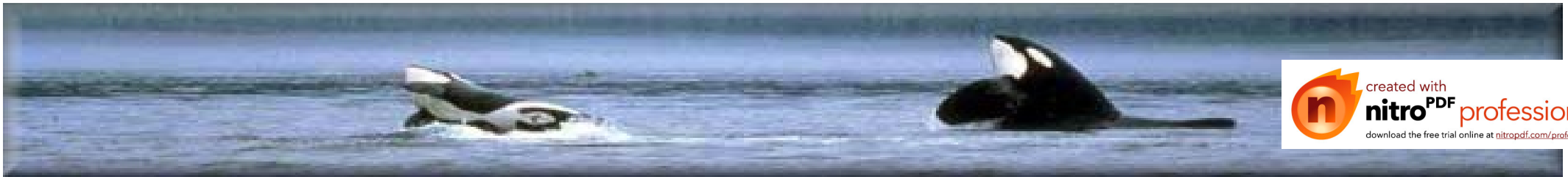
Totem Ocean Trailer Express

Fleet Renewal…*the "Orca Class" Ro/Ro Vessel*



TOTE Company History

- Founded in 1975 by Sun Company
- SS Great Land maiden voyage September 1975
- May 1976 TOTE adds second vessel for two sailings per week
- TOTE acquired by Saltchuk in 1982
- July 1991 SS Northern Lights purchased and modified
- Contract with NASSCO for two Orca Class Ro/Ro vessels December 1999
- April 2003-Midnight Sun delivered
- August 2003-North Star delivered

TOTE Alaska Operations

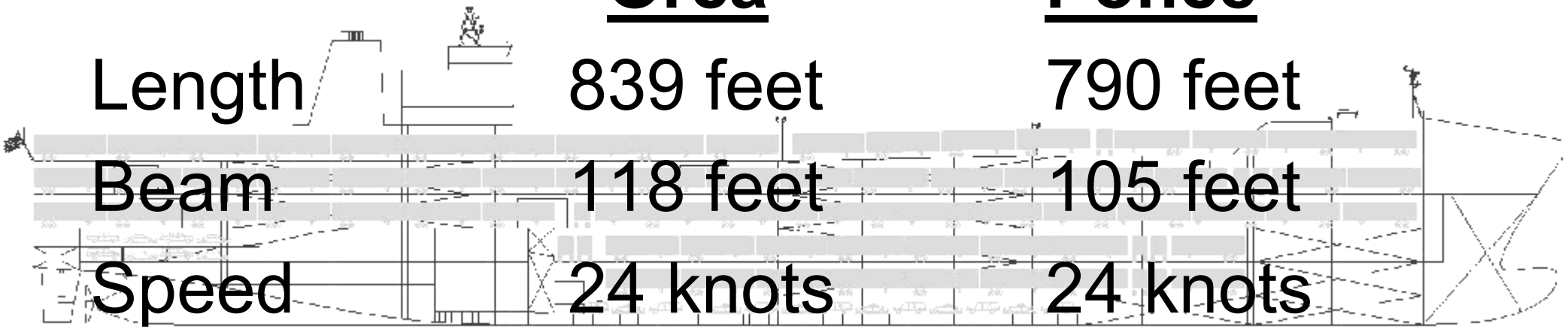
- Niche Ro/Ro liner service characterized by:
  - Speed-10 hour port turnaround
  - Flexibility-all equipment types
  - Vehicles
- Two sailings per week
- 98% average on-time record over 5 years
- Highway and rail connections throughout greater Alaska and Lower 48/Canada

