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# ROYAL AUSTRALIAN SURVEY CORPS

## REPORT ON OPERATION

# SHORT WALK

# 86



## 4 FIELD SURVEY SQUADRON

# 1986

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PROJECT REPORT

OPERATION SHORT WALK 86

19 MAY - 3 JUN 86

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PROJECT REPORT - OPERATION SHORT WALK 86  
19 MAY - 3 JUN 86

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PROJECT REPORT  
OPERATION SHORT WALK 86

- References:
- A. DGOP-A 871-86 dated 23 Apr 86
  - B. HQ FF Comd OPORD 5/86 dated 17 Apr 86
  - C. 4 MD Mounting Instruction 3/86 dated 8 May 86
  - D. 4 Fd Svy Sqn Warning Order dated Apr 86

General

1. Operation SHORT WALK 86 was mounted by 4 Fd Svy Sqn during the period 19 May to 3 Jun 86. The aim of the Operation was to field check 16 x 1:50 000 map areas and to acquire additional control for aerotriangulation in the Woomera area of South Australia. The Area of Operations (AO) was bounded by latitude 30°00'S to 32°00'S and longitude 135°45'E to 137°30'E. The sheets fall within the following 1:250 000 sheet areas, and are shown diagrammatically in Annex A.

- a. SH53-12 Andamooka,
- b. SH53-15 Gairdner, and
- c. SH53-16 Torrens.

Operational Results

2. Field Completion. All maps listed for Field Completion were checked by three teams of two members with each team checking both on the ground and from the air. A detailed Field Completion Report is shown at Annex B.
3. Supplementary Photography. Photography was obtained to enable positioning of detail and to resolve field check queries. Full details of Supplementary Photography are contained in Annex C.
4. Identification Photography. As part of the requirement to aerotriangulate the three 1:50 000 sheets contained within the 1:250 000 SH53-15 GAIRDNER, five control points were panelled and photographed. Full details of the Identification Photography flown are contained in Annex D.
5. Level Traverses. As part of the requirement to aerotriangulate the three 1:50 000 sheets contained within the 1:250 000 SH53-15 GAIRDNER, level traverses to Lake Hart and Lake Hanson were required. A total of 19.2 km of levelling was undertaken using Kern Automatic levels. Levelling to Lake Hanson was carried out on Mon 26 May 86 with reobservations on Tue 27 May 86. Levelling to Lake Hart was carried out on Thu 29 May 86. The results of these Level Traverses are contained in 4 Fd Svy Sqn Field Book No 1/86. The Levelling Traverses were carried out by SGT N. Jones and CPL G. Prince.

Operational Support

6. Aircraft Support. A Pilatus Porter A14-701 fixed wing aircraft from 173 Gen Spt Sqn was allocated in support of the Operation. Aircraft Usage details are shown diagrammatically at Annex E. The details were:

- a. Hours. The Operation was allocated 30 flying hours of which 20.3 hrs were flown using 2992 ltrs of Bulk AVTUR.
- b. Serviceability. The aircraft was to arrive in the AO on Wed 28 May but did not arrive until approximately 1630 hrs Thu 29 May 86. The delay was caused by a power failure to the RC10 camera. The problem was eventually diagnosed as a faulty female power socket in the aircraft. On insertion, pin sockets were pushed rearward and contact was prevented. This socket needs to be strengthened to ensure that this situation does not occur in the future. No other serviceability problems were experienced.
- c. Personnel. The co-operation between RASvy and AAAvn personnel was very good throughout the Operation. This degree of co-operation contributed significantly to the success of the Operation, overcoming the late arrival of the aircraft.

