

# CSIRO

## MARINE LABORATORIES

Division of Fisheries Research  
Division of Oceanography

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NW/NP

16 October 1985

A Division of the Institute of Animal and Food Sciences  
A Division of the Institute of Physical Sciences

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### CRUISE PLAN RV 'FRANKLIN' FR 6/85

#### Itinerary

Depart Townsville	1000 hours Wednesday 4 December 1985
Arrive Cairns	1500 hours Thursday 19 December 1985

#### Scientific Programs

1. Time and Space Variability of the Great Barrier Reef Undercurrent
2. Coastal Circulation due to Alongshore Pressure Gradients

#### Principal Investigators

1. Dr J.A. Church  
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2. Dr J.H.F. Middleton  
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#### Associate Investigators

1. Mr F.M. Boland  
Dr J.C. Andrews
2. Dr J.A. Church

## Cruise Objectives

For Scientific Program 1

- (a) To recover five current meter moorings along a section offshore from Townsville (CSIRO)

For Scientific Programs 1 and 2

- (b) To complete CTD sections on the sections indicated on Figure 1. These sections comprise a total of 63 CTD stations. All the stations will be to within 50 m of the bottom if time permits. Otherwise, the stations in >2000 m of water will go to 2000 m.
- (c) To obtain ADCP sections along the cruise track. If time permits, ADCP sections will be taken into the entrance of Hydrographers Passage.

For Scientific Program 2

- (d) To recover three pressure gauge moorings at the outer edge of the Great Barrier Reef (CSIRO).
- (e) To recover three pressure gauge moorings and four current meter moorings from the mid-shelf region (UNSW).

## Cruise Track

The proposed cruise track is shown in figure 1. Briefly the track is: From Townsville northward to the inshore end of the western-most CTD section. Then doing CTD stations and recovering current meter moorings along the section. The next CTD section to the east will then be done, and one of the CSIRO pressure gauges picked up before proceeding inshore and picking up the University of New South Wales pressure gauges and current meters. The eastern-most CTD sections will then be done, before picking up another CSIRO tide gauge, the central CTD sections, picking up the final CSIRO tide gauge, and steaming to Cairns.

Two standard CTD stations will be performed, the first as soon as we reach water sufficiently deep for the testing of sample bottles. The second will be performed later in the cruise. If possible, this second standard station will be performed in such a location that whenever 'Franklin' (or FRV Soela) is working in the area, it will be able to occupy the same station without undue loss of time.

If time becomes short, the eastern-most CTD section will be omitted.

## RV Equipment

- Scientific sounder
- CTD system
- Rosette (5L bottles) and thermometers
- Thermosalinograph
- Meteorological Station
- Acoustic Doppler Current Profiler
- Chemical analysis equipment
- Computers
- Compressor for filling Scuba tanks
- Inflatable boat with outboard motor capable of taking 3 divers and gear

## Equipment provided by users

Two acoustic release deck units (CSIRO)

## On board analysis

For each CTD station, samples will be taken for salinity, oxygen nitrates, silicates and phosphates. For all stations we plan to use as many bottles as practical. The expected number of samples for each property is about 700.

## Time estimates

Steaming time at 12 knots (excluding the steaming between UNSW moorings)	5 days	
CTD stations (63 + 2 standard stations)	4 days	
Recovery time for UNSW moorings (including overnight stops and steaming)	4 days	
Recovery time for CSIRO moorings		20 hours
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Total	13 days	20 hours

This leaves 33 hours allowance for loss of time due to bad weather, or any other problems.

## Personnel

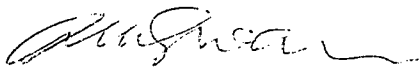
### CSIRO Division of Oceanography

Neil White (Chief Scientist)  
Len Zedel  
Bob Edwards  
Jenni Pragnell  
Alan Poole  
David Terhell  
Fred Boland  
Kevin Miller  
Dan McLaughlin

### University of New South Wales

Greg Nippard  
David Griffin  
Madeleine Cahill

This cruise plan is in accordance with the directions of the RV 'Franklin' Steering Committee.



