

REPORT

relating to the proposed construction of the

DARWIN PATROL BOAT BASE

at

Larrakeyah, Northern Territory

(SEVENTH REPORT OF 1979)

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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA
PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

R E P O R T

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(Seventh Report of 1979)

Australian Government Publishing Service
Canberra 1979

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COMMONWEALTH GOVERNMENT

Department of Housing and Construction
Canberra, A.C.T.

Departmental
No. 10.

Minute Paper for the Executive Council

Subject

Executive Council
Meeting No. 46.

ORDER UNDER PARAGRAPH 18 (4) OF THE PUBLIC
WORKS COMMITTEE ACT IN RELATION TO DARWIN
PATROL BOAT BASE, LARRAKAYAH, NORTHERN
TERRITORY.

Recommended for the approval of His Excellency the
Governor-General in Council that, in pursuance of
paragraph 18 (4) of the Public Works Committee Act
1969, the proposal be referred to the Parliamentary
Standing Committee on Public Works for consideration
and report.

Approved in Council
ZELMAN COWEN.

Governor-General
13 July 1979

Filed in the Records
of the Council.

DAVID N. REID.

Secretary to the
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(Signed) R.J. GROOM.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

DARWIN PATROL BOAT BASE,
LARRAKAYAH, N.T.

R E P O R T

On 13 July 1979, His Excellency the Governor-General in Council referred to the Parliamentary Standing Committee on Public Works for investigation and report to the Parliament the proposal to construct the Darwin patrol boat base for the Royal Australian Navy at Larrakeyah, Northern Territory.

The Committee has the honour to report as follows:

THE REFERENCE

1. The proposal is for the construction of support facilities for the new Fremantle class patrol boats, which will come into service from October 1980 providing coastal surveillance in Northern Australian waters.

2. The works consist of:

- a breakwater to provide a sheltered harbour;
- dredging;
- berth facilities for up to six patrol boats;
- a vertical-lift facility to lift boats out of the water for maintenance and for cyclone protection;
- a covered two bay maintenance shed;
- workshops, stores and administrative facilities;
- associated engineering services.

3. The facility will also support other visiting naval vessels, including survey, mine counter measure and landing craft.

4. The estimated cost of the proposal when referred to the Committee was \$18.3 million at June 1979 prices. During the public hearing, the Committee was informed that the estimated cost had been reduced to \$17.75 million (see paragraph 86 for details).

THE COMMITTEE'S INVESTIGATION

5. The Committee received written submissions and drawings from the Department of Defence and the Department of Housing and Construction and took evidence from their representatives at a public hearing in Darwin on 14 and 15 August 1979. The Committee also received written submissions and took evidence from the Northern Territory Government, Mr. T. Harris MLA, the Corporation of the City of Darwin and John Holland Holdings Ltd. Evidence was also taken from the Chairman of the Northern Territory Planning Authority.

6. Written submissions were also received from Mrs. D. Lawrie MLA and the Department of Employment and Youth Affairs.

7. Prior to the public hearing, the Committee inspected existing naval facilities in Darwin and the site for the proposed facility. The Committee also inspected the site for a small ships repair facility being constructed for the Northern Territory Government by John Holland Holdings Ltd at Frances Bay.

8. The Committee's proceedings will be printed as Minutes of Evidence.

EXISTING FACILITIES

9. Attack class patrol boats have been based at Darwin since 1968 and four of these vessels are at present based there. Temporary facilities set up when the patrol boats were first deployed to Darwin are still in use. The patrol boats berth at the Stokes Hill commercial wharf. The Naval Northern Area Command operational headquarters and administrative offices, together with the communications centre are in an Army building at Larakeyah. Workshops are in wartime buildings at Frances Bay and the slipway there, at one time Navy owned, now belongs to the Northern Territory Port Authority. It is still used by Navy for the Attack class patrol boats under a local agreement. Stores are held at H.M.A.S. Coonawarra some 13 km from the harbour. Single personnel are accommodated in Army accommodation at Larakeyah, H.M.A.S. Coonawarra or live out in the city.

THE NEED

10. The new Fremantle class patrol boats will come into service from October 1980. The Department of Defence advised that the Attack class patrol boats now based at Darwin will be progressively replaced by Fremantle class patrol boats. It is anticipated that at least four Fremantle class patrol boats will be regularly based in Darwin as the Department sees no indication that surveillance requirements in Northern Australian waters will lessen in the foreseeable future.

