Raytheon
Polar Services

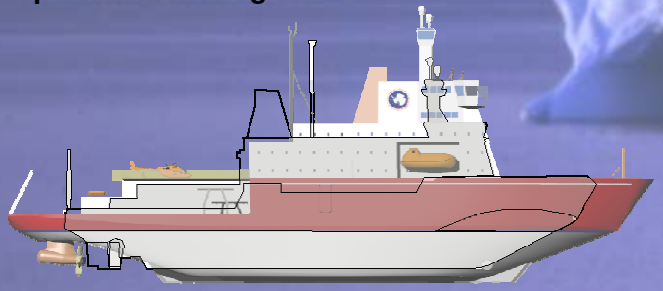
# New Generation Polar Research Vessel

## *Draft Feasibility Design*

Comments or feedback? Visit the web-based PRV forum @ www.polar.org/prv

### Operational Characteristics

- Level Icebreaking @ 3 kts – 4.5 feet (ABS A3)
- Endurance @ 12 kts – 80 days/20,000 miles
- Total Science Complement – 50
- Independent operation in multi-year ice,
- Podded propulsion provides added maneuverability without rudders
- Diesel exhaust emissions reduced by 90% compared to existing research vessels



### Science Characteristics

- Bottom mapping during icebreaking
- Box keel sized for enhanced acoustic arrays
- Clear view aft from starboard pilot house
- Enhanced equipment towing in ice
- Flexible container and van arrangements
- Geotechnical drilling capability
- Helicopter complex
- Inter-deck science/cargo elevator
- Long coring capability
- Moon pool for AUV/ROV, CTD, diving, drilling and OBS deployment
- Uninterrupted sea water intake during icebreaking

### Conceptual Enhancements

- 50% increase in ice-breaking capability
- 62% increase in displacement
- 79% shaft power increase
- 128% lab space increase
- 33% longer endurance



R/V Nathaniel B. Palmer

- 50% increase in design service life of vessel
- 32% increase in accommodations for scientists & technicians

### Design & Construction Timeline