13

BRASS KEYS 79

4 FIELD SVY

ROYAL AUSTRALIAN SURVEY CORPS

ROYAL AUSTRALIAN SURVEY CORPS

4 FD SVY SQN

OPERATION BRASS KEY 1979

AMENDMENT SHEET

OP BRASS KEY 79

MAY - AUG 79

4 FD SVY SQN

Amdt No	Amdt Entered	Amdt No	Amdt Entered

PROJECT REPORT
OPERATION BRASS KEY 79

References: A. Dept of Defence (Army Office) A474-1-48 dated 8 Aug 78

B. 4 FF Gp Mounting Instruction dated 19 Mar 79

General

1. Operation Brass Key 79 was mounted by 4 Fd Svy Sqn during the period 28 May 79 to 2 Aug 79. The aim of the operation was to field complete 115 1:50,000 scale maps in the Northern Territory Tactical Mapping Area.

2. In addition to the field completion, the opportunity was taken to obtain identification photography of selected horizontal control points in the area of operation.

Operational Results

3. Field Completion. All maps listed for field completion were checked.

4. Targetting and Photography. A total of 46 Horizontal Control Stations were targetted and photographed. Of the 46 stations only 1 station could not be readily identified on the photography. A detailed report on this aspect is contained in Annex D.

5. Supplementary Photography. Extensive supplementary photography was obtained for three separate tasks:

a. Complete coverage of the coastline at low tide to enable plotting of off-shore intertidal features.

b. Complete coverage of the Darwin 1:50,000 to enable plotting of the extensive redevelopment that has taken place since the original mapping photography was flown.

c. On request by field parties to enable plotting of detail not visible on mapping photography.

6. Full details of all supplementary photography are contained in Annex E.

Operational Support

7. Aircraft Support. Fixed wing and rotary wing aircraft were allotted in support of the operation:

a. LOH - 162 Recce Sqn. Three aircraft were employed on the operation. A total of 450 task hours were allotted, of these 444.7 were used. The aircraft were employed on field completion, movement of personnel and Horizontal Control station panelling tasks.

b. PILATUS PORTER - 173 Gen Spt Sqn. One aircraft fitted with a Wild RC 10 camera was employed on the operation. A total of 150 task hours were allotted, of these 148.3 were

/used

used. The aircraft was employed on supplementary photography, Horizontal Control station target photography, re-supply of Forward Bases, and movement of personnel tasks.

c. Serviceability. Excellent serviceability by both types of aircraft was maintained throughout the operation. At no time was the progress of the operation halted due to aircraft unserviceability.

d. Personnel. Excellent co-operation between surveyors, pilots and ground crew existed throughout the operation. The interest, involvement and willingness to participate in any task shown by all the aviation personnel significantly contributed towards the success of the operation.

A detailed report on A Avn support is contained in Annex F.

Administration

8. Manning. The outline organisation of 4 Fd Svy Sqn (-) is shown in Annex A and a roll of all personnel employed on the operation is contained in Annex B.

9. Officers. 4 Fd Svy Sqn (-) employed the following officers on the operation:

MAJ	Gruszka	OC Det	
LT	Stephens	2IC/Ops Offr	25 May - 11 Jun 79
CAPT	O'Connor	" " "	11 Jun - 2 Aug 79
LT	Maxwell		4 Jul - 2 Aug 79

LT Maxwell was involved in various survey tasks to gain knowledge of survey operations prior to attending a tertiary education course.

10. A Avn employed a total of 8 LOH Pilot Officers from 161 and 162 Recce Sqn. CAPT Byrnes, 162 Recce Sqn, was OC Avn Det for the duration of the operation. The other pilots were on a rotation basis to enable as many officers as possible to gain experience of survey operations.

11. 173 Gen Spt Sqn employed one officer as Pilatus Porter pilot for the duration of the operation.

12. Other Ranks. A total of 16 RA Svy OR were employed on the operation, all being employed on technical tasks.

13. The performance of the attached personnel was good. All concerned carried out their respective tasks in a satisfactory manner and blended well with the technical personnel.

14. Visitors. The people listed below visited on the dates shown:-

4 - 8 Jun: COL N.R.J. Hillier D Svy - A

/19 Jun:

19 Jun: The Hon D.J. Killen, MP, Minister for Defence,
Sir Arthur Tange, AC, CBE, Secretary of Defence,
Admiral Sir Anthony Synnot, KBE, AC, Chief of Defence Force Staff.

25 Jun - 28 Jun: BRIG P.J. Greville, CBE, COMD 4 FF Gp/4 MD
LTCOL T.J. Wilkinson, COFS, 4 FF Gp/4 MD
LTCOL M.R. Hawkins, DCOMD, 4 FF Gp/4 MD
MAJ G.R. Davies, SO2 (COORD) 4 FF Gp/4 MD

2 - 6 Jul: CAPT L.W.L. Partridge, JMI

22 - 25 Jul: CAPT I.D. Condon, 4 Tpt & Mov Gp

15. Rations. The rationing system was most satisfactory. An allowance of $4.00 per man per day was allocated for the operation. This figure was derived from the basis of issue compared against a price list obtained during the OC's reconnaissance of the area.

16. A cash advance of $14,000 was deposited in a cheque account opened in Katherine on arrival. Arrangements were made to have bank statements produced weekly. This enabled weekly reconciliation of the account.

17. In general items were purchased in Katherine at normal retail or carton prices. Firms in the area do not allow discount prices but arrangements were made to have a 14 or 28 day account with no extra charge. As most perishable and grocery items are dependant on interstate transport, some difficulties in obtaining certain items were encountered.

18. Forms for ordering, purchasing and utilization of the rations were printed in Adelaide prior to departure. As proven on previous operations these documents allowed efficient monitoring of the account and enabled catering to suit members' tastes and the environment.

19. A ration account ledger book was maintained for the operation. Entitlements as per daily FST 66s were entered on one side against expenditure on the other. The variation between entitlement and expenditure could thus be readily deduced.

20. In general the system was most suitable for survey operations. It allowed great flexibility, optimum usage of the funds allocated and minimum wastage.

21. Main Base. The main base was established at RAAF Base TINDAL approx 15 km south of Katherine. The accommodation required extensive cleaning and some minor repairs. On-going maintenance requirements were handled by the caretaker and the co-operation from the RAAF custodians was excellent.

22. Health. There were no major health problems during the operation. Main Base was located close to the Katherine District Hospital which provided excellent support.

23. Canteen. A small unit canteen was established at the Main Base. The function of the canteen being to supply canned beer, soft drinks and a small range of cigarettes. A loan from 4 Fd Svy Sqn Regt Fund was obtained to enable purchase of initial stocks.

/24. Morale

24. Morale. The level of morale was high throughout the operation.

25. Discipline. No situation arose that required formal disciplinary action.

26. Pay and Allowances.

a. Pay. Pay was on a normal fortnightly basis and functioned smoothly. The system used was that a cheque was received from 7 MD, cashed in Katherine, and the pay distributed to the members. The only drawback to this method being that personnel who drew large pay amounts had then to arrange banking. A method of some members receiving cash and others personal cheques is recommended as a more satisfactory solution.

b. Allowances. Members were paid the relevant District and Separation Allowances. The operational area covered three District Allowance Zones. As members were constantly working in different areas the quantity of cease and commence district allowance forms required became extremely burdensome. For future similar operations it is recommended that either a mean allowance or a method of block claiming be approved.

27. Public Relations. Public relations between the local population and personnel on the operation were quickly established. Many of the local population remembered the unit from Operation BRASS KEY 76 and a Civic Welcoming function was arranged by the Mayor of Katherine. This excellent relationship continued throughout the operation. No occasion arose where relationships were adverse, many old friendships were renewed, and new ones established.

Logistics

28. Supply. Excellent support was given by 41 Sup Bn and Log Coy 7 MD. On the rare occasions where priority stores were late in arrival it was found to be a fault of the civilian carrier not the dispatching agency.

29. Serviceability. Equipment serviceability was good throughout the operation.

30. Fuel. Fuel used during the operation was:

a. MT Super 3698 litres.

b. MT Standard 23481 litres.

c. Avtur 53645 litres.

31. Vehicles. The vehicles supporting the operation generally performed satisfactorily. Most of the repairs were handled by the attached vehicle mechanics other repairs being

/carried

carried out by Darwin Wksp Pl who were most co-operative and helpful.

