

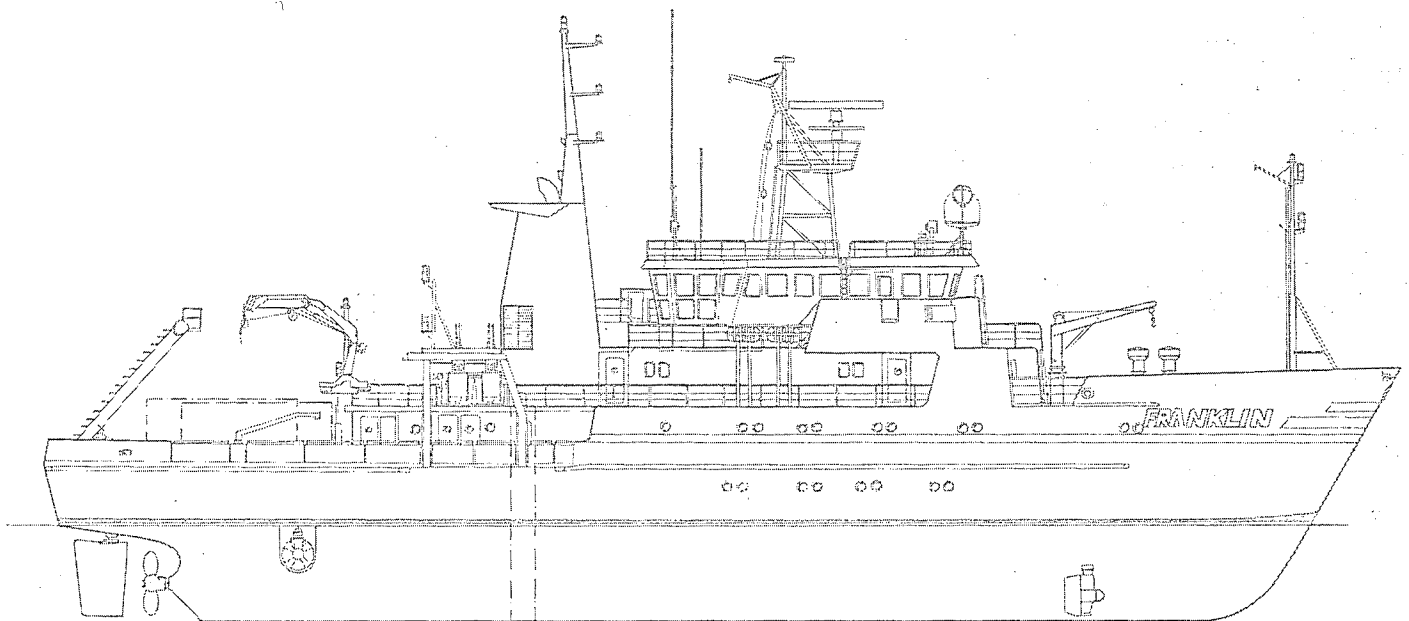
R.V. FRANKLIN

NATIONAL FACILITY
OCEANOGRAPHIC RESEARCH VESSEL

CRUISE PLAN

R.V. 'FRANKLIN'

FR 1/88



For further information contact
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R.V. FRANKLIN IS OWNED AND OPERATED BY CSIRO

RJE/NP

7 August 1987

**CRUISE PLAN
R.V. 'FRANKLIN'
FR 1/88**

ITINERARY

Depart Cairns:	0600 hrs	Friday 8 January 1988
Arrive Cairns:	1600 hrs	Thursday 28 January 1988

SCIENTIFIC PROGRAM

SEARCH FOR SUBMARINE HYDROTHERMAL VENTS, WESTERN WOODLARK BASIN

PRINCIPAL INVESTIGATORS (CO-CHIEF SCIENTISTS)

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CRUISE OBJECTIVES

To seek evidence for recent and current hydrothermal venting on the seafloor of the western Woodlark Basin spreading system, and to collect samples of vent plumes, precipitates, and associated rocks and sediments. Reconnaissance studies of a similar nature in the Goodenough Bay - Goschen Strait area during the return passage.