#### Administration

7. Manning. The following personnel were employed in the AO for the period indicated below:

- a. 45533 WO2 G.R. Warnest - DET IC - 4 Fd Svy Sqn - 19 May-3 Jun 86,
- b. 157511 SSGT A.B. Van Leeuwen - OIC Party 2 - 4 Fd Svy Sqn - 19 May-3 Jun 86,
- c. 222877 SGT N.W. Jones - OIC Party 3 - 4 Fd Svy Sqn - 19 May-3 Jun 86,
- d. 1204382 CPL J.K. Prince - 4 Fd Svy Sqn - 19 May-3 Jun 86,
- e. 49351 CPL P.A. Hardy - 4 Fd Svy Sqn - 19 May-3 Jun 86,
- f. 357223 SPR R.J. Cocker - 4 Fd Svy Sqn - 19 May-3 Jun 86,
- g. 2790227 SPR R.D. Graf - Camera Operator - 4 Fd Svy Sqn - 27 May-3 Jun 86,
- h. 227676 LT A.G. Jenkins - Pilot - 173 Gen Spt Sqn - 29 May-2 Jun 86, and
- i. 318643 CPL C.W. Stewart - All Trades - 173 Gen Spt Sqn - 29 May-2 Jun 86.

8. Accommodation. The Operation was based for the entire period in the "Eldo" Hostel, Woomera. Three double rooms were used both as accommodation and work areas whilst single rooms were used for accommodation only.

9. Rations. All rations were purchased from the members allowances with the majority being supplied by the Eldo Hostel. This system worked particularly well leaving the maximum effort available for technical work. Had this not been the case it is unlikely that the task would have been completed within the time frame.

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- 3 -

10. Health. Health was good with no mandays being lost through sickness.
11. Morale. Morale remained high throughout the Operation.
12. Discipline. No situation arose where disciplinary action was necessary.
13. Pay and Allowances.
  - a. Pay. Members were paid one pay in advance for the Operation.
  - b. Allowances. Full Travelling Allowance was paid to all members prior to leaving on the Operation. Total T & S expenditure was \$2146.30 made against FPC361134.
14. Petty Cash. Although very little Petty Cash was used it was most reassuring to have such a back up should the need require.
15. POL. The following POL was used:
  - a. MSP. MSP was obtained on SP27 from Shell Pt Augusta and Shell Woomera and on SQ78 at El Alamein. A total of 2748.1 ltr was used during the Operation.
  - b. AVTUR. Bulk AVTUR was supplied at Woomera Airfield. A total of 2992 ltr of AVTUR was used during the Operation.
  - c. Oils. Oils for the Operation were supplied by 4 Fd Svy Sqn.
16. Stores and Equipment. All stores were supplied from 4 Fd Svy Sqn resources.
17. Vehicles. The following vehicles were used during the Operation:
  - a. 4 x Truck Cargo 0.75 tonne GS Landrover Series 3, and
  - b. 1 x Trailer Cargo 0.5 tonne.
18. Vehicle Serviceability. Generally the vehicles performed well over the period of the operation, however the following repairs were required to Vehicle No 29701 which were beyond the capabilities of the Detachments resources and were carried out on TGM 139:
  - a. Repair to the electrical system and fuel pump,
  - b. Supply of a steering damper, and
  - c. Fitting of a muffler and adjusting a front wheel bearing.

Three punctures were repaired by Detachment members.

#### Logistics

19. Re-Supply. A muffler for a Truck Cargo 0.75 tonne GS Landrover was resupplied from 4 Fd Svy Sqn.

20. Recovery. The harmonic balance nut was lost from Landrover No 29670. Exhaustive efforts by 4 Fd Svy Sqn through Army sources and Shell Woomera through Australia wide retailers failed to locate a replacement part. By agreement with Recovery Section Adelaide Workshop Company, the vehicle was towed from Woomera to El Alamein where it was to be recovered by Adelaide Workshop Company.

The vehicle was recovered using Unit resources with the part, supplied by Adelaide Workshop Company on 12 Jun 86.

#### Communications

21. Personal Contacts. Contacts were made with many members of the public and all Station Owners/Managers in the AO. Particular assistance was received from people listed in Annex F.

22. Rear Link. Rear Link communications were provided by telephone using a Telecom credit card with calls recorded on AAF-C117. The office telephone at Eldo Hostel was used for calls however some rooms at the Hostel are supplied with telephones and this should be utilized for future Operations in the area.