32. Although unserviceability of vehicles did not affect the operation, the Series III Landrovers proved susceptible to damage when employed on the type of cross-country work which is inherent to survey operations. The main problem areas being:

a. inadequate radiator protection.

b. jerry-can container mountings inadequate, leading to damage being caused to jerry-cans and rear lights.

c. exterior rear view mirror mountings becoming loose too easily.

d. canvas canopies provide survey technical stores with inadequate protection from dust and penetration by spikes.

e. lack of scrub bars.

33. It is recommended that for future operations Series III Landrovers have the following modifications:-

a. stronger radiator protection.

b. modified external rear view mirror mountings.

c. hard top canopies.

d. more stable jerry can containers.

e. protective encasement for rear lights.

f. protective encasement for fuel tank.

g. scrub bars.

34. Vehicles employed on the operation were:-

a. 3 x Truck Cargo 2½ ton GS with winch.

b. 3 x Truck Cargo ¾ ton.

c. 3 x Truck Cargo ¾ ton GS, LR Series 3.

d. 1 x Automobile station wagon 5 seater CL.

e. 6 x Trailer Cargo ½ ton.

Communications

35. Rear Link. Rear link communications were provided by Telex from Tindal. The Telex was operated by personnel from 1 Sig Regt Holsworthy NSW. This system proved most effective for most of the operation, however an industrial dispute mid way through the operation caused a nation wide breakdown for Telex traffic. During the industrial dispute rear link communications were maintained by AN PRC F1 radio to Air Comm Darwin.

36. Forward Base

36. Forward Base Net. AN PRC F1 radios were used on the survey network. Sitrep timings were set for 0800, 1200 and 1700 hours daily.

37. Air Traffic Net. All communications with aircraft were by AN PRC F1 on a separate frequency.

38. The RA Sigs personnel attached to the unit all worked hard and displayed a good sense of responsibility. Their efforts in improving antenna configurations and patience during times of poor radio reception were a factor in the smooth running of the operation. (See Annex G for 1 Sig Regt Report).

(J. GRUSZKA)
MAJ
OC

8 Nov 79

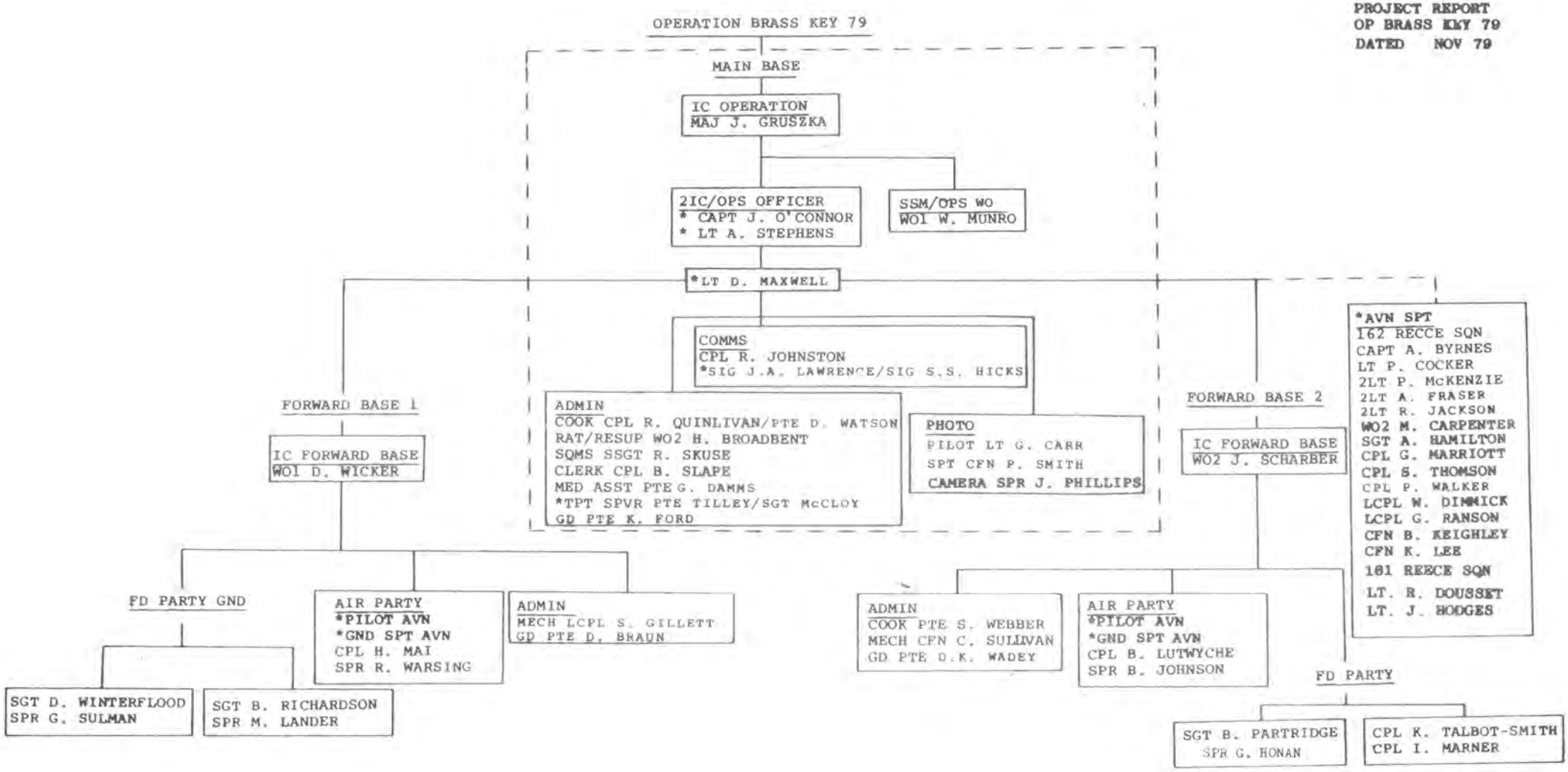
Distribution:

		Reg No
Dept of Defence (Army Office) - Incl 3 for D Svy	(5)	1-5
Field Force Command	(3)	6-8
4 Field Force Group	(2)	9-10
HQ 7 MD	(1)	11
1 Sig Regt	(1)	12
Army Svy Regt	(2)	13-14
School of Military Survey	(4)	15-18
1 Fd Svy Sqn	(1)	19
2 Fd Svy Sqn	(1)	20
5 Fd Svy Sqn	(1)	21
8 Fd Svy Sqn	(1)	22
162 Recce Sqn	(1)	23
173 Gen Spt Sqn	(1)	24

Internal:

OC 4 Fd Svy Sqn	(1)	25
4 Fd Svy Sqn Library	(6)	26-31

ANNEX A TO
PROJECT REPORT
OP BRASS KEY 79
DATED NOV 79



* INTERCHANGE PERS

ANNEX B TO
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

NOMINAL ROLL
OP BRASS KEY 79

52882	MAJ	J.	Gruszka	4 Fd Svy Sqn	15 May - 25 Jul 79
311459	CAPT	J.	O'Connor	"	11 Jun - 2 Aug 79
320753	LT	D.J.	Maxwell	"	4 Jul - 2 Aug 79
411436	LT	A.K.	Stephens	"	25 May - 13 Jun 79
41896	WO1	W.A.	Munro	"	25 May - 2 Aug 79
213599	WO2	H.R.	Broadbent	"	23 May - 2 Aug 79
43422	WO2	J.K.	Scharber	"	25 May - 15 Jul 79
126236	SSGT	R.M.	Skuse	"	23 May - 2 Aug 79
56695	SGT	R.N.	McCloy	"	11 Jun - 2 Aug 79
45549	SGT	B.J.	Richardson	"	23 May - 2 Aug 79
1733682	SGT	D.J.	Winterflood	"	23 May - 2 Aug 79
316825	CPL	H.P.	Mai	"	25 May - 2 Aug 79
45481	CPL	I.L.	Marner	"	25 May - 2 Aug 79
47142	CPL	R.F.	Quinlinan	"	23 May - 2 Aug 79
47269	CPL	B.H.	Slape	"	25 May - 2 Aug 79
45892	CPL	K.G.	Talbot-Smith	"	23 May - 2 Aug 79
226223	SPR	G.J.	Honan	"	25 May - 2 Aug 79
320155	SPR	B.D.	Johnson	"	25 May - 2 Aug 79
2268145	SPR	M.N.	Lander	"	23 May - 2 Aug 79
317246	SPR	J.M.	Phillips	"	23 May - 2 Aug 79
448281	PTE	D.W.	Tilley	"	23 May - 13 Jun 79
63195	SPR	R.W.	Warsing	"	23 May - 2 Aug 79
49743	PTE	S.N.	Webber	16 AD Regt (LT)	25 May - 2 Aug 79
433456	PTE	D.A.	Watson	DSU Sydney	25 May - 2 Aug 79
320510	PTE	G.	Damms	1 Fd Hosp	25 May - 3 Jun 79
17354	PTE	D.K.	Wadey	HQ 1 Div	23 May - 2 Aug 79
7208	PTE	D.A.	Braun	1 RAR	25 May - 2 Aug 79
2240880	PTE	K.A.	Ford	2/4 RAR	25 May - 2 Aug 79
224052	LCPL	S.E.	Gillett	101 Fd Wksp	23 May - 2 Aug 79
46270	CFN	C.J.	Sullivan	18 Tpt Sqn Wksp	23 May - 2 Aug 79
1201837	SSGT	B.J.	Partridge	2 Fd Svy Sqn	25 May - 25 Jul 79
212075	SPR	G.K.	Sulman	2 Fd Svy Sqn	23 May - 2 Aug 79
6708956	CPL	B.J.	Lutwyche	5 Fd Svy Sqn	23 May - 2 Aug 79
37371	WO1	D.L.	Wicker	Army Svy Regt	25 May - 2 Aug 79
424654	CPL	R.B.	Johnston	1 Sig Regt	25 May - 2 Aug 79
62759	SIG	J.A.	Lawrance	"	25 May - 3 Jul 79
59943	SIG	S.S.	Hicks	"	4 Jul - 2 Aug 79
1204284	LT	G.L.	Carr	173 Gen Spt Sqn	28 May - 26 Jul 79
221431	CFN	P.	Smith	"	29 May - 26 Jul 79
243432	CAPT	A.S.	Byrnes	162 Reece Sqn	27 May - 25 Jul 79
316168	LT	P.M.	Cocker	"	27 May - 27 Jun 79
2131819	2LT	P.M.	McKenzie	"	27 May - 27 Jun 79
226249	2LT	A.P.	Fraser	"	16 Jul - 25 Jul 79
316042	2LT	R.H.	Jackson	"	26 Jun - 25 Jul 79
58786	WO2	M.C.	Carpenter	"	25 Jun - 2 Jul 79
1202838	SGT	A.	Hamilton	"	25 Jun - 2 Jul 79
2796236	CPL	G.S.	Marriott	"	27 May - 2 Jul 79
1203623	CPL	S.N.	Thomson	"	25 Jun - 25 Jul 79
313124	CPL	P.	Walker	"	27 May - 2 Jul 79
1204396	LCPL	W.S.	Dimmick	"	25 Jun - 25 Jul 79
62478	LCPL	G.R.	Ranson	"	29 May - 2 Jul 79
317061	CFN	P.	Galeand	"	27 May - 2 Jul 79

/2

ANNEX B

56722	CFN	B.M.	Keighley	162 Recce Sqn	25 Jun - 17 Jul 79
1205335	CFN	K.R.	Lee	"	25 Jun - 17 Jul 79
3179820	LT	R.A.	Dousset	161 Reece Sqn	12 Jul - 19 Jul 79
220147	LT	J.S.	Hodges	"	23 Jun - 11 Jul 79

ANNEX C TO
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

FIELD COMPLETION REPORT

Task

1. To field complete 115 x 1:50,000 maps in the Northern Territory Tactical Mapping Area. The area is within the series R502 1:250,000 map sheets of:

a. SD 52-3 Fog Bay

b. SD 52-4 Darwin

c. SD 52-7 Cape Scott

d. SD 52-8 Pine Creek

e. SD 52-11 Port Keats

f. SD 52-12 Fergusson River

g. SD 53-5 Mount Evelyn

h. SD 53-9 Katherine

i. SD 53-13 Larrimah.

2. Standards to be in accordance with RA Svy Symbolization All Series 1:50,000 Mapping Specifications.

Execution

3. Organization. The force was divided into Main Base and two Forward Base Field Completion Groups. Forward Bases consisted of 1 x NCO IC 1 x air party and 2 x ground parties each having 2 members In upport of the Fwd Bases were:

a. 1 x LOH

b. 1 x vehicle mechanic

c. 1 x cook

d. 1 x GD.

4. Deployment. Forward bases were deployed at:

a. Larrackeah Barracks Darwin

b. Batchelor Christian Community Centre

c. Daly River Mission

and during the final phase of the operation worked from the Main Base, Tindal.

.../5. Field

5. Field completion materials:

a. Four units were involved in the preparation of the field completion data. The units involved were:

(1) Army Svy Regt

(2) 2 Fd Svy Sqn

(3) 4 Fd Svy Sqn

(4) 5 Fd Svy Sqn

each units area of responsibility is shown at Appendix 3.

b. Units were requested to supply the following materials at 1:50,000 scale:

(1) Preliminary maps showing Culture, Hydrography, Relief Vegetation and queries for field verification.

(2) Preliminary maps showing Culture, Hydrography and Relief.

(3) Preliminary maps showing Culture and Hydrography.

(4) Preliminary maps showing Vegetation and Hydrography.

(5) Preliminary maps showing Hydrography.

(6) Preliminary maps showing Vegetation.

(7) A transparent copy of each plot sheet.

(8) Photo mosaics if available.

c. Units complied with these requirements as far as possible. The exceptions being:

(1) Supply difficulties made it impossible for all units to supply transparent copies of the individual plot sheets.

(2) Automap products had to have their corrections marked onto four colour preliminary maps at 1:25,000 scale. These maps were printed on transparent film.

The changes to the original requirement, although not critical, considerably increased the work load.

.../6. Photography

6. Photography. The following photography was available for use during the field completion:

a. 100% coverage, of the operational area, by mapping photography which was flown in 1977 at a scale of 1:67,000.

b. 100% coverage, of the Port Keats 1:250,000 by mapping photography which was flown in 1979 at a scale of 1:67,000.

7. Other Agency Data. As a result of technical liaison the following data was obtained from other agencies:

a. Northern Territory Lands and Surveys Office Plans of Aboriginal Reserve Boundaries.

b. Division of National Mapping. Pastoral Plan of the Northern Territory.

c. Oil companies road maps.

d. Automobile Association of Northern Territory Road Map.

e. Hydrographic Charts.

f. Department of Works Town Plans.

g. Northern Territory Government Tourist Bureau Publications.

h. Department of Transport Publications relating to airfields.

i. National Association of Australian State Road Authorities Publication - National Routes and Erection of Route Markers.

Additional on the spot information was obtained from the following:

(1) Station properties.

(2) Personnel in charge of various missions.

(3) Local Engineer Officers.

(4) CSIRO, Katherine and Darwin.

8. Field Completion Methods:

a. Field completion was carried out by each forward base deploying two, two man vehicle mounted parties and one, two man LOH party.

.../b. The

b. The ground parties, in the main, were responsible for checking cultural detail, obtaining names liaising with local authorities and property managers etc. The air party was responsible for checking vegetation and drainage. Close liaison between ground and air parties was maintained so that detail difficult to classify by one means could be checked and verified by the other.

c. Corrections noted in the field, were marked onto composite paper preliminary copies of the map, or onto the existing photography. These corrections were transferred to master sheets each evening. Individual colour guides showing road, drainage and vegetation classifications were also produced.

d. Supplementary photographic coverage was obtained for detail that did not appear on the mapping photography. Requests for this coverage were submitted by ICs of the Fwd Bases to Main Base which co-ordinated the acquisition. Supplementary photography was also obtained for the entire coastline in the area of the operation. This photography was flown at the time of the lowest possible tide to aid in the plotting of intertidal features.

e. Colour 35mm and polaroid photography was taken as an aid for classification and interpretation and for future training purposes.

f. An individual report was prepared for each 1:50,000 area detailing any problems or specific information particular to that area.

9. Achievements. All 115 x 1:50,000 maps were field completed during the operation. The various compiling agencies were supplied with the following materials for each of their map areas:

a. Master correction sheets.

b. Hydrographic classification guide.

c. Road classification guide.

d. Vegetation classification guide.

e. Field completion report. Examples in Appendix 4.

f. Supplementary photography details.

10. Observations.

a. Interpretation and Depiction of Detail. In general the interpretation and depiction of detail was good, however there were some exceptions mainly in regard to hydrographic and vegetation detail. These aspects are covered below and in the IC Forward Base Reports (Appendix 1 and 2). Fidelity of shape and size was generally good with the exceptions mentioned below.

.../b. Hydrographic

b. Hydrographic Detail

(1) Watercourses. The width of many watercourses, shown as double-line features, would appear to have been exaggerated during plotting. When this exaggeration occurred there was a consequent fall off in shape fidelity. See Appendix 3. Field Completion Report 5173 - II Lake Finnis.

