

**ROYAL AUSTRALIAN SURVEY CORPS**

**OPERATION ANON  
1984**

**TONGA, TUVALU  
KIRIBATI, NAURU**

**PROJECT REPORT**

**2 FIELD SURVEY SQUADRON**

68

ROYAL AUSTRALIAN SURVEY CORPS

OPERATION ANON 84

CENTRAL PACIFIC

PROJECT REPORT

2 FIELD SURVEY SQUADRON

ROYAL AUSTRALIAN SURVEY CORPS  
DET 2 FIELD SURVEY SQUADRON  
OPERATION ANON 84  
AMENDMENT

Amendment No.	Date of Issue	Details	Amended by Signature/Date

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OPERATION ANON 84  
PROJECT REPORT

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OPERATION NUSA BARAT 84  
PROJECT REPORT

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OPERATION ANCN 84

PROJECT REPORT

Reference: A. Headquarters Field Force Command Operations Order 4/84

INTRODUCTION

General

1. In 1980 the Government of Kiribati asked the Australian Government for support with survey assistance to enable that country to define and declare an Exclusive Economic Zone (EEZ). As both Tuvalu and Nauru have common sea boundaries with Kiribati, the offer was made by the Australian Government to these Governments to be included in the project and this offer was accepted.

2. RASvy had previously completed a similar task in Tonga, with the exception of Ata Island. On two previous attempts at landing on Ata Island and completing the survey of Tonga had failed, hence this was included as a matter of some urgency.

Area of Operations

3. The area of operations is illustrated by the map at Annex A and is limited to Ata Island in Tonga, all the islands of Tuvalu (formerly the Ellice Islands), all the islands of the Gilbert group of Kiribati including Banaba (formerly Ocean Island), and Nauru.

Allocated Tasks

4. Det 2 Fd Svy Sqn was tasked to:

- a. establish survey control, by doppler satellite observations and conventional survey, to control aerial photography for class A1 mapping or to enable accurate re-gridding of existing maps where applicable;
- b. connect all doppler satellite survey stations to sea level; both for mapping purposes and for ongoing geoid investigations;
- c. obtain mapping photography to enable production of new maps where required;
- d. obtain identification photography of each newly established station and of selected other existing stations to enable aero-triangulation of the mapping photography or the re-gridding of maps as required; and

/e. obtain

- e. obtain such additional photography, as requested by the Governments involved, as was feasible.

## BACKGROUND

### Feasibility and Reconnaissance

5. A feasibility study was conducted in Nov/Dec 82. A reconnaissance was carried out in Oct/Nov 83 from which the technical requirements were determined and the concept of operations formulated.

### Concept of Operations

6. The operation was planned to be self supporting, using resources available in the AO, and not reliant on logistic support from Australia.

7. Because of the large distances between island groups, OP ANON 84 was planned as a four phase operation as follows:

- a. Phase One.
  - (1) Insertion of the force into FIJI by civil airline.
  - (2) Complete the survey task at Ata Island.
  - (3) Redeploy the force into TUVALU.
- b. Phase Two.
  - (1) Conduct survey operations in TUVALU.
  - (2) Redeploy the force into KIRIBATI.
- c. Phase Three. Conduct survey operations in the Gilbert Islands group and Banaba.
- d. Phase Four.
  - (1) Complete the survey task at Nauru.
  - (2) Regroup the force in FIJI and finalise stores shipping.
  - (3) Extract the force by civil airline.

8. Bases. Because of the large distances involved and the shortage of facilities in the AO, the only suitable places for the main support base were Funafuti in Tuvalu and Tarawa in Kiribati. The forward operating base

/was

was located on the Royal Fiji Military Force (RFMF) mine sweeper. KULA: this vessel was also used to transport the survey parties and supporting helicopter.

### OPERATION SUPPORT

#### Air Support

9. Helicopter. One BELL 206 aircraft, on charter from Pacific Crown Aviation of Suva, provided RW support for the operation. This was based on the KULA which has been modified for helicopter operation.

10. Photographic Aircraft. One BEECH B80 QUEENAIR, on charter from Airsearch Aviation of Melbourne, and fitted with a WILD RC 10 camera, provided the force photographic capability.

11. Passenger Aircraft. Chartered aircraft were used for movement of the force between bases during the operation. Movement Suva to Funafuti was by three sorties of Cessna 402 on charter from Air Fiji; Funafuti to Tarawa was by three sorties of DH Heron on charter from Air Tungaru.

#### Sea Support

12. Sea support was provided by the RFMF vessel KULA. This was used both as transport for the survey parties to reach all outlying islands and as a mobile forward operating base.

#### Aviation Fuel

13. All arrangements for purchase, and dumping where necessary, of drummed fuel were made by the Australian High Commission, Suva. All fuel was supplied by Air BP, Suva.

14. AVGAS. Drummed stock was dumped for use at Funafuti: bulk fuel was available at all other locations required in the AO.

15. AVTUR. Drummed stock was dumped and used throughout the AO for shipment on the KULA for use by the helicopter during each voyage out from the main base.

16. Unused drummed fuel was returned to the agents at each main base site for credit and eventual reconciliation of the account in Suva with the High Commission.

#### Communications

17. Rear link to Australia was provided by Det 2 Sig Regt via a Simplex CW circuit through NAVCOM CANBERRA.

18. A simplex HF voice operations net was used within the AO linking the

/support

support base, ship, field parties, and camera aircraft.

19. Communications between RW aircraft and ship were via VHF aircraft radio and a portable VHF transceiver provided by the contractor. No direct radio communication was available between RW aircraft and survey parties.

20. Flight following during photographic mission flying was via normal aircraft VHF radio to the relevant Civil Aviation Authorities in the areas concerned.

### OPERATIONS

#### Doppler Operations

21. Observations commenced at Ata island on 26 Jun 84 and finished at Nauru on 26 Oct 84. A total of 35 stations were observed, and all were connected to sea level by third order methods.

22. All doppler observations were done in point positioning mode, and a minimum of 20 acceptable balanced passes were recorded for each station.

23. The location of each doppler station is shown on the maps at Annex B and additional detail is listed at Annex C.

#### Air Photography Operations

24. Air photo operations were carried out based at Nuku' alofa (Tonga), Funafuti (Tuvalu), and Tarawa (Kiribati).

25. Identification photography of all doppler stations and a further 56 panelled existing stations was obtained.

26. Additional photo coverage of Ata island, all 9 islands of Tuvalu, and 6 islands of the Gilbert group, including Banaba, was obtained at Government request.

27. Details of survey stations photo identified are shown on the maps at Annex B and additional details are contained at Annex C.

### ADMINISTRATION AND LOGISTICS

#### Manning

28. Personnel were drawn from 2 Fd Svy Sqn, Sydney Wksp Coy, 2 Sig Regt, HQ 2 MD, 6 RAAPC Unit, 1 Mil Hosp and 2 Mil Hosp.

29. An outline organisation of the force, and a nominal roll of personnel is shown at Enclosure 1.

/Medical

Medical

30. Medical support was provided by an MO. Due to other commitments, the MO was changed during Phase Three of the operation. The MO report is contained in Enclosure 1.

Finance

31. An advance of \$A15000 was made available to the force commander prior to departure on the operation for funding until arrival at Funafuti where the imprest advance of \$A30000 became available.

32. Fortnightly acquittance of the imprest account and reimbursement up to the authorized \$A30000 was made for the remainder of the operation.

33. Expenditure from the total account was \$A155422 and \$F (Fijian) 15306, while total receipts from reimbursements was \$A12279.

34. The Financial Report by the force paymaster is included in Enclosure 1.

Accommodation

35. Hotel or Government housing was used at main base. Accommodation stores from Australia or shipboard accommodation were used for all other locations.

Rations

36. Rations for survey parties and ship borne personnel were purchased in the AO.

Fuel

37. Australian High Commission Staff in Suva arranged for positioning of stocks of drummed fuel as required. Bulk AVGAS was purchased in Fiji, Tonga, and Kiribati as required.

CONCLUSION

38. Operation ANON 84 has been successfully concluded with all allocated tasks completed.

RECOMMENDATIONS

39. Few problems arose during the operation: those deserving mention are detailed together with appropriate recommendations in Enclosure 1.

