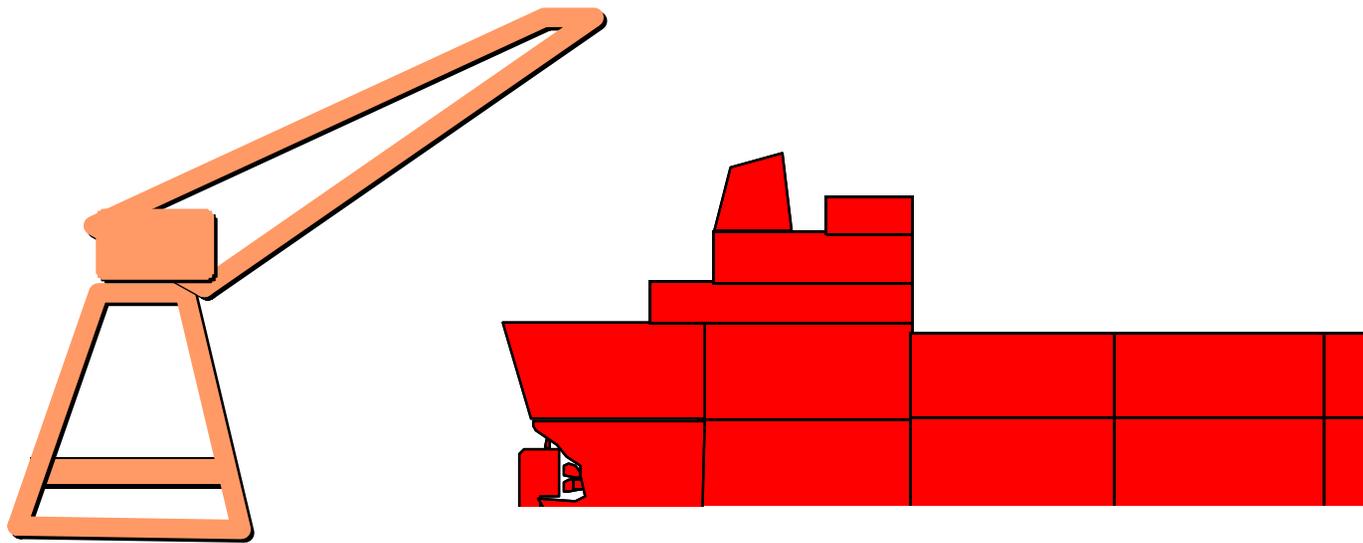


PLANNING & MANAGING PRODUCTION FOR SHIP REPAIR

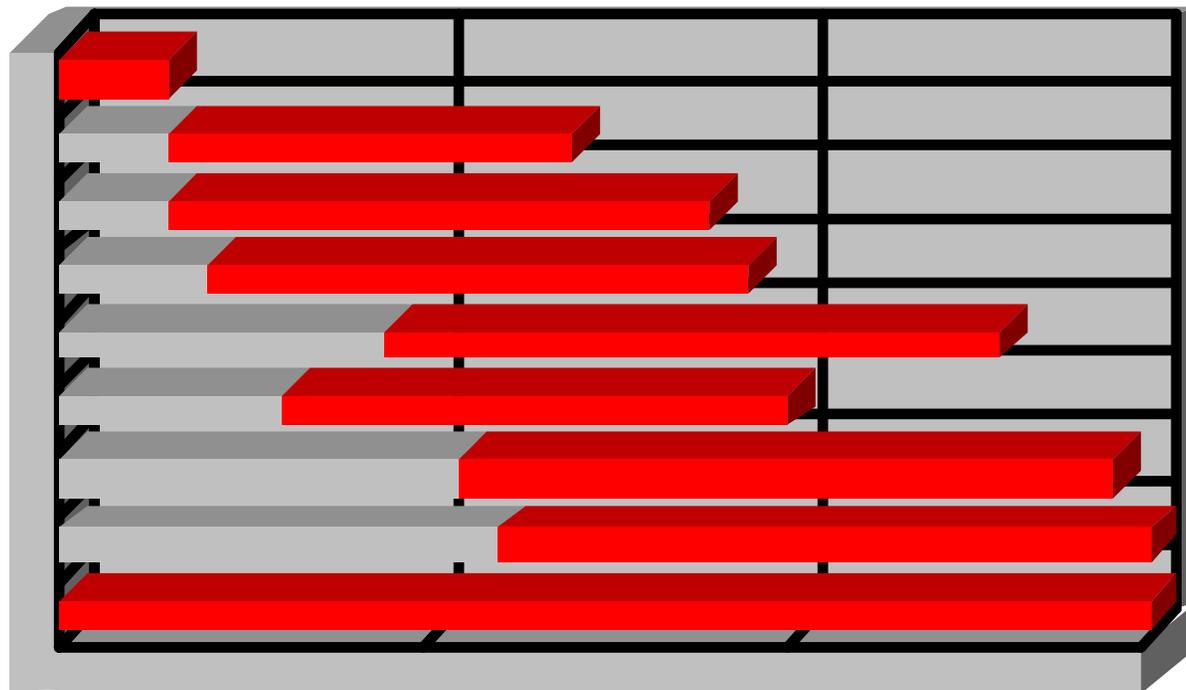


Fundamental Project Tasks

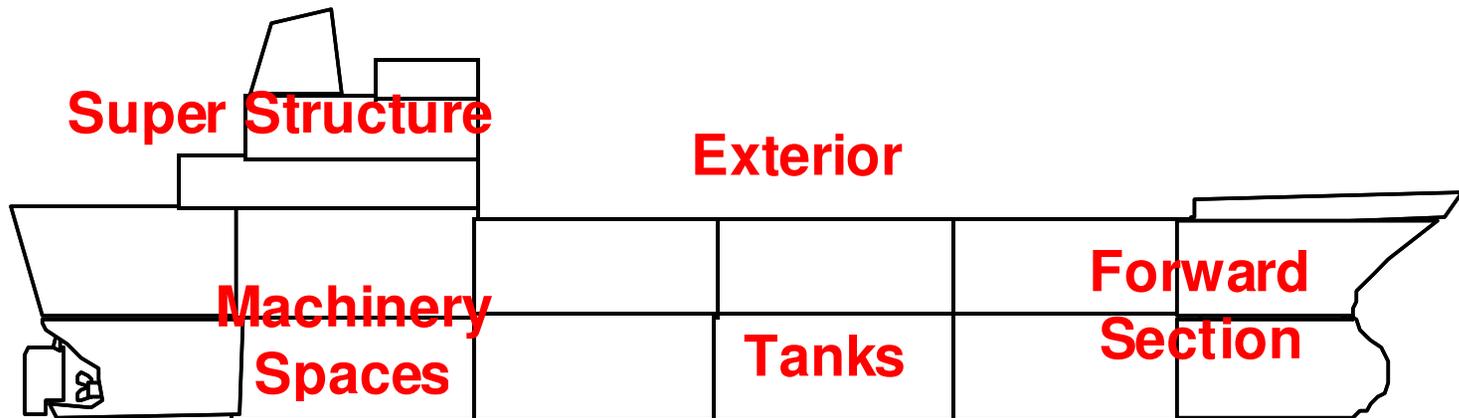
- **Identify Scope Of Work**
- **Identify Material Requirements**
- **Identify Technical Requirements**
- **Identify Organization Responsibilities**



Develop Master Plan From Major Spec Items



Identify Spec Items By Ship Zone



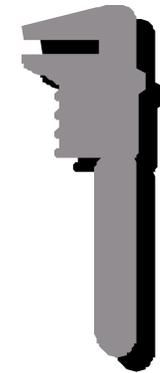
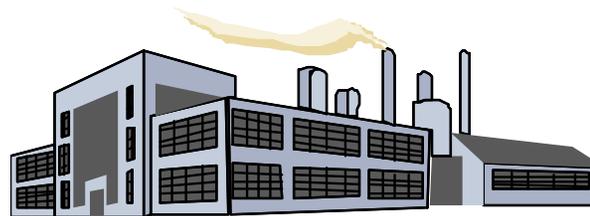
Categories of Ship Zones:

- **Strip Out (Access Areas)**
- **Hull Work (Structural Units)**
- **Outfit (Compartments)**
- **Electrical (Decks & Verticals)**
- **Painting (Decks, Tanks, & Exterior)**