(2) Swamp/Subject to Inundation. Many areas were originally shown as swamp and subsequently changed to subject to inundation. Correct classification of these areas proved to be extremely difficult even during the field completion. The areas in question are completely covered by water at the end of the wet season, and then rapidly start to dry. At the commencement of the operation many of these areas were still inundated and the completion parties annotated them as swamp. Comparison with existing maps and local knowledge indicated that they could be Black Soil Plain areas. A detailed check was carried out by the OC Det and other senior members later in the operation and it was determined that the areas were in fact Black Soil Plain. The only areas that were finally shown as swamp were those that contained distinctive swamp vegetation.

(3) Marine Swamp. Some areas adjacent to the coast that had a dark-toned, devoid of tall vegetation appearance on the photography were originally classified as Marine Swamp. These areas, in fact, were subject to inundation grasslands. The dark tone on the photographs was the result of fires in the areas.

(4) Inter-Tidal Features. Accurate boundary checking of these features is impossible during field completion. Although many areas of inter-tidal flats and reefs were added, their boundaries and shape are only approximate. Supplementary photography was flown to aid in the correct plotting of these features. The absence of these features on the original plots is due, in the main, to the height and discolouration of the water when the mapping photography was flown.

(5) Mangrove. Extensive areas of low dense vegetation immediately to the landward side of very high mangrove were originally plotted as swamp with dense vegetation. This proved to be mangrove of a slightly different type, however, it is still distinctive mangrove and creates as much, if not more, problems to movement as the taller version. All these areas were re-classified as mangrove.

c. Relief. Portrayal of relief was generally good, however a few isolations were missed. Some Automap generated products had very few spot heights, it is believed these were captured during digital acquisition but not called for output during preliminary map production. Similarly it would appear that not all cliffs were produced as output on the preliminary maps. In all cases where this was noted an annotation was made to the correction sheet to enable checking to be carried out.

.../d. Vegetation.

d. Vegetation. In general the vegetation was reasonably portrayed, however, much of the area that is covered with medium vegetation was shown as scattered. Also there were many instances of over generalization and poor shape fidelity. The underclassification was probably caused by the apparent thinness of the canopy on the photography. There is also a lack of uniform classification of vegetation between the various compiling agencies involved in the initial plotting.

e. Culture. Cultural detail, in the main, was well portrayed. The major problem areas being:

(1) The extensive development in the Darwin area. See Appendix 3 Field Completion Report 5073 - II Darwin.

(2) The large number of tracks plotted which proved to be either animal tracks, mainly buffalo or mustering tracks which vary with each wet season.

11. These observations are in general terms only, not all comments apply to all sheets, nor do they apply to individual compiling agencies. The field completion report written for each individual 1:50,000 map details and amplifies those comments that are applicable.

Conclusions

12. It is believed that the time and effort involved in field completion and the large correction tasks that are necessary on some maps could have been reduced if:

a. Greater use had been made of available source material.

b. A method of ensuring uniformity was designed when various units are tasked to compile maps in the one area.

c. Greater time was devoted to pre-planning of plotting methods before compilation was commenced.

d. All possible joins were effected before maps were sent for field checking.

Appendixes: 1. Report by IC Forward Base 1

2. Report by IC Forward Base 2

3. Areas of Responsibility

4. Samples of Field Completion Reports

APPENDIX 1 TO
ANNEX C TO
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

FIELD COMPLETION REPORT - FWD BASE NO 1

References: A. 4 Fd Svy Sqn, SOP Field Completion (Draft) 1978
B. After Action Report, Op New Broom 5 dated 23 Aug 78

Task

1. To field complete 115 x 1:50,000 map areas which cover the Northern Territory tactical mapping area. This Appendix covers only those maps plotted by Army Survey Regt Bendigo.

Execution

2. Material Supplied

a. 25 x 1:50,000 map areas in the Darwin 1:250,000 map which were a direct result of automap output.

b. 8 x 1:50,000 map areas in the Fergusson River 1:250,000 map plotted on standard Wild B8s using the normal methods.

3. Presentation. The presentation was as follows:

a. Preliminary 4 colour maps printed on paper.

b. Combined black, blue, brown on paper.

c. Combined blue, brown, green on paper.

d. Combined blue, green on paper.

e. Individual black and blue on paper.

f. 4 x 1:25,000 four colour veriplots for each 1:50,000 area on crono, to be used for master correction copies. (Automap area only).

g. Photomosaics at approx 1:50,000 scale.

4. Photography. Mapping photography used was flown by RAAF in Aug/Sep 77, and supplementary photography was flown where new detail required accurate positioning not possible during field check.

5. Field Completion

a. Field completion was carried out by two vehicle mounted parties and one LOH party as laid down in Reference A.

b. The ground parties field checked all cultural detail accessible by vehicle, and recorded details of vegetation and hydrography of distinctive nature that were encountered.

.../C1-2

c. The LOH party was responsible for field checking all vegetation and hydrography, and cultural detail not accessible by the ground parties.

d. Corrections were made on a composite preliminary map in the field and transferred to master copies each day in accordance with Reference A.

e. Supplementary photographic coverage was requested for areas of new cultural detail and offshore detail as required.

f. A selection of polaroid films and 35mm slides were taken to aid interpretation and for educational purposes.

6. During the course of field completion, the following observations were made:

a. Presentation of Material

(1) It is understood that time considerations resulted in the automap produced prelim maps being prepared at 1:50,000, while the orono veriplot master copies remained at 1:25,000. This proved unsatisfactory. The master copies must be at the prelim map scale to simplify and maintain accuracy during transferral of field check detail. The task of applying the corrections to the veriplots was extremely difficult and time consuming, however, the 1:25,000 veriplots solved many logic problems that occurred during field check, because reduction to 1:50,000 obliterated many densely detailed areas. As a result, a decision is required to determine the most suitable scale for field checking of automap output.

(2) Many veriplot produced symbols are too small to readily interpret during field checking and must be enlarged sufficiently to enable instant recognition.

(3) Insufficient map detail was supplied for the east edge of the Darwin 1:250,000 area which would be required as a "bleed" edge on the JOG series and consequently was not field checked.

(4) No transparent copies were supplied for the Fergusson River 1:250,000 map area for use as master correction overlays. Correction guides were compiled directly onto copies of the four colour prelim maps and care should be taken when transferring detail to compilation sheets as scale problems are anticipated.

b. Feature Interpretation and Depiction

(1) General. A greater reliance during plotting, on previous publications, particularly the 1:100,000 series, would have produced a more accurate prelim map prior to field check. The 1:100,000 series although in error in many instances, is a recently field checked publication and would have provided a sound basis for correct classification of vegetation and hydrographic features in most cases. Join information supplied by 4 Fd Svy Sqn was left unresolved prior to field

.../C1-3

check and the many discrepancies remaining, resulted in a most difficult and time consuming task in finalization. The eight maps in the Fergusson River 1:250,000 area reflect a more thorough research of source data and were generally accurate in their presentation, requiring only minor changes during field completion.

(2) Cultural. Appreciable cultural changes have occurred since the mapping photography was flown, particularly in Darwin and the surrounding districts. In the more sparsely populated areas much cultural detail is of a temporary nature due mainly to the influence of the Wet season. Many tracks in the vicinity of the coastal plains are established by buffalo hunters, or are muster tracks and their location varies from year to year. Fences are a reasonably permanent feature, although in some instances run for many kilometres and then stop. This is a true indication of their pattern and should be shown as such. In many cases, the fences have been destroyed by burning off and as no attempt has been made to restore them, these have been deleted.

(3) Hydrography. The presentation of hydrographic features generally reflects poor plotting and decisive executing action is required to improve the presentation, and reduce the number of obvious errors appearing on the preliminary map. A greater use of source data, more accurate photo interpretation, and in the case of automap data, correct use of plotting techniques, is required to ensure a product compatible with adjoining maps plotted in the traditional manner.

(a) Watercourses. Many double line watercourses appear to have been plotted wider than scale and will require replotting. A large number should only be single line streams, although their lineweight should be enhanced. The correct width should be determined from the photomosaic, and it is suggested that a lineweight guide (currently in use during scribing) be produced before plotting is commenced.

(b) STI. Extensive areas of STI occur adjacent to streams in low lying areas, and their general extent has been identified as an aid to replotting.

(c) Swamp. Large areas of swamp in the floodplains adjacent to the coast have been reclassified as STI. Incorrect use of the swamp classification resulted in areas of swamp appearing within a larger boundary similarly classified, and these errors should have been resolved during plotting.