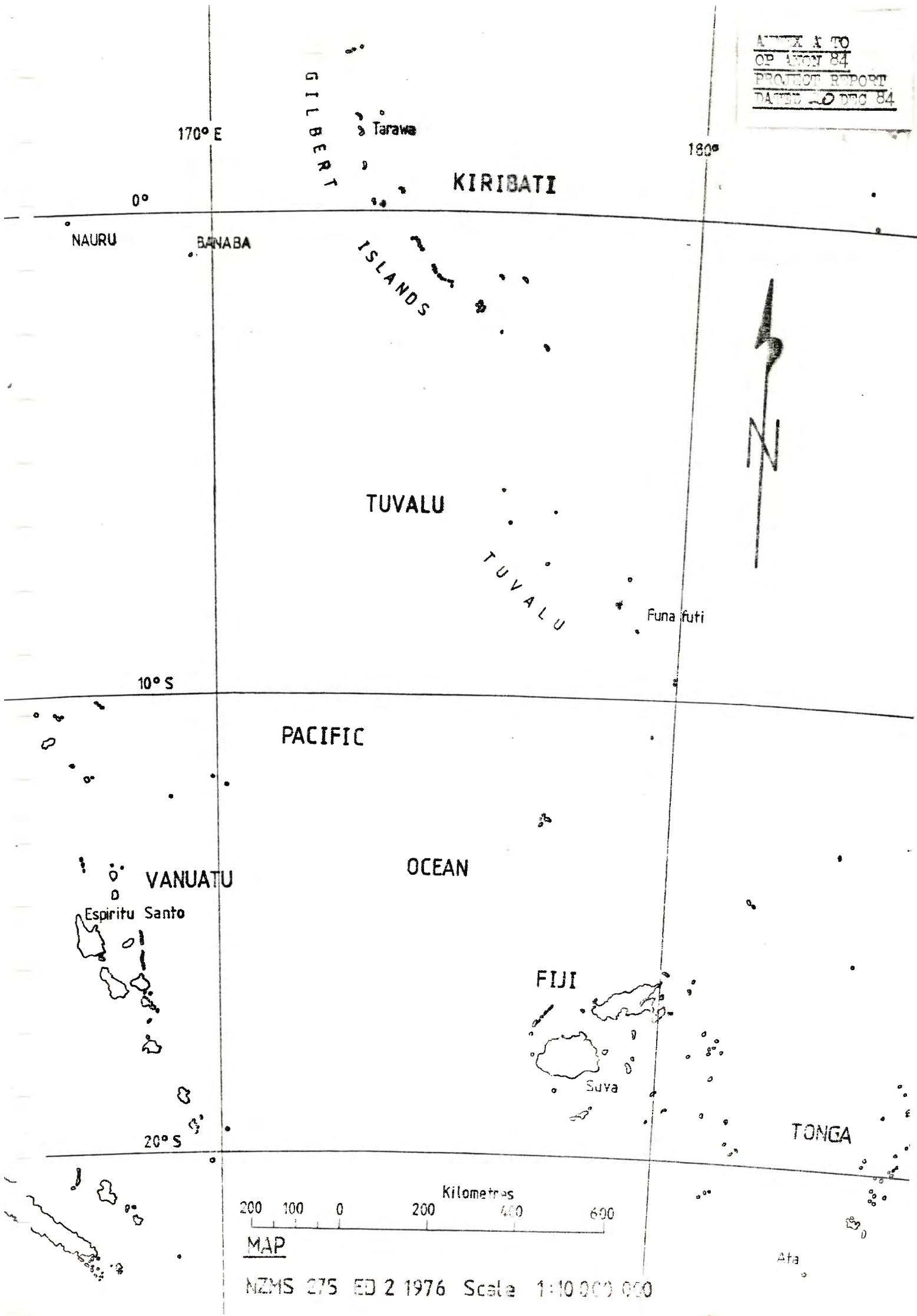


(P.J. BLASKETT)

CAPT

Force Commander

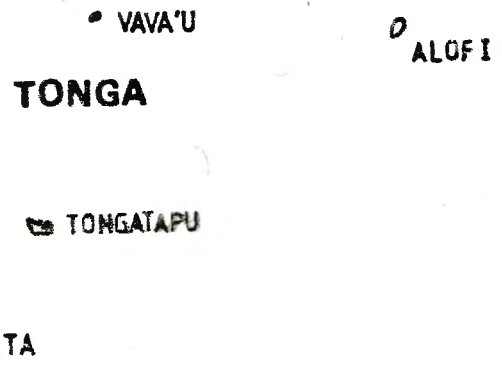
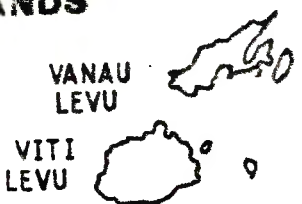
20 Dec 84



MAP

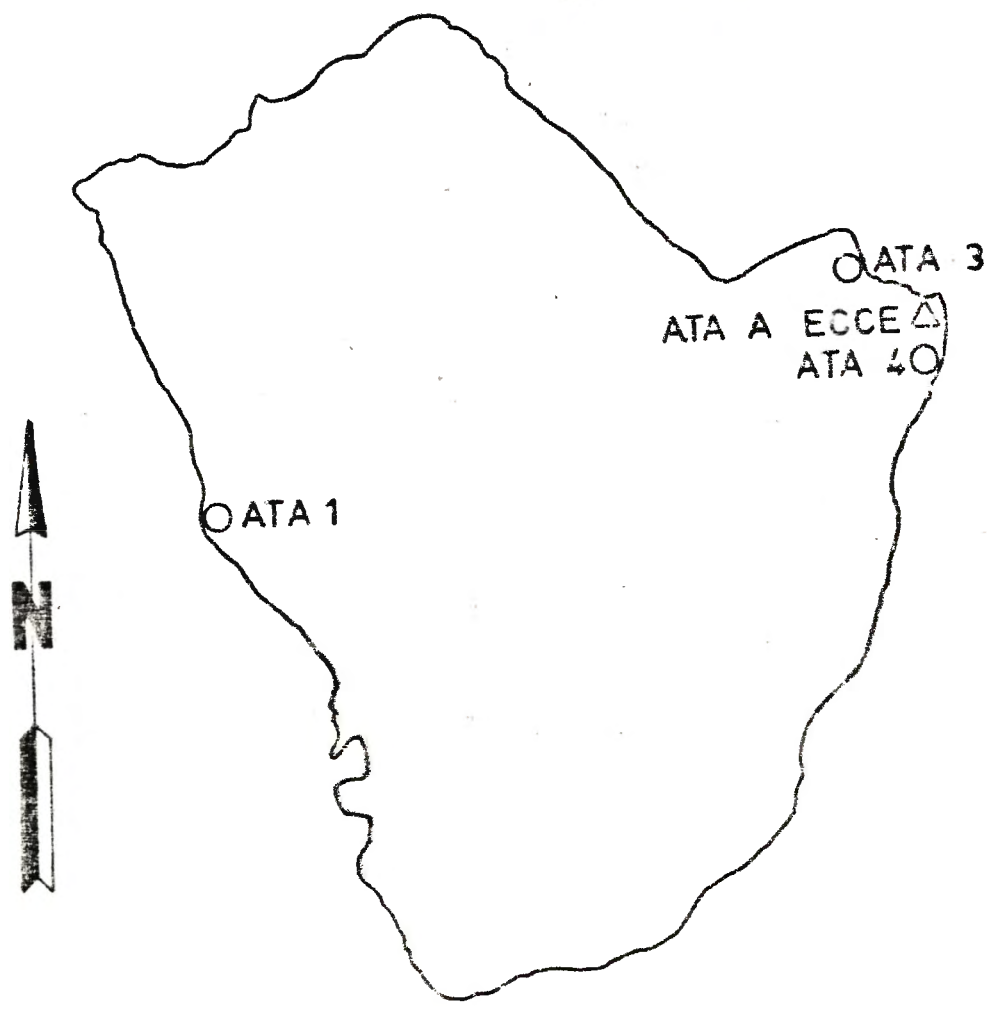
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**FIJI  
ISLANDS**



