

Explore lost worlds of the deep

NORFANZ VOYAGE

10 MAY TO 8 JUNE 2003



Fact Sheet – The *RV Tangaroa*



Capable of working in conditions ranging from subtropical to subantarctic, *Research Vessel Tangaroa* is well equipped for a wide range of stock assessment work. *RV Tangaroa* can trawl down to 2000 metres and can also accommodate a wide range of commercial and research mid-water and bottom trawl gear. *RV Tangaroa* is also fully equipped for fisheries acoustic work. Recent modifications for marine geological research include a deepwater coring system (to 5000 m) and air compressors for seismic surveys.

Specifications and Principal Features

Name of Vessel	<i>RV Tangaroa</i>
Owner	NIWA Vessel Management Ltd.
Flag	New Zealand
Year of Construction	1991
Length	70.0 metres
Beam	13.8 metres
Draft	7.2 metres
Hull	Ice Strengthened
Gross Tonnage	2282 tonnes
Nett Tonnage	684 tonnes
Cruising speed	12-13 knots
Accommodation	44 total comprising 18 single berths and 13 double berths

Hydrographic Sounders

Single-Beam Echo sounders	Simrad EK 500 (Scientific): 12, 27, 38 and 120kHz Simrad EA 500 (Hydrographic): 12 and
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	120kHz
Multi-Beam Echo sounder	SIMRAD EM300: 30kHz
Survey navigation systems	HydroPro and HydroMap
Motion compensation	TSS DMS TSS POSMV system
Sound velocity calibration	Expendable Bathythermographs (XBTs) Digibar DB-1100 AML SVplus sound velocity profiler

AUTOMATIC WEATHER STATION

Carries sensors for wind speed and direction, barometric pressure, relative humidity and air temperature and solar radiation, sea-surface temperature, while other sensors can be provided as requested.

SCIENTIFIC WORK AREAS AND LABORATORIES:

RV Tangaroa has excellent facilities for the sorting, preserving, processing and storage of fish, plankton and other biological material. Several laboratories were specifically designed for and are used as wet laboratories.

CTD Enclosure

The CTDs are deployed through the mid-ships starboard A-frame and when recovered the CTD is moved into the CTD-enclosure, which is connected to the hydro/dry-laboratory (see below).

Wet laboratories

Two laboratories are on the starboard side on the main trawl deck; one commonly used as a CTD-laboratory or as a wet hydro-lab (5.7m x 1.5m), the other a plankton lab (4.7 m x 1.7m). A sizable temperature controlled wet laboratory (3.4m x 3.0m) is also provided on the starboard side of the trawl deck. All laboratories have workbenches, cold and warm running water, and ample space for storage of containers and equipment.

For the sorting and processing of fish the trawl is emptied onto deck and the fish stored through hatches in three receiving bins of a total capacity of 75m³ and provided with a refrigerated salt water re-circulation system. Upon removal from a receiving bin, the fish is sorted semi-automatic by hand, with the selected specimen kept in smaller holding tanks for further scientific study. The remaining fish are processed using the fish factory that can process up to 16 tonnes of fish per day. The freezer hold has a capacity of 350 tonnes of processed fish product.

On the fish processing deck three laboratories are available. The main wet laboratory (6.2m x 7.1m) contains large weighing and dissecting tables and is used for all major fish studies. Two more laboratories are provided: one wet laboratory (4.2m x 3.2m) and one dry laboratory (3.5 x 3.2m).

A medium-size scientific freezer, adjacent to the main wet laboratory, is designed to remain at a constant temperature between -30 and +5°C.

Dry Laboratories and Computer Areas/Rooms

RV Tangaroa has five dedicated dry laboratories/computer areas. On the bridge a large computer area (6.5m x 4.1m) is available from where the Chief Scientists and support staff direct all scientific operations and process the main data.

One hydro/dry laboratory (6.0m x 3.2m) is available on the trawl deck, while one terminal room (4.5m x 4.5m) is provided on the main deck. The below main-deck contains the main computer/EM300 control room (4.5m x 5.7m) and the electronics laboratory (4.5m x 6.0m).

Dark Room

The vessel's dark room (5.5m x 2.5m) is situated on the trawl deck.

Radioisotope laboratory

As a radioisotope laboratory (3.2m x 2.8m) the chemical preparation and storage laboratory has been used, which is located on the trawl deck, and is provided with benches and fume cabinet.

Temperature Controlled Laboratory

The port wet lab on the trawl deck can maintain a controlled temperature between -5°C and +5°C (with an accuracy of plus/minus 1.0°C).

Container Laboratories

RV Tangaroa can carry up to three 20ft container laboratories on the trawl deck.

SCIENTIFIC SEA WATER SUPPLY

A sea water pumping system with a capacity of approximately 30m³ per hour for scientific purpose is built in the vessel.

ADDITIONAL EQUIPMENT - mobilised as required

Side Scan Sonar	Klein dual frequency side scan sonar. C-MAX side scan sonar
Subbottom profiler systems	3.5 kHz, ORE sub-bottom profiler, Model 140, Geo Acoustics profiler Various small airgun systems
Multi-channel Seismic System	Hydroscience/Geometrics/ Seismic Systems - 48 channel, total length 625m
Compressor	Containerised Reavell 5436 75.8 cuft/min @ 2,000 psi.
Magnetometer	SeaSPY towed system
Gravity Meter	LaCoste and Romberg marine gravity meter
Seabed sampling	Rock dredges, grab samplers and gravity, piston and box corers
Sonobuoy System	Sparton AN/SSQ-53
Tide measurements	Current, level, etc meters

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