11. The berth at Stokes Hill Wharf, used by arrangement with the Northern Territory Port Authority, is designed for large vessels and is not suitable for patrol boats. Sea conditions are often bad and access to and from the patrol boats becomes hazardous. Normally, only one alongside berth is available to the Navy.

12. The wartime building which accommodates the workshops is inadequate in size and layout. It could not accommodate the improved facilities required for maintaining the Fremantle class patrol boats. The slipway, whilst able to take Attack class patrol boats, is not large enough for the Fremantle class. At present no shipyards capable of refitting patrol boats exist in Darwin and the vessels are sent to Cairns for refits and major repairs. The small craft repair facility being constructed by John Holland Holdings Ltd at Frances Bay will not be capable of servicing Fremantle class patrol boats without modification. The Department of Defence also anticipated problems if patrol boats were required to use civilian facilities.

13. The harbour at Darwin does not offer the same possibility of cyclone refuge in creeks as at Cairns, where a patrol boat base will also be constructed (see Committee's Fourth Report of 1979), due to the shallowness of the creeks and the large tidal range. The existing maritime facilities at Darwin do not provide cyclone protection. At the time of Cyclone Tracy, of the three Attack class patrol boats in the harbour, one was completely destroyed, a second very severely damaged, while the third managed to put to sea and escape damage.

14. The dispersion of the wharf, workshop and other support facilities results in unnecessary movement of personnel and stores.

15. Committee's Conclusion There is a need to provide a new patrol boat base in Northern Australia. The existing temporary facilities at Darwin are inadequate for the support of the present Attack class patrol boats and would be unable to satisfactorily support the new Fremantle class patrol boats.

THE PROPOSAL

16. It is proposed to construct at Larrakeyah Cove, operating, support and maintenance facilities for up to six patrol boats and for other visiting naval vessels including survey, mine counter measure and landing craft. The facilities will provide sufficient equipment to maintain the patrol boats between refits. Refits and major repairs will be undertaken by commercial contracts in Cairns as repair facilities capable of carrying out major repairs and refits do not yet exist in Darwin.

17. The following facilities are proposed:

- breakwaters sufficient to provide a reasonable degree of protection against swell and waves;
- a wharf capable of accommodating six vessels berthed three abreast;
- a vertical-lift facility;
- a covered maintenance shed for two vessels combined with workshops, stores, offices and other facilities;
- transfer arrangements for the movement of vessels from the vertical-lift to the maintenance shed and to uncovered dry land tie-down berths for cyclone protection;
- a building housing equipment for electrical power, compressed air, oily wastes separation, and fire fighting;
- engineering services including:
 - 60 Hz electrical power for the new patrol boats;
 - 50 Hz electrical power for vessels currently in service and for machine shops, welding, portable tools etc;
 - salt water for fire fighting and ships service;
 - fresh water;
 - compressed air;

- diesel fuel from a 200 tonne tank;
- sewage discharge from vessels;
- oily wastes discharge;
- telephones (the PABX to be shared with Army);
- defuelling arrangements;
- a pontoon with access ramp for boats;
- miscellaneous small buildings including a gas bottle store; and
- parking for up to 20 cars.

18. Breakwaters Because of the high tidal range and the possibility of surges above the normal tidal range occurring during cyclones, it is expensive to provide a harbour giving full cyclone protection. Such a facility would require breakwaters to be constructed to a height of 12.5 metres above chart datum to provide for no overtopping. Since this is an extreme condition, the breakwaters will be constructed to a height of 9.5 metres above chart datum, a height that will provide for no overtopping under non-cyclonic conditions and give adequate protection from swell, currents and waves to berthed vessels. The Department of Housing and Construction estimated that an additional cost of approximately \$5M - \$6M would be incurred to provide a breakwater giving full cyclone protection.

19. Cyclone protection of the patrol craft will require their removal from the water, via the vertical-lift facility, to dry land berths situated above surge level. The breakwaters will also afford some protection to the vertical-lift facility.

20. Vertical-Lift Facility A vertical-lift facility is to be provided to remove patrol boats, survey vessels and other small ships from the water for emergency repairs, intermediate and depot level maintenance, and to the tie-down berths. Vessels will be floated over a suspended platform and will then be mechanically raised until completely clear of the water. Vessels will be transferred by rail from the elevated platform to the covered maintenance building and land berths. Carriages will be moved to the required positions by tow motors and winches.