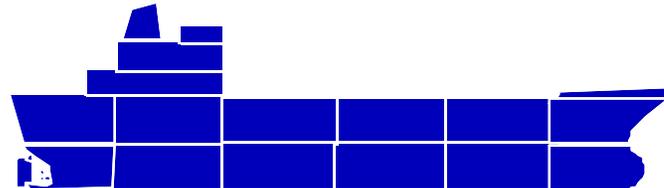


Develop Work Orders

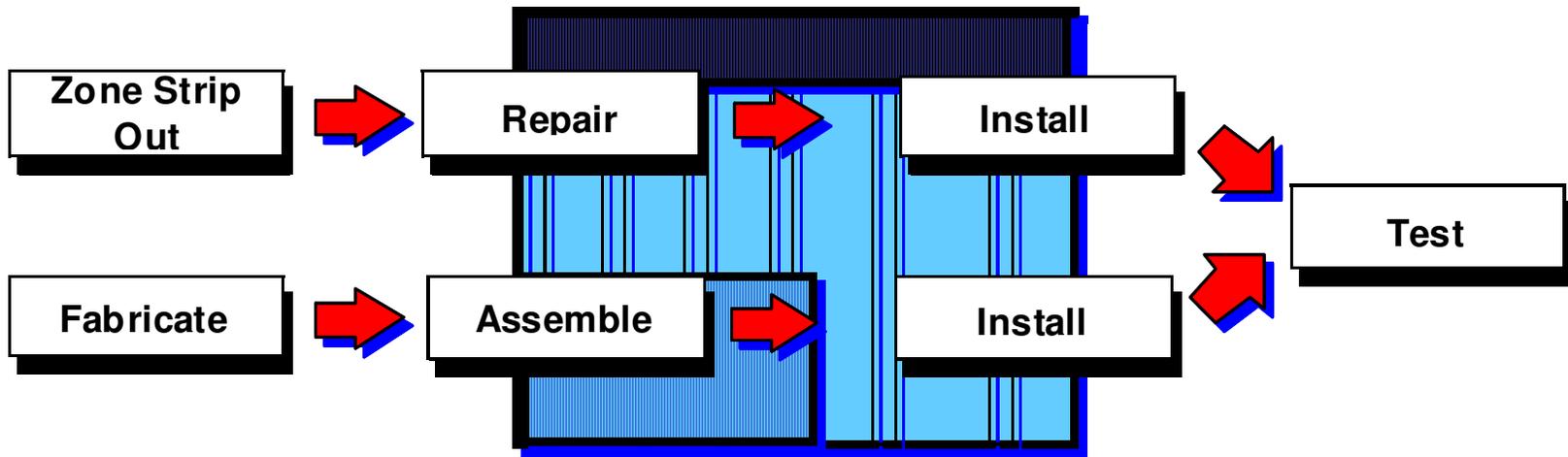
- Ship Work
- Shop Work
- Subcontract Work



- Material
- Drawings
- Manpower



Time-Phasing Ship & Shop Work



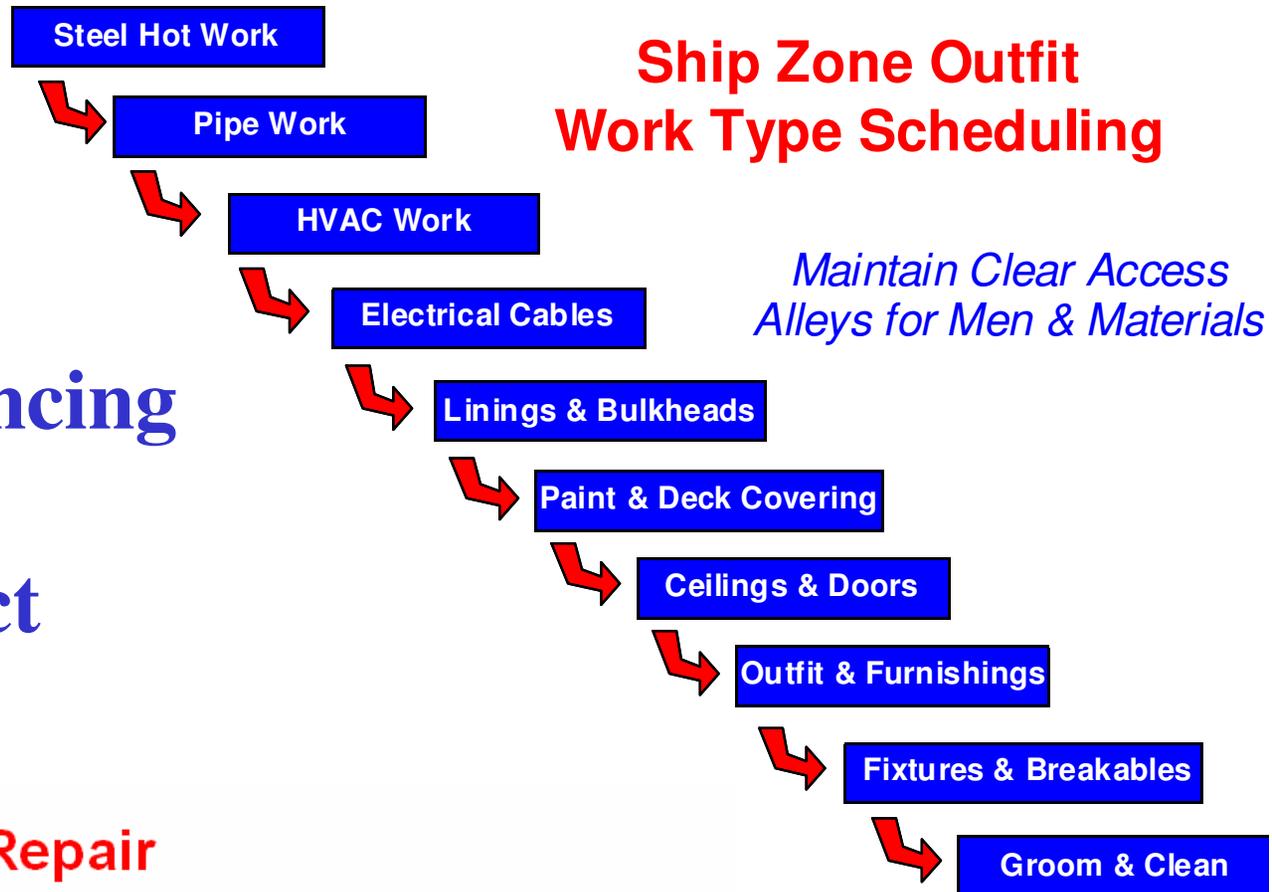
Sequence On-Board Work by Ship Zone or Area

