

FRANKLIN

National Facility
Oceanographic Research Vessel

RESEARCH SUMMARY

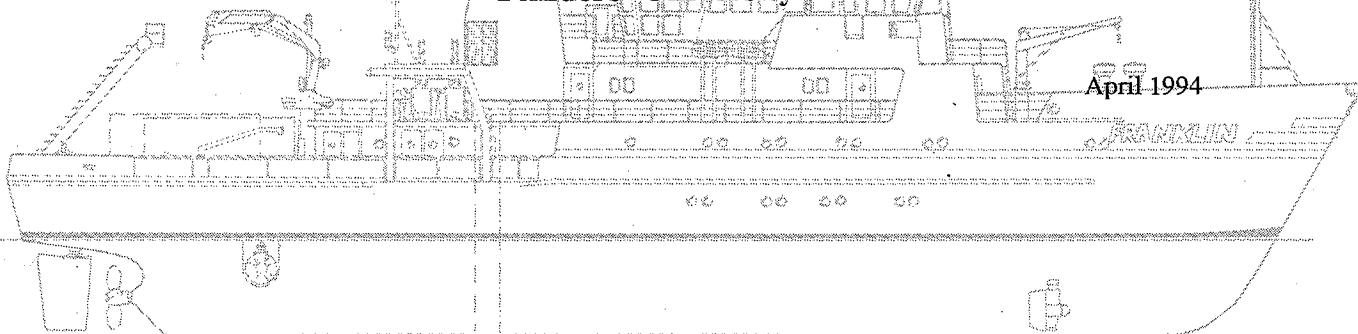
FR 3/94

Sailed	Hobart	1015	Saturday	10 March 1994
Arrived	Newcastle	0700	Sunday	3 April 1994

OCEAN TRANSPORT IN THE TASMAN SEA SEASONAL VARIABILITY

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April 1994



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1. Itinerary

Sailed Hobart	1015hrs Thursday 10th March, 1994
Arrived Newcastle	0700hrs Sunday 3rd April, 1994

2. Scientific Program

OCEAN TRANSPORT IN THE TASMAN SEA SEASONAL VARIABILITY

1. To estimate the volume transport (and its time variability) of the EAC along the east Australian coast and in the Tasman Front using CTD, ADCP and current meter moorings.
2. To determine the large-scale general circulation of the Tasman Sea using patterns of tracers (temperature, salinity, oxygen and nutrients) and of the density to estimate geostrophic circulation.
3. To recover the current meter moorings near Coffs Harbour which had been deployed in 1989 (Fr 10 & 11/89) and serviced in 1992 (Fr 8/92).

3. Principal Investigators

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4. Results

A disappointingly small proportion of the planned CTD work was completed due to the large (record) amount of time lost due to bad weather and to the longer than expected amount of time spent recovering the moorings. Both main CTD sections have substantial gaps. See cruise track, figure 1.

Nearly all of the mooring equipment was recovered however. It will not be possible to summarise the results from the current meters until this data has been processed.

5. Cruise narrative

All dates and times are local time - Australian Eastern Standard Summer Time or Australian Eastern Standard Time.

We sailed from Hobart at 1015 on Thursday the 10th of March after delays due to problems with the bow thruster. The weather was quite good until about 8am the next morning, at which point we hove to. By the end of the 4th day at sea we had been hove to for over three days. This is, apparently, the longest the Franklin has ever been hove to in one spell. Having achieved this unenviable record (one which we all hope will stand without serious challenge for many years) we continued CTD work along this section for a few days before having to heave to again because of strong winds and a big, steep swell from the South. After two days we were able to do one CTD in marginal conditions before conditions worsened again. It was eventually decided to abandon the 43°S CTD section as there was little prospect of it being completed in a reasonable time.

We then steamed to Cape Reinga and started the section north from there. This section was completed without incident and we started the 30°S section in good conditions. We decided to leave the section on the 25th of March and steam in to the moorings (near the NSW coast at 30°S) and recover the moorings, starting early on the 28th. While steaming in a few CTDs were done when weather permitted - the weather had deteriorated again.

The first mooring was recovered without incident on the morning of the 28th. The acoustic release on the second mooring didn't respond, so we went on to the next (in 700m of water) and recovered that without incident. The three inshore moorings were recovered on the 29th, leaving only the mooring which hadn't responded on the 28th. This mooring was in 4,400 metres of water. After trying to communicate with it again at first light on the 30th a release command was sent and that also had no effect. After several hours searching the top instruments were located (in the correct position) with the ship's sounder. As the acoustic release would not release the only option left was to trawl for it. The daylight hours of the 31st of March and the 1st of April were spent

trawling with the top part of the mooring being recovered on the afternoon of the 1st. Unfortunately the pressure case (rated to 2000m) of the ADCP at the top of the mooring had imploded - we think that this had happened some time before. Another unsuccessful attempt was made to release the mooring on the morning of the 2nd before steaming to Newcastle.

6. General

All of the ship's systems worked well with the following relatively minor exceptions. See computing and electronics reports for more information.

- the digitiser board for the oxygen current and oxygen temperature in the CTD was faulty, giving oxygen profiles with a number of large jumps. This data may be recoverable.
- the CTD data from the first few stations was very noisy because of slip ring problems. This should be recoverable.
- the ship's log (a new unit installed in dry dock) was giving consistently low speeds early in the cruise. This came good later.
- the new Ashtech OEM GPS did not work at all, apparently due to a fault in the antenna. Fortunately the Trimble 4000A GPS worked well this cruise.
- the thermosalinograph was out of action for about 2 days because of a problem with the pump motor.
- the sounder printer failed about a week into the cruise. There was no spare for the failed component on board.
- the main logging computer (fdcs-log-1) stopped once because of a problem with its console keyboard. Fortunately, this was between stations.