A.D. McEwan  
Chief, Division of Oceanography



D.H. Green  
Chairman, National  
Facility Steering Committee

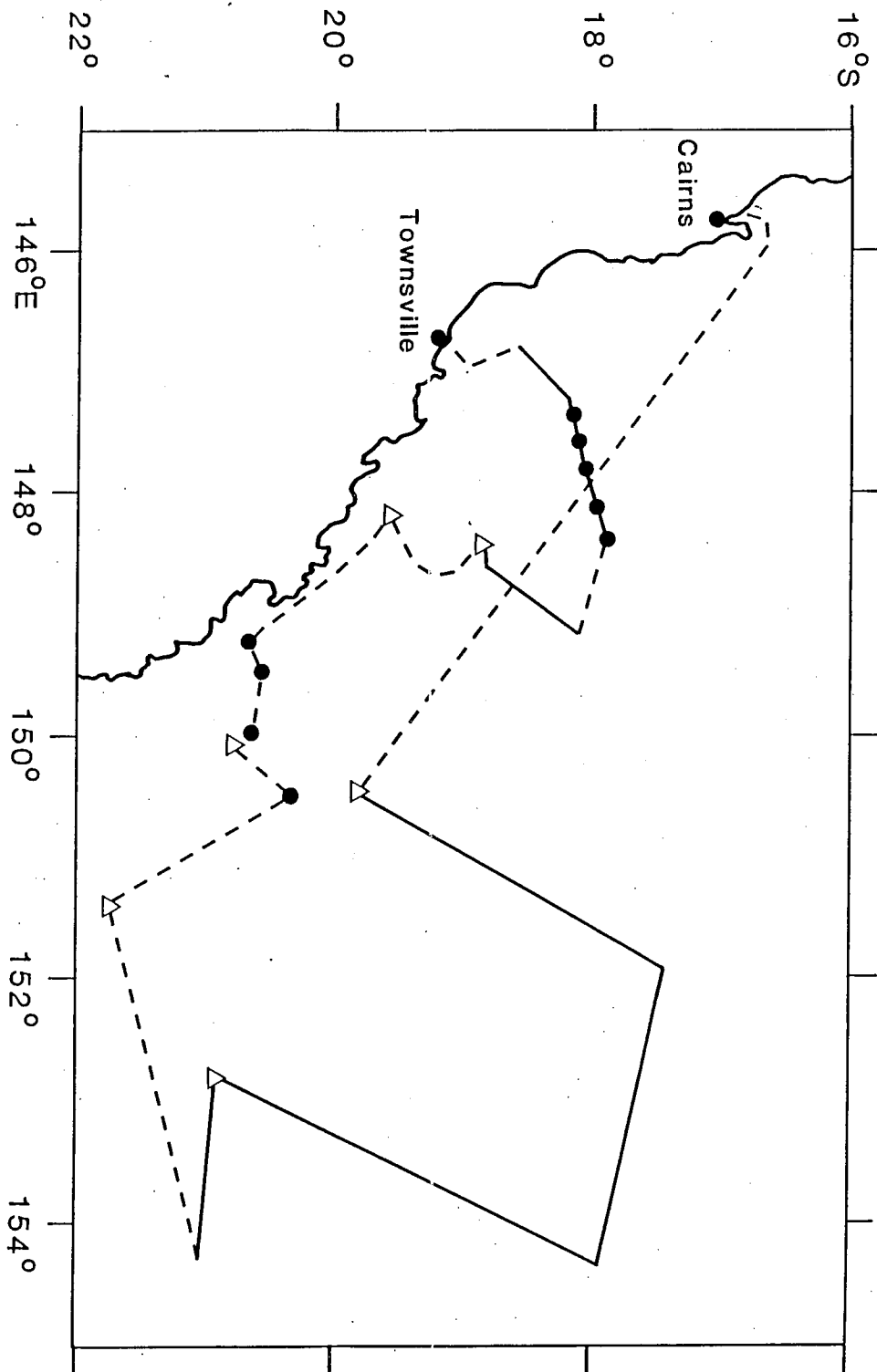


Figure 1  
Cruise track for Fr 6/85, showing CTD sections (solid lines), current meter moorings (dots), and pressure gauge moorings (triangles).