Shipbuilding is an old traditional industry and its organization and management are very traditional.

Relationship between management and workers is adversarial.

Shipyards have been slow to introduce new organization types and management approaches.

There is a general lack of trust in shipyards.

Today’s professionals and workers expect more than the traditional approach to management.

Companies can no longer consider themselves as closed systems. They are impacted by their immediate external environment as well as the global environment.

Different levels of management require different skills and focus.

A manager's task has changed from the traditional, directing, organizing, controlling to coaching, supporting, facilitating, advising.
SHIPYARD ORGANIZATION AND MANAGEMENT (Cont.)

- Management 101 describes normal organization types. Today flexibility in organization is essential.
- Shipyards are mostly functionally organized with some matrix elements overlaid on the functional organization.
- The biggest problem in traditional management is communication between themselves and to their subordinates.
- Re-engineering a company and the use of Concurrent Engineering offer ways to help companies struggling to survive.
- U.S. shipyards should use Concurrent Engineering, as well as the Shipbuilding Policy and Build Strategy approach, as they can all assist them to better plan, communicate and perform their work.
- **Work organization is where U.S. shipyards are weak, compared to world class shipbuilders**
The role of the management in coordinating the resources of an enterprise

**RESOURCES**
- Land and Buildings
- Materials
- Plant Machines Equipment
- The Services of Men

**Management**
- Obtains the facts
- Plans
- Directs
- Coordinates
- Controls
- Motivates

in order to produce ...

**Goods and Services**
MODERN SHIPBUILDING PRACTICE

Functional Organizational Structure

President

Vice President Engineering
Vice President Production
Vice President Marketing
Vice President Finance
MODERN SHIPBUILDING PRACTICE

Product Organizational Structure

President

Vice President
Industrial Relations

Vice President
Finance

Vice President
Tanker Division

Vice President
Liner Division

Vice President
Warship Division
MODERN SHIPBUILDING PRACTICE

Process Organizational Structure

- President
  - Vice President Material Processing
  - Vice President Component Assembly
  - Vice President Final Assembly
  - Vice President QA & Testing
Customer Organizational Structure

- President
  - Vice President Government Division
  - Vice President Commercial Division
  - Vice President Foreign Division
Matrix Organizational Structure

President

Vice President Engineering

Vice President Production

Vice President Marketing

Vice President Finance

Project Manager

Project Manager

Project Manager
Structural Design Options for Grouping Employees into Departments
KEY

P - President
VP - Vice President
M - Manager
S - Supervisor

Direct Reporting
Horizontal Interactions
Vertical Interactions
MODERN SHIPBUILDING PRACTICE

MARAD/SNAME/IHI Engineering Organization

Typical U.S. Engineering Organization

Typical British Engineering Organization
Integrated Shipbuilding

- Hull
  - Structure
  - Joiner
  - Paint
  - Pipe
  - Vent
  - Electrical

- Deck house
  - Structure
  - Joiner
  - Paint
  - Pipe
  - Vent
  - Electrical

- Mach. Space
  - Str. Fitting
  - Pipe
  - Mechanical
  - Vent
  - Paint
  - Electrical

Product (department)
### MODERN SHIPBUILDING PRACTICE

#### Product Engineering Function/Zone Matrix

<table>
<thead>
<tr>
<th>Hull</th>
<th>Deck House</th>
<th>Machinery Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Foundation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design Composites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilation</td>
<td></td>
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</tr>
<tr>
<td>Mechanical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10/15/98
Engineering Organization for Zone Construction

Engineering Department

Basic Design Section

Product Eng. Section

Hull Sup.

Deckhouse Sup.

Mach. Space Sup.

Project Mgr.

Project Mgr.

S Pa DC Pi V E

S Pa DC Pi V E

SF M Pa DC Pi V E

KEY

S - Structure
Pa - Paint
DC - Design Composite
Pi - Pipe
V - Ventilation
E - Electrical
SF - Structural Foundations
M - Mechanical