23. Field Parties. AN/PRC F1 radios were provided for communications between ground parties within the AO.

#### Conclusion

24. Operation SHORT WALK 86 was carried out successfully within the resources allocated.

10 Jul 86



(D. TAYLOR)  
Major  
Officer Commanding

- Annexes:
- A. Sheet Index
  - B. Field Completion Report
  - C. Supplementary Photography Report
  - D. Identification Report
  - E. Aircraft Usage
  - F. Personal Contacts

AREA OF OPERATIONS  
OPERATION SHORT WALK 86

1. The AO and the 1:50 000 sheet numbers for the Operation are shown diagrammatically below:



FIELD COMPLETION REPORT  
OPERATION SHORT WALK 86

Project

1. To field check 16 x 1:50 000 map areas and acquire additional control for aerotriangulation in the Woomera Area.
2. The sheets are contained within the area 30° to 32°S and 135°45' to 137°30'E and are shown diagrammatically at Annex A.
3. The following series R742 sheets were field checked during the Operation:
  - a. 6035 1 COONDAMBO,
  - b. 6135 1 LAKE HART,
  - c. 6135 4 WIRRAMINNA,
  - d. 6236 1 ROXBY,
  - e. 6236 2 RED LAKE,
  - f. 6236 3 KOOLYMILKA,
  - g. 6236 4 STALEY,
  - h. 6235 1 WOOMERA,
  - i. 6235 2 BERNARD,
  - j. 6235 3 ERNA ISLAND,
  - k. 6235 4 EUCCOLO,
  - l. 6335 3 WINDABOUT,
  - m. 6334 1 PERNATTY,
  - n. 6334 2 BOOKALOO,
  - o. 6334 3 MAGNACOWIE, and
  - p. 6334 4 WOOCALLA.
4. The total area to be field checked during the Operation was approximately 11 000 sqkm.
5. The sheets were field checked in accordance with SYMBAS Ed 2.

Execution

6. Organisation. The force consisted of 3 x two man parties for

the initial field completion by vehicle. The same two man parties air checked the area which they had covered on the ground.

7. Deployment. The force was based in Woomera for the whole Operation, both for ground and air checking.

#### Photography

8. The date of the photography and plotting by SA Lands Dept was 1979-82. The area is covered in approximately 1:80 000 photography with some 1985 1:40 000 photography over the northern sheets.

#### Field Completion Material

9. The sheets detailed in paragraph 3a, b and c were not plotted and were field checked using Edition One circa 1961-65 printed copies. PFM positives of the Edition one reformat were used as master sheets. Additions and deletions were marked in red on all master sheets.

10. The sheets detailed in paragraph 3 d, e, f and g were produced from enlargements of the SA Lands Dept 1:100 000 plot sheets of the area. PFM positives of the enlargements were used as master sheets. These sheets were field checked using dyelines of the enlargements and Edition one circa 1961-65 printed copies. The enlargements proved difficult to use. Vegetation and 10m contours are to be plotted by 4 Fd Svy Sqn.

11. The sheets detailed in paragraph 3 h, i, j and k were field checked using dyelines of SA Lands Dept 1:50 000 plot sheets and Edition one circa 1961-65 printed copies. PFM positives of the plot sheets were used as master sheets.

12. The remaining sheets detailed in paragraph 3 were field checked using dyelines of SA Lands Dept 1:50 000 plot sheets. PFM positives of the plot sheets were used as master sheets. Dyelines of the ground corrected masters were used to air check these areas.

13. Dyelines of the plot sheets were used to produce coloured road guides with deletions being indicated. Coloured drainage guides were produced on dyelines of the plot sheets.

14. Oza film copies of the SA Lands Dept scribed contours were overlaid when necessary.

15. Composite wrong reading plot sheets caused some difficulty in the field. Difficulty was also found with dot plotting of linear features such as fences.

#### Field Completion Method

16. By the time the aircraft arrived 90% of sheets had been ground field checked with the corrections transferred onto the master sheets.

17. Supplementary photography and identification photography were flown on the first and last days of aircraft usage, other days were used for air checking by the three parties.

