

CSIRO

MARINE LABORATORIES

Division of Fisheries Research
Division of Oceanography

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2 June 1985

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CRUISE PLAN R.V. FRANKLIN FR 3/85

Itinerary

Depart Hobart	1000 hours Saturday June 8, 1985
Arrive Heron Island	1100 hours Tuesday June 18, 1985
Depart Heron Island	1200 hours Tuesday June 18, 1985
Arrive Cairns	1500 hours Thursday June 27, 1985

Scientific Programs

1. Time and Space Variability of the Great Barrier Reef Undercurrent.
2. Coastal Circulation due to Alongshore Pressure Gradients.
3. Sea mounts of the Tasman Sea: Geochronology, Geochemistry and Origin (seamount dredging).

Principal Investigators

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Associate Investigators

1. Mr F.M. Boland (CSIRO)
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2. Dr J.A. Church (CSIRO)

3. Professor D.H. Greene
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Dr T. Falloon
Mr N. Oiding
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University of Tasmania
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Dr M.T. McCulloch (RSES-ANU)

Cruise Objectives

For Scientific Program 1

- (a) To deploy 6 current meter moorings at the section offshore from Townsville

For Scientific Program 1 and 2

- (b) To complete CTD sections on the sections indicated on Figure 1. These sections comprise a total of 66 CTD stations (all to within 50m of the bottom).
- (c) To obtain ADCP sections for the period after departing from Heron Island. This includes several ADCP sections into the entrance of Hydrographers Passage.

For Scientific Program 2

- (d) To deploy 3 pressure gauge moorings at the outer edge of the Great Barrier Reef.

For Scientific Program 3

- (e) To complete seamount dredging on as many of the seamounts between Gascoyne Seamount and Recorder Guyot (inclusive) as is possible.

The sections outlined in (b) and (c) are to be repeated on RV Franklin Cruise FR 6/85. The equipment deployed in objectives (a) and (d) is to be recovered on FR 6/85.

Cruise Track

The proposed cruise track is shown in Figure 1. Briefly the track is : From Hobart thence northward along the eastern Tasmanian continental shelf. During this part of the track we will occupy three CTD stations offshore from Maria Is. On passing Flinders Island, the ship will steam north east to Gascoyne Seamount where the first dredging will be attempted. The ship will then steam northwards along the chain of seamounts and thence to Heron Island where some staff will be interchanged.

The track is then to complete the CTD sections offshore from the Great Barrier Reef. At the entrance to Hydrographers Passage several ADCP sections will be completed. These sections will go from about the 200m isobath to inside the

outer barrier of the Great Barrier Reef.

If time permits, the most northerly section will be repeated using only the ADCP and steaming at reduced speed. (The time estimates do not include repetitions of this section).

It should be noted that this is the first scientific cruise of R.V. FRANKLIN and it is expected that there will be teething problems with equipment that will need to be ironed out en route. For this reason, there will be some unscheduled stops for trial CTD stations and the like.

If interesting features, such as an East Australian Current front are crossed, then these will be examined (if time permits) using XBT's and the ADCP.

ORV Equipment

- Inmarsat
- Scientific sounder
- CTD and tape recorder
- Rossette (5 L Bottles), thermometers
- Thermosalinagraph
- Meteorological Station
- Closed circuit TV system
- Salinometer
- Auto Analyser
- Spectrophotometer
- Oxygen analysis equipment
- Acoustic release system
- ADCP
- Towing winch

Equipment provided by users

- backup acoustic release system
- current meter moorings
- pressure gauge moorings and associated deck gear.

On board analysis

For each CTD station, samples will be taken for salinity, oxygen, nitrates and silicates and phosphates. For all stations, we plan to use as many bottles as practical. Expected number of samples for each property is about 840.

Note : that most of the CTD stations occur in the last half of the cruise.

Time estimates

Steaming time 2960 n miles at 12 kt	10 days 6 hrs
CTD stations (70 stations)	3 days 6 hrs
Deployment time 3 pressure gauge moorings	9 hrs
6 current meter moorings	12 hrs
ADCP stations at Hydrographers Passage	6 hrs
Seamount dredging	4 days 9 hrs
Total	19 days

Personnel

Hobart - Heron Island

CSIRO Division of Oceanography
John Church (Chief Scientist)
Neil White
Len Zedel
Robert Beattie
Ron Plaschke
Alan Poole
Jan Peterson
Eric Madsen

Australian National University
Ian McDougall

Oregon State University - U.S.A.
Robert Duncan

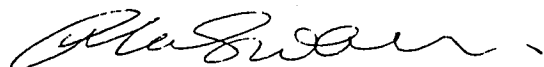
University of Tasmania
Trevor Falloon

Engineer from DEC
(Hobart - Louisville)

Heron Island - Cairns

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Vito Diritto
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This cruise plan is in accordance with the directions of the National Facility Steering Committee for the oceanographic research vessel RV Franklin.



A.D. McEwan

