RV Investigator

Marine National Facility

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RV Investigator – a new era in marine and atmospheric research for Australian scientists
RV Investigator

• RV Investigator is a blue-water research vessel with the capability of conducting science in the areas of: Oceanography, Geosciences, Ecosystems and Atmospheric research.

• Owned by CSIRO Australia and operated by ASP Ship Management.

• Administered by the Marine National Facility.

• Available to Australian Marine Researchers and International Collaborators.
In 2009 the Australian Government dedicated $120M for a new research vessel - RV Investigator.

- Designed by: Joint venture Robert Allan and Alion Science and Technology – Canada (RALion)
- Built: Sembawang Shipyards Singapore under contract to Teekay Holdings Australia Pty Ltd
• Length: 93.9m, Height 37m, Beam 18.5m and Draft 6m
• 3 Diesel Engines - 3000kW, 2 AC Electric Drive Propulsion Motors 2600kW – Twin Screws
• Approx. 6,000 tonnes
• First Steel Cutting: Jan 2012
• Keel Laid: 9 May 2012
• Delivered (Yard): 4 Aug 2014
• Arrived Hobart: 10 Sep 2014
• Scientific Sea trials: 28 Oct 14 to 11 Feb 15
RV Investigator - Construction

- Gondola: Holds an array of acoustic instruments
- Construction: Approx 33 large scale blocks, built individually and welded together to form the main superstructure
RV Investigator - Main Capabilities

• DNV Silent R
  • Compliant

• Atmospheric Research
  • Dedicated Aerosol and Atmospheric Chemistry labs
  • Weather Radar

• Oceanography
  • Trace metal clean sampling system
  • SBE 911 plus and 17plus CTD systems
  • TRIAXUS - Towed undulating sampler

• Ecosystem Science
  • Trawl capability to 4000 m
  • Towed camera system to 6000m

• Geosciences
  • Coring system and Seismic compressors
  • Multi-beam systems on gondola and drop keels
RV Investigator - Main Capabilities

- DNV Silent R
  - Investigator is the first diesel electric AC drive twin screw research vessel to achieve Silent-R compliance
  - The measurement bandwidth is from 10 Hz to 25kHz @ 11kts
• **Atmospheric Research**
  - Dedicated Aerosol and Atmospheric Chemistry labs
  - Dual Polarization Doppler C-band Weather Radar (250kW)
  - Green house gas spectrometers
  - Meteorological Instruments
    - Wind speed & direction
    - T&RH, rain gauges
    - Pressure
    - SW and LW Radiometers
  - Ozone and Radon detectors
  - Sea surface temperature

The data will be used to improve climate models and weather predictions for Australia and the rest of the world.
RV Investigator - Main Capabilities

- **Oceanography**
  - Trace metal clean water sampling system
  - Trace metal SBE 9plus with 17plus, CTD 12 bottle carousel
  - SBE 911 CTD, 24 and 36 bottle carousel
  - TRIAXUS - Towed undulating sampler
RV Investigator - Main Capabilities

- Ecosystem Science
  - Winches
    - 2 x Trawl winches (8000m)
    - 2 x CTD winches (7000m of 8mm wire)
    - Coring and hydrographic winches
    - Net drum and Gilson winches
    - Towed body – fibre capable
    - Heavy duty general purpose winch.
    - A-frame (multi-block)
RV Investigator - Main Capabilities

• Geosciences
  • Coring system and Seismic compressors
  • Gondola
    − Multi-beam systems, EM122, EM710, ME70
  • Drop keels
    − EK60 Sounder (18, 38, 70, 120, 200 & 333kHz)
    − ADCP 75 & 150kHz
• Air Chemistry Lab
• Aerosol Lab
• General Purpose (Dry Lab)
• General Purpose (Clean Lab)
• General Purpose (Wet Lab)
• Hydrochemistry Lab
• Constant Temp Lab
• CTD Lab
• Preservation Lab
• Underway Seawater Lab
• Space - 13 container Lab
RV Investigator – Scientific Sea Trials

- Sea acceptance trials: 28 Oct – 1 Nov 14
  - CTD
  - Winches
  - Triaxus
  - Acoustic Calibration

- Personal Experience
  - Very stable in rough conditions (5-6m Swells)
  - Increased our weather window for operations
  - Accommodation/cabins are first class
  - Meal and Lounge areas are very comfortable.
  - Very spacious moving around the vessel and in compartments
For further information visit our blog at http://csirofrvblog.com/

Questions