1. Sequence areas to minimize traffic and enhance flow of men and materials.
2. Consolidate like-work in an area where applicable. It saves time and allows workers to be more productive.
3. Avoid trade (craft) conflicts.
4. Sequence work in logical order, starting from rip-out & uncover to hot work, outfit, fixtures, and cleanup.

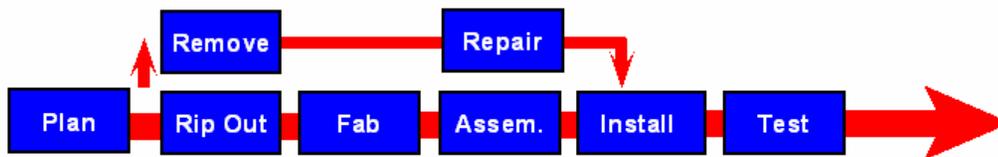


Scheduling requires the proper sequencing of work and related project activities.

Ship Zone Outfit Work Type Scheduling



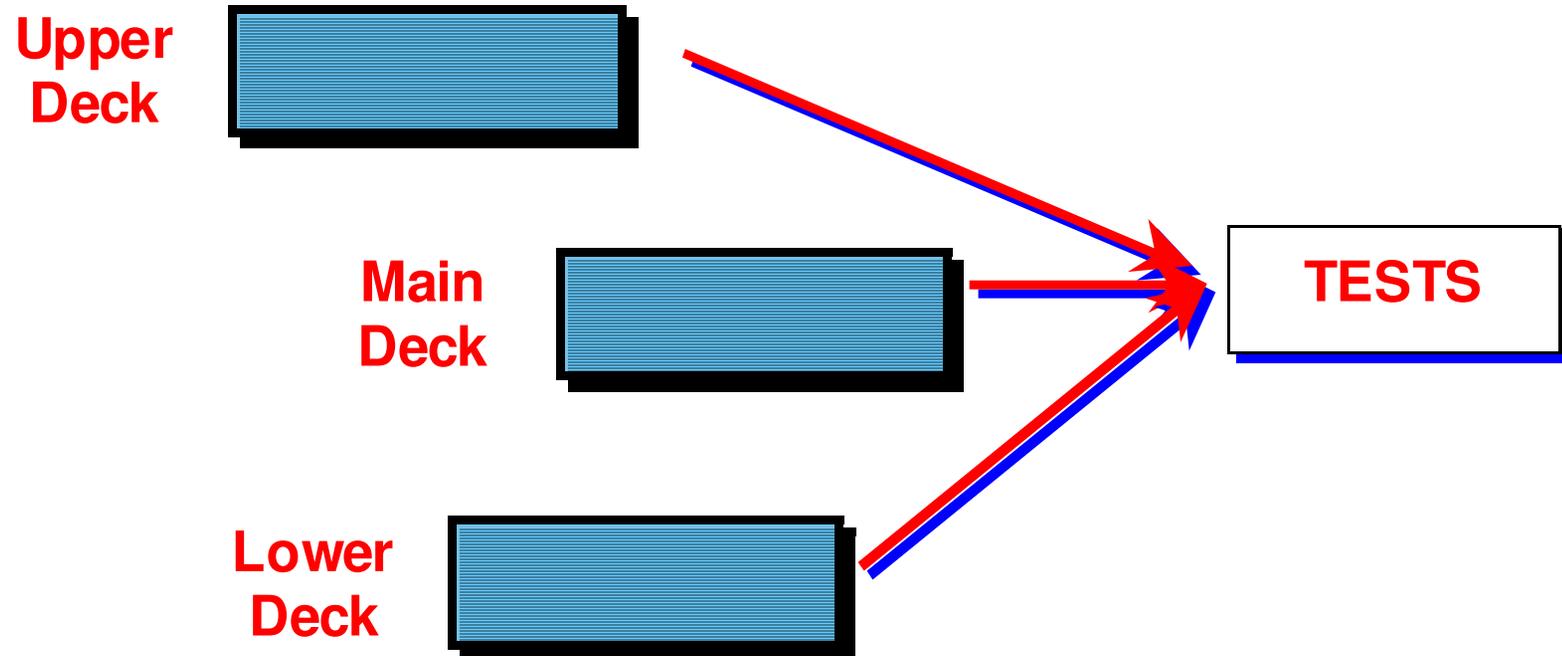
Ship Repair



Schedule work to ensure that work orders can be started with all required equipment, manpower and materials ready on hand.



Sequence & Link Work Packages To Tests & Trials



Impose Schedule Constraints On Plan

- **Trade Manpower Constraints**
- **Shop Constraints**
- **Waterfront Constraints**
- **Vendor Delivery Constraints**
- **Technical Data Delivery Constraints**
- **Other Contract Constraints**



Execute Plan & Update Plan

- Issue Purchase Orders
- Receive & Palletize Material
- Issue Drawings & Technical Data
- Issue Work Packages
- Execute Work Packages
- Close Out Completed Work
- Update Schedules



Time Charge Discipline

Ensure all workers charge their hours to authorized work orders.

EVERY DAY, WITHOUT EXCEPTION

Time charges may be logged either directly into *PERCEPTION* or onto hard copy time sheets.



Ensure all time charges are entered into
PERCEPTION EVERY DAY, WITHOUT
EXCEPTION.

Ensure all time charge errors are corrected
before the end of following day WITHOUT
EXCEPTION.



Material Control Discipline

Ensure all contract material is logged against authorized work orders **WITHOUT EXCEPTION.**

Ensure all contract material withdraws are entered into *PERCEPTION* **EVERY DAY WITHOUT EXCEPTION.**



Manage Change Orders

Establish strict procedures for performing change orders.



Before work begins, ensure for all changes orders

- 1. That they are authorized by the ship owner**
