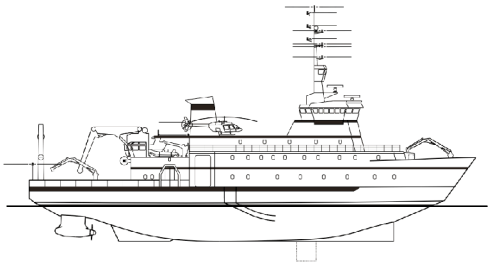
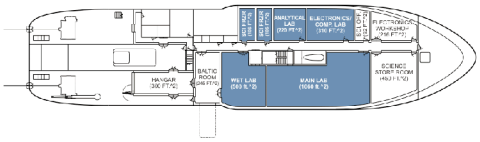
ALASKA REGION RESEARCH VESSEL

CONCEPT DESIGN



OUTBOARD PROFILE

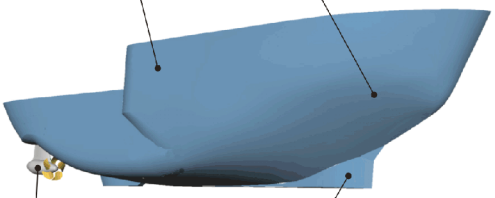


MAIN DECK

HULL PERFORMANCE FEATURES

REAMERS
- Improve turning in ice
- Break wider channel
- Reduce midship friction
- Enable the use of vertical sides midship

BOW FORM
- Compromise between ice and open water performance
- Relatively shallow buttocks (slope)



AZIMUTHING PROPULSORS
- Superior maneuverability and control
- Extend operability in ice significantly
- Enable breaking/clearing with prop wash
- Enhances available thrust

ICE WEDGE
- Prevents beaching and loss of stability in ice
- Splits thick ice
- Guides ice away from vessel bottom and propulsors
- Provides location for bow

VESSEL CHARACTERISTICS

Length, Overall .....226'-0"
Length, Design Waterline.....200'-0"
Beam, Maximum.....52'-0"
Beam, Amidships .....48'-0"
Depth, Amidships.....29'-0"
Draft, Design Waterline.....18'-0"
Displacement .....2,800 LTSW

Lab Area, Total .....2,100 ft.^{2}
Covered Working Deck .....545 ft.^{2}
Exterior Working Deck .....3,500 ft.^{2}

Propulsion Power.....5,750 HP
Endurance .....45 Days

ICE TRANSITING CAPABILITY

Ice Type.....Winter, First-Year Ice, 72.5 ksi
Level Ice Thickness .....2.2 ft. - 2.5 ft.
Ridge Height/Depth.....7 ft./20 ft.

SCIENCE EQUIPMENT

CTD Winch
Capacity .....6,000 lbs.
Cable, 0.322 in. EM .....33,000 ft.

Hydro Winch
Capacity .....6,000 lbs.
Cable, 3x19 hydrowire .....33,000 ft.

Deep Water Traction Winch
Capacity .....10,000/25,000 lbs.
Cable, 0.680 in. coax .....26,500 ft.
Cable, 9/16 in. towing .....33,000 ft.

Over-side Handling Equipment
Stern A-Frame .....20,000 lbs.
Side A-Frame .....12,000 lbs.
Baltic Room Extension Crane .....12,000 lbs.
Knuckle boom crane.....20,000 lbs.
Aft deck crane, small .....2,000 lbs.
Fore-deck crane .....2,000 lbs.

FISHERIES EQUIPMENT

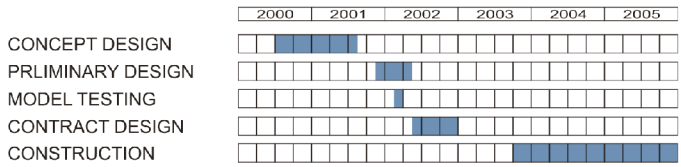
Suitable for catch weight to 25,000 lbs.
Capable of towing to a depth of 3,300 ft.

Full Suite of Trawl Winches (Removable)
Trawl Winches .....2x13,000 ft. of 1.13 in. WR
Net Reel.....350 ft.^{3} Net Capacity
Gilson, Outhaul, Net Sonde Winches

Aft Deck Arranged for Fisheries
Stern Ramp .....13 ft. wide, 37 degree slope
Trawlway .....13 ft. wide, 47 ft. long

DESIGN OVERSIGHT COMMITTEE

VERA ALEXANDER, UAF, CHAIR
ROBERT ELSNER, UAF
TERRY WHITLEDGE, UAF
THOMAS WEINGARTNER, UAF
TOM SMITH, UAF
RICHARD PITTENGER, WHOI
ROBERTSON DINSMORE, WHOI
JOE COBURN, WHOI

GLOSTEN
The Glosten Associates, Incorporated

PROJECT TIMELINE