VOYAGE PLAN NO. SS03/2004

Title
Geological framework of the Bremer and Denmark sub-basins, southwest Australia.

Itinerary
Depart Fremantle 1000 hrs, Sunday 8 February, 2004
Arrive Albany 1000 hrs, Monday 23 February
Depart Albany 1500 hrs, Monday 23 February
Arrive Hobart 1000 hrs, Tuesday 9 March

Principal Investigator
Dr Neville Exon (Chief Scientist)
Geoscience Australia, PO Box 378, Canberra 2601
Contact details. Phone 02 6249 9347; Fax 02 6249 9920
Neville.Exon@ga.gov.au

Scientific Objectives
To investigate the nature of sedimentary sequences in the Bremer Basin, as part of an assessment of its petroleum potential.

Voyage Objectives
- To acquire geoscience data from the outer shelf to abyssal plain
- 200-4500 m water depth
- 116 deg 30'E to 121 deg 30'E.
- Highest priorities are seismic profiling (3060 km at 7 knots) and dredging (40 dredges, 500-4000m water depth)
- Secondary priorities are magnetic profiling (on seismic profiles), swath mapping, echosounder profiling and coring (10 cores, 200-4500m water depth)
- Swath will be run the whole time, at least until we leave our area of interest.
- Transits at 11 knots to and from work area.

Time Estimates
Geophysical leg (15 days total, 12.5 days seismic profiling)
- Depart Fremantle 1000, Sunday 8 February, transit with swath-system only
- Deploy seismic gear around 35deg 45'S late 9 February
- Run 4 east-west seismic profiles for 6 days
- Run about 12 N-S seismic profiles for 5.5 days, starting in far west and finishing in far east
- Run one short E-W profile for 1 day back toward Albany
- Pull gear and 0.5 day transit back to Albany
- Port call in Albany arriving 1000 on Monday 23 February: some change in science crew and refuelling

Geological leg (16 days total, 10 days sampling, locations decided on first leg)

- Transit 0.5 days to west of area
- Dredging and minor coring in canyons from west to east: perhaps 40 dredges and 10 cores
- Depart eastern edge of area of interest on Thursday 4 March and transit direct to Hobart
- Berth in Hobart 1000, Tuesday 9 March

Southern Surveyor Equipment

- Swath-mapper with sound velocity profiler
- 12 KHz echosounder
- Trawl winch for dredging
- Smith-Macintyre grab
- Coring winch
- Space in operations room to set up seismic recorders
- Space for swath and seismic processing
- Room in wet laboratory for sedimentology
- Cold room for core storage
- Room for rock saw in wet laboratory
- Room for microscopes in dry lab

Geoscience Australia equipment

- GA navigation system
- GA airgun (GI) seismic system: compressor container, guns, winch, streamer, recorders
- Magnetometer
- Core deployment system (Thomas)
- Piston and gravity corers
- Dredges
- Grabs
- Microscopes
- Rock saws

Special requirements

- Room for compressor on deck
- Room for sampling gear on deck
- Room for seismic winch on deck
- Room for magnetometer winch on deck
- 10,000 litres of diesel fuel to run compressor

Data sets collected from the National Facility's instruments

- Navigation, with digital acquisition
- Swath-bathymetry (digital)
- Bathymetry, with digital acquisition (12 kHz)
- Plots of ship tracks at various scales if possible

Personnel List
Geophysical Leg

Dr Neville Exon	Chief Scientist
Mike Sexton	Geophysicist/seismic processor
Georgina Burch	Geologist/seismic processor
Cameron Buchanan	Swath expert
Andrew Cortese	Swath expert
Lyndon O'Grady	Science technician
Cameron Mitchell	Geologist
Andrew Hislop	Mechanical technician
Wojciech Wierzbicki	Electronics technician
TBA	Junior geophysicist
Stephen Thomas	Voyage Manager National Facility – electronics
Bernadette Heaney	National Facility – computing

Geological Leg

Dr Neville	Chief Scientist
Andrew Heap	Geologist
Jane Blevin	Geologist
Georgina Burch	Geologist
Alix King or Cameron Mitchell	Geologist
Roger Hocking	GSWA geologist
Barry Taylor	UWA paleontologist
Christian Thun	Science technician
Lyndon O'Grady	Science technician
Andrew Hislop	Mechanical technician
Stephen Thomas	Voyage Manager National Facility – electronics
Bernadette Heaney	National Facility – computing

This voyage plan is in accordance with an agreement between CSIRO Marine and Atmospheric Research and Geoscience Australia, and supported by the National Facility Steering Committee for the Research Vessel Southern Surveyor.

Chief Scientist
Neville Exon