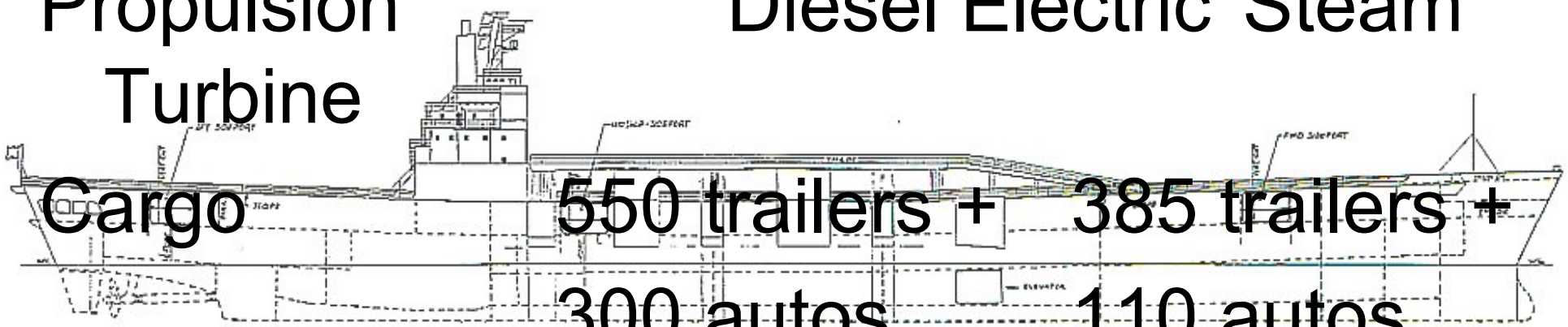
Alaska Transportation Challenges

- Railbelt Alaska's freight arrives by:
  - Liner Vessel - 69%
  - Barge - 27%
  - Overland - 4%
- 1,450 nautical miles one way (Tacoma-Anchorage)
  - Wind gust to 100 knots
  - Seas to 60'
- Cook Inlet
  - Ice-choked 5 months of year
  - 6 to 7 knot tidal current
  - 35' tidal range

Vessel Comparison

	Orca	Ponce
Length	839 feet	790 feet
Beam	118 feet	105 feet
Speed	24 knots	24 knots
Propulsion	Diesel Electric	Steam Turbine
Cargo	550 trailers + 300 autos	385 trailers + 110 autos
Internal Ramps	12	





