



**WE
SERVE
CONFIDENCE**

www.eagleoffshore.org



EagleMarine
We serve confidence

Eagle Marine Engineering Consultancy

Meeting your needs worldwide with business offices in Middle East and Asia

Mission:

Merging the latest and most effective technology with practical plans for the Maritime industry. Upholding the ideals of safety, reliability and customer satisfaction while also building a robust network of engineers, architects, and technicians. Facilitating and further the researching and development within the industry.

Vision:

To become the spearheads of revolutionary marine and offshore project management techniques, ensure uniform quality standards to our clientele, and expand our service portfolio by investing in technology and training for the looming engineers.

info@eagleoffshore.org

Eagle Marine is an ISO 9001:2015 certified company headquartered in Abu Dhabi and has business branches in Asia. Eagle Marine was conceived by a group of talented Marine Engineers and Naval Architects with an aim to revolutionize the marine and offshore industry. From Vessel architecture to offshore installations and project management, we find viable, practical, time bound and economical solutions for every client. Given the expertise, qualifications and years of professional experience with every team member, Eagle Offshore offers a better perspective and a competitive edge while handling your business.

About Us



OUR SERVICES

Eagle marine offers consultancy, design, and engineering for a wide range of markets. We have the experience and skills to deliver the peace of mind you need, and we do this by keeping your project on track, in scope, and on budget. Being flexible and agile, we take on any challenge with confidence and creativity. We can provide our services in a range of disciplines, including

- **Ship design – Concept and Basic design**
- **Structural Design & Modifications**
- **Heavy lift and transport engineering**
- **Engineering for BWTS & EGCS**
- **Project Management**
- **Naval Architecture**
- **Motion analysis & Subsea Engineering**
- **Offshore installation engineering**
- **Vessel Inspection & Surveys**
- **Technical Workforce Supply Services**



SHIP DESIGN

The concept design stage transforms operational requirements into a real vessel while satisfying all design constraints. These constraints are primarily cost-driven, and they can affect different design areas, such as main dimensions, speed, onboard comfort, cargo capacity, construction costs, modularity, and future mobilizations.

The basic design stage transforms the vessel concept into a technically sound and safe one to build vessel design. This is done by developing scantlings and stability calculations, system P&ID and structural drawings following rules and regulations issued by the designated classification society, flag, or other related authority.

General arrangement development as per Class, SOLAS, and other relevant codes

- **Structural design of floating offshore units**
- **Production design and drawings**
- **Feasibility study for conversion engineering**
- **Lifting analysis for offshore structures**
- **Finite element analysis**
- **Buckling and ultimate strength analysis**
- **First-principle calculations for scantlings, sea fastening, lashing**
- **Linear and non-linear analysis**
- **Vibration analysis**

NAVAL ARCHITECTURE

Stability

- Weight control and monitoring/weight estimation
- Inclining experiment
- Lightship survey
- Intact stability calculations
- Damage stability (Deterministic & Probabilistic)
- Offshore multi-axis stability (Intact & damage)
- Stability of offshore structures during major conversion

Hydrodynamic Analysis

- Resistance calculation
- Propulsion calculation
- Mooring analysis
- Motion response analysis
- Multibody simulation
- Green sea analysis
- Maneuvering simulation

Statutory plans and drawings

- General arrangement plan
- Lines plan
- Structural drawings
- Piping drawings
- Electrical drawings
- Docking plan
- Tank capacity plan
- Fire control plan
- Lifesaving appliances plan
- Escape route plan
- Tonnage calculations
- Freeboard calculations
- Equipment number calculations
- Light/ sound/ signal plans
- Wheelhouse visibility plan



STRUCTURAL DESIGN & MODIFICATIONS

Since no project is the same, but efficiency is always a condition, we focus on achieving the best results with our partners' goals at the forefront. Keeping your project on track, in scope, and on the budget is our way of providing you with confidence. Our structural engineers are experienced in most types of designs for maritime, offshore, and subsea structures. Eagle Marine is dedicated to supporting our clients' needs regarding shipping strength analysis for various structural elements like bulkheads, transverse frames, girders, plates, foundations, global analysis, and optimization for hull structure.

