

KOREAN RESEARCH ICEBREAKER

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ARACON



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## INTRODUCTION

▶ The icebreaker is a specially designed vessel to navigate ice covered polar regions with a powerful propulsion unit and strengthened body. ARAON becomes a milestone of Korea polar research history and for producing superior scientific results to benefit of human society.

## MISSION

- ▶ Multidisciplinary scientific research in the Polar Regions
- ▶ Logistics to the stations in the Polar Regions
- ▶ Support for the construction of the Jang Bogo Antarctic Research Station

## MAJOR RESEARCH ACTIVITIES

- ▶ How the polar ocean, atmosphere and geosphere have interacted with the rest of the earth to influence its development during its history.
- ▶ How the polar ocean affects biological production, and bio-geochemical cycles warrant focused research in sea-ice influenced areas.
- ▶ How under-exploited resources, in an environmentally safe manner, can be effectively explored and managed as an important aspect of research.

## ANNUAL OPERATION PLAN

- ▶ October ~ April : Antarctic expedition
- ▶ May ~ June : Anchoring in Incheon(home port)
- ▶ July ~ August : Arctic cruise
- ▶ September : Anchoring in Incheon(home port)

## FEATURE

	ARAON	Merchant vessel
Propulsion unit	▶ Electric driven propulsion unit with 360° rotating azimuth thruster	▶ Engine driven propulsion unit
Bow shape	▶ Specially designed for icebreaking (Ice knife)	▶ Ordinary bow type (Bulbs bow)
Direction control	▶ 360° rotation with Azimuth propulsion unit and bow thruster	▶ 35° maneuvering by rudder
Special equipment & system	▶ Dynamic Positioning System(DPS-2) ▶ Enhanced safety system such as ice detecting radar, anti-rolling/heeling system	
Helicopter operation	▶ Transporting cargos and researchers to the research field ▶ Searching safe route in the ice-covered polar region	
Main function	▶ Icebreaking + Cargo transportation + *Research(complex, heavy duty) - ARAON equips 10 laboratories and about 20 state-of-the-art research equipments	▶ passenger ship, car carrier, bulk ship, container ship etc.

## SPECIFICATIONS

- ▶ Gross tonnage : 7,487 ton
- ▶ Delivery : November 2, 2009
- ▶ Dimensions (m) : 111 x 19 x 9.9 (Length x Width x Depth)
- ▶ Service speed : 12 knots
- ▶ Endurance : 20,000 Nautical Miles (70 days)
- ▶ Accommodation : 85 persons (25 crew & 60 researchers)
- ▶ Icebreaking performance : Continuous breaking of 1m-thick multi-year ice at the speed of 3 knots
- ▶ Cargo hold capacity : 31 TEU

## ■ MEANING OF ARAON

ARAON is a compound word which combines 'Ara(old Korean word which means 'sea')' and 'On(Korean word which means 'all')' and is named for a wish to cruise all the sea in the world.

## RESEARCH EQUIPMENT

- ▶ Oceanographic Research  
- CTD w/Water Sampler, X-BT, Thermo Salinograph, etc.
- ▶ Acoustic Research  
- Multi-Beam Echo Sounder, ADCP, Acoustic Synchronizer, etc.
- ▶ Geophysical Research  
- Multichannel Seismic System, SBP, PDR, Marine Gravity Meter, etc.
- ▶ Biological Research  
- MOCNESS, RMT, Bongo Net, Sea Soar, etc.
- ▶ Observation & Monitoring  
- Weather Station, Satellite Receiver, Underway Measurement System, etc.

ARAON