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**ATA ISLAND**



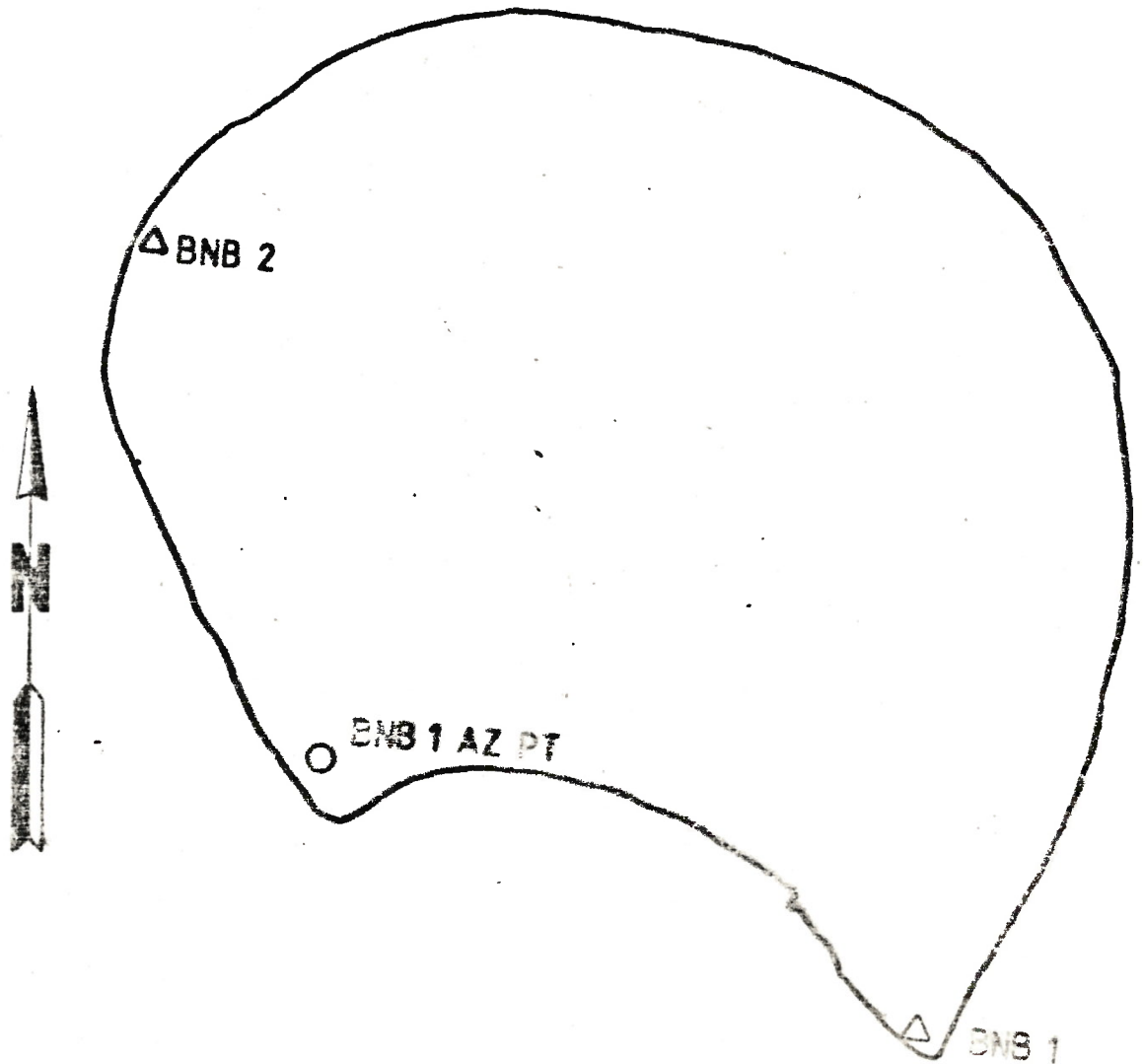
**NAURU**

⊙ NAURU

OCEAN ●


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**BANABA (OCEAN) ISLAND**



REPUBLIC OF TUVALU

 NANUMEA


 NIUTAO

 NANUMANGA

ELLICE

 NUI

ISLANDS

 VAITUPU

 NUKUFETAU

 FUNAFUTI

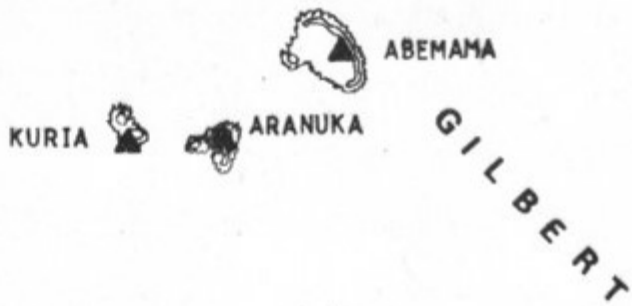
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 NUILAKITA

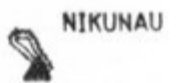
ANNEX B.70  
OF ANON B4  
PROJECT REPORT  
DATED DEC 84



REPUBLIC OF KIRIBATI



GILBERT



ISLANDS



ANNEX B TO  
OF APRIL 84  
PROJECT REPORT  
DATED DEC 8


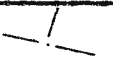







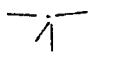
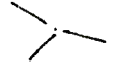
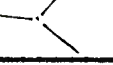

DOPLER STATION DATA/PHOTOGRAPHIC DATA

SERIAL	STN NO	PROCESS NUMBER	LAT	LONG	JULIAN DAYS FROM	JULIAN DAYS TO	PASSES	PANEL DIAG	RUN NO	MSN NO	PHOTO NO	FLYING HT (ft)
1	ATA A ECCE	11843	S22°20'	W176° 12'	177	179	46	+	4	356	42 - 55	4,100
2	ATA 1		S22 20	W176 13				/	4	356	42 - 55	4,100
3	ATA 3		S22 20	W176 12				/	4	356	42 - 55	4,100
4	ATA 4		S22 20	W176 12				/	4	356	42 - 55	4,100
5	NIULAKIPA 1965 ECCE (HIRAN 55)	11844	S10 47	E179 28	209	210	26	+	4	361	24 - 31	2,200
6	NKT 7		S10 47	E179 47				/	4	361	24 - 31	2,200
7	NLL 13 ECCE	11845	S09 25	E179 52	208	211	44	+	2	362	19 - 32	2,000
8	NLL 11		S09 23	E179 51				/	1	362	01 - 17	2,000
9	NLL 12		S09 24	E179 52				/	7	362	63 - 71	2,000
10	NLL 17 ECCE	11846	S09 21	E179 50	208	211	28	/	5	362	56 - 58	2,000
11	TYP 200		S09 21	E179 50				+	6	362	60 - 61	2,000
12	UF 102 ECCE	11847	S08 31	E179 12	199	201	22	/	2	360	7 - 11	2,500

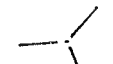


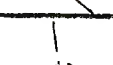
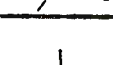
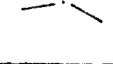

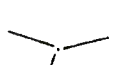
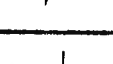


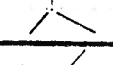




DOPPLER STATION DATA/PHOTOGRAPHIC DATA

SERIAL	STN NO	PROCESS NUMBER	LAT	LONG	JULIAN DAYS		PASSES	PANEL DIAG	RUN NO	MSN NO	PHOTO NO	FLYING HT (ft)
					FROM	TO						
40	ONZ 10 ECCE	11859	S01 53	E175 37	278	280	33		9	383	53 - 55	2,000
41	ONZ 3		S01 48	E175 32					1	384	1 - 7	2,000
42	ONZ 14		S01 57	E175 35					7	383	42 - 47	3,000
43	TBZ 37 ECCE	11860	S01 30	E175 04	279	281	29		2	384	9 - 14	2,000
44	TBZ 30		S01 20	E174 51					4	384	21 - 27	2,000
45	TBZ 24		S01 25	E175 00					3	384	16 - 19	2,000
46	BRZ 10 ECCE	11861	S01 20	E176 00	275	277	25		4	382	13 - 15	2,000
47	BRZ 5		S01 17	E175 57					3	382	9 - 11	2,000
48	BRZ 14		S01 22	E176 01					5	382	17 - 19	2,000
49	NKZ 7 ECCE	11862	S01 24	E176 29	276	278	22		8	382	29 - 31	2,000
50	NUKUNAU SODANO RM 2		S01 19	E176 24					6	382	21 - 23	2,000
51	NKZ 8		S01 22	E176 28					9	382	33 - 35	2,000
52	TBZ 8 ECCE	11863	S01 07	E174 40	282	284	31		1	385	1 - 6	2,000

DOPPLER STATION DATA/PHOTOGRAPHIC DATA

SERIAL	STN NO	PROCESS NUMBER	LAT	LONG	JULIAN DAYS		PASSES	PANEL DIAG	RUN NO	MSN NO	PHOTO NO	FLYING HT (ft)
					FROM	TO						
53	TBZ 13		S01 14	E174 47					4	385	25 - 29	2,000
54	NNZ 14 ECCE	11864	S00 40	E174 27	282	285	22		3	387	16 - 21	1,400
55	NNZ 5		S00 48	E174 28					5	387	30 - 32	2,000
56	NNZ 18		S00 35	E174 22					2	387	9 - 14	1,500
57	NONOUT 1 ASTRO SODANO		S00 31	E174 14					7	387	39 - 44	1,500
58	BNB 1	11865	S00 52	E169 32	263	267	32		8	378	38 - 40	2,500
59	BNB 1 AZIMUTH POINT		S00 52	E169 31					4	378	22 - 24	2,500
60	AKZ 1 ECCE	11866	N00 11	E173 38	239	242	36		10	372	116 - 129	3,000
61	AKZ 3		N00 07	E173 35					1	372	1 - 8	5,000
62	AKZ 7		N00 11	E173 31					7	372	74 - 91	3,000
63	KRZ 2	11867	N00 12	E173 25	239	241	25		5	372	56 - 64	3,000
64	KRZ 8		N00 14	E173 22					6	372	66 - 72	3,000



DOPPLER STATION DATA/PHOTOGRAPHIC DATA

SERIAL	STN NO	PROCESS NUMBER	LAT	LONG	JULIAN DAYS		PASSES	PANEL DIAG	RUN NO	MSN NO	PHOTO NO	FLYING HT (ft)
					FROM	TO						
78	TRZ 8		NO1 22	E173 08					1	386	1 - 11	3,000
79	TRZ 4		NO1 20	E172 58					4	386	54 - 56	3,000
80	BNB 2	11871	SOO 51	E169 31	264	267	31		3	378	18 - 20	2,500
81	ABZ 20 ECCE	11872	NO1 53	E172 49	248	249	25		5	375	29 - 33	2,100
82	ABZ 13A		NO1 43	E172 59					1	375	1 - 8	2,400
83	ABZ 2		NO1 57	E172 56					4	375	20 - 27	2,300
84	ABZ 10		NO1 47	E173 03					2	375	10 - 13	2,400
85	MRZ 8 ECCE	11873	NO2 00	E173 17	247	249	29		2	374	10 - 16	2,500
86	MRZ 4		NO2 00	E173 16					1	374	1 - 8	2,500
87	MRZ 14		NO2 03	E173 16					3	374	18 - 24	2,500
88	BTZ 26 ECCE	11874	NO3 16	E172 42	259	261	22		9	377	36 - 38	2,000
89	BTZ 5		NO3 03	E172 46					6	377	24 - 26	2,000
90	BTZ 11		NO3 07	E17254					7	377	28 - 30	2,000





RJB:NA  
Telephone (02) 3490407

2 Fl Coy RHA  
Sandwick Barracks  
Aveca Street  
RANDWICK NSW 2037

In reply please quote R569-1-23

27 Nov 84

HQ FF Comd

For Information

DSVT-A  
MGOP-A

OPERATION ANCH 84 - AFTER ACTION REPORT

Reference: A. HQ FF Comd Operation Order 4/84 dated 17 May 84

1. This report is submitted in accordance with the reference. A comprehensive Operation Report will be produced in due course.