Comments on Particular Aspects

18. The map sheets north and west of Woomera are part of the Woomera Restricted Area. The northern and possibly the eastern section of this boundary is currently under review. It is unlikely that a gazetted location of a new boundary would be available by the time these map sheets go through cartography however contact should be made with the Department of Defence, Regional Security Officer on (08) 213 2301, extension 2194 prior to release.
19. The New Stuart Highway has been repositioned and constructed through the majority of the southern and western sheets and closely follows the Trans Australian Railway. The New Highway rarely crosses the Railway in comparison to the Old Stuart Highway. A guide for the Highway for the three sheets to the west was prepared from photography since it had not been plotted.
20. The Old Stuart Highway is no longer maintained and although it receives a great deal of use in parts other sections of it are in poor repair.
21. The Woomera Pipeline extends from Pt Augusta and is supported by short cement stilts. The Pipeline is a restriction to movement and crossover points are few, making them important. A service track in good repair follows the full extent of the Pipeline.
22. A 132KV powerline originates in Pt Augusta. The powerline is suspended on large steel pylons and these are of major landmark value. The service track which follows the line is in very good condition and it is used by Station owners for access through their properties.
23. Access tracks follow the majority of the Trans Australian Railway. Pimba Station is the only station/siding to be attended.
24. Inspection tracks follow a majority of the fences in the area. The fence is the important feature to be shown.
25. The Woomera region was used extensively as a missile-rocket testing ground from the 1950's onward. The Koolymilka complex on sheet 6236 3 was the location from which the tests originated and was fully manned until 1979. The complex is still operational but is only manned when tests are due to be conducted. At other times a skeleton crew looks after security and maintenance.
26. Over the years numerous observation towers, monitoring points, camera buildings and aerial/mast complexes were constructed. These features were widely dispersed over 6236 2, 6236 3 and 6235 1. Most of these have now been demolished and now disused vehicle tracks lead to old foundations.
27. The Deep Space Research Station on 6235 2 has been completely dismantled and only footings and unmaintained roads remain. The area is no longer Prohibited.
28. Vegetation for the 1:50 000 areas plotted by SA Lands was not available at the time of field check. Native pine covers many sand ridge areas, malley scrub covers sandy plains and gibber areas are almost devoid of any vegetation.

29. The majority of the dams and drainage features were dry since the last substantial rain fell in 1979. Some rain had fallen in the week proceeding field check. Many bores and wells supply water to the area. Most large dams have accompanying large earthen drains to aid catchment of water and have tanks and windpumps.

30. Detailed Field Completion reports for each map sheet have been included in each Production Data Folder.

31. Nomenclature listings were prepared for each map sheet.

#### Conclusion

32. Although difficulties were experienced with single colour reverse reading composite plot sheets and in particular the enlarged 1:100 000 plots the field completion task was successful.

ANNEX C TO  
PROJECT REPORT  
OP SHORT WALK 86  
DATED 10 JUL 86

SUPPLEMENTARY PHOTOGRAPHY REPORT  
OPERATION SHORT WALK 86

1. General. Supplementary Photography was flown on Fri 30 May 86 and Mon 2 Jun 86 as previously requested by the field checking teams. Photography was acquired using a Wild RC10 Camera, No 1466 with a SWA lens No 2044, mounted in a Pilatus Porter Aircraft, No A14-701 supplied by 173 Gen Spt Sqn.
2. Results. 430 line km of Supplementary Photography were flown, using a total of 20.3 task hours. The coverage of the Supplementary Photography is shown diagrammatically at Appendix 1-3. The scale of photography was 1:25 000 with a forward overlap of 80% except for the three North South Runs 1, 5 and 7 which were flown with 60% overlap.
3. Personnel. The following personnel were involved:
  - a. 227676 LT A.G. Jenkins - Porter Pilot,
  - b. 2790227 SPR R.D. Graf - Camera Operator, and
  - c. 318643 CPL C.W. Stewart - RAEME Support.
4. Film Processing. The exposed film was processed at 4 Fd Svy Sqn by SPR Graf. The two rolls of developed RC10 film and accompanying A36 Photographic Reports were despatched to CPE Laverton, on 19 Jun 86 from 4 Fd Svy Sqn.
5. 35mm Photography. 35mm Colour and black and white photographs were taken of the area both from the ground and from the air.