(d) Mangrove. Although sometimes considered to be a vegetation feature, it is interelated with numerous other drainage features and should have been plotted using a hydrographic boundary. On most prelim maps, it has intermittently been plotted as a vegetation boundary which leads to confusion. The low secondary mangrove has been incorrectly portrayed as swamp with a dense or medium vegetation. This method of portrayal was suggested by 5 Fd Svy Sqn on "Op New Broom 5" referred to in Reference B, and was determined

.../C1-4

to be incorrect by Army Survey Regt. Consequently, its use should have been discontinued. There is an apparent misinterpretation of the note in the Remarks column of symbol C9 by "Symbas", and this should be clarified. Some major streams through mangrove are not continuous and the drainage pattern appears incomplete. Where the true position of the stream is indistinct, it is suggested that it be shown with a dashed line.

(e) Offshore Features. The limits of most intertidal features were not accurately plotted, probably due to the tide level at the time plotting photography was flown, and by cloudy water caused by excessive tides common to this area. These features have been indicated on the hydro-guides in general terms only, and should be replotted from low water supplementary photography supplied.

(4) Vegetation. The vegetation was generally underclassified. The entire area is covered mainly with medium vegetation. The probable reason for incorrect interpretation was brought about by seasonal burning off and the fact that the vegetation height generally averages only 8 to 10 metres with small individual canopies during the dry season. Regrowth quickly reoccurs during the wet to the original density. It was impossible to accurately determine the correct vegetation boundaries during field check and the densities have been identified on the vegetation guides in general terms only, as a guide to replotting. Narrow bands of dense vegetation along streams have also been identified on the guides as they are a positive aid to ground and air navigation.

(5) Relief. It is suspected that some cliff features, although correctly plotted by automap, were not enhanced on the prelim map for easy identification during field check. Where doubtful, cliffs have been positioned on the veriplots and a check of the special relief features should be made before adding. Generally the relief appears well plotted. 10 metre contours should be deleted from future prelim maps in dense or rugged terrain to aid clarity.

7. The above observations are made in general terms only and are amplified and specifically applied in the field completion reports and guides produced for each 1:50,000 area.

Conclusions

8. It is obvious that these maps will require extensive replotting and corrective action that is not the result of changes in detail since date of mapping photography, but that of incorrect photointerpretation and presentation during plotting. It is strongly recommended that adequate time be allowed for research prior to plotting, and that sufficient time be made available during and on completion of plotting for a full and complete edit to take place before production of the prelim map. A more careful approach to these tasks should drastically reduce the time taken to field complete and correct the base data.

(D.L. WICKER)
Party IC

APPENDIX 2 TO
ANNEX C TO
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

OPERATION BRASS KEY - 1979
FIELD COMPLETION REPORT
FWD BASE NO 2 - BATCHELOR, NT

Reference: A. 4 Fd Svy Sqn Tech SOP for OP BRASS KEY II - NT 1979

Task

1. To field complete 115 x 1:50,000 preliminary maps in the Northern Territory Tactical Mapping area. This annex covers only those aspects relevant to operations from Fwd Base No 2 established at BATCHELOR, NT between 27 May 79 and 22 Jun 79.

Execution

2. Personnel

43422	WO2	J.K. Scharber	Tech - I/C party
1201837	SGT	B.J. Partridge	Tech - Ground
45481	CPL	I.L. Marner	Tech - Ground
6708956	CPL	B.J. Lutwyche	Tech - Air
45892	CPL	K.G. Talbot-Smith	Tech - Ground
226223	SPR	G.J. Honan	Tech - Ground
320155	SPR	B.D. Johnson	Tech - Air
49743	PTE	S.N. Webber	Cook
46270	CFN	C.J. Sullivan	Veh Mech
17354	PTE	D.K. Wadey	GD

In addition the following A Avn personnel were rotated from Main Base:

243432	CAPT	A.S. Byrnes
2131819	2LT	P.M. McKenzie
313124	CPL	P. Walker
2796236	CPL	G.S. Marriott
62478	LCPL	G.R. Ranson

3. Ground Support

1 x Truck Cargo $2\frac{1}{2}$ ton GS w/w
2 x Truck Carryall $\frac{3}{4}$ ton GS

The availability of a Veh Mech at Fwd Base proved very advantageous and despite some delays in obtaining spares the unserviceability of vehicles did not unduly affect operations.

4. Air Support

1 x LOH

Excellent co-operation and support was given by members of 162 Recce Flt. Operations were not affected by unserviceability of aircraft.

/5. Accommodation

5. Accommodation

Accommodation was in the Christian Community Hall, BATCHELOR. The hall comprised shower, toilet, limited kitchen facilities and a hall with a large billiard table in the centre which proved useful for laying out map sheets. The hall, however, was not large enough to accommodate all personnel and it was necessary to erect tentage in the yard for the remainder of personnel. The stove in the kitchen was non-operable and gas 2 burner stoves had to be used. Additional refrigeration was also necessary.

6. Fuel

The following quantities of fuel were prepositioned by HQ 7 MD:

a. AVTUR - 11,800 litres

b. MT - 5,600 litres

7. Rations

Rations were resupplied on a weekly basis from Main Base at TINDAL. Day to day requirements, eg bread, milk, were purchased locally.

8. Technical

a. Material Supplied

(1) 14 x 1:50,000 map areas in the PINE CREEK 1:250,000 map area which consisted of silk screened 5 colour preliminary maps produced from 4 Fd Svy Sqn plot sheets plotted direct in ink.

(2) 2 x 1:50,000 map areas in the CAPE SCOTT 1:250,000 map area similar to (1) above.

(3) 3 x 1:50,000 map areas in the FOG BAY 1:250,000 map area produced by offset printing from Army Svy Regt AUTOMAP plots.

b. Presentation

(1) In the case of 4 Fd Svy Sqn produced preliminary maps the presentation was as follows:

(a) Cultural, drainage, contours, vegetation and field check queries on paper.

(b) Cultural, drainage, relief and field check queries on paper.

(c) Vegetation, drainage on paper.

(d) Vegetation only on paper.

(e) Drainage only on paper.

(f) Master ozafilms of each overlay with the exception of the field check overlay.

(g) Complete coverage of mapping photography (Aug/Sep 1977).

/(2) In the

(2) In the case of Army Svy Regt produced preliminary maps the presentation was as follows:

(a) Preliminary 4 colour maps printed on paper.

(b) Combined black, blue, brown on paper.

(c) Combined blue, brown, green on paper.

(d) Combined blue, green on paper.

(e) Black only on paper.

(f) Blue only on paper.

(g) 4 x 1:25,000 four colour veriplots for each 1:50,000 area on cronaflex, to be used as Master Correction copies.

c. Photography

The mapping photography was flown by RAAF in the period Aug/Sep 77. It consisted of RC10 SWA panchromatic photography flown at an altitude of 6,000 metres.

d. Field Completion

(1) Field completion was carried out by two vehicle mounted parties (2 pers per vehicle) and one LOH party of 2 tech personnel.

(2) The ground parties checked all cultural detail accessible by vehicle and recorded details of vegetation and hydrography of distinctive nature that were encountered.

(3) The LOH party was responsible for checking all detail with particular emphasis on vegetation, drainage and cultural detail not accessible by the ground parties.

(4) Corrections were made on composite preliminary maps in the field and transferred to master ozafilms each day in accordance with reference A.

(5) Supplementary photographic coverage was requested for areas of new cultural detail where accurate positioning from the ground or air proved difficult.

(6) A number of 35 mm slides were taken to aid in interpretation and for educational purposes.

(7) The following 1:50,000 areas were field completed from BATCHELOR:

APPENDIX 2

5271-	I	DOUGLAS CREEK	5270-	I	UNION REEF
	II	MT MASSON		IV	BURRUNDIE
	III	BAN BAN			
	IV	MT RINGWOOD			
5171-	I	MARGARET RIVER	5071-	I	RUM JUNGLE
	II	BURNSIDE		II	PROSPECT HILL
	III	BURRELLS CREEK		III	REYNOLDS RIVER
	IV	BATCHELOR		IV	MT TOLMER
4972-	I	GROSE ISLAND	4971-	I	MURRENJA HILL
	II	FOG BAY		IV	PERON ISLAND
	III	POINT BLAZE			

(8) A total of 72.8 LOH flying hours were used at BATCHELOR averaging 3.8 hours/map sheet.

e. Observations

(1) In the case of Army Svy Regt material the cronaflex veriplot master copies were at 1:25,000 whilst the preliminary maps used as working copies were at 1:50,000. This made accurate transference of corrections to the master copies extremely difficult.