Area of Operation (See Annex A)

2. The AO lies in the Central Pacific Ocean bounded by latitudes N 3° 20' and S 22° 20', and by longitudes W 175° and E 167°.

3. Operations were carried out in BONGA (Ata Is), TUVALU, KIRIBATI (Gilbert Islands and Tarawa), and YAKRU.

4. Support was based in Suva (FIJI), Finafiti (TUVALU), and Tarawa (KIRIBATI).

Tasks

5. Specified tasks were to:
- a. establish horizontal control using doppler satellite equipment;
  - b. connect control points to sea level;
  - c. obtain identification photography of all control points established, and of selected other existing control points; and
  - d. obtain such additional photography, requested by the various Governments, as was feasible.

Attachments

Achievements

6. All tasks were completed. A total of 35 doppler control stations were established, and 91 new and existing stations were identified by spot photography. All doppler stations were connected to sea level.
7. Complete photo coverage of Ata Is, all islands in TUVALU, and 6 islands of KIRIBATI were obtained. No photography was attempted at NAURU - this was photographed and mapped anew in 1983.

MOUNTING OF THE OPERATION

Timeline

8. Planning and mounting of the operation was as follows:
  - a. Dec 82 - Feasibility study.
  - b. Oct/Nov 83 - Reconnaissance.
  - c. 4 Apr 84 - DCD Operation Instruction issued.
  - d. 17 May 84 - FF Comd Operation Order issued.
  - e. 30 May 84 - Financial Instruction issued.
  - f. 18 Jun 84 - Advance Party to Suva.
  - g. 21 Jun - 1 Jul 84 - Task in TONGA.
  - h. 2 Jul 84 - Rear Party to Suva.
  - j. 2 Jul - 27 Oct 84 - Task in TUVALU, KIRIBATI, NAURU.
  - k. 29/30 Oct 84 - RPA.

Personnel

9. The force of 20 Army was sufficient for the task though occasional juggling of manpower was necessary to cope with illness and injury. Manning is shown at Annex B.
10. Pre-Operational Unit Training, carried out during Feb-May 84, proved to be invaluable. The survey parties were familiar with all survey requirements and techniques from the outset. Initial hesitancy gave way to confidence during the early part of the operation.

11. The ability to remain keen in the face of delays, the technical competence, and the endurance under often trying conditions, shown by all members is the main source of the successful completion of all tasks.

#### Stores

12. Most stores were shipped to Suva by sea freight, with only vital delicate stores being air freighted.

13. Initial difficulties in gaining customs clearance of stores was encountered in Suva. Quick response by staff of the High Commission solved this problem, and although 2 days delay was caused, no final operational delay eventuated.

#### Movement

14. Insertion from Australia and subsequent movement was as follows:

- a. To Suva - scheduled QANTAS service.
- b. Suva to Funafuti - 3 sorties of chartered aircraft.
- c. Funafuti to Tarawa - 3 sorties of chartered aircraft (originally planned 1 sortie of a larger aircraft; this was cancelled due to breakdown).
- d. Tarawa to Suva - scheduled Air TONGAREU service.
- e. Funafuti to Nauru - scheduled Air NAURU service.
- f. Nauru to Suva - scheduled Air NAURU service.
- g. RTA - scheduled QANTAS service.

#### ADMINISTRATION AND LOGISTICS

15. The operation was self supporting using resources available in the AO. This proved satisfactory apart from a delayed shipment of marine lubricating oil which caused a loss of five days operational time.

#### Accommodation

16. Hotel accommodation was used in Suva, Tarawa, and Nauru, and this was satisfactory. Two Government houses were available in Funafuti - this had to combine living quarters and office space and was a poor but workable solution.

/Rations

Rations

17. Rations for field parties were purchased locally. These proved adequate but offered little variety - notably the lack of fresh fruit and vegetable.

Equipment

18. The only major equipment failures were in the AN/GRC 106 radio sets. Most faults were repairable in the field, but of four sets taken, only two were in operation on RTA. No failure of communications occurred.

Fuel

19. Pre-positioning of drummed AVGAS and JET-A1 was arranged by the High Commission, Suva. Bulk AVGAS was available in Tarawa. No problems with supply or drummed fuel quality occurred.

Finance (See Annex C)

20. Financial support for the operation was excellent. The only delay in reimbursement was due to a TELEX breakdown at Tarawa.

SHIP SUPPORT

21. The Royal Fiji Military Force (RFMF) vessel 'KULA' was used as the mobile operational base. This proved to be a workable solution to the deployment problems in operating in such vast ocean areas, however it was far from ideal. Annex D contains details of the vessel and the conditions encountered.

22. Co-operation between the ship's company and the survey parties was exceptionally good and an efficient working routine and great camaraderie quickly developed.

AIR SUPPORT

23. Air support was as follows:

- a. Camera Aircraft. A Beech B80 Queenair on charter from Airsearch Aviation, fitted with an RC 10 camera, was used for all photographic work. No equipment failure nor unplanned downtime occurred.
- b. Helicopter. Initially an ECQUERIL ASTAR was used, on charter from Pacific Crown Aviation of Suva. Fitted only with 'pop out' floats this was not suited to long over water flying and was only used at Ata Island. Main support was a Bell 206

/fitted

fitted with fixed floats and external cargo hook. No unplanned downtime occurred though one float had to be replaced.

#### FOREIGN CO-OPERATION

##### Personnel

24. Tonga. A Tongan surveyor accompanied the force to Ata Island.
25. Tuvalu. The Chief Surveyor was on leave overseas, but his staff were most helpful in providing maps and what survey records were available. A very good publicity campaign by radio informed residents of outlying islands of our arrival and purpose in being there, and this was of great assistance.
26. Kiribati. The Chief Surveyor was very knowledgeable and helpful with records and local information. Several of his staff accompanied parties to outlying Islands as local guides and interpreters. Once again a radio news publicity program was used to good effect.

##### Facilities

27. Tuvalu. Two houses were provided for office and living accommodation. This proved cramped and far from ideal, but was the only space available. Transport, though extremely limited was made freely available as required.
28. Kiribati. A large house was provided as office accommodation and this was a good arrangement. Unfortunately the hotel living accommodation was 20km away and commuting and administration was a burden. A Government bus and driver were provided and a rental car was also used. All facilities in Kiribati were charged for at usual Government or commercial rates.

#### COMMUNICATIONS

29. A detachment of 2 Sig Regt provided a HF Morse-code rear link to the RAN, Canberra, and also the forward HF voice link to support vessel and survey parties. Det 2 Sig Regt after action report is contained at Annex E.
30. Flight following was carried out routinely on aircraft VHF by local Civil Aviation Authorities. HF comms were routinely available with the camera aircraft as required. Ship/Helicopter comms was via portable VHF equipment provided by the contractor. No means of communication between helicopter and survey parties was available.

#### MEDICAL

31. Annex F contains the MO report. No major medical problems arose; the main complaints were for recurring diarrhoea and coral infected cuts becoming ulcerated.

/SPECIAL

SPECIAL EQUIPMENT

Magnavox MX 1502

32. Three equipments plus spares kit were used and major item service-ability was 100%. The only minor failures were wet or short circuited antenna cables.

Pneumatic Antenna Masts

33. Two 21m masts were used and these proved extremely simple and quick to use in the field. These materially shortened the total time of occupation of stations where obstructed by close-by coconut plantation. Total erection and dismantling time was less than 90 mins. One drawback is that they must be sling carried by helicopter and this would be awkward and slow over long distances.

Geodimeter 14A EDM

34. This proved ideal for the typical distances (up to 5km) involved. Over water lines on reefs caused some problem because of sea spray in the air and on the prisms. The equipment is light and quickly set up, and measures are rapid and automatic.

Inflatable Boats

35. Two inflatable ZODIAC boats were used quite extensively by survey parties to reach distant points, and as general tender transport for the ship. These proved inadequate because:

- a. they are not tough enough to resist abrasion by coral sand and impact with coral rock, and
- b. the four piece floors are too flexible and fragile for prolonged use.

36. Both boat floors were modified during the operation as follows, and then gave reasonable service:

- a. a set of floor side rails was fabricated of marine ply strips to stiffen one boat's floor, and
- b. a new floor of two layers of 12mm marine ply was made for the second boat.

37. Both boats suffered considerable wear, particularly the bottoms, due to rock and sand abrasion.

38. The 40 HP motors used proved to be reliable, but they are old models and are extremely heavy and cumbersome to use.

RECOMMENDATIONS

39. For this type of operation, small boats are necessary. The ZODIAC is unsuitable and the motors are too heavy and unnecessarily powerful. It is recommended that aluminium boats and smaller, lighter outboard motors be purchased. A 3.6m boat and a 25 or 30 HP motor is reckoned to be the right combination.