21. The facility will have the ability to dock a vessel with a draught of up to 2 metres at any tide and be capable of lifting or lowering vessels up to 750 tonnes at a rate of 300 mm per minute and will be designed

to withstand the effect of cyclones. It is anticipated that eight Fremantle class patrol boats could be removed from the water in 12 hours. The design of the facility will allow some future expansion should this prove necessary.

22. Future Development Some additional facilities may be required in the future, e.g. a headquarters and administration building including a communications centre, provision for separate naval sleeping accommodation, facilities for a larger number of patrol boats, and facilities for mine counter measure vessels, landing ships, and other larger naval vessels.

THE SITE

23. Site Selection Study At the request of the Department of Defence, a site selection study was carried out in 1977 by the then Department of Construction. Sites were investigated at six localities in the Darwin area:

- Channel Islands
- Peak Hill
- Quarantine Island
- Stokes Bay
- Frances Bay
- Larrakeyah Cove.

24. Larrakeyah and Frances Bay were the lowest cost options and none of the other sites had any special features that would offset their higher cost. The Larrakeyah site was finally the cheaper of the two and also had a number of operational and technical advantages compared to Frances Bay. These can be summarised as follows:

- the site is adjacent to existing support facilities such as administrative offices, communications facilities, messing and sleeping quarters, transport workshops etc.;
- it is within an existing secure Defence area;
- adjacent sites are available for housing key personnel;
- there is the capacity at Larrakeyah for expansion in the future to provide support for destroyers and other large naval ships;
- the Larrakeyah site provides immediate access to deep water;

- the approaches to Frances Bay would require significant dredging for access to be available at all stages of the tide;
- the more restricted nature of the Frances Bay site would make the manoeuvring of patrol boats at low speeds more difficult;
- there is a lower siltation build-up than at Frances Bay and therefore lower maintenance dredging costs;
- the site is less exposed to damage from debris and stray vessels during cyclonic conditions; and
- development of this site will permit operations independent of other waterfront activities.

25. The comparative costs of development at the Frances Bay and Larrakeyah sites have been re-assessed following the decision by the Northern Territory Government to establish a small craft repair facility in Frances Bay. The indications are that, assuming the Commonwealth makes no contribution to the construction of commercial facilities at Frances Bay, a naval facility could be established there at a marginal saving compared with the Larrakeyah site. The cost differential is not seen as sufficient to offset the advantages of a separate Navy facility at Larrakeyah.

26. It should be noted that in addition to the advantages of the Larrakeyah site outlined above:

- the Frances Bay site would not readily allow expansion of facilities and is unlikely to be able to provide for Navy's future requirements (i.e. additional berths, landing ramp for the heavy landing ship, mine counter measure vessel facilities such as a non-magnetic area, and a possible future berth for larger ships). There could also be expansion problems for the commercial ship repair facility; and
- facilities would be some 3-4 metres lower than at Larrakeyah thus increasing the risk of cyclone damage and in particular making it impractical to provide shore tie-down arrangements.

27. At the public hearing, the Department of Defence stressed that the development of a naval base in Darwin is seen to be an essential element

in protecting Australia. To be fully effective, the Department believes that the base must have the capacity to operate at all times.

28. In summary, the Department of Defence believes that the limitations posed by establishing a patrol boat base at a location in the Darwin area other than Larrakeyah would be unacceptable from an operational viewpoint and would seriously inhibit the future expansion of facilities.

29. Site Details The proposed site will occupy part of the existing Larrakeyah Military Area, approximately 2 km west of the Darwin City Centre.

30. The patrol boat base will occupy approximately 6 hectares of the 67 hectare Military Area while the harbour area contained within the breakwaters will occupy 10 hectares.

31. Access to the site is through the residential suburb of Larrakeyah and via an internal road system within the Defence establishment.

32. Topographically, the site can be divided into three distinct zones:

- a flat onshore area, elevated approximately 22 metres (R.L. 22.00) above chart datum (low tide);
- a shore line and tidal area consisting of a steep cliff on rocky beach;
- an offshore area generally having a hard scoured sea bed with little overlying sediments.

