



AUSTRALIA'S NEW ANTARCTIC ICEBREAKER

RSV *Nuyina*

RSV *Nuyina* can:

- break 1.65 m thick ice at a continuous speed of 3 knots
- cruise efficiently at 12 knots, with a maximum speed of 16 knots
- handle sea state 9 (waves over 14 m)
- handle Beaufort 12 winds (hurricane)
- cope with air temperatures as low as -30°C and up to 45°C
- support voyages of up to 90 days

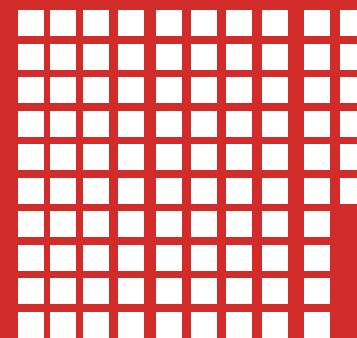
Australia's new icebreaker, RSV *Nuyina*, will make its maiden voyage to Antarctica in 2020-21. The ship will be the main lifeline to Australia's three Antarctic research stations and its sub-Antarctic station on Macquarie Island, and will support Australia's leadership role in Antarctic and Southern Ocean scientific research. The ship is also flexible enough to cope with future research and operational demands during its expected 30 year lifetime.

Scientific capability

The *Nuyina* is the only ship in the world to have a watertight room or 'wet well' to process seawater for krill and other fragile marine organisms, at up to 1800 litres per minute. Other state-of-the-art scientific equipment includes acoustic instruments to map and visualise the sea floor and organisms in the water column, and instruments to measure atmospheric gases, cloud properties, wave heights and ice conditions.

What's in a name?

The word *nuyina* means 'southern lights' in *palawa kani* – the language spoken by Tasmanian Aborigines today. It is pronounced "noy-yee-nah". The name *Nuyina* recognises the long connection that Tasmanian Aboriginal people have with the southern lights (or aurora australis). The ship name was suggested by Australian schoolchildren through a 'Name our Icebreaker' competition.



96 containers



1200 t cargo



Length 160.3m



117 expeditioners + 32 crew



5030 m³ cargo hold space

1.9 million litres fuel (including 0.5 million litres aviation)





'Silent R' acoustic rating at 8 knots minimises noise from the engines and bubbles sweeping around the hull



Dynamic positioning system maintains ship's position ± 20 m in sea state 4 (moderate seas)

Heavy Lifting:

- 1200 tonne (t) capacity below decks in up to 96 20-foot shipping containers
- 60 20-foot containers above deck for cargo and labs
- Cranes: 2 x 55t on bow; 1 x 15t side loader; 1 x 15t aft; and smaller cranes on science work deck
- Helicopters: 4 small (B3s) or 2 medium (S92s)
- Tenders: 3 ship + 1 science
- Barges: 2 x 45t capacity

Air sampling mast

2 x 55t cranes on bow

Meteorological instruments

1 x 15t aft crane

Helicopters

1 x 15t side-loading crane below helideck

Scientific winches and A-frame to launch and recover sediment corers and trawl equipment

Retractable boom for instruments to measure snow and ice thickness

Cargo hold doubles as an equipment space and staging area for sea ice research

Science tender

Personnel transfer tender

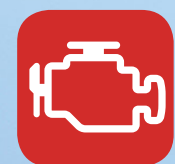
Wet well to process seawater containing krill

Stern tender

Multi-beam echosounder to map 25 km-wide swaths of seafloor up to 11 000 m deep

Two drop keels with acoustic instruments to map and visualise the sea floor and organisms in the water column

NUYINA
HOBART



2 diesel engines (19 200 kW total) for icebreaking and two electric motors (7400 kW total) powered by diesel generators for silent operations



Moon pool to deploy autonomous vehicles and oceanographic equipment



2 controllable pitch propellers; 3 bow and 3 stern thrusters for manoeuvring

Once in a generation investment

A new icebreaker represents a once in a generation investment by the Australian Government and is the centrepiece of the Australian Antarctic Strategy and 20 Year Action Plan launched on 27 April 2016. The \$1.9 billion package will cover the design, build and 30 year operational and maintenance lifespan of the icebreaker. It is the single biggest investment in the history of Australia's Antarctic Program.



Australian Government
Department of the Environment and Energy
Australian Antarctic Division



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www.antarctica.gov.au/icebreaker