We provide specialist skills and knowledge, including design codes, legislative requirements, and good engineering practice. Structural design is performed following industry standards using specialized software tools.

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MOTION ANALYSIS & SUBSEA ENGINEERING

Motion analysis is conducted by approximating the response amplitude operators (RAO) using only sophisticated hydrodynamic analysis systems. This service is available for a spectrum of ships, including barges, vessels, floaters like semi-submersibles, spars, tops, FPSOS, among others. Our experts can provide solutions for:

- **Mooring systems design and up-gradation**
- **Deck cargo barge to pipelay design**
- **Cable lay barge or accommodation barge design**

In the case of deep draft floaters, an air-gap analysis could predict the occurrence of slamming loads and wave impact loads due to a negative air gap that follows movements of the sea surface. Air gap analysis could help determine:

- **The possibility of slamming events**
- **Impact area (under potential scenario)**
- **structural integrity against slamming loads**

Eagle Marine rigorously invests in R&D when it comes to conceiving more feasible methods in flexible pipeline engineering. We take over challenging tasks around engineering, installation, and retrieval of flexible pipe systems to provide you with the most advanced integrated solutions for deep-water and ultra-deepwater field developments all through design till installation. We are highly equipped to perform:

- **Pipeline installation analysis**
- **Umbilical installation analysis**
- **On-bottom stability analysis**
- **Free span analysis**
- **Beach pull engineering analysis**
- **Global buckling assessment**
- **Riser analysis**



HEAVY LIFT AND TRANSPORT ENGINEERING

Our expert team of naval architects and structural engineers with outstanding experience in shipyards, offshore & heavy industries provides intelligent, reliable, and flexible solutions for all your heavy lift & transport needs. Working closely with clients of varied requirements helped us develop a customized work plan to execute the transport and lifting of any cargo.

Engineering the ballast & sea fastening calculations, checking local & global strengths of the barge or the heavy-lift vessel during transportation, the cargo being transported is subjected to dynamic loads due to waves from the ocean and subsequent vessel motions. Engineered sea fastening prevents the potential loss or damage to cargo during transportation. Dynamic loads used to design the tie-down members are either based on MWS standard motion criteria or maximum motions the vessel could undergo while experiencing the worse anticipated sea state along the tow route deduced from vessel motion response analysis. When it comes to the safe transportation of cargo, we perform the following operations:

- **Land & marine transportation feasibility**
- **Crane- lifting plan and calculations**
- **Float-off and float-on calculations**
- **Weighing and COG estimation**
- **Motion response analysis**
- **Hull deflection calculations**
- **Design of transport frames and lifting appliances**
- **SPMT transportation engineering**
- **Design of grillage and sea fastening solutions**
- **Ballast and stability calculations for load out/in, float on/off operations**
- **Mooring calculations**
- **Bollard pull calculations**
- **Deck strength calculations**



OFFSHORE INSTALLATION ENGINEERING

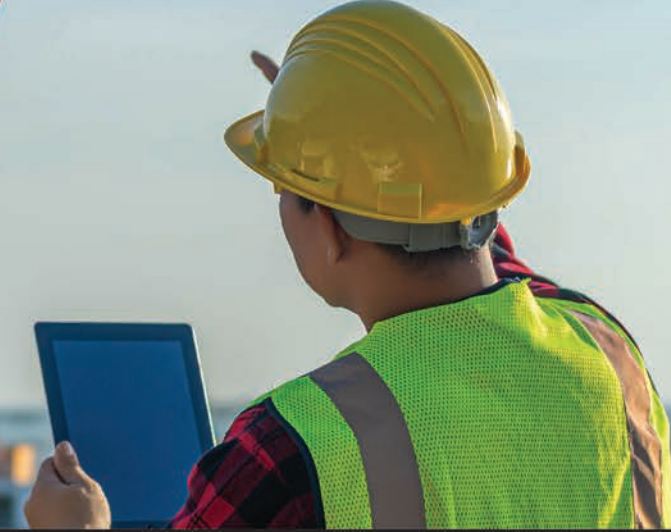
A simple subsea lowering analysis is conducted for vessels as recommended by DNV-RP-H103, or a detailed fully coupled dynamic analysis is conducted including all important bits of lowering or recovery operations such as lift in the air, lift through splash zone, lift in the water, lowering on to the seabed and lifting off from the seabed. These tests help estimate the dynamic loads on slings and associated equipment during the lowering or recovery operations while also establishing and quantifying the restrictions for installing or recovering subsea structures. Launching substantially large or heavy jackets from the launch barge helps them float without challenges. Jacket launch analysis aims to provide the following checks:

- **Barge ballasting requirement for arriving at launch floating condition**
- **Jacket push/pull force required to commence launching**
- **Rocker arm reaction loads estimation**
- **Jacket launch trajectory and dive depth**
- **Reserve buoyancy analysis**
- **Sensitivity studies for jacket COG positions and friction coefficients**

On the other hand, jacket docking analysis evaluates the impact interaction load between the jacket and pre-installed piles or conductor.

Docking analysis declares the restrictive sea state for carrying out docking operations without exceeding the allowable docking load.

ENGINEERING FOR BWTS & EGCS



3D Scanning

Feasibility Study

Basic Design & Class Drawings

Detailed Engineering & Production Drawings

Project Management & Equipment Installation





VESSEL INSPECTIONS & SURVEYS

Our team of engineers possesses expertise in vessel surveys and inspection activities. Eagle Marine provides you with the full technical inspection of the vessel along with an inspection report and photos, expert evaluation of dearth, recommended corrective measures, and an estimated budget. Our inspection covers:

ON HIRE/OFF HIRE SURVEYS

- Pre-purchase and in-service condition surveys
- Hull damage and machinery damage surveys
- Repair cost estimations

MARINE SURVEY

- Dry cargo survey
- Draught survey
- Pre-discharge condition survey
- Cargo damage survey
- Loading/offloading survey
- Loading supervision
- Lashing Survey

BUNKER SURVEY/ CONDITION SURVEY

- On-hire/off-hire bunker & condition survey
- General condition survey

CONTAINER SURVEY

- Pre-shipment condition
- Stuffing/unstuffing/stow
- Cargo/container damage
- Lashing survey/certification

BREAK-BULK/PROJECT CARGO SURVEY

- Pre-shipment condition
- Pre-discharge condition
- Loading/discharging survey
- Damage/short landing survey
- Cargo hold inspection
- Lashing/sea-fastening calculation
- Onboard stowage supervision



PROJECT MANAGEMENT



PROJECT MANAGEMENT

Eagle marine offers clients a complete solution to deliver their projects on schedule and within budget. Our project management team has extensive industry experience managing new vessel construction and conversion projects alongside reputable marine builders worldwide. We can provide onsite supervision of the vessel construction to ensure construction quality and timely delivery. Our services range from assigning individual shipbuilding consultants to entire teams to design, develop, and manage shipbuilding, ship repair, and conversion projects and ensure safety and security for both the operations and the shipyard.

- **Heavy cargo transportation & installation**
- **Weighing and COG estimation operations**
- **Supervision for ship conversions, repair, and modification**
- **Inspection and preparation of dry dock specification**
- **Owner representatives/dry dock superintendence**
- **Pre-engineering survey for repair and conversion projects**
- **Site supervision: structure, outfitting, machinery, piping, accommodation, HVAC**



TECHNICAL WORKFORCE SUPPLY SERVICE

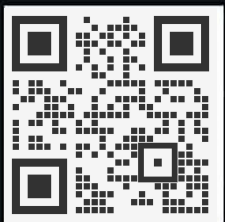
Enriched by our vast industrial experience in this engineering business, we provide qualified and competent personnel to support your operations in the areas of shipbuilding, repair, heavy lifting & the transportation industry. We can minimize your administrative obligations so that you can focus solely on operational duties.

We can provide our experts in a range of disciplines, including

- **Naval architects**
- **Structural engineers**
- **Project engineers – Marine**
- **Project engineers – Heavy lift & transportation**
- **Structural draftsmen**



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