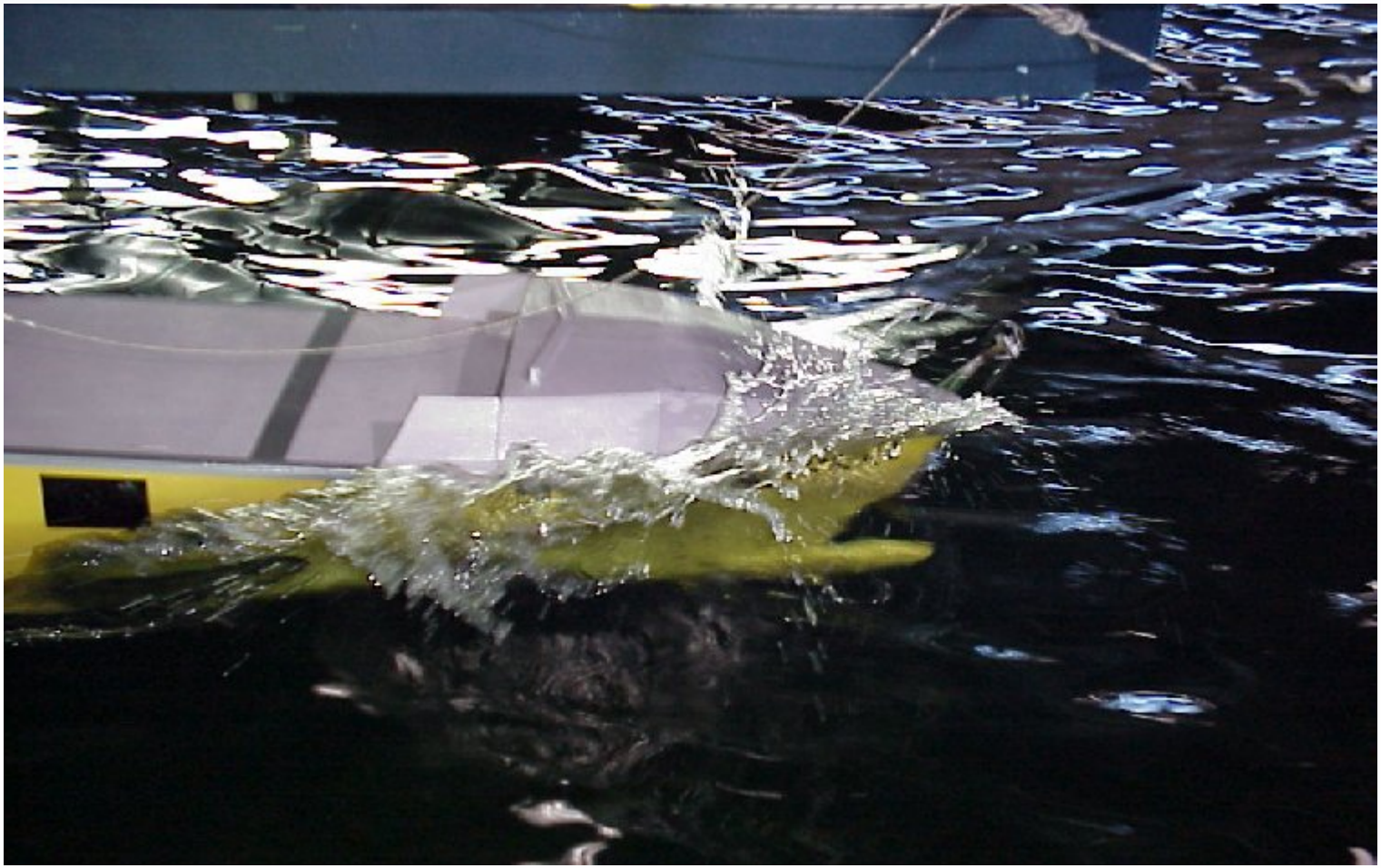
New Vessel Service Features

- **Diesel-Electric System Attributes**
  - Better Able to Maintain Service Speeds in Heavy Weather
  - Smaller Engine Package Improves Payload Area
  - Ease of Maintenance
- **Seakeeping Characteristics**
  - Unusually Large Freeboard
  - Whaleback Forecastle to Shed Seas
- **Enhanced Cargo Handling Systems**
  - Multiple Internal Ramps
  - Broader Beam
  - Reduced Stanchions
  - Fewer Bulkheads
- **Internal Fuel Tank**
- **Ice Bands**
- **Fresh Water Ballast**

Seakeeping Tests

Ponce Vessel Seakeeping

Seakeeping Tests

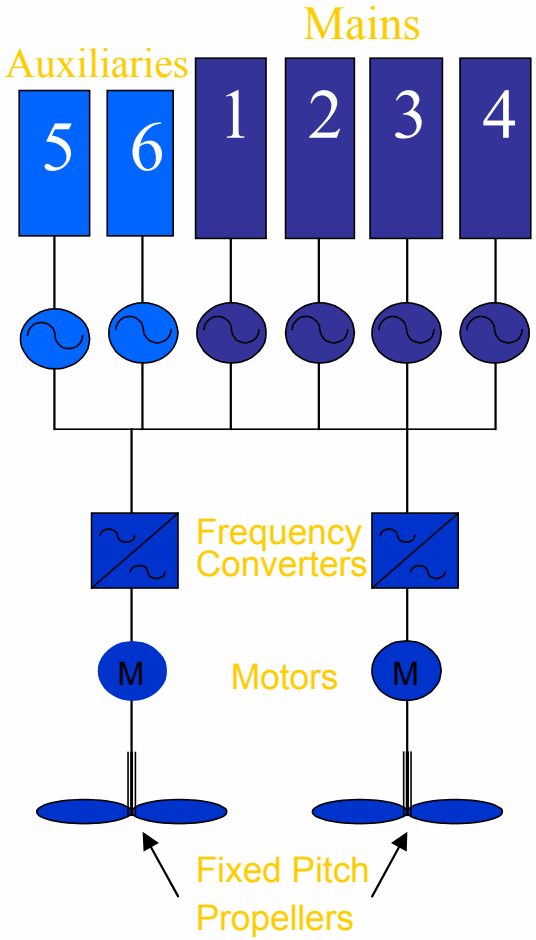


Orca Vessel Seakeeping

Orca Class Vessel Redundancies

- 4 Main Engines
- 2 Auxiliary Generators
- 2 Electric Motors
- Dual Rudders
- Twin Propellers
- 3 Collision Avoidance Radars

