

RESEARCH PLAN

FR 08/94

Sail Fremantle 0800 Tuesday 23 August 1994
Arrive Colombo 1200 Thursday 15 September 1994

OCEAN TRANSPORT IN THE LEEUWIN CURRENT AND IN THE EQUATORIAL INDIAN OCEAN

Principal Investigators

Prof. M Tomczak

Dr A White

Flinders Institute for Atmospheric and Marine Sciences

Dr J Church

Mr F Boland

CSIRO Division of Oceanography

Dr D Quadfasel

Institut für Meereskunde

HAMBURG, Germany

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Scientific Programme

To determine the seasonal variability of the Leeuwin Current near 20°S and thus the variability in southward oceanic heat flux near north-western Australia, by measuring the current's transport and water mass characteristics using current meters (an Australian contribution to WOCE).

To measure the transport in the equatorial current system at 80°E using current meters.

To determine the depth averaged water velocity in the Leeuwin Current near 20°S by measuring the magnetic and electric field fluctuations associated with it, using ocean floor magnetometers and electrometers.

Cruise objectives

To deploy current meter array ICM6 of the World Ocean Circulation Experiment (WOCE) in the region indicated on the attached figure.

To deploy acoustically recoverable magnetometer/electrometer sets in conjunction with current meter array ICM 6 (to be recovered on Cruise FR5/95).

To recover the array of seven current meter moorings on 80°E which was deployed by R/V *Sonne* in July 1993.

To complete short CTD/ADCP/nutrient sections in the vicinity of the moorings.

Cruise Track

A proposed cruise track is shown on the attached figure.

ORV Equipment Required

All standard equipment including 24 bottle rosette, ACR deck unit, Aanderaa tape reader.

A clear deck is required for the mooring work (no Container labs), and large storage space is essential.

Equipment to be provided by users

Backup ACR units.

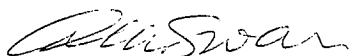
Time estimates

Steaming time	15 days
Mooring deployment	3.5 days
Mooring recovery	3.5 days
Station time	1 day
Total time	23 days
Time available	23 days

Personnel

Matthias Tomczak	FIAMS	Chief Scientist
Gert Johansson	"	
Antony White	"	
Fred Boland	CSIRO Oceanography	
Mooring Technician	"	
Detlef Quadfasel	IfM Hamburg	
Mooring Technician	"	
Dave Vaudrey	CSIRO ORV	Cruise Manager
Phil Adams	"	
Bob Griffiths	"	

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

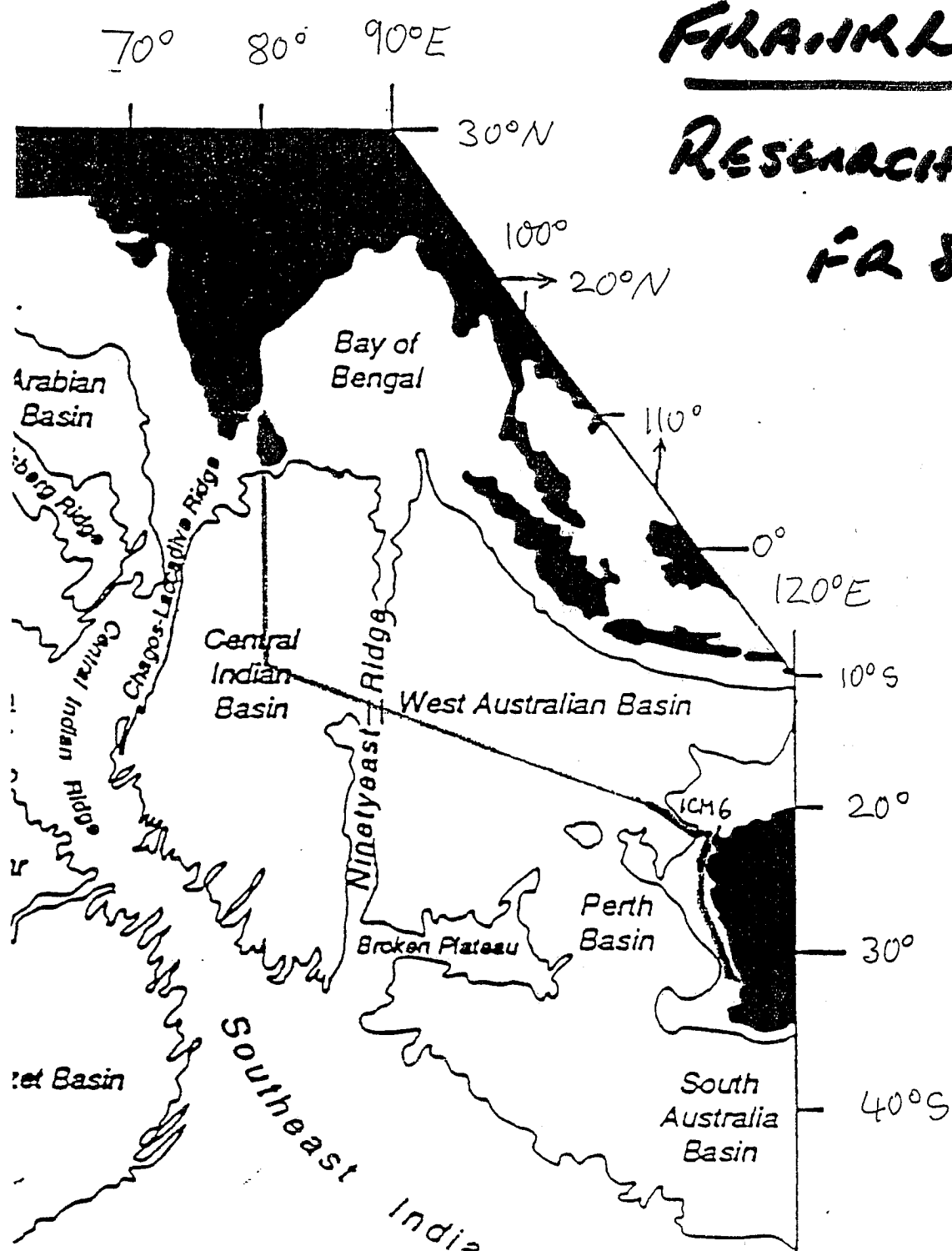


A D McEwan
CSIRO Division of Oceanography



G W Paltridge
National Facility Steering Committee

February 1994



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Figure 1 cruise track, FR08/94