CRUISE TRACK

Proceed from Cairns via Jommard Entrance to the first station at 151° 10'E, 9° 50'S. Activities will then concentrate on the area north of Normanby Island, between 150° 55'E and 151° 20'E (see Fig. 1), within which the exact

track will be dictated by results progressively obtained.

Pass through Dawson Strait and proceed to approximately 150° 40'E, 10° 10'S for further traversing and overside operations.

Return via Goschen Strait and China Strait (?) to Cairns.

OPERATIONS

Over-the-side and traversing activities will be conducted on a 24-hour basis while on station, and will involve a variable combination of

- traversing with echo-sounder and towed magnetometer
- dredging bottom rock samples (maximum depth 3200 m)
- sediment coring
- 2-3 km traverses with bottom following camera under tow
- CTD-transmissometer soundings and hydrocasts while drifting or moving slowly under TAC propulsion (10-400 m above bottom)

Navigation by GPS and, in the main area of operations, with a miniranger network established on Normanby and Fergusson Islands.

O.R.V. EQUIPMENT REQUIRED

1. Main winch and towing cable. Tensiometer and wire-out meter must be operative
2. Hydro and CTD winches and cables
3. Scientific sounder
4. 12 kHz pinger
5. GPS and SATNAV
6. Computing System, plotter (D. Cousens, R. Beattie, D. Edwards to liaise regarding prior programming for navigational and data recording and plotting)
7. CTD profiler, transmissometer, rosette (10 and 30L bottles, racks), reversing thermometers
8. Milli-Q and Milli-R04 water purification system
9. Yeo-Kal 606 SDL (3000 m version) and reader
10. Biological container laboratory
11. Solvent fumehood (HCl, HNO₃)
12. Sony video 8 camera recorder
13. Oscilloscope and other electronics test equipment
14. Shipboard communications (especially Bridge-Operations-Winch)
15. PACLARK Camera cage loaned to ship
16. Photocopier
17. Weak links for dredging

EQUIPMENT PROVIDED BY USERS

1. 3 x Lister dredges and weights, various mini-dredges
2. Towed camera, video camera, strobe and cage, Video playback
3. Sediment corer (gravity type)
4. Towed magnetometer and cable
5. 12 kHz pinger
6. Jobo colour film processing equipment

7. Small rock saw
8. Chemtronics portable digital voltameter and associated apparatus for analysis of seawaters
9. Retrological stereo microscopes
10. Miniranger navigation receiver.

ON-BOARD ANALYSIS

Dredge and corer samples will be curated and examined microscopically (Container and Chemistry Laboratory). Colour film to be processed on board (Darkroom and GP Laboratory). Water samples to be filtered (Wet Laboratory) and analysed (PDV, Chemistry laboratory). General data processing, magnetometer etc. We hope to achieve automated recording and plotting of navigational data.

Time Budget

Steaming to and from Woodlark (12 kts)	5 days
Operations, Woodlark Basin	14.5 days
Operations, Goodenough Bay	2 days*
	<hr/>
	21.5 days
	<hr/>

* Subject to change at sea

PERSONNEL

Steve Scott (Chief Scientist at sea)	University of Toronto
Mike Gorton	University of Toronto
Dick Chase	University of British Columbia
Eric Finlayson	PNG Geological Survey
John Ringis	UNDP Bangkok
Ray Binns (Chief Scientist pre, post)	CSIRO Sydney
David Whitford	CSIRO Sydney
Dave Cousen	CSIRO Sydney
David Edwards (Cruise Manager)	CSIRO Hobart

Three additional geoscientists yet to be selected, probably from Canadian and Australian post-doctoral students or Australian University staff.