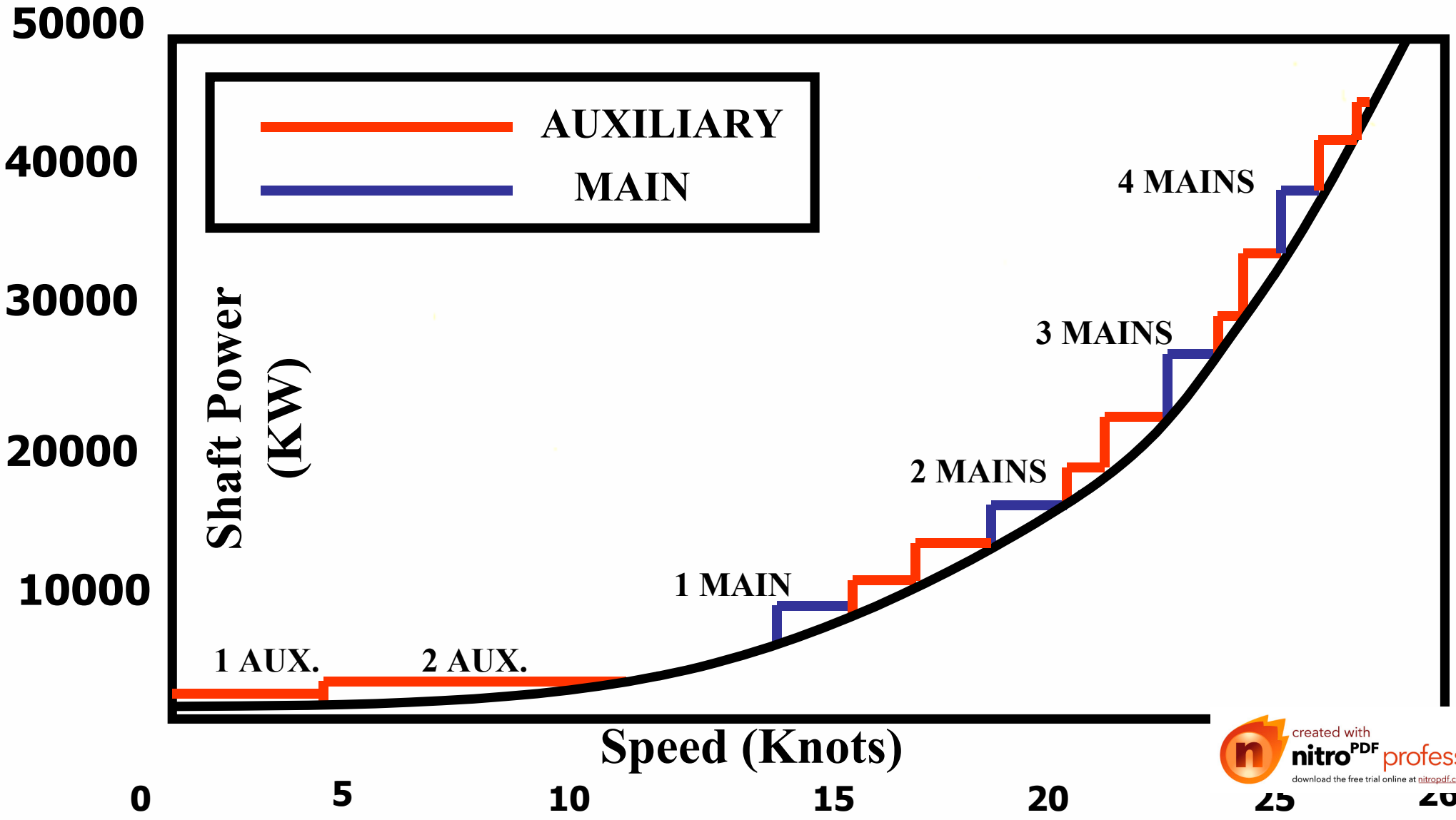
The ship is fitted six generators and two propulsion motors.



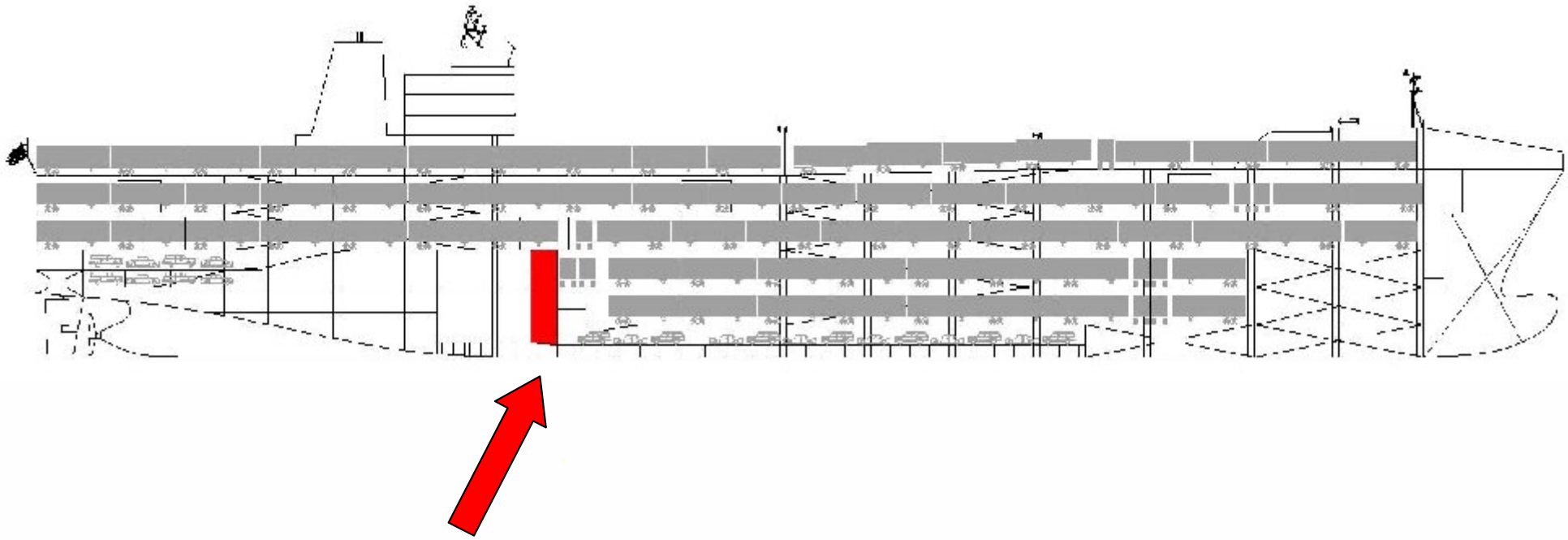
- With all necessary auxiliary loads the following speeds can be achieved.
  1 Main Generator 12 knots
  2 Main Generators 19.5 knots
  3 Main Generators 22.5 knots
  4 Main Generators 24.6 knots
  4 + 2 Auxiliary 25.3 knots
- Even with one propulsion motor out of operation a speed 16 kts can be achieved on one shaft.