33. Initial drilling, coring, sampling and laboratory testing of materials at the site has been undertaken both on land and on the sea bed and results are being used in the detailed design phase. In addition, a trial blast has been done in the onshore area to assist in the initial assessment of the quality and size range of the material that might be excavated.

34. These initial site investigations have shown the onshore area to comprise hard porcellanite rock approximately 6 to 10 metres deep overlying a softer phyllite material. A detailed hydrographic survey has been made and the contours of the seabed plotted.

35. The University of New South Wales was commissioned to construct a hydraulic model of the proposed harbour and breakwaters to check the effect of tides, waves and currents and to enable optimum alignment of the breakwaters to be determined.

36. Current measurements at the site have been completed and a wave-rider buoy installed in the harbour adjacent to the site to obtain wave data. Sufficient tests have been carried out to support the basic design layout of the harbour works proposed, but model studies and tests are continuing to provide the additional data necessary for detailed design.

37. Committee's Conclusion The Committee believes that the Larrakeyah site meets the operational requirements for a patrol boat base in the Darwin area.

CONSTRUCTION

38. Building Design The covered maintenance area, workshops, stores, amenities and services functions will be integrated into a composite structure.

39. The lower portion of the structure will be constructed with reinforced concrete floors, columns and beams. The footings will be tied down by ground-anchors. The upper portion of the structure will be steel framed and supported by the reinforced concrete structure.

40. The covered maintenance shelter will be capable of accommodating two boats at one time of dimensions up to 60 metres long by 10 metres wide. Steel columns will support steel framed roof trusses. This structure will be side braced down to the lower sections of the building. The total height of the building will be 28.0 metres and the clear span 28.5 metres. The external walls and roof will be clad in prefinished corrosion resistant steel sheeting.

41. The stores, workshops, amenities and services sections of the building will be located on each side of the covered maintenance shelter. The external wall cladding will be the same as used for the shelter but insulated and lined where necessary. Windows will be aluminium framed. Sun protection will be provided to all windows.

42. The flammable liquids store will be constructed with reinforced concrete block walls, reinforced concrete floor and roof, weather protected

with prefinished corrosion resistant steel sheeting. The store building will have adequate ventilation, a floor bund, and fire fighting equipment in accordance with Commonwealth Fire Board recommendations.

43. The vertical-lift control cabin, located at the northern end of the vertical-lift facility, will be lined with cyclone impact resistant glass all round, and sun protected by a roof overhang.

44. Internal Finishes Internal faces of external walls will be pre-finished steel except where wall insulation and lining is required. Where internal finish is required, steel stud partitions will be lined with asbestos cement sheets. The valuable store will have painted reinforced concrete block walls. Fire rated partitions will be in steel stud, lined with double layers of plasterboard. Walls to shower cubicles, splash-backs above basins and sinks will be clad with glazed tiles. Floors to wet areas will be ceramic tiles. Floors to workshops and stores will be non-slip oil resistant concrete.

45. Wharves The original submission of the Department of Housing and Construction provided for two wharves to be constructed incorporating a vertical reinforced concrete wall on the face of one wharf as there were indications that the foundation material in the vicinity of the wharves was unstable and would have quite low strength. The Department indicated that investigations were in progress to determine the feasibility of a possible lower cost solution using a combination of a concrete deck supported on steel piles and backed by rock filled armoured slopes.

46. At the public hearing, the Committee was informed that the Department is now satisfied that a piled wharf backed by a rock protected slope will provide the necessary structural stability and will be a less costly solution.

47. In changing to a piled wharf and protected slope construction, the wharf alignment has been straightened and the position of the vertical-lift adjusted so that the major buildings and transfer yard will be constructed on firm ground and not require piling.

48. The changed wharf alignment has the advantage of improved access for vessels approaching the wharf but has a disadvantage in that access to the berths from the land will be more restricted. The modified layout has

been considered with the Department of Defence and there is agreement that overall it is the better solution. It results in a cost reduction of \$1.65 million in the berths' estimates.

49. Excavated Area The onshore area will be excavated into several levels from the plateau (R.L. 22.00) to near water level (refer to site layout plan B). Vehicle ramps will interconnect these levels. As much as possible of the excavated material will be used in the proposed breakwater.