(2) Many veriplot produced symbols are too small to quickly interpret whilst field checking and as a result many manhours were required to colour code all drainage and vegetation areas prior to checking. Colour coding was also necessary on 4 Fd Svy Sqn sheets where intense drainage and vegetation detail caused confusion.

(3) In the case of Army Svy Regt sheets no notice had obviously been taken of available information in the form of published 1:100,000 maps and join strips supplied by 4 Fd Svy Sqn. This was particularly noticeable in the interpretation of vegetation.

f. Amendments

(1) Hydrography

(a) Generally hydrographic information was plotted very well. The limits of intertidal reefs and flats caused some difficulties and supplementary photography at 1:50,000 scale was flown along coastal areas at low tide to enable these limits to be fixed.

(b) Initially vast areas on MURRENJA HILL, MT TOLMER, ALLIGATOR POINT and REYNOLDS RIVER were plotted as ST1 with smaller swamp areas within. At field completion these areas were found to contain large sheets of water and were subsequently changed to swamp. Following further investigation by the OC and OPS OFFR these areas were reverted to their original depiction.

(2) Relief

(a) No significant changes were made to relief information.

/(3) Cultural

(3) Cultural

(a) The use of recent mapping photography (Aug/Sep 1977) plus the ability to fly supplementary photography on request eliminated many of the problems which could have arisen due to the tremendous amount of development in the area since the production of the 1:100,000 sheets.

(b) Although most of the fences had tracks and/or firebreaks along them these features have only been shown where they have had a fair amount of use and are considered reasonably significant.

(c) Extensive re-alignment of the Stuart Highway was in progress during field completion and the highway has been shown as "under construction". It is possible that construction may be completed prior to publication of the relevant sheets, in which case this note should be deleted. 4 Fd Svy Sqn will advise of progress at a later date. Supplementary photography was flown along the new alignment.

(4) Vegetation

(a) Generally vegetation shown on 4 Fd Svy Sqn plot sheets was very good and only minor additions and deletions were necessary.

(b) Due to the fact that Army Svy Regt had plotted their base vegetation as scattered with no regard to joins supplied by 4 Fd Svy Sqn which had shown the base as medium the sheets of POINT BLAZE, FOG BAY and GROSE ISLAND caused more trouble than necessary. It is considered that these sheets together with those sheets joining PINE CREEK 1:250,000 to the north will require extensive replotting of vegetation boundaries.

(c) Along the coastline of POINT BLAZE, FOG BAY and GROSE ISLAND timber immediately to the landward side of plotted mangrove had been shown as dense vegetation. Upon investigation this was found to be a lower mangrove which subsequently caused extensive amendments to be made to the veriplot master copies.

9. Conclusions and Recommendations

a. The necessity to colour code drainage and vegetation areas on preliminary maps caused a large drain on available manpower. It is recommended that where time permits these tasks be undertaken prior to movement to the field. The problem, however, could be most suitably overcome by the use of stipples for both drainage and vegetation features.

b. Some attempt must be made by compiling agencies to join between their work and that of the compiling agency adjoining it. The added confusion and extra work generated by the disregard of join strips sent by 4 Fd Svy Sqn to Army Svy Regt could have been avoided.

/c. The average

APPENDIX 2

c. The average number of flying hours per 1:50,000 area was 3.8. This meant that most areas were completed in one flying sortie. By comparison a road check took 3 or 4 days to cover the same area. As a result the air party finished up with a large amount of work to transfer to master copies each evening, together with pre-planning of the following days activities. Ultimately every few days a "catch up day" was necessary even though all parties worked to 2200 hrs most evenings in an effort to keep the LOH in work. The addition of an extra air party would have ensured that the LOH was used to maximum efficiency whilst allowing the other air party time to transfer all corrections to master copies and plan their next sortie.

d. Some preliminary maps were found to have gaps in detail. This was obviously caused by plot sheets not being completed to the neatline. It is strongly recommended that in the future all sheets are completed at compilation and/or plotting stage to the neatline, ie prior to production of preliminary maps.

e. Far too many copies of preliminary maps were produced. In addition various combinations of overlays produced were found to be impracticable for use as working copies or guides. It is recommended that only copies outlined in 8.b.(1) above be produced together with approx 5 "all up" copies as spares. This is in addition to copies sent to property owners prior to commencement of field completion as outlined in Ref A.

(J.K. SCHARBER)
WO2
I/C FORWARD BASE 2
(BATCHELOR NT)

OPERATION BRASS KEY 79

APPENDIX 3 TO
ANNEX C TO
PROJECT REPORT
OF BRASS KEY 79

Scale 1: 2,000,000

COMPILING AGENCY

12°00'

SD 52-3 FOG BAY

SD 52-4 DARWIN

GUNN PT 5073-I | VERNON ISLANDS 5173-IV | CAPE HOTHAM 5173-I | POINT STUART 5273-I

CHARLES POINT 5073-III | DARWIN 5073-II | KOOLPINYAH 5173-III | LAKE FINNISS 5173-II | ALLIGATOR HEADS 5273-III | SAMPAN CREEK 5273-II

ARMY SVY REGT

GROSE ISLAND 4972-I | BYNOE HARBOUR 5072-IV | MIDDLE ARM 5072-I | NGONAMAH 5172-IV | HUMPTY DOO 5172-I | MARY RIVER 5272-IV | SWIM CREEK 5272-I

POINT BLAZE 4972-III | FOG BAY 4972-II | SWEERS LOOKOUT 5072-III | TUMBLING WATERS 5072-II | MANTON DAM 5172-III | MARRAKAI 5172-II | MT BUNDEY 5272-III | ANNABURROO 5272-II

SD 53-1 ALLIGATOR RIVER

13°00'

SD 52-7 CAPE SCOTT

SD 52-8 PINE CREEK

SD 53-5 MT EVELYN

PERON ISLAND 4971-IV | MURRENJA HILL 4971-I | MT TOLMER 5071-IV | RUM JUNGLE 5071-I | BATCHELOR 5171-IV | MARGARET RIVER 5171-I | MT RINGWOOD 5271-IV | DOUGLAS CREEK 5271-I

Batchelor

Adelaide River

CAPE FORD 4871-II | ANSON BAY 4971-III | ALLIGATOR POINT 4971-II | REYNOLDS RIVER 5071-III | PROSPECT HILL 5071-II | BURRELLS CREEK 5171-III | BURNSIDE 5171-II | BAN BAN 5271-III | MOUNT MASSON 5271-II

STUART

4 FD SVY SQN

CAPE SCOTT 4870-I | DASHWOOD PLAINS 4970-IV | BILLAWOCK 4970-I | MT HAYWOOD 5070-IV | BLACK-FELLOW CREEK 5070-I | TIPPERARY 5170-IV | FENTON 5170-I | BURRUNDIE 5270-IV | UNION REEF 5270-I | MOLINE 5370-IV | CALLANAN 5370-I

Daly River Mission

DOMBEY 4870-III | BARTH-ELEMY 4870-II | GREENWOOD 4970-III | NACOOLYA 4970-II | DALY RIVER 5070-III | ROCK CANDY RANGE 5070-II | COLLOO 5170-III | WAGAMAN 5170-II | FLEMING 5270-III | PINE CREEK 5270-II | WANDIE 5370-III | RANFORD 5370-II

Pine Creek

14°00'

SD 52-11 PORT KEATS

CAPE HAY 4769-I | KEATS 4869-II | MOYLE PLAIN 4869-I

Port Keats Mission

5 FD SVY SQN

PEARCE 4769-II | SUGARLOAF RANGE 4869-III | ANOPHELES 4869-II

SD 52-12 FERGUSSON RIVER

ARMY SVY REGT

BAMBOO 5169-IV | JINDUCKIN 5169-I | JINDARE 5269-IV | FERGUSSON RIVER 5269-I

MARBEENA 5169-III | BRADSHAW 5169-II | CLARAVALE 5269-III | McDRILL CREEK 5269-II

SD 53-9 KATHERINE

EDITH RIVER 5369-IV | SEVENTEEN MILE 5369-I | LAMBELL 5469-IV | DAVID 5469-I | MARGARET 5569-IV | DILJIN 5569-I

O'SHEA 5369-III | KATHERINE 5369-II | COMOYE 5469-III | EVA VALLEY 5469-II | WATER-HOUSE 5569-III | BUKA-LORKMI 5569-II

Katherine

Tindal

HWY

2 FD SVY SQN

MANBULLOO 5368-IV | TINDAL 5368-I | MARANBOY 5468-IV | BAMYILI 5468-I | BESWICK 5568-IV | MOTT 5568-I

COLLINS 5368-III | WONGALLA 5368-II | DURRINYAN 5468-III | STOTT 5468-II | Mataranka 5568-III | ELSEY 5568-II

15°00'

SD 52-15 AUVERGNE

SD 52-16 DELAMERE

SD 53-13 LARRIMAH

LAKE DUGGAN 5467-IV | KARAMAN 5467-I | WARLOCH 5567-IV | MANGARIA 5567-I

5 FD SVY SQN

INMIRRA 5467-III | YUNGMAN 5467-II | GORRIE 5567-III | YUNGALLA 5567-II

Larrimah

LARRIMAH 5566-IV | ROSS 5566-I

IMBALERI 5566-III | IRONSTONE 5566-II

VICTORIA

RIVER

HWY.

