



SEAQUEST

MARINE PROJECT MANAGEMENT LTD.

*Quality System*

# *The Quality Management System*

- SeaQuest Quality Management System consists in refined procedures developed through years of building and operational experience
- SeaQuest methods are more stringent than the procedures usually implemented by shipyards, enabling to achieve higher standards of quality

## SeaQuest Quality Manual:

1  
Quality

2  
Policy

3  
Procedures

4  
Safety

5  
Risk Assessment

6  
Environmt. Risk Assesmt.

7  
Technical

8  
Tech. Instr. & Check Lists

9  
PSPC

## Quality System

### 1) Quality Manual

- Quality policy and objectives
- Organization
- Quality management system
- Management responsibility
- Resource management
- Product realization
- Measurement, analysis and improvement

## Quality System

### 2) Policy Manual

- Health, safety and environment and quality policy
- General correspondence
- Internal communications
- Customer enquiry policy
- Conceptual design
- Specification writing
- Technical review
- Plan approval
- Site supervision
- Site office
- Declaration

## Quality System

### 3) Procedures Manual

- Management and policy review
- Resources
- Customer requirement
- Planning process control
- Production process control
- Purchasing
- Internal audit
- Control of non-conforming product
- Corrective and preventative action
- Measurement and improvement
- Service rendering
- A1-Company processes
- Site Staff assessment
- A2-Business Continuity Plan

## Quality System

### 4) Safety Manual

- Safety policy
- Organization and lines of responsibility
- Fire / electrical safety
- First aid
- Training
- Cleanliness
- Manual handling
- Protective clothing
- Visual Display Screen equipment
- Machinery
- Guarding
- Visitors and contractors
- Enclosed spaces
- Working at heights
- Accident reporting form

## Quality System

### 5) Risk Assessment Manual

- The management of health and safety at work
- Risk assessment
- Categories

### 6) Environmental Risk Assessment Manual

- Environmental Policy
- The management of the environment
- Risk assessment
- Appendix: Sample calculations

## Quality System

### 7) Technical Manual

- Quality policy and objectives
- HSE
- Responsibility
- General requirements
- Pipe outfitting
- Instrumentation
- Installation inspections of mechanical equipment
- Boilers
- Non structural tanks
- Ventilation system and air conditioning
- Electrical
- Painting
- Structure
- Welding
- Hull & Machinery steel forgings & castings
- Non destructive testing
- Inclining experiment
- DWT measurement
- Sea trial
- Planned maintenance system
- Delivery file
- A1- Delivery checklist
- A2-Cargo tank working procedure
- Coated ballast/cargo pipe inspection procedure



## Quality System

### 8) Technical Instructions & Check Lists

- Pre-arrival checklist
- Publications, instructions and documentation
- Navigation and watch-keeping
- Safety guidance
- Cargo handling guidance
- Oil pollution from E.R.
- Inerting of gas free cargo oil tanks
- Guidelines for enhancing and optimizing discharge operations
- Auxiliary Engines. operating instructions
- Main Engine operating instructions
- Purifier plant operating instructions
- Waste oil / bilge water handling
- EO classification routines
- Steam plant operation
- Auxiliary Engines decarbonization
- BWT maintenance-coating repair procedure.
- Heated cargoes guidance notes
- Operation of machinery at design capacity

## Quality System

### 9) Performance Standards for Protective Coatings

- Part 0 - Design
- Part 1 - PSPC inspection procedure
- Part 2 - Painting
- Part 3 - Inspection
- Appendixes:
  - 1- Definitions
  - 2 - Painting inspection flow chart
  - 3 - Non conformity report
  - 4 - Adhesive tape test info sheet
  - 5 - PSP inspection report
  - 6 - SSP inspection report
  - 7 - Final Coating Inspection report
  - 8 - Coating inspection report
  - 9 - Coating technical file minimum contents

# Certification

## ABS Quality Evaluations Certificate Of Conformance

This is to certify that the Quality Management System of:

**SeaQuest Marine Project Management Ltd**

europe  
26, Rue Adrien-Lachenal  
Geneve  
Switzerland

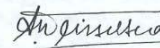
has been assessed by ABS Quality Evaluations, Inc. and found to be in conformance with the requirements set forth by:

**ISO 9001:2008**

The Quality Management System is applicable to:

THE PROVISION OF SUPERVISORY SERVICES FOR NEW BUILD PROJECTS AND THE PLANNING AND  
EXECUTION OF THE NECESSARY PLANNING APPROVALS

Certificate No:	38858
Original Certification Date:	15 July 2004
Effective Date:	14 June 2013
Expiration Date:	14 July 2016
Revision Date:	14 June 2013



