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PROJECT PLANNING PAPER 1/65

NGW RECEIVING FACILITIES AT NAVAL COMMUNICATION
STATION, DARWIN

Reference: Naval Staff Requirement NSR 1/65.

INTRODUCTION

1. Naval Communication Station, Darwin, is a vital element in the RAN Communications Network and of the Defence Signals Organisation. With recent developments of

, it is assuming even greater strategic and tactical significance and urgency, and the functions it performs are of considerable Defence importance. Increased and improved facilities are now urgently needed. However, the receiving capability of the station has been progressively degraded by nearby industrial development of Darwin, increased vehicular and aircraft traffic in the vicinity, and the proximity of power transmission lines. This receiving capability will be reduced to a completely unacceptable level by further forecast development of Darwin industry towards the Receiving Station. The Naval Board has agreed that planning should proceed towards providing appropriate communication functions including all activities associated with the Defence Signals Organisation at a new site.

2. Briefly it was originally proposed that:

- a. A Communications Centre would remain at Coonawarra West with the Administrative support, domestic accommodation and some training facilities;
- b. Coonawarra East would remain as the Transmitting Station until moved to another location under investigation.
- c. The new site would become the Receiving Station, comprising Defence Communications (Receiving and Special Activities), and Naval Broadcast, Ship/Shore, Fixed Services and local operational receiving positions. A complex aerial system would be required and
for inter-control purposes.

3. It is now proposed that:

- a. The Communications Centre will remain at Coonawarra West, together with the domestic accommodation, administrative support and training facilities. The Comcentre will contain remote control facilities for ship/shore,

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mobile fixed services, point-to-point circuits, and local communications, the monitoring and keying of the broadcasts, the Tape Relay Centre, and System Control.

- b. Coonawarra East will remain as the Transmitting Station, until moved to the new site at Humpty Doo.
- c. The new site will become purely a Receiving Station comprising Defence Communications (Receiving and Special Activities), with receivers remotely controlled from Coonawarra West for general communication purposes. A complex aerial system will be required and a radio bearer will be used for inter-control purposes.

4. The reasons for the change in concept are as follows:

- a. The new site will now become purely a receiving station, leaving all the System Control functions, teletype machines for general communications, broadcast keying and monitoring circuits, ship/shore, fixed services and local communications keying circuits, multiplex and crypto equipment at the Comcentre. Thus the majority of the potentially dangerous sources of electrical interference will be situated remote from the sensitive receiving systems.
- b. Fewer personnel will be required to work at the site and the facilities to be provided can be reduced commensurately
- c. Since all the Defence Communications equipment and personnel will be at the site, and all the general naval communications equipment, with the exception of the remotely controlled receivers, will be at Coonawarra West, the problems of security presently encountered will be eliminated.
- d. The building requirements at the site will be reduced by approximately 15% which will cause a reduction in cost. Part of this saving will be required for internal modifications to the building at Coonawarra West to fit it out as an efficient Comcentre.
- e. Because of these above considerations the whole receiving system efficiency will be enhanced, since the noise free area at a new site will be used to its best advantage.

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5. The new Receiving Station is to include:
- a. The aerials, buildings, locally and remotely controlled receivers, air conditioning and power supplies necessary to perform the following functions:
 - (1) Defence Signals Organisation requirements,
 - (2) receive functions of ship/shore, mobile fixed services, point-to-point circuits, contingency plans communications requirements, integrated joint service requirements, coastal harbour and local circuits.
 - b. Rooms, facilities, transport, etc., needed to support the daymen, watchkeeper and security personnel at the site.
 - c. Internal communications system and access to the PABX at Coonawarra West.
 - d. Appropriate works to allow for security.

OBJECT

6. To provide the receiving functions of Naval Communications Station, Darwin, at a new site and to up-date the technical arrangements of the Comcentre at Coonawarra West to bring it into line with current practice.

CONSIDERATIONSManning.

7. Based on the current approved HMAS MELVILLE Scheme of Peace Complement, dated 1st July, 1969, when the station becomes operational it is assessed that the following additions in personnel, directly attributable to the new receiving station, will result:

a. Officers

1 LCDR. WE or LEUT. WE

Deputy WE Officer

b. Sailors

1 CEC

Administration and General Supervision, Shoal Bay.

1 LEMC

Radio Maintenance.

5 EMC

4 Watchkeepers, Shoal Bay.

1 T/T and Crypto maintenance.

/5 LS

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5 LS

4 Guardhouse and
Security duties.

1 PO

Guardhouse and
Security duties.

c. WRANS

3 WRMTD's

Watchkeeper drivers

2 WRCK's

Domestic Support Staff

2 WRSTD

Domestic Support Staff

d. Civil Staff

salaried Staff

1 Senior Technical Officer

Defence Communications

2 Technical Officers Grade 2

Defence Communications

1 Technical Officer
Grade 2

Specialised Maintenance.

Wages Staff

1 Tractor Driver

Aerial farm control

2 Gardener's Labourer/
Labourer

Aerial farm control

1 Cleaner/Labourer

Domestic cleaner.