At the moment there is only one printer (the QMS laser printer) available on the network. I suggest that a second (identical?) printer should be put in the ops room where the 'DELP' printer used to be.

7(a) Scientific personnel

Neil White	CSIRO DO	Chief Scientist
Helen Phillips	CSIRO DO	
Fred Boland	CSIRO DO	
Kevin Miller	CSIRO DO	
Danny McLaughlan	CSIRO DO	
Val Latham	CSIRO ORV	
Les Drury	CSIRO ORV	
Phil Adams	CSIRO ORV	

7(b) Crew

Neil Cheshire (Master)

Ian Menzies (Second Mate)

Ian Hayward-Bryant (Second Engineer)

Tony Bernardin (Greaser)

Jack Caldwell (AB)

Klaus Hopp (AB)

Bob Clayton (Second Cook)

John Handicott (Cadet)

Dick Dougal (First Mate)

John Scott (Chief Engineer)

Don Roberts (Electrical Engineer)

Jannik Hansen (Bosun)

Bluey Hughes (AB)

Gary Hall (Chief Cook)

Reg Purcell (Chief Steward)

Acknowledgements

As always, acknowledgements and thanks to all of the ship's officers and crew for their very professional and helpful approach.

Thanks for the patience and forbearance of all personnel during the long periods of bad weather.

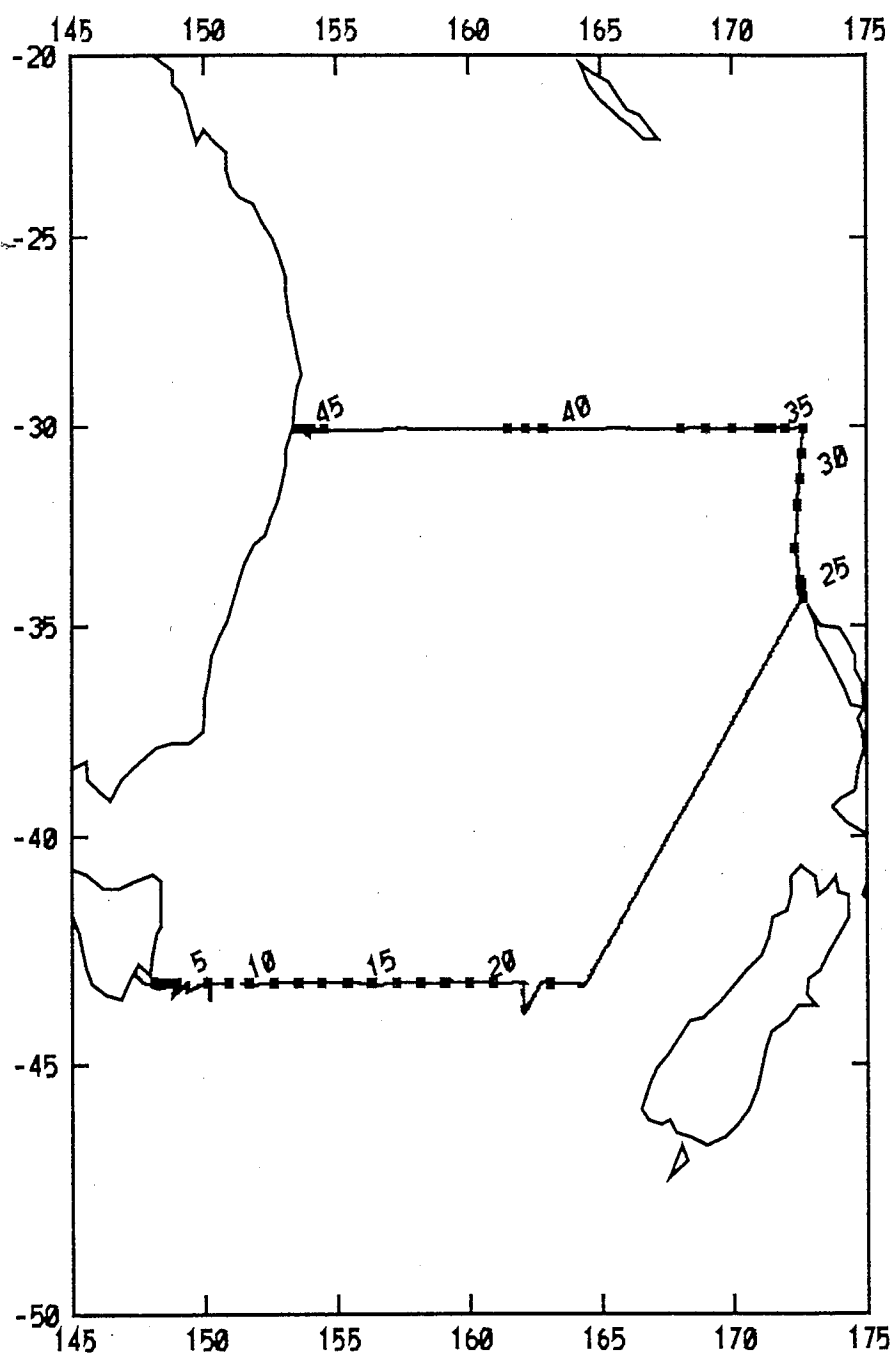


Fig 1. Cruise track for Fr 3/94.
CTD stations are shown
as squares.