Speed Power Curve

Main and Auxiliary Generator Powering Steps

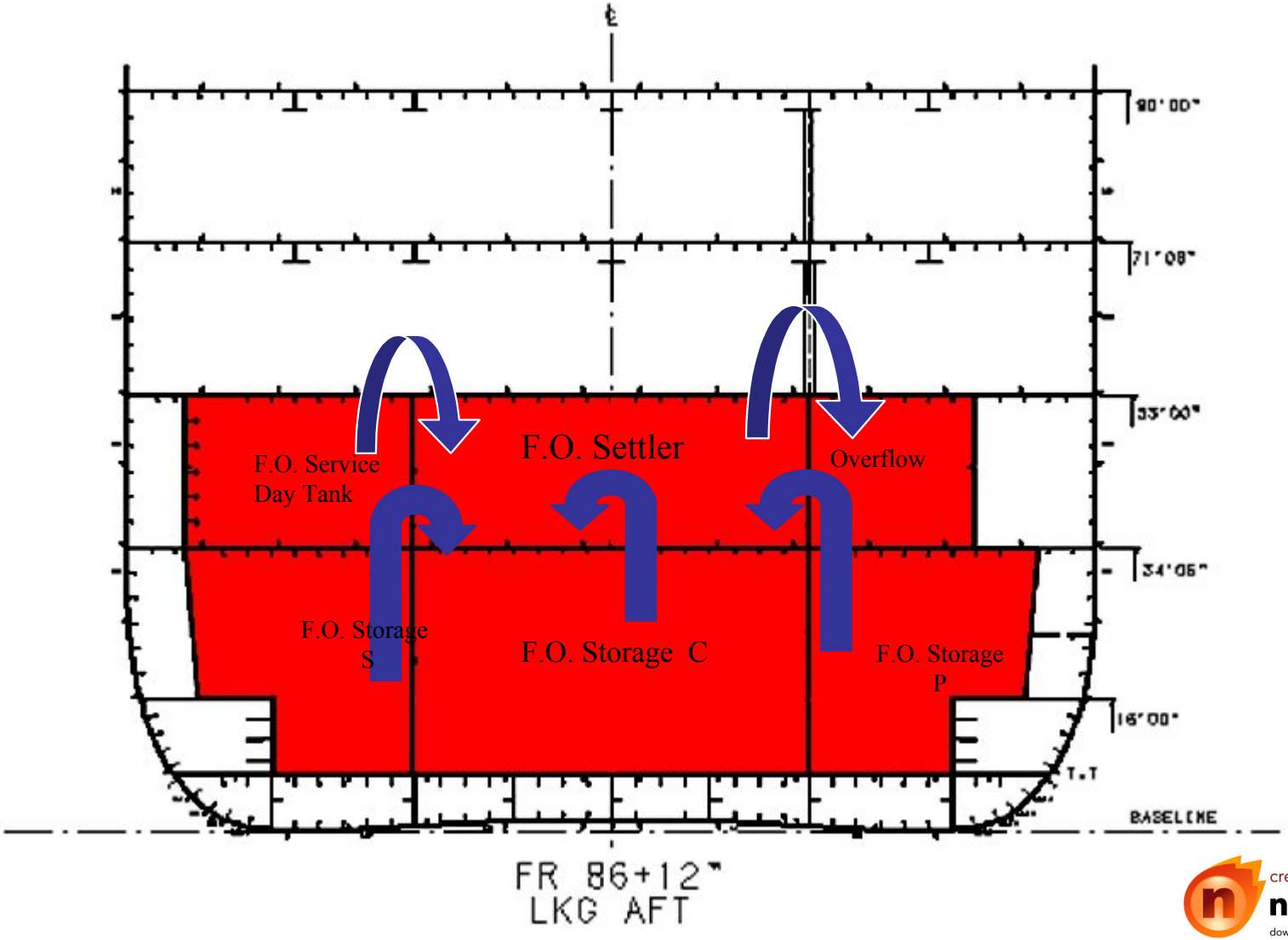


F.O. Pollution from Grounding or Collision



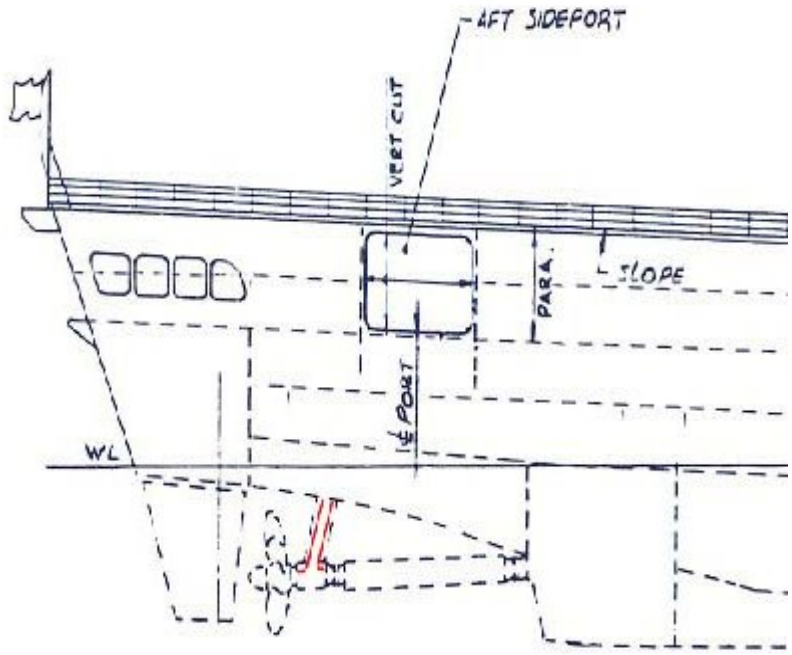
Location of protected fuel oil tank for Alaska Service