BUCHANAN HWY.

16°00'

129°00'

130°30'

132°00'

133°30'

134°00'

APPENDIX 4 TO
ANNEX C
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

SAMPLE FIELD COMPLETION REPORTS

CONTENTS

FIELD COMPLETION REPORT

1:50000 SHEET 5173-11 LAKE FINNIS

1. Duration and Personnel

   a. Ground Party: IC SGT Richardson 31 May to 2 Jun 79

   b. Air Party: SPR Warsing 3 Jun 79

2. Contacts: Nil

3. Amendments

   a. Cultural: Only minor changes.

   b. Drainage: Similar to adjoining maps, the major flood plain has been re-classified as subject to Inundation. Areas of swamp behind the mangrove have been changed to inter-tidal flat and an area of inter-tidal flat is to be plotted on the seaward side of the mangrove from supplementary photography. The saline coastal flat is reasonably accurate as plotted and the ground party advises that in appearance the only difference between the saline coastal flat and the bordering flood plain is the total absence of vegetation in the saline coastal flat areas. An investigation should be carried out on the accuracy of plotting of many drainage features on this map. Many double line streams (field checked as perennial)appear to be out of proportion (width). Sample areas have been marked on the drainage guide. Streams within these areas, as plotted, do not agree with the width and shape as they appear. If an error is proven then the total area mapped by Automap should be checked against photo mosaics to determine the extent of the inconsistency. All areas adjoining mangrove and saline coastal flat that have been classified as dense or medium swamp have been wrongly interpreted and are in fact a different type of mangrove. This interpretation of dying mangrove should only be used at the very limits (landward) of saline features where normal vegetation is taking over.

   c. Vegetation: Some areas of scattered have been changed to medium.

   d. Relief: Nil.

   e. Recommendations: As above.

FIELD COMPLETION REPORT

1:50000 SHEET 5073-II DARWIN

1. Duration and Personnel

a. Ground Party IC SGT Winterflood 19 Jun to 2 Aug 79

b. Air Party SPR Warsing 18-19 Jun 79

2. Contacts

a. NT Electrical Commission.

b. NT Water Supply Commission.

c. Sqn Leader Barnes, SATCO
RAAF Base Darwin.

3. Amendments

a. General: 1:25,000 preliminary maps were supplied and used for field checking. Much detail will have to be deleted or displaced for 1:50000 production. All amendments or additions may be confirmed from the 1:25000 supplementary photography supplied for the area. This photography was considered necessary due to the rapid cultural development since the date of the mapping photography.

b. Cultural

(1) Powerlines less than 66,000 volts have been deleted plus two short 66000 volt lines that run from the power stations in the built-up area. The reasons for deletion are:

(a) Not on pylons.

(b) To avoid clutter in built-up area.

(2) The pipelines leading into the city along the Stuart Highway have been deleted from the start of the divided highway. From this point they are above and below ground intermittantly and thus could cause confusion as the cultural detail density increases.

(3) The area south of the highway at Winellie is largely industrial and has been included as built-up area. If all buildings to scale had been shown, a confusing pattern of irregular shaped buildings would have occurred with no space left to portray the symbolized buildings.

(4) Suburb names have been repositioned near the schools as they appear to be the central dominant feature in each case. The UBD Street Guide was used as a reference for suburb names.

(5) The presentation of the coastline just north of Stokes Hill, although irregular, is correct. Reclamation of land is taking place, however the cultural lines should be deleted.

(6) Numerous water towers and radio masts have been included although not considered hazardous to air navigation.

(7) The North Australian Railway is abandoned. The railway workshops are being used for another industrial purpose. Siding and station symbols should be retained but named sidings should be reduced to area names, eg Knuckey Siding should become Knuckey.

(8) The area around Tracy Village now contains only 5 permanent buildings. All other buildings are temporary and are being sold or removed.

(9) Casurina is a multi-area name, referring to all suburbs north of the highway. The only reference to this name should be Casurina Hospital and Casurina Beach.

(10) 3 ammunition dumps are shown on this sheet. Only those buildings which are above ground have been shown. A Key Points Check will be necessary.

(11) The Stuart Highway Route Number is Highway 2.

(12) The plotting of all buildings to scale has been poorly executed and inconsistant. There are many instances of large buildings being symbolized whilst smaller ones are shown to scale, also many of those shown to scale are of poor shape fidelity. They should all be replotted using the supplementary photography as a guide to their shape and size. It is recommended that this be done at 1:25000 and then a selection process used to determine those necessary for depiction at 1:50000.

(13) The plotting of many other features has been far too casual. Many freehand or continuous features should have been multi point, also curved features are poorly portrayed and joined.

(14) All built-up areas boundaries should be re-plotted using field check material to establish limits.

c. Hydrography

(1) All offshore features should be re-plotted using the supplementary photography. Some Field Check queries as to the positions and shape of offshore banks and shoals could not be answered as they were too distant from the coast to be checked by

LOH. Areas shown as dense vegetation in swamp have been re-classified as mangrove.

d. Relief. It is believed that the cliffs added along the coastline have been plotted but not enhanced on the preliminary map. A check of all cliffs will be required to ensure completeness.

4. Recommendation. The map should not be delayed in production as the rate of cultural detail development is extremely rapid.

ANNEX D TO
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

TARGETTING AND PHOTOGRAPHY OF HORIZONTAL CONTROL STATIONS

1. General. The targetting and photography of the horizontal control stations was conducted during the period 7 Jun to 26 Jul 79. Photography was acquired using a Wild RC10 SWA camera mounted in a Pilatus Porter aircraft.

2. Results. Forty six stations were panelled and photographed, all were previously established stations. Of the 46 stations only one could not be readily identified on the target photography. Details in Appendix 1 and 2.

3. Specifications. The following criteria were followed for targetting and photography:

a. Targets

(1) White Plastic

(2) Dimensions - Arms to be 2m wide and 6m long. Arms to start 2m from the Ground Mark, and oriented N-S, E-W (where a cross configuration is used).

(3) Configurations - The following to be used in order of preference:

(a) Open cross - standard layout

(b) Open Y - used where standard configuration is not possible

(c) Arrow head, used only when cross or Y cannot be used.

b. Aerial Photography

(1) Flying height - 10,000 ft above MSL

(2) Exposures - three frames centred about the control point with 60% overlap

(3) Azimuth - preferably E-W but not essential.

4. Personnel. Following were involved:

a. Targetting

CAPT S. Byrnes)
2LT R. Jackson) LOH Pilots
2LT Fraser)
SPR R.W. Warsing
SPR M. Lander
SPR B.D. Johnson
SPR G.J. Honan

b. Photography

LT G. Carr-Porter Pilot
SPR J.M. Phillips - Camera operator

Appendix: 1. Targetting and Photography Diagram
2. Summary of Horizontal Control Photography

OPERATION BRASS KEY 79

TARGETTING & IDENT PHOTOGRAPHY

APPENDIX 1 TO
ANNEX D TO
PROJECT REPORT
OP BRASS KEY II

Scale 1: 2,000,000

SD 52-3 FOG BAY
SD 52-4 DARWIN
SD 53-1 ALLIGATOR RIVER
SD 52-7 CAPE SCOTT
SD 52-8 PINE CREEK
SD 53-5 MT EVELYN
SD 52-11 PORT KEATS
SD 52-12 FERGUSSON RIVER
SD 53-9 KATHERINE
SD 52-15 AUVERGNE
SD 52-16 DELAMERE
SD 53-13 LARRIMAH

12°00'
13°00'
14°00'
15°00'
16°00'
129°00'
130°30'
132°00'
133°30'
134°00'

DARWIN
U 241
NMG 22
NMG 23
MT FARRINGTON
Batchelor
NMG 25
NMG 26
Adelaide River
NMG 27
STUART
NMG 28
DALY
Daly River Mission
NTS414
NMG 30
NMG 31
Pine Creek
RIVER
NTS 382
Port Keats Mission
NTS 385
NTS 384
NTS 411
NTS 383
NTS 410
NTS 376
NMG 35
NMG 34
Katherine
NMG 36
NMG 37
NMG 38
NMG 39
NMG 40
NMG 41
U 111
Tindal
U 112
NMG 42
Mataranka
U 113
U 114
U 109
NMG 118
NMG 116
NMG 115
NMG 114
NMG 112
NMG 111
NMG 109
Larrimah
NMG 108
NMG 107
NMG 106
NMG 104
NMG 103
NMG 102
NMG 101
VICTORIA
RIVER
HWY.
BUCHANAN HWY.