NOTE: As technical officers of the type required would probably only be obtained in Darwin from ex-RAN senior sailors, it is by no means sure that civil technical officers could be recruited for Darwin, and the commitment may have to be met by the RAN. For purposes of domestic accommodation four civilian salaried staff have been regarded as CPO status. The wages staff will probably be indigenous persons and allowance has been made for accommodation.

8. The estimated date for the new receiving station to be ready for operation is December, 1972. Based on this date the changes in the complement mentioned in paragraph 7 will be required to be phased in as follows:

a. Officers

1 LCDR. WE or LEUT WE

April 1972

b. Sailors

1 CEC

October 1972

1 LEMC

October 1972

5 EMC

October 1972

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b. Sailors (contd.)

1 LS	December 1971
1 PO	November 1971
4 LS	November 1971

c. WRANS

3 WRMTDS	November 1972
2 WRCKS	November 1972
2 WRSTDS	November 1972

d. Civil StaffSalaried Staff

1 Senior Technical Officer	October 1972
2 Technical Officers Grade 2	October 1972
1 Technical Officer Grade 2	April 1972

Wages Staff

1 Tractor Driver	May 1972
2 Gardener's Labourer/Labourer	May 1972
1 Cleaner/Labourer	May 1972

9. It is not expected that there will be any side effects on other establishments.

Training

10. a. No overseas training will be required.
- b. Operating teams will be transferred directly from Coonawarra West to the new receiving station and there will be no initial or continuing training requirement
- c. Apart from basic training at CERBERUS, HARMAN and DSD no specialised training programme will be required.
- d. No additional training equipment is required.
- e. No standard training aids are required.
- f. Training handbooks and publications will be required for new equipments under investigation or ordered for Coonawarra West. These will be supplied with and included in the cost of the equipment.

Works

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Works Requirements11. Receiving Station11.1. Acquisition of Land

A site on the Shoal Bay Peninsular which meets the Staff Requirements has been selected and involves:

- a. Crown Land Sections 117, 120, 406, 414, 415, 416, 417, 418.
- b. Freehold Sections 116, 121, 407/8, 409 and Portions 1375 (21), 1376 (22), 1377 (23) and Part Pastoral Lease 547, 2300 acres, Koolpinyah. The Department of Interior has estimated the cost of Acquisition is \$126,000 and the Minister for Defence has approved commencement of negotiations.

11.2 Construction

- a. The main building and the ancillary works are to include the following items:
 - (1) Receiving station building and associated buildings;
 - (2) bases and guy anchors for aerial towers;
 - (3) water reticulation by mains or bore supplies;
 - (4) electrical reticulation to receiving site.

/ (5) Access roads

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- (5) Access roads from receiving site to aerials;
 - (6) Flood lighting;
 - (7) Approximately 1,200 sq. yds. of hardstanding for vehicular parking and turning area;
 - (8) Boundary fencing;
 - (9) Incinerator;
 - (10) Site works and landscaping;
 - (11) Internal telephone system (connected to Coonawarra West);
 - (12) Minerva or similar Fire Protection System;
 - (13) 350 KVA emergency diesel generator.
- b. It is a requirement that during the construction phase the manproof security fence be erected after site clearance and excavation, and be completed before commencement of other works items, within the secure area. This fence is to be erected 200 feet from the new Receiving Station building.
- c. An estimate of \$1.8M has been made by DNW for an unprotected building of steel frame with brick cavity walls etc. except for the 'Secure' area within the Operations Building; this area will conform to the normal 'Secure' standards. A preliminary estimate has been requested from Department of Works. A requisition for \$10,000 has already been issued to progress site investigation. A breakdown of the estimated costs is shown at Appendix 'D'.

/11.1.3.

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11.3 Aerial System

The aerial farm and associated aerial equipment for the new receiving station is still under consideration. The successful tenderer will be required to install the aerial complex as part of the contract.

12 Coonawarra West12.1 Building

- a. The existing receiving building will be required to be modified in accordance with Appendix F. The work involved will include:
- (1) Re-organisation of the internal walls.
 - (2) Installation of two screened rooms.
 - (3) Some rewiring of the building to accommodate new and re-arranged equipment.
- b. An estimate of \$0.080M has been made by DEW for this work. A preliminary estimate has been requested from Department of Works.

12.2 Accommodation

- a. Male accommodation is required for :
- 1 Officer
 - 6 CPO/PO
 - 11 Junior Sailors
 - 4 Wages Staff

NOTE: CPO/PO includes 4 civilian technicians.

- b. Female accommodation is required for :
- 7 Junior WRAN Sailors.

NOTE: Accommodation is presently available

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in the new WRANS Barracks at Coonawarra West but estimate has been included to show overall costs attributable to Shoal Bay.