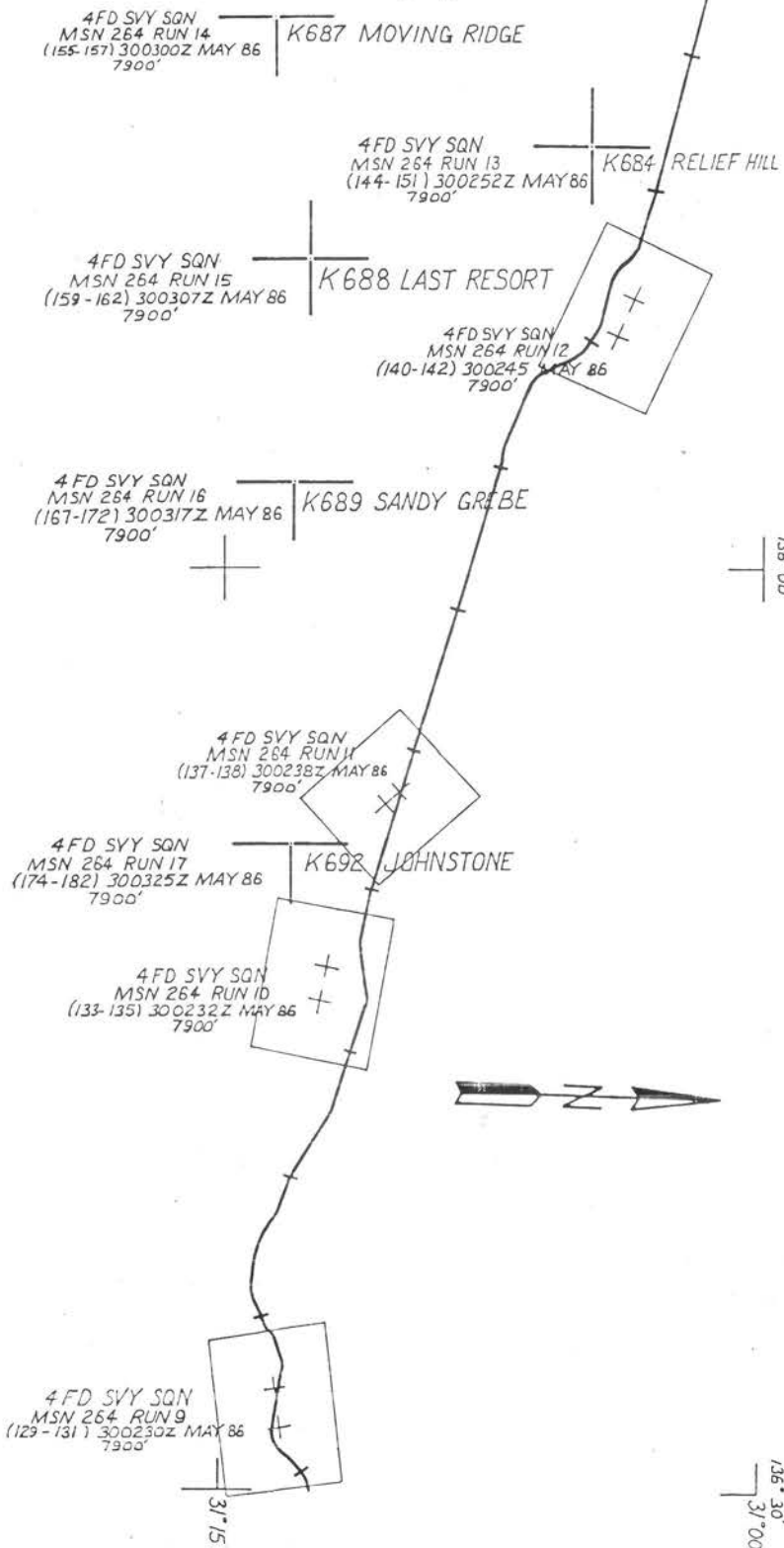
- Appendixes:
1. Supplementary Photographic Coverage SH53-12 ANDAMOOKA
  2. Supplementary Photographic Coverage SH53-15 GAIRDNER
  3. Supplementary Photographic Coverage SH53-16 TORRENS