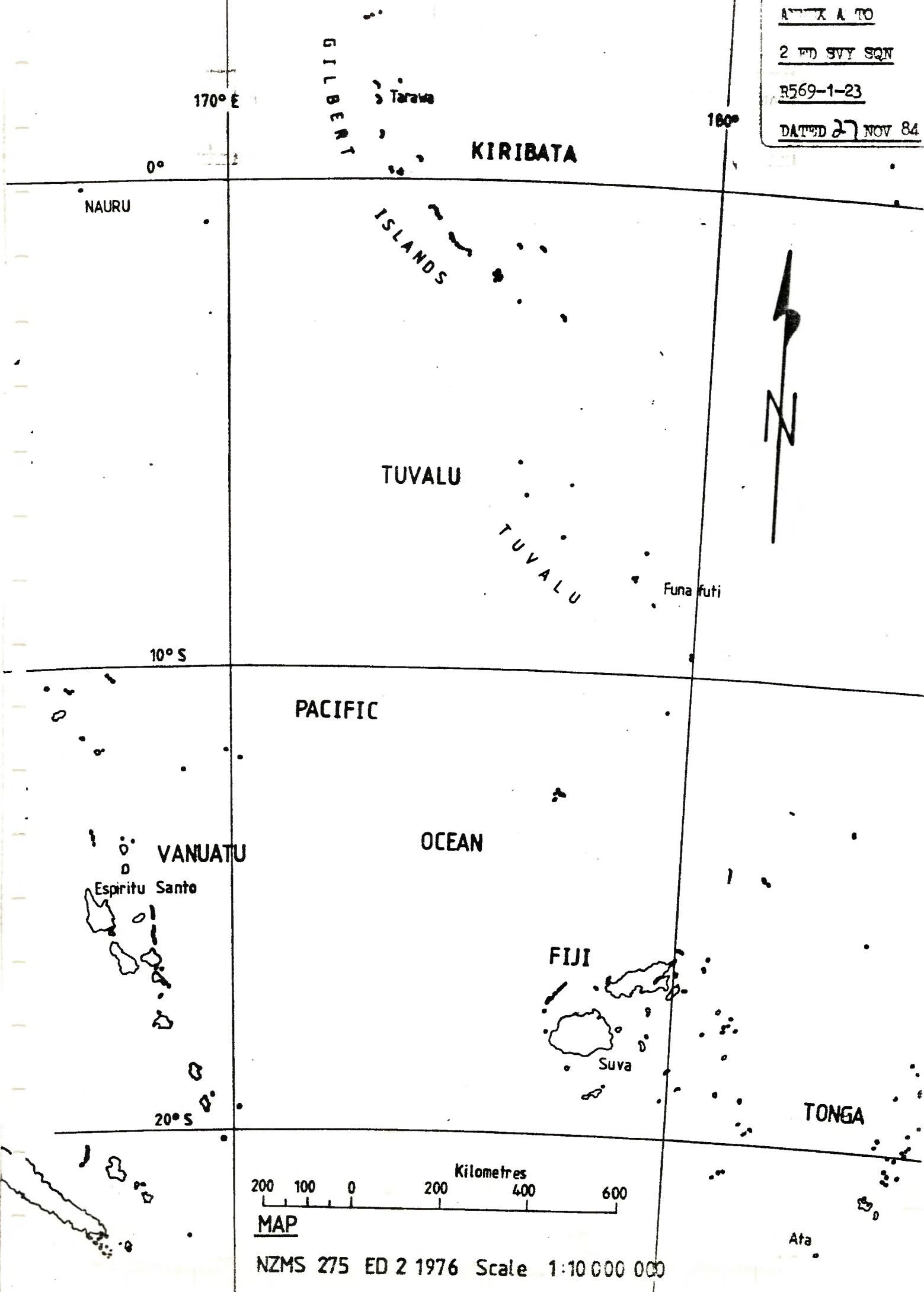
(P.J. BLASKETT)  
CAPT  
OC Det

ANNEX A TO

2<sup>ND</sup> SVY SQN

R569-1-23

DATED 27 NOV 84



MAP

NZMS 275 ED 2 1976 Scale 1:10 000 000

OP ANON 84 - MANNING

MAIN BASE

Appointment	No.	Rank	Name	Unit
Force Comd	43885	CAPT	P.J. Blaskett	2 Fd Svy Sqn
Force EM	1201911	WO1	A. Gee	"
IC Comp/Rec	1202788	SSGT	B.L. Gordon	"
Air Camera Op	2133188	SGT	J.R. Gill	"
"	180386	CPL	A.J. Mallon	"
Paymaster	610242	WO2	P.M. Bruce	6 RAAPC
NCO OKR	322147	CPL	M.S. Thomas	2 SIG REGT
OKR	4401548	CPL	S.D. Gregory	"
OKR	553087	SIG	R.W. Hawes	"

OPS BASE/SHIP

2IC/OPS OFFR	325839	LT	G.L. Parker	2 Fd Svy Sqn
Tech WO	1203243	WO2	A.R. Hancock	"
* MO	227772	CAPT	P.E. Nasveld	2 Mil Hosp
* MO	148441	CAPT	D.P. Scott	1 Mil Hosp
Tech Elec	227843	LCPL	R.H. Brown	Syd Wksp Coy
Cook	4401192	PTE	T.F. King	HQ 2 MD
Fd Party Ldr	316827	SGT	H.J. McNamara	2 Fd Svy Sqn
"	49351	CPL	P.A. Hardy	"
Fd Party Member	324265	SPR	R.F. Caulfield	"
"	230865	SPR	N.J. Cowan	"
"	230539	SPR	W.F. Hofbauer	"
"	393365	SPR	R.J. Miller	"

\* CAPT Scott replaced CAPT Nasveld on 12 Sep 84.

OP ANON 84  
FINANCIAL REPORT

1. INTRODUCTION

The Australian Army carried out Surveys for the establishment of the Exclusive Economic Zones (EEZ) over the period 18 Jun - 29 Oct 84 as follows:

- a. Completion of the Kingdom of Tonga's EEZ  
26 Jun 84
- b. TUVALU 17 Aug 84
- c. Republic of KIRIBATI (North and South  
Gilbert Islands Phase) 22 Oct 84
- d. Republic of NAURU 28 Oct 84

2. FINANCIAL AND MANAGEMENT PLAN

The Detachment Commander was appointed Advance Holder and the Paymaster completed all relative cash/cheque transactions involving Public Monies obtaining the OC authorisation as necessary.

The Paymaster also prepared ARA paylists, calculated all appropriate Allowances, advised on and completed Allotment documentation, remittances etc and forwarded weekly FINREP reports and fortnightly IMPREST statements.

Other allied tasks included overseeing of casual civilian employees, general admin eg Airline and accommodation bookings, correspondence etc, Banker and Custodian for members' financial and personal requirements, Postage and in view of the temporary nature of the Cash Office as such, liaison in and around the various localities with civilian and Government Contractors, which proved a useful means in meeting the locals and assisting in further promoting the good image of the Australian Army.

3. TRANSIT FUNDS AND IMPREST AMOUNT

An initial amount of A\$15000 proved adequate until the IMPREST/ Bank account was opened in TUVALU on the 6 Jul. From then until the final Imprest period (8/85) the A\$30,000 advance was a sufficient limit within which to work. A budget was prepared in order to forecast final costs including Rear Party tasks in Fiji and subsequently an increase of A\$5000 for the closing stage of the OP was justified.

4. RECEIPTS

- a. During the period 276 receipts were issued for an income on the Cashier's Sheet of A\$12278.63. Apart from \$1250 remitted back on FP11s and approx \$1000 covering minor sales of stores eg sale of Aero oil and refunds on containers etc, the balance of the credits received were re-imburements from members for meals, civilian laundry etc.

/EXPENDITURE

EXPENDITURE

b. 574 claims plus a Petty Cash re-imburement of A\$674.10 for a total expenditure outlay of:

- (1) Fijian \$15306.28
- (2) Aust \$155422.54 was incurred over the period.

A breakdown of Expenditure is shown as follows:

	Aust Currency	Fijian Currency
ARA Pay	\$44241.90	-
Allowances (not including Allow- ances advanced by Paymaster before departure)	43047.72	\$1443.20
Stores etc	895.02	2115.96
Vehicles, Fuel etc	2290.74	1521.58
Accommodation	37388.28	9511.14
Rations	16768.65	-
Admin inc Power, Freight, Travel, Phone etc.	9088.38	714.40
Civ wages, Army Laundry	1701.85	
	<hr/>	<hr/>
	\$155422.54	15306.28

No problems of a major nature were encountered in the overall situation and the advantage of paying large accounts by cheque was welcomed. This allowed cash holdings to be kept at a reasonably low level thus assisting in adequate security arrangements being maintained.

5. PREPARATION AND CONCLUSION

The presence of the Paymaster two weeks before departure is essential. Checking of stationery, stores forms and updating of manuals, briefing by Senior Accountant Canberra and briefing to members, payment of initial allowances, eg Outfit Allowance, TA Advance, liaison with RFO Sydney, Cash Office and UPR etc was all carried out during this time.

