

## **RESEARCH PLAN**

### **CRUISE FR 6/94**

Sail Adelaide: 0700hrs Thursday 23 June 1994  
Arrive Adelaide: 1500hrs Tuesday 5 July 1994

### **SOUTHERN AUSTRALIAN MARGIN: COOL - WATER CARBONATES AND GEOLOGICAL HISTORY**

#### **Principal Investigators**

**Dr Yvonne Bone**  
**Dr Victor A. Gostin**  
University of Adelaide

**Professor Chris. C.C. von der Borch**  
Flinders University

**Dr Noel P. James**  
Queens University, Canada

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***R V FRANKLIN***

**FR 6/94**

## **SOUTHERN AUSTRALIAN MARGIN: COOL - WATER CARBONATES AND GEOLOGICAL HISTORY**

### **Itinerary**

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### **Scientific Program**

The overall program aims at determining the:-

- (1) increase understanding of cool-water carbonates,
- (2) obtain high-resolution sub-bottom profiling to determine Neogene and Quaternary structures and geological history,
- (3) determine sediment distribution and dynamics on a major east-west oriented open-platform continental shelf fronting a long-fetch open ocean viz. the Southern Ocean, and
- (4) determine distribution of bryozoans, sponges and other invertebrates, and catalogue bryozoan species present.

This is the third cruise investigating these parameters along Australia's southern margin, and will be followed by a fourth, further westwards in the Great Australian Bight, in 1995.

### **Principal Investigators**

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## Cruise Track & Time Estimates

### SPENCER GULF APPROACHES

580 km Seismic

1150 km Precision Depth Profiling

62 km Bottom Samples

The following cruise plan is a framework within which we intend to operate. Since this is in large part an exploration research cruise, the plan will inevitably be modified on the basis of on-site discoveries. The proposed cruise track is attached.

23/6	0700	Depart Adelaide. Steam to Location A, southern end of Line 1, (35°05' x 133°32'). 24 hours.
24/6	0700	Arrive at Location A. Begin seismic survey along Line 1, north east towards Elliston, ending at Location B (33°43' x 134°55'). 25 hours.
25/6	0800	Arrive at Location B. End of seismic line. Steam SW along Line 1 back to Location A, stopping at 12 sample sites along the way. Run PDR. 28 hours.
26/6	1200	Arrive at Location A. Depart for Location C along Line 2 (35°10' x 134°48'), running PDR. 10 hours.
26/6	2200	Arrive at Location C. Steam SW along Line 3 to Location D (35°12' x 134°18'), stopping at 7 sample sites along the way. Run PDR along the way. 12 hours.
27/6	1000	Arrive at Location D. Steam east along Line 4 to Location E (35°14' x 134°42'). Run PDR along line. (4 hours).
27/6	1400	Arrive at Location E and sample. Steam SE along Line 5 to Location F (35°31' x 134°45'). 4 hours.
27/6	1800	Arrive at Location F. Begin seismic survey to NE along Line 6, to Location G (34°44' x 135°20'). 13 hours.
28/6	0700	Arrive at Location G. Steam SW along Line 6 to Location F (35°31' x 134°45') and take 11 samples. Run PDR along line. 20 hours.

29/6	0300	Arrive at Location F. Steam east along Line 7 to Location H (35°29' x 135°09'). Run PDR between locations. 4 hours.
29/6	0700	Arrive at Location H and sample. Steam south east along Line 8 to Location J (35°45' x 135°20'). Run PDR between locations. 5 hours.
29/6	1200	Arrive at Location J. Begin seismic survey to north east along Line 9 toward Location K (34°55' x 135°46'). 13 hours.
30/6	0100	Arrive at Location K. Steam back south west along Line 9 to Location J, taking 8 bottom samples along the way. Run PDR between locations. 17 hours.
30/6	1800	Arrive at Location J. Steam north east along Line 10 to Location L (35°41' x 135°42'). Run PDR between locations. 3 hours.
30/6	2100	Arrive at Location L and sample. Steam south along Line 11 to Location M (36°07' x 135°43'). Run PDR between sites. 6 hours.
1/7	0300	Arrive at Location M. Steam north east along Line 12 to Location N (35°29' x 136°02'), taking 8 samples along the way. Run PDR between locations. 15 hours.
1/7	1800	Arrive at Location N. Steam north east along Line 13 to Location O (35°09' x 136°42'), taking 4 samples along the way. 10 hours.
2/7	0400	Arrive at Location O. Steam south along Line 14 towards Location P (36°35' x 136°18'), running seismic survey. 23 hours.
3/7	0300	Arrive at Location P. Steam north along Line 14 towards Location O, taking 12 samples along the way. Run PDR between locations. 27 hours.
4/7	0600	Arrive at Location O. Steam to Adelaide. 9 hours.
4/7	1500	Arrive Adelaide.

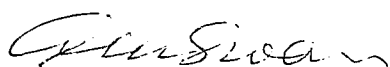
#### ORV Equipment required

All standard systems; especially the echo sounder, pinger, MacIntyre grab, XBT, CTD, containerised deck lab (will also be used for formalin work), rosette samplers, computing facilities, water sampling, thermosalinograph, pH, light, transmissometer, freezer facilities.

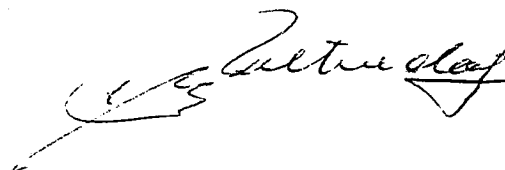
## Personnel

Yvonne Bone	U.Adelaide	Chief Scientist
Chris von der Borch	Flinders U. - seismic	
Vic Gostin	U.Adelaide - siliciclastics	
Noel James	Queens U. - carbonates	
David Feary	AGSO - seismic	
Bill Woerkerling	Latrobe U. - coralline algae	
Steve Hageman	U.Adelaide - bryozoans	
Colin Murray-Wallace	Wollongong U. - amino acid racemisation	
Karen Gowlett-Holmes	S A Museum - invertebrates	
Tony Belperio	S A Geol. Survey - sea-level history	
Bob Beattie	CSIRO - ORV	Cruise Manager
Phil Adams	CSIRO - ORV	

This research plan is in accordance with the direction of the National Facility Steering Committee for the oceanographic research vessel *Franklin*.



A D McEwan  
CSIRO Division of Oceanography



G W Paltridge  
National Facility Steering Committee

March 1994