Fuel Oil Tankage and Overflow Configuration



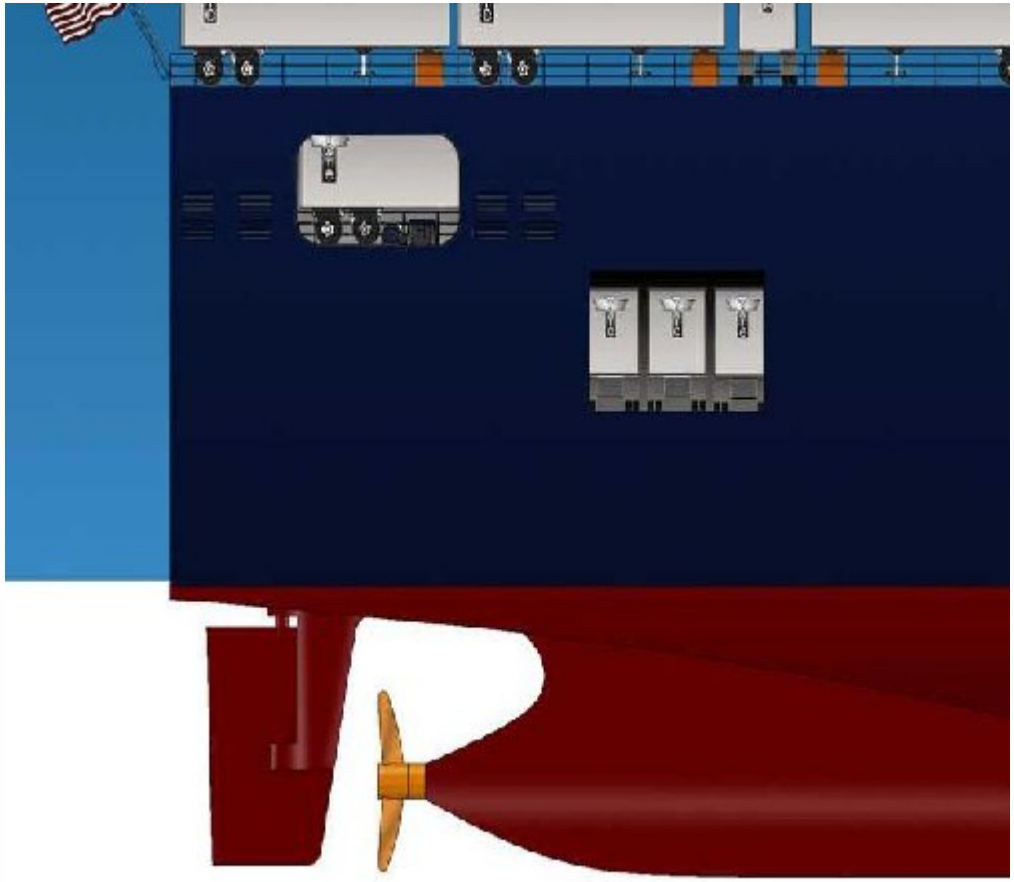
L.O. Pollution - Ponce Vessels

- Three seal sites are available for possible leakage.
- Oil piping is led down the outside of the struts to the oil bearings.
- This piping is susceptible to mechanical damage especially transiting Cook Inlet, in winter, in ice.

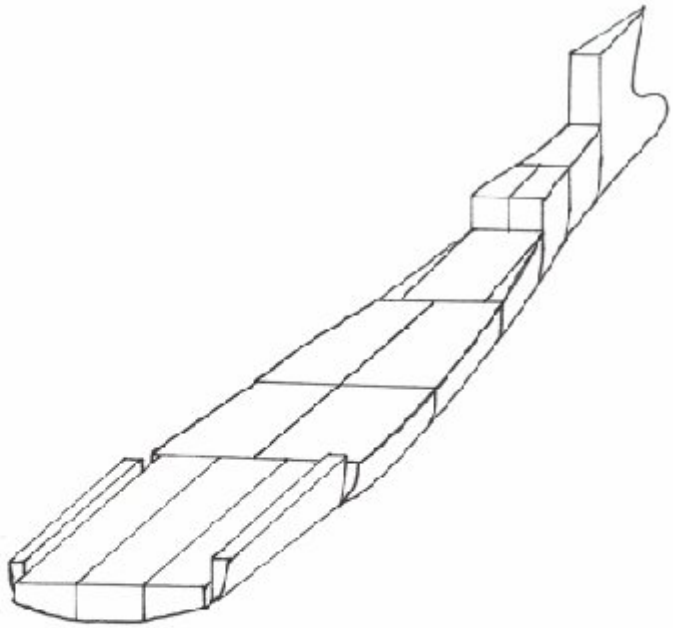


L.O. Pollution - Orca Vessels

- One seal site only is available.
- A new seal system is installed with redundancy and alternatives if one seal fails.

