting & Life Saving Appliances and Hazardous plan

- Preparation of GA, FF & LSA and HAZ
Area Plan

Training Details:

1. SACS - Offshore Structures
2. STAAD.Pro - Structures
3. OrcaFlex - Subsea Systems, Mooring/Riser Analysis & Pipelay analysis
4. Sub Sea pipelines design and analysis
5. Operation and maintenance of Offshore Structures
6. Structural assessment for fixed /floating structures



Contact Information

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