A week at the conclusion of the Op is also necessary as debriefs, DEFPAC and RFO contact, acquittal and reconciliation of balance of monies, preparation and forwarding of Cease Allotments Allowances etc, Report writing and return of stores/accountable forms was all undertaken in this time.

6. SUPPORT

All people with whom I had contact eg 2 Fd Svy Sqn, RFO Sydney, DEFPAC IO, CFO Canberra, DSC-A Canberra, DSU Randwick (SGT Bowen) were all very helpful before, during and after the Op.

7. COMMENTS

The Financial Instruction for OP ANON sets out certain instructions on page 3 as follows:

- a. Various Allowances and in particular Separation Allowance, whereas the FF Comd Op Order of 4/84 on pages 12 and 13 also sets out Instructions on Allowances. There is a conflict apparent in the interpretation of Separation Allowance method of payment and whilst in Canberra I was informed that the Op Order Instruction was the one to follow as it emanated from DSC-A.
- b. Remittances paras 25 and 26. This instruction states, inter alia, to forward remittances of cash by Form FP 11 and this service was availed of in several instances by 3 members of 2 Sig Regt who were attached for the Op. I confirmed at the time that there was no urgency involved. However on the 5 Sep a Signal from DEFPAY Melbourne (DEFPAC 26827) was received stating that FP 11s should only be used for urgent payments and that the respective members should have effected Allotments prior to proceeding on the Op. (Incidentally one member informed me later that it took six weeks for the payment to reach its destination).
- c. ARA Paylists (FP 141) and Unit Pay Transaction Summary (FP 101). Para 21 of the Financial Instruction states that the original of these forms was to be distributed to DEFPAC and the duplicate to become the Imprest Copy (ie distributed to the Senior Accountant). But the above mentioned DEFPAY signal also included an instruction to the Paymaster to send the Original Paysheets as well to the Senior Accountant. These inconsistencies are mentioned so that perhaps future instructions could be written so as to streamline the matters involved. Also with regard to Living Allowance referred to in DSC-A Signal 0 18157, it would appear

/that

that this may have been a "first" payment because of soldiers not having previously experienced Field accommodation/hardship aspects in this locality as say, compared to conditions in Indonesia. The Allowance of A\$3.34 was remarked upon as being very low and a submission, to ensure that members on OP ANON were not disadvantaged in comparison to members on previous Ops, is worthy of consideration.

8. ADDITIONAL

The position of Paymaster is a full and varied one but it could be advantageous for him to be briefed beforehand on aspects of P/R work for there are plenty of capable photographers generally available and with some instruction beforehand, acceptable copy could be returned to Australia.

Also it was useful in that I had a current Projectionist's licence and as well as showing films to members, goodwill was obtained with the locals by also showing films at suitable opportunities to them.

Finally and whilst not related to Finance there is a matter of concern with regard to discarded ammunition. At Betio behind the Police Station and accessible to the public is a considerable pile of World War II Ammo comprising small arms ammo, mortar bombs etc much of it in an advanced state of corrosion. To me the locals don't appear to appreciate the potential danger and it would be a matter of Vital Defence Co-operation if this lot was destroyed and discussions be held with the local people to warn them of the dangers inherent in hoarding ageing ammunition.



(P.M. BRUCE)  
WO2  
Paymaster  
OP ANON 84

OP ANON 84 - SHIP SUPPORT - HMFS KULA

General

1. KULA was originally a US Navy minesweeper, built in about 1952. In its present configuration it has had the forward engine room gutted and had a flat roofed dog-house constructed on the stern deck, the roof of which is now a helicopter landing pad.

Accommodation

2. Crew accommodation is spartan and extremely cramped. The only spare bunk space available was allocated to the Helicopter pilot, Medical Officer, and 2IC/OPS officer. All other personnel had to use either the storage hold (formerly the forward engine room) or sleep on available deck space.

3. The hold space is unsatisfactory as sleeping accommodation because:

- a. it must be used for equipment storage and is thus crowded,
- b. it suffers from the smell of diesel fuel and in adverse wind conditions it also accumulates diesel exhaust fumes, and
- c. the deck above is open and in rough sea conditions it leaks water into the hold. Some work was done to try to block the leaks with pitch but this was not entirely successful.

4. Because of the absence of proper accommodation for the survey parties, the vessel is not suitable where the men are required to spend more than 2 consecutive nights aboard. They tire rapidly in the conditions and are then at low efficiency when occupying the survey stations.

5. No suitable work space could be found for the Tech WO to carry out on job checking of survey observations, computations, and records. Because of this, he was removed to main base after the first two voyages. This is not satisfactory, but was necessary.

Water

6. The storage capacity for water totals 5000 gallons. With a crew of 30 and a further 10 men as passengers this is barely adequate. Showering is restricted to every second day and clothes washing must be left till the ship is in port.

/Catering

Catering

7. Galley facilities are cramped and only one cook can work at a time. Because of this, and because of survey party deployment and workload, our cook was usually used as an extra member on a survey station.
8. Refrigerator and freezer space is adequate though not lavish. One instance of breakdown resulted in one freezer chest of meat spoiling.
9. Meal preparation and ingredients are heavily spiced and utilize many local vegetables (eg Taro, Dalo, Yams, Lovo) which are not always palatable to our tasks. Diet was generally adequate; supplemented by vitamin tablets; and relieved by eating survey party rations whilst on stations.

Helicopter Support

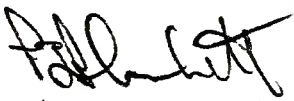
10. The support provided by the pilots of the chartered aircraft (initially Mr Ian Simpson, and subsequently Mr Rob McKenzie) was excellent. Both are very experienced pilots and have a great deal of time up spent on heavy engineering tasks in remote regions; this experience was much in evidence during some of the more difficult weather conditions encountered.
11. The vessel's crew have operated with the same charter company and pilots on previous occasions and their experience and know how in slinging loads and landing the helicopter on such a small and difficult pad was also much in evidence.
12. That the operation was concluded ahead of schedule is due in large part to the smooth cooperation and expertise of both the pilots and ship's crew and is very pleasing to note.

Equipment Storage

13. On the first voyage of the vessel to Ata Island, all survey stores were placed in the hold. With this space required to be used by some members as sleeping space, it was soon decided that better use of available space was essential.
14. Timber was purchased and storage racks were built in the hold and this improved the space problem considerably, but see also para 3. above.

Conclusion

15. Though adequate when voyages are short, the vessel is not suitable for prolonged survey operations away from a port. A ten to twelve day voyage establishing up to six survey stations not more than one days soiling apart is considered to be the maximum acceptable workload.

  
(P.J. BLASKETT)  
CAPT  
OC DET

OPERATION ANON 84 - DET 2 SIG REGT REPORT

GENERAL

Introduction

1. Operation Anon was a survey operation conducted from 18 JUN 84 to 29 OCT 84. Aim was to assist in determining the Exclusive Economic Zone of Tuvalu, Kiribati and Nauru.
2. The operation was conducted utilising two support bases. Operational headquarters, land based, with the forward support headquarters aboard a Fijian ship.
3. The forward support base, HMFS Kula, is a Minesweeper with helicopter support capabilities which was also employed in inserting and extracting the field parties.

Task

4. A three man detachment was tasked in providing communications support to 2 Fd Svy Sqn for the duration of Operation Anon 84.
5. Specific tasks were, the operation of a rear link circuit to HMAS Harman, Canberra, using both, the Naval Ship/Shore circuit and the Naval CW Broadcast. Also the operation of a forward HF voice net to the HMFS Kula and up to three survey parties.

Manning

6. The following personnel were employed as follows:
  - a. 322147 CPL M.S. Thomas - DET COMD/Radio Operator
  - b. 4401548 CPL S.D. Gregory - Radio Operator
  - c. 553087 SIG R.W. Hawes - Technician

Equipment

7. See Appendix 1 for list of stores allocated to the task.
8. See Appendix 2 for list of additional stores recommended to be allocated to future stores lists.

MOUNTING AND DEPLOYMENT

Timings

9. Timings for the operation were as follows:
  - a. Mid April, detachment personnel identified.
  - b. 7 MAY to 11 MAY 84, equipment for shipping drawn, prepared and forwarded to 2 Fd Svy Sqn, Randwick.
  - c. 28 MAY to 8 JUN 84, equipment for movement by air, drawn and prepared.

- d. 12 JUN 84, personnel and equipment to 2 Fd Svy Sqn, Randwick.
- e. 19 JUN to 22 JUN 84, operator training at HMAS Harman, Canberra.
- f. 2 JUL 84, movement Sydney - Suva.
- g. 6 JUL 84, movement Suva - Funafuti.
- h. 12 JUL 84, established communications with HMAS Harman.
- i. 12 AUG 84, closed down communications.
- j. 17 AUG 84, movement Funafuti - Tarawa.
- k. 21 AUG 84, re-established communications.
- l. 12 OCT 84, closed down communications.
- m. 22 OCT 84, CPL Thomas and SIG Hawes RTA.
- n. 29 OCT 84, CPL Gregory RTA.

### Training

10. During Operator Familiarisation Training at HMAS Harman, 19 JUN to 22 JUN 84, instruction and practice was given in the following:
- a. Naval Ship/Shore, methods and procedures,
  - b. Uses of the Naval CW Broadcast,
  - c. RAN Coastal Operations Network,
  - d. Complans, Callsigns and Suffixes,
  - e. Morse reading exercises,
  - f. Morse transmitting exercises, and
  - g. Alternate communications in the event of an emergency.
11. At the end of the four day training period operators were given practical examination in morse receive and transmit. To pass, operators required a 98% accuracy at 18 words per minute.