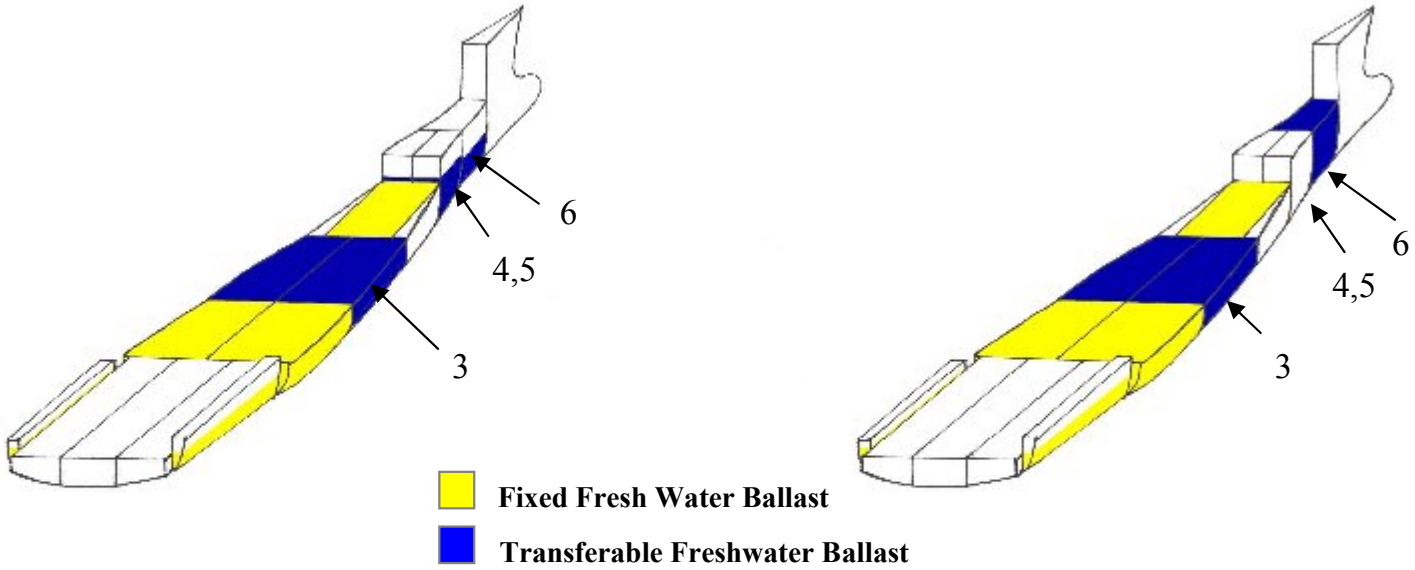


Ballast Systems and the Transfer of Non-Indigenous Species



This depicts the available ballast tankage

By examining all operation conditions it was found that almost 90% of the operation could be covered using a combination of locked in, and movable, fresh water ballast.



This required slightly more ballast to be carried for some light conditions than would be necessary

Human Resource Issues

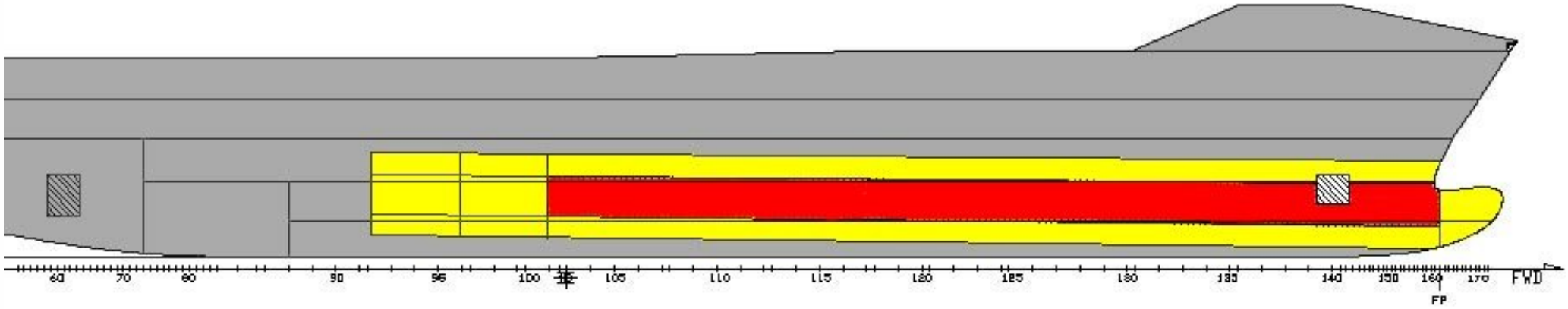
- Diesel Electric vs. Steam Turbine E.R.
  - Licensing issues, experience issues, training, guarantee engineering
- Port/Shoreside Staff
  - Port engineers, maintenance personnel
- Reduced Crew Size
- Navigation Training Issues
  - Larger sail area, twin propeller, twin rudder, mooring/bulbous bow

Environmental Design Elements

- Double hull fuel tank protection
- latest ballast management system
- Extremely fuel efficient diesel-electric power plan
- 4-Cycle engines-clean burning, low emissions of sulfur oxides and nitrogen oxides
- State-of-the-art sewage treatment plant
- Trash disposed shore-side via licensed contractor
- Awards: *Washington State Recycling Association Recycler of the Year 2008; Tahoma Environmental Business Award - Tacoma-Pierce County Chamber – 2007; Washington State Governor's Award for Pollution Prevention and Sustainable Practices – 2005; The U.S. Coast Guard Biennial William M. Benkert Foundation 2002 Environmental Excellence Bronze Award; States/British Columbia Oil Spill Task Force Legacy Award 2000; The Alaska Department of Environmental Conservation Commissioner's Pollution Prevention Award 2000*

Ice Strengthening

The new ships were designed to ice class I-C to mitigate potential hull damage.



EXTENT OF ICE STRENGTHENING

Cargo Mix Flexibility

- "Stretch" Flatbed Loads + 7(

- 53' Dry or Reefer
- 48' " "
- 45' " "
- 40' " "
- 30' Pups

Orca Class : Inboard Profile