Alex Weisselberg, President



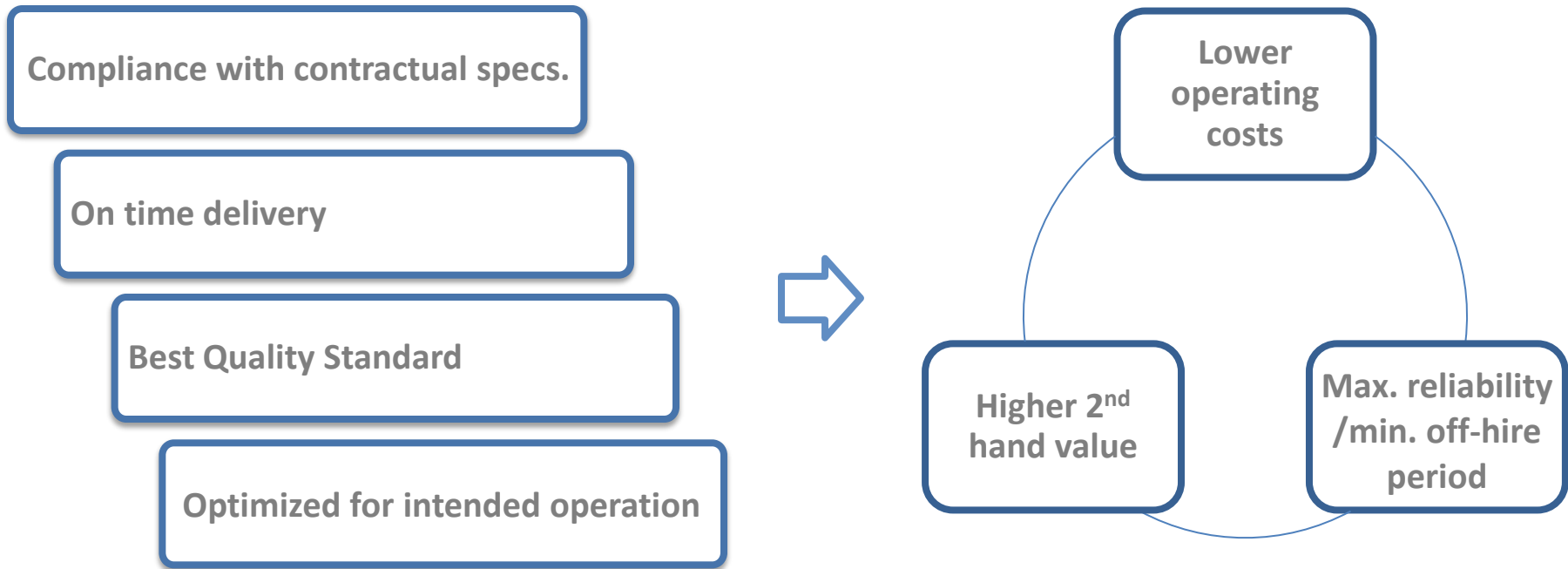
Validity of this certificate is based on the periodic audits of the management system defined by the above scope and is contingent upon prompt, written notification to ABS Quality Evaluations, Inc. of significant changes to the management system or components thereof.

ABS Quality Evaluations, Inc. 16855 Northchase Drive, Houston, TX 77060, U.S.A.  
Validity of this certificate may be confirmed at [www.abs-qp.com/cert\\_validation](http://www.abs-qp.com/cert_validation).

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# Goals

We offer quality service to achieve, through exacting management and professionalism, a strong relationship with the client through to the successful conclusion of the venture.



# ***KPI***

## Construction Key Performance Indicators

### **Before launching of the ship (as percentage)**

- Steel & block fabricated
- Pipe & spool fabricated
- Block blasted
- Final block painted
- Dock erection completed

### **After launching (as percentage)**

- Tank coatings of cargo, ballast and fresh water tanks completed
- Machinery & electric outfit completed
- FAT completed
- Test and trials completed
- Defects rectified (OWC, OCR/OCRS)

# ***KPI***

## Site Team Key Performance Indicators

- Attendance of inspections based on agreed ITP (Inspection and Test Plan)
- Timely issuance of required Progress Reports and Minutes of Meetings
- Effectively recognizing defects and follow up actions
- Proactive and advance warnings based on monitoring inspections and logistic requirements
- Delivery of the project with complete documentation, certification and all defects satisfactorily rectified - no conditions of class

# ***Lessons Learned and Risks Mitigation***

## **Case study n.1: Suezmax Crude Oil Tanker in DSME**

- **OWNERS SPECIAL FOCUS ON FOR SAFETY**
  - ✓ Before project kick off meeting conducted safety kick off
  - ✓ Project specific safety plan prepared
  - ✓ SeaQuest dedicated safety inspector employed from initial stage
  - ✓ Safety audit conducted within DSME and sub-contractors work site prior to start of work
  - ✓ Daily work site monitoring for safety issues
  - ✓ All five tankers delivered with a 100% safety record
  
- **RISK MITIGATION:**
  - ✓ Meticulous planning of project from start to completion
  - ✓ Safety kick off meeting
  - ✓ Project specific safety plan
  - ✓ Dedicated safety inspector
  - ✓ Safety audit

