

FRANKLIN

National Facility Oceanographic Research Vessel

AMENDED AMENDED AMENDED

RESEARCH PLAN

CRUISE FR 10/91

Sail Sydney	1200 Friday 15 November 1991
Arrive Noumea	1200 Monday 2 December 1991
Sail Noumea	0830 Tuesday 3 December 1991
Arrive Sydney	1600 Sunday 15 December 1991

OCEAN TRANSPORT IN THE TASMAN AND CORAL SEAS

Dr John Church, Dr Gary Meyers, Mr Fred Boland
CSIRO Division of Oceanography

Associate Professor Matt Tomczak
Ocean Science Institute
The University of Sydney



APPLICATION AND VALIDATION OF THE ALONG TRACK
SCANNING RADIOMETER OF ERS - 1

Dr Ian Barton and Dr Fred Prata
CSIRO Division Of Atmospheric Research

For further information contact:

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July 1991

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FRANKLIN is owned and operated by CSIRO

**Cruise Plan
R.V. Franklin
Fr 10/91**

Itinerary

Depart Sydney 1200 Friday 15 November 1991
Arrive Noumea 1200 Monday 2 December 1991
Depart Noumea 0830 Tuesday 3 December 1991
Arrive Sydney 1600 Sunday 15 December 1991

Scientific Program

The objectives of this study are to analyse in detail the ocean dynamics in the Tasman/Coral Sea. Specifically, we want

- 1) To estimate the volume transport of the East Australian Current (EAC) at 23°S and 30°S and to estimate the time variability of this transport at 30°S. The EAC differs from the surface western boundary currents in other oceans in that the eddies are of the same magnitude as the mean current so that it appears that the current is discontinuous in time and along the coast. Thus part of the problem is to acquire sufficient data to properly define the EAC. As part of this objective, we hope to determine the large-scale general circulation of the Tasman/Coral Sea using patterns of tracers (temperature, salinity, oxygen and nutrients) and of density to estimate geostrophic circulation (baroclinic plus barotropic) at all depths.
- 2) In collaboration with US scientists completing a section between South America and New Zealand at about 32°S, to estimate the meridional heat and freshwater fluxes. One of the keys to accurately estimating these fluxes is to have good estimates of the transport in the western boundary current (Hall and Bryden 1982).
- 3) To validate the accuracy of satellite derived SST's, and to assess the importance of the radiative skin layer on the remote measurement of SST.

Principal Investigators

Objectives 1 and 2 :

Dr J.A. Church
Dr G. Meyers
Mr Fred Boland
all of:
CSIRO Division of Oceanography
GPO Box 1538
Hobart, Tas 7001

Assoc Prof M. Tomczak
Ocean Sciences Institute
The University of Sydney
Sydney, NSW 2006

Objective 3 :

Dr Ian Barton
Dr Fred Prata
both of:
CSIRO Division of Atmospheric Research
PMB No.1,
Mordialloc,
Victoria, 3195

Cruise Objectives

To complete 3 CTD/ADCP/nutrient sections at about 23°S, 30°S and 168°E as indicated on the figure.

To deploy a current meter array on the continental slope at 30°S.

To make radiometer, thermistor and radiosonde measurements at times of overpasses of ERS-1

Cruise Track

A proposed cruise track is shown on the attached figure. CTD stations are shown as crosses. The port call in Noumea will be to refuel and re-provision the ship.

ORV Equipment Required

All standard instrumentation plus 24 bottle rosette, ACR deck unit, Aanderaa tape reader. We will require a large storage space and clear deck area for mooring work (no container labs).

Equipment to be provided by users

Radiosonde receiver, infrared radiometer, radiosondes and thermistor chains

Time Estimates

Steaming	15.5 days	
CTD stations	10.0 days	
Moorings	2.0 days	
Entering/leavingports	2.0 days	
Allowance for bad weather	1.5 days	(If the weather is good then this time will be used to complete a repeat section (CTD/ADCP) across the current meter moorings at the end of the cruise)
Total	31 days	
Time available	31 days	

Personnel

J.Church (Chief Scientist)	CSIRO DO
F. Boland	CSIRO DO
K. Miller	CSIRO DO
D. McLaughlin	CSIRO DO (Sydney - Noumea only)
N. White	CSIRO ORV
P. Adams	CSIRO ORV
R. Plaschke	CSIRO ORV
M. Rayner Bob Griffiths	CSIRO ORV
P. Hay	OSI - Sydney Uni
A. Prata	CSIRO DAR
one other	CSIRO DAR

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
CSIRO Division of Oceanography



G.W. Paltridge
National Facility Steering
Committee

Fr 10/91 - proposed cruise track