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
for

A.D. McEwan
CSIRO Division of Oceanography

D.H. Green

D.H. Green
National Facility Steering Committee

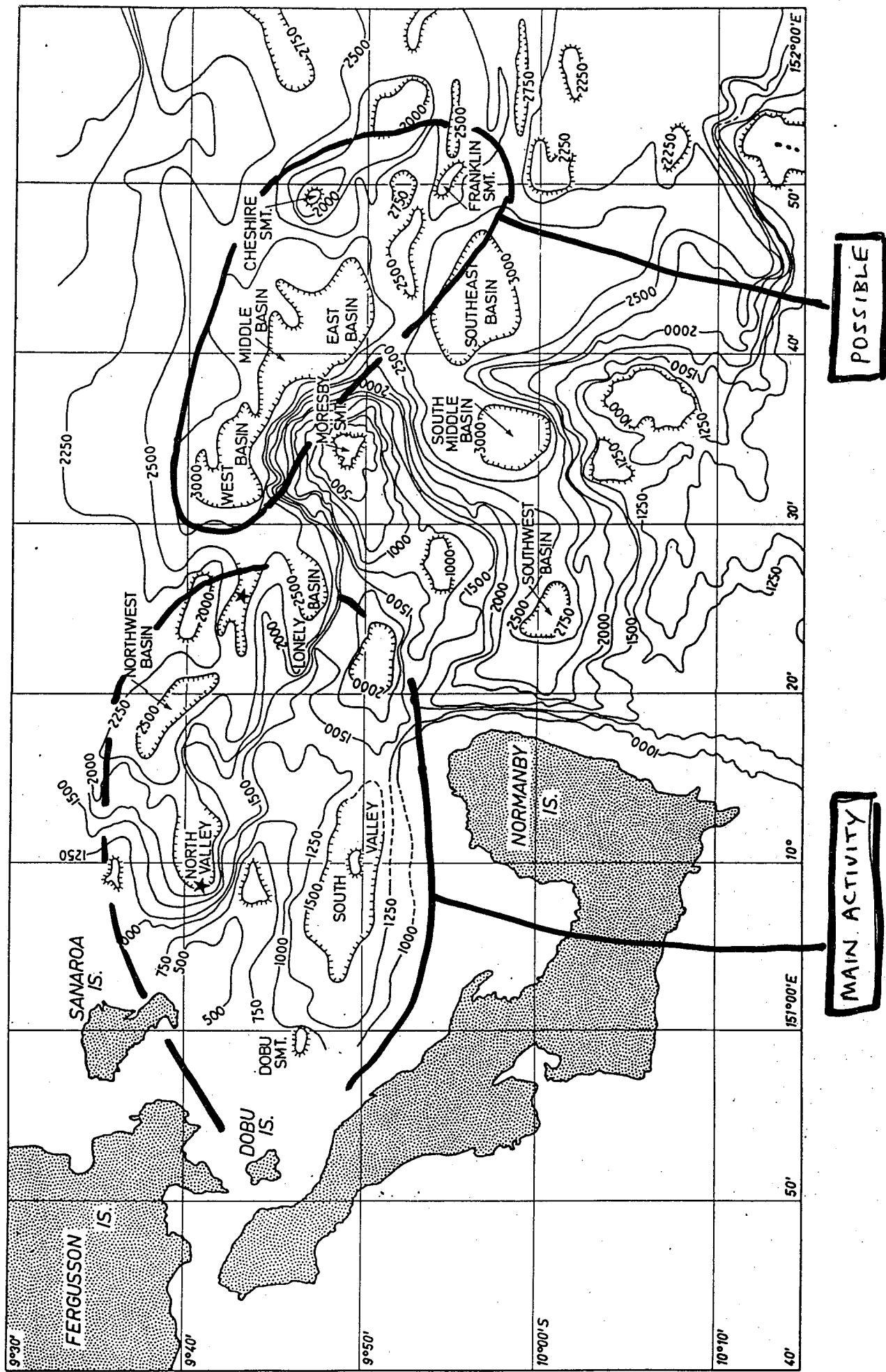


FIG. 1 PACLARK II operations, Woodlark Basin. The eastern area may be visited, depending on results in the west.