C2 - 1

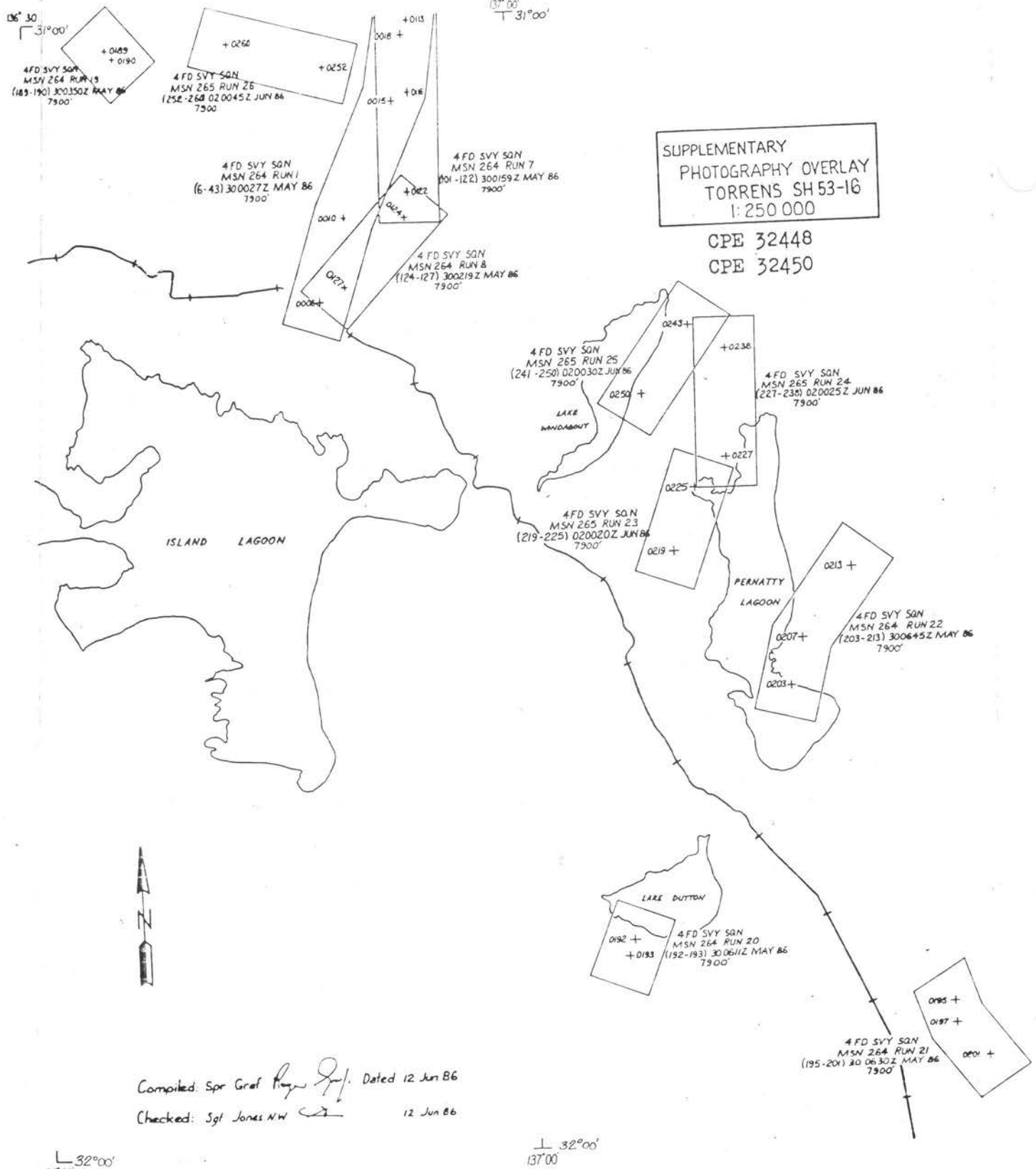
SUPPLEMENTARY & IDENT  
PHOTOGRAPHY OVERLAY  
GAIRDNER SH53-15  
1:250 000

CPE 32450



Compiled: Spr Graf *[Signature]* Dated: 12 Jun 86  
Checked: Sgf Jones N.W. *[Signature]* 12 Jun 86

C3-1



Compiled: Spr Graf *[Signature]* Dated 12 Jun 86  
Checked: Sgt Jones *[Signature]* 12 Jun 86