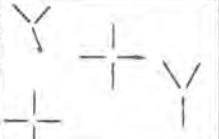
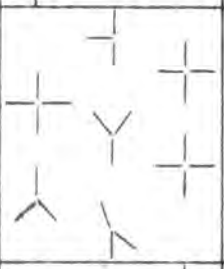
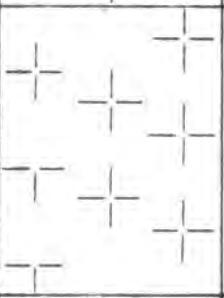
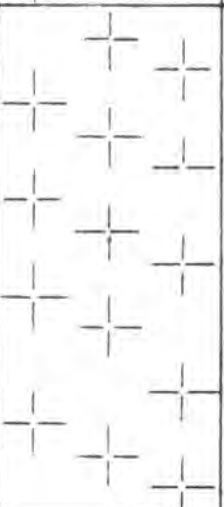
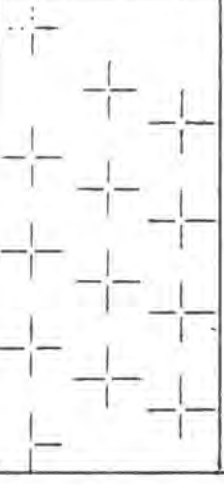
POSITIVE IDENT

PANELS ARE VISIBLE AT U241
BUT WERE CONSIDERED TO BE
LAID IN AN INCORRECT POSITION

NMG 39 IS AWAITING FILM NEG'S
FOR CONFIRMATION

APPENDIX 2 TO
ANNEX D TO
PROJECT REPORT
OP BRASS KEY II

SUMMARY OF HORIZONTAL CONTROL PHOTOGRAPHY

1:250,000 Area	Control Point Name/Number		Photo Data		Viewed Target Configuration	Remarks
			Film	Frames		
SD 52-4 DARWIN	Waugite	U 241	CPE 28811	96-98		No Good - Pos doubt
	Tidy Hill	NMG 22	CPE 28811	99-101		
	Quarry Hill	NMG 23	CPE 28811	102-104		
	Mount Farrington		CPE 28811	105-107		
SD 52-8 PINE CREEK		NTS 414	CPE 28811	122-124		One arm destroyed
	Mount Minza	NMG 25	CPE 28811	108-112		
	Mount Carr	NMG 26	CPE 28811	113-115		
	Mount Paqualin	NMG 27	CPE 28811	116-118		
	Mount Osborne	NMG 28	CPE 28811	119-121		
	Union Hill	NMG 30	CPE 28811	125-127		
	Gaudys Hill	NMG 31	CPE 28811	128-130		
SD 52-12 FERGUSSON RIVER		U 109	CPE 28811	78-80		
	Bondi	NTS 376	CPE 28811	134-136		
	Foelsche Headland	NTS 382	CPE 28811	131-133		
	Wedge	NTS 383	CPE 28811	87-89		
	Nawnim	NTS 384	CPE 28811	90-92		One arm destroyed
	Jinduckin	NTS 385	CPE 28811	93-95		
	Bradshaws	NTS 410	CPE 28811	81-83		
	Byers	NTS 411	CPE 28811	84-86		
SD 53-9 KATHERINE		U 111	CPE 28811	75-77		
		U 112	CPE 28811	47-49		
	Mount Solitary	U 113	CPE 28811	44-46		
	Mount Day	U 114	CPE 28811	41-43		
	Peckham Hill	NMG 34	CPE 28811	72-74		One arm destroyed
	Mount Shepherd	NMG 35	CPE 28811	69-71		
	Rodgers Knoll	NMG 36	CPE 28811	137-139		
	Fishers Ridge	NMG 37	CPE 28811	66-68		
	Maranboy Hill	NMG 38	CPE 28811	63-65		
	Styles Hill	NMG 39	CPE 28811	59-62		Awaiting neg for verification
	Tandangle Hill	NMG 40	CPE 28811	56-58		
	Macdrill Bluff	NMG 41	CPE 28811	53-55		
	Stott Hill	NMG 42	CPE 28811	50-52		
		NMG 118	CPE 28811	38-40		
SD 53-13 LARRIMAH		NMG 101	CPE 28811	1-3		2 arms destroyed by fire
		NMG 102	CPE 28811	1-3		
		NMG 103	CPE 28811	4-6		
		NMG 104	CPE 28811	4-6		
		NMG 106	CPE 28811	7-9		
		NMG 107	CPE 28811	10-12		
		NMG 108	CPE 28811	13-15		
		NMG 109	CPE 28811	13-15		
		NMG 111	CPE 28811	16-18		
		NMG 112	CPE 28811	19-21		
		NMG 114	CPE 28811	22-24		
		NMG 115	CPE 28811	25-27		
		NMG 116	CPE 28811	25-27		One arm destroyed

ANNEX E TO
PROJECT REPORT
OP BRASS KEY 79
DATED 8 NOV 79

SUPPLEMENTARY PHOTOGRAPHY

1. Introduction: Supplementary photography was acquired for areas as requested by the field completion parties plus complete coverage of the Darwin 1:50,000 and a strip at low tide along the entire coastline in the area of the operation. Photographic missions were planned to ensure maximum economy in aircraft hours. Diagram showing coverage is at Appendix 1.

2. Scale: Photography was acquired at either 1:50,000 or 1:25,000 scale depending on the detail density in the area. Flying heights were therefore either 15,000 ft or 7,500 ft above sea level.

3. General

a. Due to the requirement for the aircraft to be used on other tasks during the operation frequent removal and replacement of the camera occurred. This was also under the supervision of trained personnel.

b. All photographic missions were flown from either RAAF Base Tindal or Darwin.

c. Proof prints were developed during the operation using the facilities of the Photographic Section RAAF Base Darwin. The RAAF personnel were most helpful and co-operative.

d. Navigation using the NF2 sight was found to be very difficult. It is believed that the internal optics in the sight required cleaning. This task was beyond the training level of the operator.

e. Extreme cold was encountered by the operator during missions at the higher altitude. This was caused by the gaps around the camera and navigation sight. Attempts were made to overcome the problem by packing foam rubber into the gaps, however this proved unsuccessful.

f. A minor modification was made to the camera mount. This was necessary as the mount and camera were not compatible. The modification in no way effected the camera operation nor will it prevent the mount being used with another camera.

Appendix: 1. Supplementary Photography Coverage

OPERATION BRASS KEY 79

SUPPLEMENTARY PHOTOGRAPHY

APPENDIX 1 TO
ANNEX E TO
PROJECT REPORT
OP BRASS KEY II

Scale 1: 2,000,000

12°00'

SD 52-3 FOG BAY

SD 52-4 DARWIN

SD 53-1 ALLIGATOR RIVER

DARWIN

13°00'

SD 52-7 CAPE SCOTT

Batchelor

SD 52-8 PINE CREEK

SD 53-5 MT EVELYN

Adelaide River

STUART

DALY RIVER

Daly River Mission

Pine Creek

14°00'

SD 52-11 PORT KEATS

SD 52-12 FERGUSSON RIVER

SD 53-9 KATHERINE

Port Keats Mission

Katherine

Tindal

HWY.

Mataranka

15°00'

SD 52-15 AUVERGNE

SD 52-16 DELAMERE

SD 53-13 LARRIMAH

VICTORIA RIVER

VICTORIA

HWY.

BUCHANAN HWY.

Larrimah

16°00'

129°00'

130°30'

132°00'

133°30'

134°00'

"OHH! CORPORAL PHILLIPS HOW CARELESS OF ME, I'VE FORGOTTEN TO TURN ON YOUR OXYGEN!"


"HOW ABOUT LANDING YOUR HELICOPTER AND LETTING US USE THE FAN ?!"
WOK WOK WOK....
Dikko
79


"WE MAY AS WELL WAIT HERE! YOU GET STUFF-ALL TRACTION ON THE ROOF!"
Dikker
79