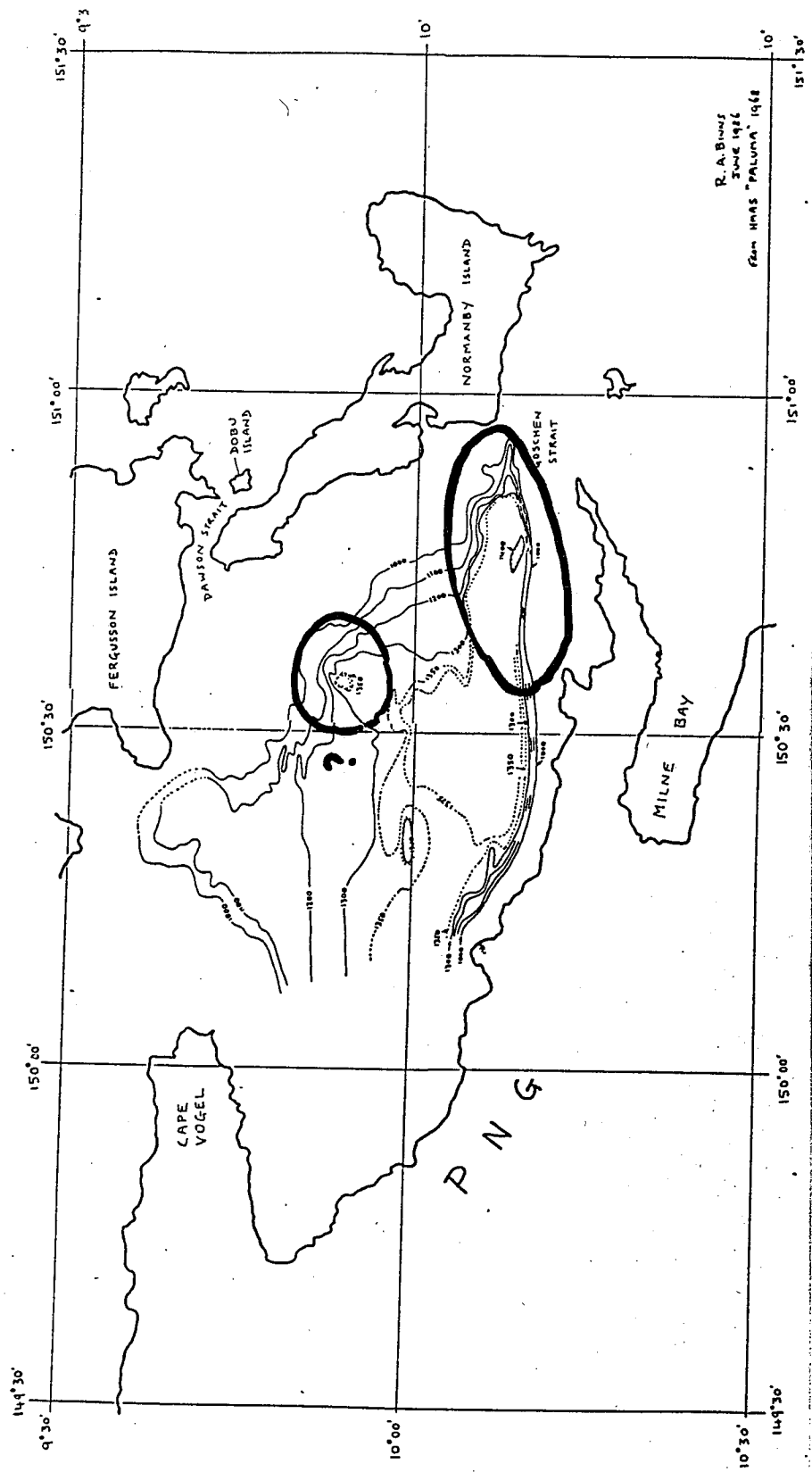


FIG. 2 PA CLARK II operations, Goodenough Bay-Goschen Strait during return voyage