32°00'  
06 30

32°00'  
137 00

ANNEX D TO  
PROJECT REPORT  
OP SHORT WALK 86  
DATED 10 JUL 86

IDENTIFICATION PHOTOGRAPHY REPORT  
OPERATION SHORT WALK 86

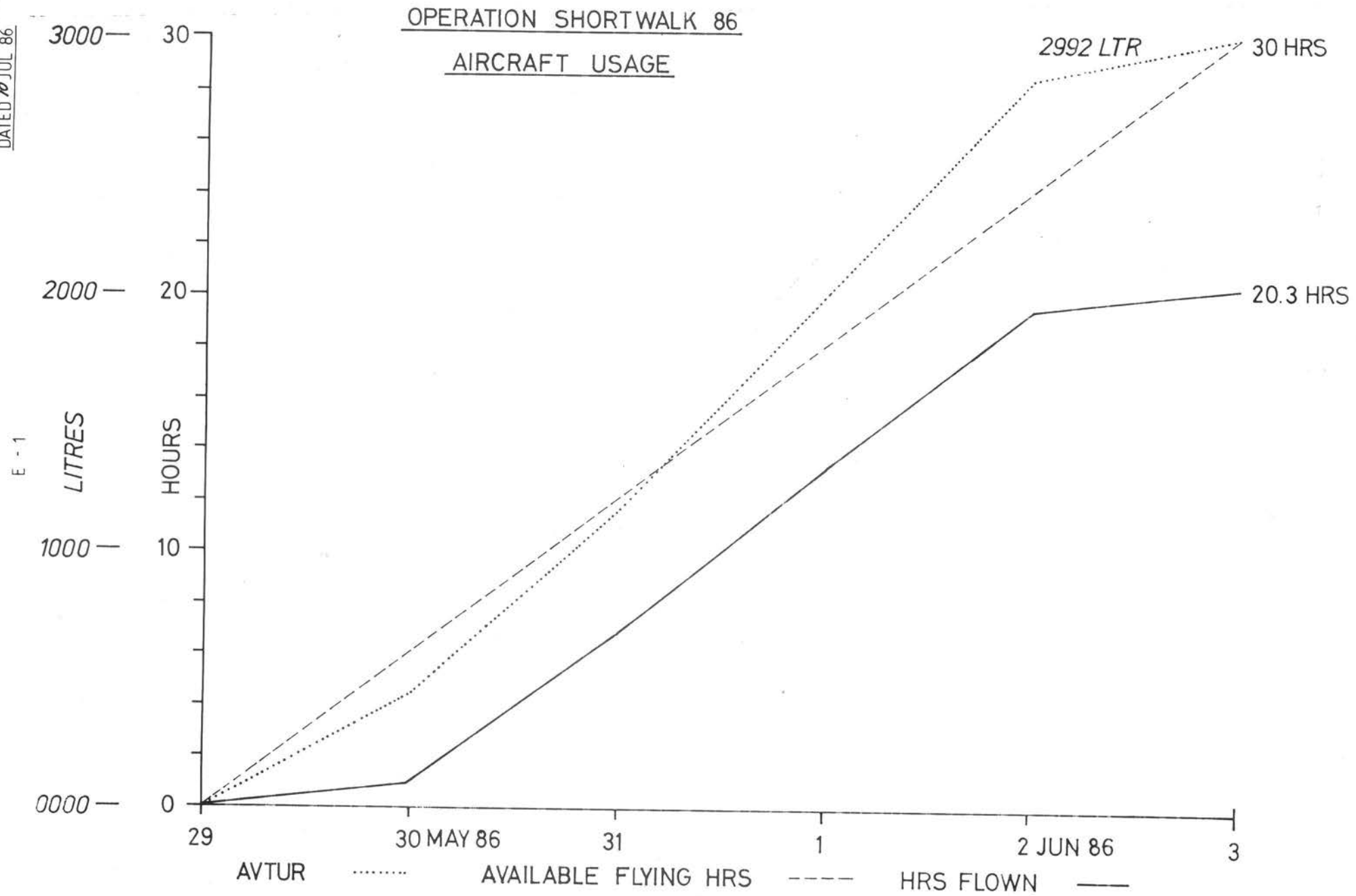
1. General. Identification Photography was flown of five control points on Fri 30 May 86. Each of the control points were pannelled with 6m x 2m white plastic arms and fell within the 1:250 000 SH53-15 GAIRDNER. The Photographic Identifications were required to assist with the aerotriangulation of the following sheets:
  - a. 6035 1 COONDAMBO,
  - b. 6135 4 WIRRAMINNA, and
  - c. 6135 1 LAKE HART.
2. Results. Each identification point was flown both north-south and east-west using a Wild RC10 Camera No 1466 with a SWA lens No 2044. The camera was mounted in a Pilatus Porter Aircraft, No A14-701 supplied by 173 Gen Spt Sqn. The scale of the photography was 1:25 000 and it was flown with 80% forward overlap. The photographic coverage is shown at Appendix 2 to Annex C. A summary of the results obtained are included as Appendix 1.
3. Personnel. The personnel involved with Supplementary Photography were also involved with the Identification Photography and are listed in Annex C. SGT N. Jones and CPL G. Prince pannelled the control points.
4. Film Processing. The exposed RC10 film was processed by SPR Graf at 4 Fd Svy Sqn. The film was despatched with the Supplementary Photography and accompanying A36 Photographic Reports to CPE Laverton on 19 Jun 86.
5. Distribution. Sets of all control points photographed were distributed to:
  - a. SA Lands Dept. A positive of the central frame containing the panel point and one frame each side were supplied with a marked up bromide print to SA Lands Dept to assist in the aerotriangulation of the 1:50 000 sheets indicated above.
  - b. Army Survey Regt. A marked up bromide print of the central frame containing the panel point are to be depatched to Aerotriangulation section at Army Survey Regt.
  - c. 4 Fd Svy Sqn Records. A marked up duplicate negative and a bromide print of the central frame containing the panel point was retained in Squadron Records.