- c. Using Living In/Living Out percentages provided in HMAS MELVILLE Statement of Requirements on which to base a master plan the following is the accommodation requirements:

	<u>Living In</u>	<u>Living Out</u>
Officers	-	1
CPO/PO	1	5
Junior Male Sailors	7	4
Junior WRANS	7	-
Wages Staff	4	-
	<u>19</u>	<u>10</u>
TOTAL	19	10

- d. The order of cost for domestic accommodation attributable to Shoal Bay is \$M.305. This is based on the following:

10 houses at about \$20,000 each	\$200,000
Barracks accommodation	
1 CPO/PO	5,000
7 Junior Male Sailors	35,000
7 Junior WRANS	35,000
4 Wages Staff	20,000
Recreational and other facilities	10,000
	<u>\$305,000</u>

/12. Technical

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Technical Equipment13.1 Shoal Bay Receiving Station

Much of the existing equipment at, or on order for, the Receiving Station at Coonawarra West, will be transferred to the new Receiving Station. Additional equipment required will be :

- a. Remote controlled receivers for ship/shore (both CW and RATT), mobile fixed services, and local communications. The existing ship/shore and local communications receivers are due to be replaced by the new general purpose HF receivers at present being procured. These can be re-allocated on installation of the remote controlled receivers.
- b. Aerials and aerial distribution systems.
- c. Remote aerial control facilities.
- d. Radio Bearer System between Shoal Bay and Coonawarra West.

13.2 Coonawarra West Comcentre

Much of the existing equipment at, or on order for, the Receiving Station at Coonawarra West, will remain at the Comcentre. Additional equipment required will be :

- a. System Control Equipment.
- b. Radio Bearer System between Shoal Bay and Coonawarra West (see 12.1 d.)
- c. Remote control equipment for receivers at Shoal Bay (see 12.1 a.)
- d. Power system for special supplies :
i.e. 50-0-50VDC; 115V, 60 c/s etc.

/13. Transport.

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Transport

14. Buses will be required to transport each watch and support staff to and from Coonawarra West. Maximum numbers of personnel requiring transport on any occasion will not exceed 80 and two 41 seater buses will suffice. They are required by September 1972. A Mini-van is to be modified to take standard fire fighting equipment, and will be required by October, 1971. A tractor is required by November, 1971, together with ancillaries including a two disc plough, grass cutting machinery and a scraper. Transport for the security personnel and Project Team and/or Liaison Officer will be required from December, 1970.

Installation

15. The supply and installation of new equipment and the trans-position of existing equipment will be arranged under contract specially let for the purpose.

16. The installation specification will be written by the Project Team in conjunction with DWE and DSD.

Security and Protection

17. Security arrangements for new buildings or associated alterations are to be in accordance with ACB 0337 chapter II, articles 1103-1113. Alterations and extensions are to be in accordance with ACB 0337 chapter 9. Contracts for work and installation are to be appropriately classified and security arrangements made in accordance with ACB 0337 chapter 17. A temporary security office is to be placed on the site and inside the secure area until the new station is fully operational. The Shoal Bay area required by the RAN should be gazetted as a Prohibited Area under the Defence Act and the Crimes Act.

/17. Financial.

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Financial Aspects

18. Including \$10,000 for the preliminary site survey vide paragraph 10 above which was provided as a separate item in the 1967/68 New Works Programme and a requisition has already been issued, the estimated cost of the project is as follows :

a. Capital Costs

(1) New Works (Division 694)	\$2,205,000
(2) Acquisition (Division 689)	126,000
(3) Site Survey (Division 694)	10,000
(4) Equipment (Division 670/0/2A)	880,000
(5) Transport (Division 681)	40,000
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	\$3,261,000

b. Maintenance Requirements

(1) P.N.F. Personnel	\$102,000
(2) Civil Personnel	6,000
(3) Administrative expenses	17,000
(4) Provision of and Installation of Telephone Facilities	7,000
(5) Maintenance Equipment and Stores	9,000
(6) Transport running costs	1,000
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	\$142,000

c. Recurring Maintenance After Completion

(1) P.N.F. Personnel	\$55,000
(2) Civil Personnel	22,000
(3) Administrative expenses	13,000
(4) Telephone facilities	1,000
(5) Maintenance Equipment and Stores including Victualling Equipments, rations and Clothing.	5,000
(6) Naval Stores	25,000

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(7) Maintenance of Building	50,000
(8) Additional electrical power	10,000
(9) Transport running costs	6,000
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	\$187,000
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The estimated spread of authorisation and expenditure is given in Appendix 'C'.

19. Provision for authorisation and expenditure of \$200,000 under Division 656 New Works for construction of a new Receiving Station at Coonawarra West was made in the Navy 3 year programme 1965/66 - 1967/68. Because of the requirement for further detailed investigations it was not possible to progress the Project in the original time scale and only \$10,000 was spent on site investigations and tests bores.

Approvals

20. The Minister for Defence has approved the project. A Cabinet Submission will be required and exemption from consideration by the Parliamentary Standing Committee on Public Works will be sought on security grounds.

Project Director

21. D of C is the Project Director and a Project Team of one Communications Officer and one Weapon Electrical Officer be performed to work on this and other associated projects in the Darwin area.