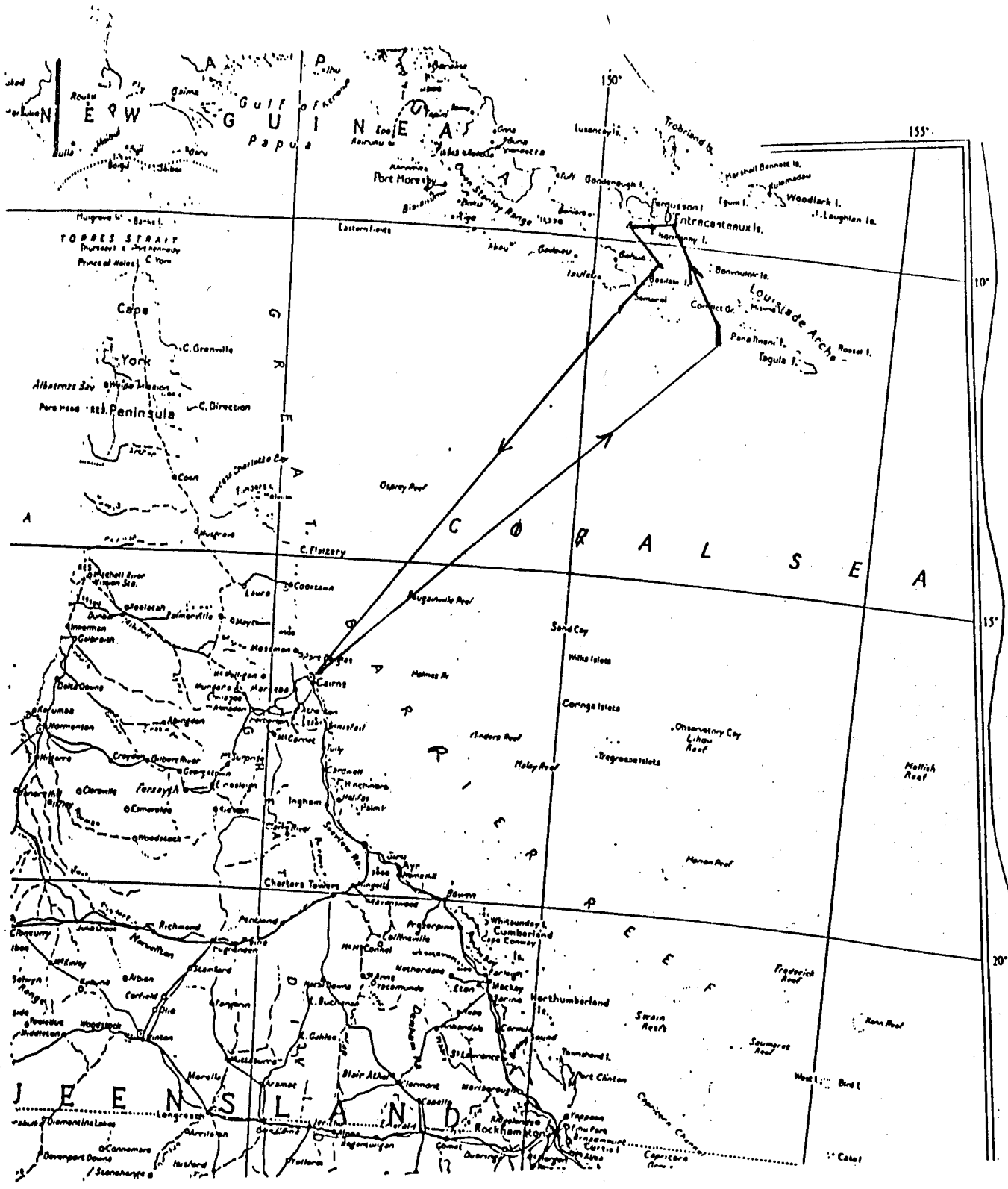


FIG. 3 General track, PAULARK II.