- 2. That work orders have been set up for time charging and material issues.**
- 3. That schedules have been considered and integrated within on-going work to minimize delays and disruptions.**



PERCEPTION specifically tags all change orders so that exact shipyard costs in time and materials are clearly identified and that these costs can be recorded immediately and without delay.



Measure & Report Performance

- **Progress Measurement**
- **Labor Cost Performance & Forecast**
- **Material Cost Performance & Forecast**
- **Schedule Impact Analysis**
- **Resource Requirements Re-Evaluation**
- **Technical Requirements Re-Evaluation**



Modify Plan To Work Around Problems Re-Schedule For Delays & New Work

- Alternative Production Methods**
- Subcontracted Additional Resources**
- Alternative Vendor Selections**
- Revised Supervision Plan**
- Modified Manpower Requirements**



Generate Billing Invoices

PERCEPTION can generate billing invoices at any time.

PERCEPTION records all shipyard contract costs on a real-time basis:

- a) As soon as time charges are entered
- b) As soon as material withdraw transactions are entered.



Billing invoices can indicate both actual labor and material cost transactions as well as other miscellaneous costs manually entered.

Invoices can specify milestone payments, handling charges, mark-ups, taxes, special service fees, credits, etc.



Lessons Learned

- **Evaluate Competitive Bid Performance**
- **Evaluate Schedule Performance**
- **Evaluate Cost Performance**
- **Evaluate Quality Of Service**
- **Evaluate Response To Problems**
- **Identify Non-Value Work**
- **Revise Future Bid Strategy**



PERCEPTION

An integrated shipyard management system

- **Contract Estimating**
- **Planning & Scheduling**
- **Labor Work Orders & Time Charge Management**
- **Purchasing & Inventory Control**
- **Contract Cost & Schedule Performance Reporting**

A Microsoft Windows PC-Based Client/Server System



30 Years Serving the Shipbuilding & Repair Industry