# ***Lessons Learned and Risks Mitigation***

## **Case study n.2: 6,100 ceu PCTC in DSME**

### ■ DESIGN STAGE

- ✓ **Lessons Learnt:** no side to side bulkhead in cargo region prone to vibration and fatigue cracks in short service period
- ✓ **Remedial Actions:** extensive 3D review and FEM analysis for 30 years life cycle; change in structural details and welding profiles; visit to existing ships for understanding vibration/fatigue issues

### ■ CONSTRUCTION STAGE

- ✓ **Lessons Learnt:** identification of design critical areas; inspections at sub assembly and block stage.
- ✓ **Remedial Actions:** info relevant to critical areas release to construction sites in DSME and sub contractors; monitor critical areas cut outs; strict alignment check and fit out inspections; weld profile grinding as recommended by FEM analysis

### ■ VESSEL IN SERVICE

- ✓ **Lessons Learnt:** cracks in decks/engine room/accommodation
- ✓ **Remedial Actions:** re-design accommodation area end connections, corners and cutouts; education of QM and Production with follow up inspections

### ■ REPEATED SHIP: CHANGE OF BLOCK SUB CONTRACTORS

- ✓ Block fabrication shifted to China
- ✓ Education of QM and production



# ***Lessons Learned and Risks Mitigation***

## **Case study n.3: 45k DWT CON-RO in DSME**

### ■ **LESSONS LEARNT**

- ✓ Need of familiarization with vessel type among builder, owner, SeaQuest
- ✓ Concept design
- ✓ Largest stern ramp in the world for RO-RO vessels, of semi-flexible type: need of monitoring inspections at various stages
- ✓ High number of ballast tanks leading to too many water tight boundaries in cargo hold space
- ✓ High level of automation with CPP propeller, bow and stern thrusters, shaft generator, exhaust gas cleaning system and BWTS

### ■ **REMEDIAL ACTIONS / RISK MITIGATION**

- ✓ Proactive approach on contract and design stage
- ✓ Construction stage early assessments and inspections
- ✓ Site team integration with owners expertise
- ✓ Choice of site team

# ***Lessons Learned and Risks Mitigation***

## **Case study n.4: Kamsarmax bulk carriers in DSME**

### ■ **LESSONS LEARNT**

- ✓ DSME original design with rudder area just 1.34% of lateral projected area below waterline and risk of poor maneuverability and course stability
- ✓ Design modification for inner bottom strength not incorporated in production drawings
- ✓ DSME changed production site for series vessels

### ■ **REMEDIAL ACTIONS / RISK MITIGATION**

- ✓ SeaQuest modified design of rudder area over 1.8% and complied with IMO standards for ship maneuverability, Resolution MSC 137 (76)
- ✓ SeaQuest management swift response and emergency action taken along with DSME top management for rectification after fabrication
- ✓ SeaQuest experts quickly set up new site team and integrated with existing team for series vessels; ship quality at both shipyards matched and fully satisfied clients' requirements

# ***Lessons Learned and Risks Mitigation***

## **Case study n.5: LR2 product carrier in HHI**

### **CARGO TANK COATINGS**

- **RISK MITIGATION:**
  - ✓ Meticulous follow up from start to completion
  - ✓ Information sharing
  - ✓ Tri-party meeting with paint manufacturer and shipyard
  - ✓ Paint maker recommendations fully explained
  - ✓ Cargo tank coating procedure established by SeaQuest and seminar held by SeaQuest PM for all parties involved
  - ✓ Hot work, blasting, coating sequence
  - ✓ Strict inspections and re-inspections

## ***RISKS CONNECTED TO YARD PERFORMANCE (SEAQUEST PAST EXPERIENCE)***

- Production schedule changes and modified overlapping (1<sup>st</sup> vessel)
- Production: grinding; flushing; rush for key events; inter-department communication; painting preparation and facilities
- Sub-contractors: changes of subcontractors
- Order changes: late information; rework
- Owners' Furnished Information and Equipment: unjustified claims
- Dry dock schedule extremely tight: short cut on painting and NDT
- Post launching: safety precautions; hunting for berthing place
- Post sea trial fatigue: inattentive manpower; details left undone
- Double banking: quayside space
- Manpower shortage: sharing key manpower with other projects
- Poor finishing: additional manpower for details, cleanliness, final finish

## ***WHY SEAQUEST***

- Well established **ISO certified Safety and Quality Assurance System (\*)**, enhanced and implemented throughout the years
- Ship Building Project Management is our **core business** with a track record of 180 delivered vessels in leading Far Eastern shipyards
- Services are provided to **3rd parties only** and customised to satisfy client's specific requirements
- Proved knowledge of **Far Eastern culture and ship building methods**
- Short **chain of command** with extremely fast reaction
- Excellent **safety records**
- Excellent **cost control** with no overruns experienced on any of the projects
- Large pool of **skilled manpower** for quick reaction in case of need
- Services are proposed at a **lumpsum price** with minimal accounting for the customer

*\* not to be confused with ISM Code certification for ships operation*

# *Contacts*

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