Generic Ship Repair & Overhaul
Cost Estimating Libraries
Computerized Cost Estimating

- Computer-based tools to quickly formulate a cost estimate
- Manage cost data from central database
- Maintain current catalog of actual costs
- Maintain catalog of prior estimates
Establish Libraries of Centrally Available Cost Data
The *Generic Ship Repair & Overhaul Cost Estimating Libraries* provide a wide range of labor and material cost data useful for estimating construction costs across almost any ship type.

The libraries contain cost estimating relationships ("CER"s) applicable to many different manufacturing and assembly operation.

Rates based upon average mid-size U.S. commercial new construction shipyard.

Factors are provided for other size yards, foreign and domestic, and for military contractors.
The basis for the CERs has been pulled from a wide range of actual production cost data from many different shipyards, large and small, in the United States and Canada, over the past 10-15 years.

The CERs are the result of blending this data across the shipyards, each with different levels of productivity and manufacturing methods.

Factors have been selectively applied to the data to account for shipyard size, its relative level of production technology and an assessment of the shipyards’ relative level of competence in managing its costs and schedules.
The blending of actual costs has been performed to develop a generic mid-size (500-1000 production employees) commercial shipyard that has mid-1990’s production facilities including numerically controlled plate cutting and automated panel assembly line.

The CERs are in no way expected to reflect the actual cost performance of any given shipyard. Additional factors and considerations are always required when applying these CERs to a specific shipyard, its elected build strategy, and details of the ship design and selection of equipment and materials.
The use of these CERs should be undertaken with the same care as any level of business information that approximates or simulates any real-world situation.

The CERs are not advertised to guarantee an exact correlation with the actual costs that would ultimately be incurred.
Commodity-based escalation factors are applied to material cost CERs so that they are available to a common, current year value.
Variations due to specific materials, equipment models and configurations, and vendor pricing methods should be expected.

Costs assume commercial grade shipbuilding materials and quality management. Factors may be applied for various levels to allow for added costs of military specifications.
The shipyard data used to develop the CERs is largely proprietary information and maintained in strict confidence with these shipyards.

SPAR’s precise methods for blending also are proprietary and they are not offered for public use.

However, the use of these CERs have yielded cost estimate results that have been tested on numerous occasions and have been found to be highly credible when compared with other independent cost estimating methods.
Shipyards Cost & Performance Factors

- Commercial Vs Military
- International Cost Factors
- Hull Size Factors
- Pre-Outfit Productivity Factors
- Material Cost Escalation Factors
- Currency Exchange Rates
- USA Wage Rates
- International Wage Rates
- Learning Curves
General Shipyard Services

• Tugs, Docking & Mooring
• Hauling
• Cleaning & Refuse Removal/Disposal
• Temporary Services (Power, Heat, Light, Phone, Ventilation, Area Protection, etc.)
• Lift & Crane Services
• Rigging & Line Handling
• Tank Cleaning, Gas Free Certs
• Inspections & Testing
Structural Work:

- Plate Renewal
- Structural Fabrication (Steel, Stainless & Aluminum)
- Fairing, Plate Cut & Fit
- Doubling Plates & Stiffening
- Blast, Sweep & Manual Cleaning
- Gouging
- Welding & Welding Repairs
- Bulkhead Repair
- Foundations Renewal
Machinery Work:

• Generator Overhaul
• Shaft Bearings & Repacking
• Stern Gland Repacking
• Rope Guard Refit
• Refurbish Seals
• Prop Polish & Repair
• Rudder Removal, Clearance Measurements, Tests, & Gland Repacking
• Remove/Install Pipe, Valves, Pumps, Coolers, Blowers, etc.
• Drilling & Machining
Miscellaneous Hull Work:

• Remove, Change, Clean, Calibrate Anchor Chains, etc.
• Open/close/Repair Tanks
• Temporary Access
• Handrail Repair/Renewal
• Repair Deck Outfit
• Refit Sea Chests & Strainers
• Outer Hull Clean & Paint
• Fuel Tank Preservation
• Water Tank Preservation
• Remove/Repair/Replace Insulation
Pipe Work:
• Pipe Removal/Renewal (Stainless, Galvanized, Black Pipe)
• Pipe Bends
• Pipe Insulation
• Pipe Fittings Work
• Valve Work
Electrical Work:

• Electric Motor Overhaul/Repair
• Electric Power Cable Renewal/Installation
• Remove/Install Electrical Appliances & Fixtures
Joiner Work - Remove/Install Fixtures & Furnishings

- Berthing Areas
- Food Preparation Areas
- Medical Facilities
- Ship’s Office Areas
- Lockers & Stowage Areas
- Recreation Areas
- Laundry Areas

Sheet Metal Work:

- Grates & Walkways
- Shelving
Clean & Paint Work:

- Sandblast, Brush, Chemical, Hand/Power Clean
- Full, Spot Coat (Epoxy, Vinyl, Alkyd Enamel, Copper Ablative)
- Inspections
- Cover-Up & Protect
- Scaffolding
- Marks (Bulbous Bow, Draft, Names & Hailing Port)
Users can modify the generic CERs to better suit their shipyard’s actual cost experience as well as add additional ones to further expand the value of the libraries.
Benefits

- Fewer cost surprises
- Faster bid response
- Lower cost risk
- Greater profit potential
- More competitive bids
Over 35 Years Serving the Shipbuilding & Repair Industry

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