### OPERATIONS

#### Funafuti

12. The communications centre was established in a corner of a large airport hanger, approximately five minutes walk from the operation headquarters. The hanger was also used as a storeroom, workshop and garage for local government departments.
13. The AO around Funafuti extended up to 250 nautical miles (420 km) for forward net operation and approximately 4000 km for rear link communications with Australia.
14. The equipment configuration consisted of, one Radio Set AN/GRC-106 dedicated to the forward HF voice net, one AN/GRC-106 for Ship/Shore circuit and one Receiver/Transmitter 662/GRC for CW Broadcast circuit.
15. Conditions on the rear link were generally quite good. Circuit readability to Canberra was normally good to excellent, as for Darwin, generally fair to good. Few occasions of interference were encountered.
16. Conditions on the forward net were also generally good. Few problems arose between main base and the survey parties, with either, voice procedure of circuit readability. However readability with the HMFS Kula was usually only fair.
17. Initially, parties had trouble adhering to the predesignated radio sked timings due to other work commitments. Sked timings were

.../therefore

therefore changed to a more suitable period.

18. Daily sked timings were:
- a. Rear link (CW Broadcast)
    - (1) 0200 to 0330Z
    - (2) 2200 to 2330Z
  - b. Forward Net
    - (1) 0400Z
    - (2) 2100Z
    - (3) Maintained listening watch from 2000 to 0400Z
  - c. HMFS Kula maintain a 24 hour listening watch on 13.971 MHz, and were also involved with a sked to Suva on 5.640 MHz at 0001Z daily.
19. Antennae used were:
- a. Rear Link - Transmit
    - (1) 8 MHz Half-wave Dipole,
    - (2) 12 MHz Half-wave Dipole, and
    - (3) 16 MHz Half-wave Dipole.
  - b. Rear link - Recieve
    - (1) 16 MHz Half-wave Dipole, and
    - (2) Long Wire.
  - c. Forward Net
    - (1) Initially an inverted 'V' was utilised, but due to abnormally high reflected power, it was discarded for the omni-directional Droopy Dipole.

#### Tarawa

20. Operational HQ was established in a two-storey house, with the communications area on the top floor.
21. The AO around Tarawa extended as far as 360 nautical miles (520 km) on the forward net circuit and approximately 4900 km for rear link communications.
22. Rear link conditions on the CW Broadcast were usually good to excellent. However signal strength and readability was poor on the Ship/Shore circuit when frequencies were suppressed by solar activity. Overall communications was quite good with a satisfactory standard of morse transmit and recieve from both HMAS Harman and operation HQ.
23. Conditions on the forward net were good, however frequencies were also effected by the increase in solar activity.
24. All sked timings remained the same as for Funafuti stage.
25. Antennae used were:
- a. Rear link - Transmit
    - (1) 8 MHz Half-wave Dipole,
    - (2) 12/16 MHz Multi-wave Dipole, and
    - (3) Due to lack of space and trees around the house a Droopy Dipole was converted into a Multi-wave antenna.
  - b. Rear link - Recieve
    - (1) Long Wire
  - c. Forward Net
    - (1) Droopy Dipole, and
    - (2) Mast Telescopic 27Ft.
    - (3) Good close range communications, less than 100 km, was obtained by erecting a mast on top of a water tower.

26. Throughout the operation, a Radio Telephone patch system through Sydney Radio, was established and maintained for the convenience of all operational force personnel.

27. Australian government officials made use of our telephone facility in Funafuti and, in Tarawa, the Australian High Commission passed immediate traffic via the rear link. This happened only when their own communications system became inoperable.

28. Attempts to communicate with Airforce Sydney on the AOCs went unsuccessful, although we received them clearly. However it is ascertained that HF voice communications from AO to AS is possible due to our success with the radio telephone system.

### Frequencies

29. Overall, frequencies were quite good. However, periods during, mid August, late September and early October, saw the frequencies deteriorate to fair but workable.

### Interference

30. Over the period of the operation the majority of interference was man made. The main concentrations of natural interference were during the periods previously mentioned.

31. The Geociever MX 1502 Magnavox used by the field parties, reduced receive communications in their location to unreadable. Magnavox only interfered whilst tracking.

32. An unknown source of intermittent electrical interference caused poor readability on all frequencies. Suspect it may have been caused by the generated power supply used in the Tarawa AO.

### Traffic Statistics

33. Statistics for the rear link are as follows:

- a. Transmit - 113
- b. Receive - 72
- c. Average messages per day;
  - (1) Transmit - 1.34
  - (2) Receive - 0.86
- d. Average message length;
  - (1) Transmit - 110 words of text
  - (2) Receive - 103 words of text
- e. Average time on circuit per week;
  - (1) Transmit - 4 Hours 12 Minutes
  - (2) Receive - 21 Hours
- f. Re-run rate approximately 1 message every 15 days.

34. Of the four weekly reports, the largest was the situation report approximately 165 words of text in length. The others, financial reports, were approximately 50 to 100 words of text in length.

35. Statistics for the forward net are as follows:

- a. Transmit - 107
- b. Receive - 244
- c. Average time on circuit;
  - (1) Per week - 3 Hours 17 Minutes

(2) Per day - 28 Minutes

36. Two situation reports were recieved from each of the field parties and the forward operational HQ per day.

#### Problems

37. Late delivery of equipment and lack of early information on the freighting of stores, resulted in insufficient time to ensure that all equipment was completely serviceable.

38. Detachment personnel were told to clear standdown and BRL, before all preparation was finalised. This resulted in insufficient time to complete administration before departure for Randwick.

39. Trunks were found to be suitable for carrying purposes, but too heavy and unmanageable once loaded, due to their large capacity. Personnel were risking serious injury when the trunks had to be man handled in and out of the ship's hold.

40. Time at Randwick, prior to embarkation, was wasted. Personnel had nothing to do, as all stores preparation was finalised prior to departure from Watsonia.

41. Operators and technician alike, were not given sufficient time to revise little used skills. Subsequently four days is insufficient for Army trained operators to be fully conversant with Naval procedures and competent with their operating standards.

42. The following items were requested by signal on the dates shown:

- |    |                          |   |           |
|----|--------------------------|---|-----------|
| a. | Copy of all stores lists | - | 13 JUL 84 |
| b. | Interconnector cable     | - | 15 JUL 84 |
| c. | Copy of ACP 131          | - | 15 JUL 84 |
| d. | Radio Set AN/GRC-106     | - | 6 AUG 84  |

43. Of the stores requested, recieved a reply for para 39.d. via signal on the 20 AUG 84 and as for para 39.c., recieved item on 24 AUG 84 via safe-hand despatch. No reply was given in reference to para's 39. a or b.

44. Due to circumstances described in para 12, a system of communication was required between headquarters and the communications area. This is highlighted by the inability to quickly contact senior survey personnel in relation to technical problems occuring at survey stations.

45. A personal tape recorder had to be borrowed and used to record all messages recieved on the CW Broadcast. It had to be utilised to eliminate the need for re-run requests and to cut down on operating time.

46. Was unable to aquire adequate storage container for transporting safe-hand package around A0. Was forced to purchase an attache case at members expense, this is unacceptable.

#### Operating Problems

47. After only three weeks of operation, two complete Radio Sets and one Reciever/Transmitter, of the four allocated to the task, remained

.../serviceable.

serviceable. The remaining serviceable Radio Sets was the minimum amount required to operate all dedicated circuits.

48. Recieved a message on the 19 SEP 84, encrypted using incorrect system. Sent service action and instructed HMAS Harman to pass cryptogram to 135 Sig Sqn for encryption. Did not recieve anything more in reference to this incident.

49. Due to poor ventilation of work area and hot, humid weather conditions, had a major problem with the radio sets over-heating. Had limited success by placing wet sponges and towels on top of sets.

50. Due to heat, humidity and the salt air, corrosion of unprotected metal, such as, antenna connectors, battery lugs and terminals was a major concern throughout the period of the operation.

51. Increased and unwarranted transmitting to HMFS Kula was due to their listening watch not being maintained and the hard to understand accent of the Fijian operators.