SUMMARY OF PHOTOGRAPHIC IDENTIFICATIONS  
OPERATION SHORT WALK 86

1. A Summary of the 1:25 000 Photographic Identifications which were obtained during Mission No 264 of Operation Short Walk 86 are shown below:

Serial No (a)	Station (b)	Latitude(°S) (c)	Longitude(°E) (d)	CPE No (e)	Run No (f)	Frame No (g)	Panel Configuration (h)
1	K684 RELIEF HILL	31°04'46"	135°46'20"	32450	13	144-151	+
2	K687 MOVING RIDGE	31°13'31"	135°42'04"	32450	14	155-157	
3	K688 LAST RESORT	31°12'33"	135°49'58"	32450	15	159-162	+
4	K689 SANDY GREBE	31°13'04"	135°57'15"	32450	16	167-172	
5	K692 JOHNSTONE	31°13'12"	136°08'54"	32450	17	174-182	

ANNEX E TO  
PROJECT REPORT  
OP SHORTWALK 86  
DATED 10 JUL 86



PERSONAL CONTACTS  
OPERATION SHORT WALK 86

1. The following contacts were made by the three field parties with members of the Public:

- a. Mr B. Bower, Defence Support Centre, Woomera;
- b. Mr D. Fale, Defence Support Centre, Woomera;
- c. Mr S. Shaw, ETSA, Adelaide;
- d. Mr M. Dean, ANR, Pt Augusta;
- e. Mr C. Reid, ANR, Pt Augusta;
- f. Mr J. Collins, Western Mining, Adelaide;
- g. Mr B. Crew, Western Mining, Olympic Dam Site Manager;
- h. Mr R. Rees, TELECOM, Adelaide;
- i. Mr M. Medwell, SA Nomenclature Board, Adelaide;
- j. Mr B. Bemmell, Highways Dept, Pt Augusta;
- k. Mr S. May, Supervisor Koolymilka Range Area;
- l. Mr B. McCarthy, Security Officer, Nurrungar;
- m. Mr D. O'Callaghan, Mine Manager, Mt Gunson Mine;
- n. Mr J. Oag, Arcoona Station;
- o. Mr P. Adams, Oakden Hills Station;
- p. Mr E. Greenfield, South Gap Station;
- q. Mr J. Wilkinson, Kootaberra Station;
- r. Mr W. French, Pernatty Station;
- s. Mr J. Thompson, Yudnapinna Station;
- t. Mr D. Mould, Coondambo Station; and
- u. Mr I. Reid, Wirraminna Station.

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