

ALKSHIPS

Shipbuilding Supervision



Newbuilding Experience “incl. on order” Overview by ship type (2004 – to the date)

- **52 bulk carriers**
 - **Newcastlemax, Capesize**
 - **Kamsarmax**
 - **Ultramax, Supramax**
 - **Handymax, General Cargo**
 - **6 container vessels**
 - **44 oil tankers**
 - **VLCC**
 - **Suezmax, Aframax,**
 - **MR & Chemical Tanker**
 - **3 LNG carriers**
 - **8 other gas carriers**
 - **LPG carriers, Semi-refrigerated LPG carriers,**
 - **1 FSRU**
- ➔ In total 114 vessels for NB in Far East, Europe, Black Sea.**
- ➔ Over 100 vessels for Dry-Docking, Major Conversion**

Role of the Ship Owner

- **Define Ship Requirements**
- **Yard Selection/Qualification**
- **Building Specifications**
- **Plan Approval**
- **Building Supervision**

Ship Owner's Needs

- Fit for the Intended Service
- Safe
- Reliable
- Economical
- Operation & Maintenance friendly
- Environment friendly

⇒ **Criteria for:** **Design**
 Construction
 Testing

Scope

- **Technical Specifications**
 - Detailed description of the vessel and its systems
- **Classification Society Rules**
- **Other Rules and Regulations**
 - IMO (SOLAS, MARPOL, COLREG)
 - Flag state (CE directives)
 - ILO, USCG, Suez Canal, Panama Canal,
- **Building Standards (for design, tolerances, repair)**
 - National & International Standards (JIS, CSQS, ISO)
 - Shipyard specific standards & procedures
 - Other standards: IEC, IACS
- **Key Drawings (GA, Midship, Capacity Plan, schematics)**
- **Equipment Makers (original licensee, type approval certificate)**

Owner's Area

- **Design Approval (Plan Approval)**
- **Building Supervision**

⇒ **Contractual Provisions:**

- **Plan Approval**
 - **Extent of drawings - for approval / for reference**
 - **Deadline for reply (existing designs!)**
 - **Communication with Classification Society**
- **Building Supervision**
 - **Role/Authority of the Buyer's representative**
 - **Number of people allowed**
 - **Extent of inspections**
 - **Access to all working areas, including subcontractors**
 - **Facilities provided for Buyer's team**

Owner's Involvement

Classification Society / Flag Authorities

Yard Quality Control / Quality Assurance System

- ✓ **Many issues not covered by Rules (coating, operation)**
- ✓ **Commercial pressure on Classification Society**
- ✓ **Very competitive industry for Shipyards**
- ✓ **Increased drive for productivity leads to Shortcuts**
- ✓ **Production Dept. often controls Quality Control**
- ✓ **Shipyard's QC/QA stops at the yard gate (Subcontractors)**
- ✓ **Often Prototypes - No series production**
- ✓ **Lack of experience/qualification**
- ✓ **Lack of management & coordination**

Plan Approval

- **Approval of Equipment Vendors**
- **Review main drawings and vendor documentation:**
 - **Compliance with Specifications, Rules & Standards**
 - **Compliance with Equipment Maker recommendations**
 - **General Evaluation of the Detailed Design**
 - **Any Operational & Maintenance issues**
 - **Feedback from existing fleet**

New Building Supervision

Follow up the construction (incl. main equipment)

- **Compliance with approved drawings**
- **Check workshop drawing vs approved drawing**
- **Compliance with building standards**
- **Compliance with the specifications**
- **Compliance with “Good Shipbuilding Practice”**
- **Ease of maintenance & Access**
- **Follow up testing and trials**
- **(Pre-)qualification of Subcontractors**
- **Compliance with HSQE policy**
- **Construction follow-up and reporting**

IACS Requirements & URZ23

- **Scheduled inspections**
 - Extent to be agreed (Steel fit-up, paint inspections!)
- **Unscheduled inspections/Patrolling**
 - Critical areas
 - Shipyard's weak points
 - Bottle necks - Erection in dry-dock, Painting,
⇒ Quick reporting system (Digital Cameras, Tools, DFT Gauges)
- **Tests & Trials**
 - Shop tests (extent attended by Buyer's to be agreed)
 - On board testing
 - Mooring trials
 - Sea trials
 - Gas trials (before, after delivery)

Subcontracting & Factory Acceptance Tests



- Extent of Subcontracting (can be agreed in contract)
- (Pre)-Qualification of Subcontractors
- Implementation of proper standards & procedures
- Implementation of QC (Subcontractor and shipyard)
- Scheduled Inspections:
 - at Subcontractor's premises,
 - upon arrival at shipyard
- Unscheduled inspections, etc...