

## Disciplines

Viking Systems provides its clients with timely solutions using basic conceptual design tools to advanced analysis design tools for ships and floating marine structures. Viking Systems has applied its extensive knowledge of ship design into the development of SAGA and many other specialized in house programs. Viking Systems Disciplines include:

### Mechanical Engineering

### Powering and Resistance

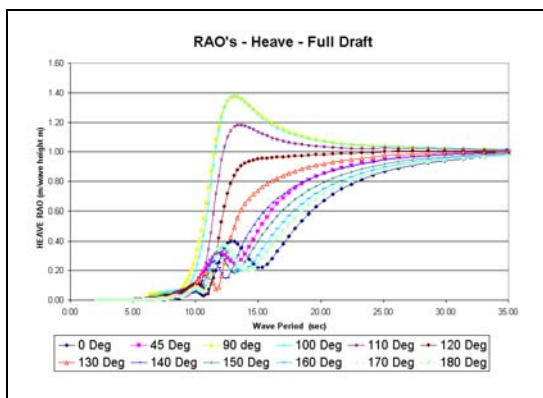
### Weights and Center of Gravity

### Hydrostatics

- Trim and Stability
- Damage Stability
- Floodable Length

### Ship Dynamics

- Vessel RAOs
- Design Accelerations



EXAMPLE OF HEAVE RAO

### Ship Vibration

- Local and Global Ship Vibration

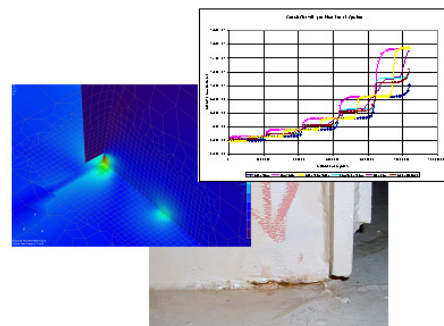
### Structural Design and Analysis

- Design Loads
  - Site-specific static and Dynamic Loads
  - Liquid Cargo Tank Sloshing Loads
  - Thermal Loads
  - Mooring Analysis

- Ship Structural Design
  - Preliminary
  - Contract
  - Detailed
- Material Selection
- Class Society Rule Design
- Finite Element Analysis
  - Stresses and Deflections
  - Buckling
  - Fatigue
- Reinforcement Analysis
- Shipboard Crane Design
- Mooring Support Structure
- Foundation Design
- Details and Components

### Model Testing

### Forensic Damage Analysis / Repair Recommendations



EXAMPLE OF A MODEL DEVELOPED TO PREDICT A CRACK FOUND IN A SHIP – ALLOWS FOR EFFECTIVE REPAIR SOLUTION

### Vessel Classification Management Owners Design and Build Representative