52. Insufficient technical repair equipment and spare parts were made available for the operation.

#### Recommendations

53. For the problems stated in the previous paragraphs the following recommendations are made:

- a. Problems relating to late delivery, lack of time and information could be eased if detachment personnel were identified at an earlier date.
- b. If standdown or BRL must be cleared, it should be after the preparation of stores, administration and any specialised training is completed.
- c. Stores should be packed into a greater number of smaller containers, to keep the weight of containers within a safe lifting capacity.
- d. If all preparation and administration is completed prior to departure fo Randwick, then five days is sufficient to be present for briefings, prior to embarkation.
- e. That operators recieve at least two weeks familiarisation training. Also technician should be given at least one week to familiarise himself with the equipment tasked to the operation.
- f. That all requests for stores and equipment at least be answered, whether the items requested are available or not.
- g. A Telephone Set 'K' could be utilised for any short-range communications requirements so should be included on future stores allocation.
- h. That at least an additional two Radio Sets AN/GRC-106 be included on future stores allocation.
- i. That a Gasette Recorder and a quantity of cassettes be included on future stores allocation.
- j. That an adequate security case be made available and included on future stores allocation.
- k. That all addressees involved with operation be issued a communication instruction, detailing procedures to be used for forwarding of classified messages to A0.
- l. That additional precautions against over-heating be taken, such as, seperating the power amplifier from the reciever transmitter by using specially extended couplers and cables.
- m. That an anti-corrosion grease or gel be included on

future stores allocation.

n. A member of the survey contingent, living aboard the HMFS Kula, be responsible for radio skeds and ensuring a constant listening watch is maintained.

o. That adequate technical stores and repair equipment be made available to technicians.

p. It would be beneficial to the survey personnel and to future operations, to have unit training in radio procedure and antenna theory, to help overcome the few minor problems that occurred in these areas.

q. A greater range of frequencies be made available to efficiently operate the forward net. The frequencies must be compatible with the Radio Set PRC-F1. See Appendix 3.

r. That all previous after-action reports be made available to future radio detachment commanders prior to overseas operations.

NOV 84



(M.S. THOMAS)

CPL

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1. The following main items of equipment were allocated to the task:

- a. 4 X Radio Set AN/GRC-106,
- b. 4 X Mast Telescopic 27 Ft,
- c. 3 X Antenna Droopy Dipole, local pattern,
- d. 2 X Antenna Group AN/GRA-50,
- e. 2 X Charger Battery PPF2,
- f. 1 X Generator Set 500Watt,
- g. 1 X Test Set Battery 6V - 12V,
- h. 1 X Test Set RF Power,
- i. 1 X Cable WD-1/TT, 1/2 mile dispenser pack,
- j. 1 X Clock Direct Reading,
- k. 1 X Lead extension 240V 100Ft,
- l. 1 X Lead extension 240V 50Ft,
- m. 1 X Light fluro 240V,
- n. 1 X Light fluro 28V,
- o. 2 X Earthing rod 3Ft,
- p. 1 X Distribution box, local pattern,
- q. 2 X Power board 240V 4 outlet,
- r. 1 X Hydrometer,
- s. 9 X Trunk locker cabin,
- t. 9 X Padlock brass 2",
- u. 1 X Frequency measuring set,
- v. 1 X Multimeter Aust no 2
- w. 1 X Multimeter Fluke 8020B,
- x. 1 X Toolkit Electronic Lightweight,
- y. 1 X Cable Coax 75 OHM 120 Ft, and
- z. 1 X Cable Coax UR78 150 Ft.

2. The following items were not taken from AS, but purchased in A0:

- a. 4 X Battery 12V 130AH, and
- b. 2 X Battery 12V 240AH.

1. It is recommended that the additional stores be included in future stores allocation;

- a. 2 X Radio Sets AN/GRC-106,
- b. 2 X Telephone Set 'K',
- c. 1 X Casette Recorder,
- d. 2 X Casette Tapes,
- e. 3 X Tubes of Anti-corrosion Gel,
- f. 4 X Cable coax Special Purpose CG789 AU 2' 6",
- g. 2 X Cable coax Special Purpose CX-10099 2' 6",
- h. 1 X All Modules in Reciever/Transmitter,
- i. 4 X Power Amplifier Valve for AN/GRC-106,
- j. 1 X Interconnecting Cable (PA case to PA main assembly),
- k. 1 X Connectors for all plugs used,
- l. 1 X Security Case, and
- m. QTY Fuses.

1. The following frequencies were assigned for use on Operation:

Anon 84:

- a. 4188.5,
- b. 6283.5,
- c. 8377.0,
- d. 12565.5,
- e. 16754.0,
- f. 22270.0,
- g. 25100.0,
- h. 4185.7,
- i. 6278.5,
- j. 8371.3,
- k. 12556.9,
- l. 16742.6,
- m. 22243.2, and
- n. 25074.2.

2. Frequencies are for Naval Ship/Shore circuit, however the range of frequencies shown in sub-para's a, b, c, h, i and j although inadequate, had to be used to operate the Forward Net.

Background

1. Operation Anon 84 was a four phase operation to gather satellite survey data for Ata Island (Tonga), Tuvalu, Kiribati (Gilbertgroup) and Nauru. Duration of operation was 19 weeks.
2. Australian Army personnel numbered 21.
3. Additional medical support supplied to 2 civilian fixed wing and two civilian rotatory wing personnel, as well as for the 30 Fijian crew of H.M.F.S. "KULA".
4. Medical support was supplied by one medical officer, with a changeover of M.O. on 1 Oct 84.
5. Area of operations extended from 176°E to 168°W and from 4°N to 22°S.
6. Medical backup was supplied by local hospitals.

Medical Stores

7. Recommended Medical Stores list available from Field Force Command.
8. Packing of stores should be supervised by the R.M.O. during the 2 weeks prior to departure, as items supplied as substitutes for unavailable lines are not always suitable.
9. Security of medical stores was difficult to enforce on the ship with the consequence that various lines were depleted without the M.O.'s knowledge.

Immunisation

10. A number of attached personnel did not have current immunisation despite the Operation Instruction requesting the parent unit to ensure the completeness of immunisation programmes.
11. Two members required further immunisation while overseas.

Medical Problems

12. Only one major medical problem developed. The illness presented as a generalised viremia associated with gradual worsening chest pain due to severe chest wall muscle inflammation. Diagnosis was uncertain and follow-up tests plus Physician review were organised upon return to Australia. The member would have been hospitalised if facilities were available at the time of onset of illness.
13. One member of the Fijian crew was admitted to Tuvalu hospital for an appendicectomy. This instance highlighted the potential for major procedures in areas of isolation. However, in this case ready access to hospital surgical facilities was available. The member was subsequently flown to Fiji for convalescence.

14. Other problems were of a minor nature including:
- a. seasickness,
  - b. diarrhoeal episodes,
  - c. skin rashes including fungal,
  - d. tropical sores,
  - e. coughs/colds,
  - f. middle ear infections,
  - g. bronchitis,
  - h. ankle sprain,
  - i. aggravation of pre-existing acne,
  - j. isolated venereal disease - (no pathology confirmation), and
  - k. scorpion bite.

15. Pathology facilities were utilized on two occasions at Taraua hospital. Re-supply of anti-diarrhoeal tablets from the hospital pharmacy was necessary.

#### General Health, Morale and Hygiene

16. Overall health of Australian Army personnel was good with health problems largely being of nuisance value, without greatly disrupting performance.

17. Base camps had adequate showering and toilet facilities, being housed in hotels or government dwellings.

18. Showering and toilet facilities on H.M.F.S. "KULA" were inadequate, with both operating for restricted periods during the day.

19. Field parties had little availability of fresh water for bathing.

20. Attention to personal hygiene despite limited facilities was of high standard.

21. Rubbish was disposed of in the time honoured maritime method.

22. Morale was generally good with a noticeable improvement with the commencement of regular mail deliveries.

/Water Supply

### Water Supply

23. Stored rainwater was used at Tonga, Nauru and Tuvalu. It was considered to be uncontaminated.
24. All water in Kiribati was considered contaminated, fresh rainwater being scarce. Well-water was the main source for support base and on the ship. This was treated by boiling.
25. Due to a misunderstanding regarding the availability of a water filtration unit, sterilization tablets were not taken. This necessitated the boiling of all drinking water from contaminated sources.

### Malaria Prophylaxis

26. On advice from Field Force Command and A.M.R.U., the zone of operation was considered to be malaria free.
27. No prophylactic drugs were required.
28. It should be noted that the Anopheline mosquitos were present in significant numbers, in Kiribati according to a recent entomological study. No cases of malaria, however have been recorded but the potential should be noted.

### Filiarisis

29. Filiarisis is endemic to both Tuvalu and Kiribati.
30. Precautions included the use of personal insect repellent and mosquito netting.

### Local Medical Facilities

31. Contact with local medical facilities was made in Tuvalu, Kiribati and Nauru.
32. Hospital facilities were adequate in Funafuti and Tarawa.
33. Local island dispensaries had only basic medical facilities.
34. Full co-operation was given at all times by the nationals.

### Rations

35. Rations consisted largely of pre-packaged and canned foods purchased locally for field operations.
36. Fresh food and vegetables was occasionally available for purchase having been shipped from Australia or New Zealand.

37. Personnel at the Support Base ate European style food in the local hotels.

#### Communications

38. 24 hour communication was not possible.

39. Twice daily radio schedules were the only opportunities to notify potential problems back to Support Base.

#### Medical Follow-up

40. General screening with blood and stool samples was undertaken on return to Australia.

41. Health warning notices were included in each member's Unit Medical Record.

#### RECOMMENDATIONS

1. For long operations a changeover of Medical Officers should be encouraged so that a first-hand understanding of diseases peculiar to the Tropics can be gained by a larger number of Corps personnel.
2. Medical Officers should personally supervise the packing of medical stores. Adequate time should be given for this (2 weeks) prior to the shipping of stores.
3. Security of medical stores could be improved by limiting access to sleeping quarters where stores were kept. Note should be made that quarters were shared and no door lock was available.
4. The inclusion of a water filtration unit on future operations.
5. Consideration of a salt water de-salination unit should be made for similar operations.
6. In view of long distances and limited airfields, an additional Medical Assistant should be included as medical support for the Main Base party.