50. On the upper level at R.L. 17.00 will be located the stores holding area, stores building loading dock and area for a future administrative building for the Naval Officer Commanding, North Australia Area (NOCNA). The boat tie-down area as well as the maintenance and stores building complex will be located at the intermediate level at R.L. 13.00. A vehicle ramp will continue to the wharf level (R.L. 9.50) and provide access to the western breakwater and small boats pontoon.

51. Dredging The harbour within the breakwater is to be dredged to a depth of 4.0 metres at low water in all areas in order to ensure a general navigable depth of 3.5 metres as specified by Navy. This will involve approximately 175,000 cubic metres of dredging. At low water a depth of 5 metres will be provided at the berths and a depth of 6 metres at the vertical-lift facility. These depths provide for a 24 hour /365 days per year operational capability for all vessels up to 2.50 metre draught. Some vessels which have a greater draught will be able to remain alongside at all times but will only be able to move to and from the berths at times when the tide is approximately one metre above chart datum. Spoil material will be either barged to an area south-west of Abbots Patches or pumped to a reclamation area adjacent to the western breakwater and contained within a bund formed from excavated site material. Minor siltation can be expected in the harbour but is not expected to present any serious problems.

52. Breakwaters The breakwaters will be constructed mainly from rock excavated within the limits required for onshore buildings and facilities. The breakwater core will be protected by secondary and primary rock armour.

53. The Department of Housing and Construction informed the Committee that the porcellanite material excavated from the site can be used in the

breakwater core but it will not provide sufficient hard rock of the size required for all secondary armour material. The estimated cost of the breakwaters has been increased by \$1.1 million to allow for the bulk of the armour material coming from external quarries.

54. Vertical-Lift Facility The vertical-lift will comprise a 42 metre by 14 metre articulated steel platform suspended by wire ropes from eight hoists at a level of approximately 13 metres above chart datum. The hoist winches will be bolted to concrete pedestals supported on the adjacent wharf structure on one side, and on a concrete wall on the other.

55. Electrical Services The following electrical services will be provided:

- general light and power at 50 hertz, including power to machines and special equipment;
- self-contained emergency lighting and exit lighting where required for safety purposes;
- special purpose supplies at 60 hertz and various voltages to the workshops and covered maintenance shelter. The 60 hertz supplies will originate from rotary converters located in the workshops power services area;
- a goods lift operating between R.L. 9.5 and R.L. 18.45;
- standby emergency 50 hertz supply to selected essential loads. An auto-start diesel alternator of approximately 285 kW capacity will be used for this purpose. External loads connected to this plant will include the vertical-lift, ship winching, area fire fighting and floodlighting;
- telephones as required, connected back to the area main PBX.

56. The maintenance and stores building substation will be connected to the existing high voltage supply in the Larakeyah Military Area, which has sufficient capacity for the patrol boat base load. The supply originates from a Northern Territory Electricity Commission service.

57. Security lighting will be provided to the buildings, sea berths and tie-down areas. Additional selective working lighting will be incorporated at berths for night-time operations.

58. Mechanical Services The following mechanical services will be provided:

- air conditioning to special equipment store, workshop areas, amenities area, and offices;
- powered ventilation exhaust systems for battery rooms, process areas and toilet areas;
- sawdust extraction system, woodwork and metal paint spray booths and fume extractors for the workshops, all in accordance with health regulations;
- grit blasting facilities;
- hot water to all wash basins, sinks and showers from solar units fitted with electric booster power;
- deep freeze units, tea making facilities, refrigerated drinking water fountains spaced conveniently throughout the area and provision for light snack equipment in the amenities area;
- compressed air will be reticulated to workshops, process area and land berths from a 235 litres/second compressor plant. The leading compressor will also be connected to the essential power supply.

59. Cranage The covered maintenance shed will be provided with a 10-tonne capacity double girder electric overhead travelling crane. The crane will be controlled from a cabin travelling independent of the crab, ensuring safe operation and oversight at each side of the vessels. The bulk store, part of the covered maintenance shelter and the services area will be provided with a 10-tonne capacity pendant operated single girder electric overhead travelling crane.

60. The shipwrights metal shop, heavy machine workshop, stripping and cleaning shop will be provided with 1.5-tonne pendant operated electric hoists and monorail. The electrical workshop will be provided with a hoist of 1-tonne capacity and monorail. All cranes and hoists will be capable of two speed travel and hoisting operation.

61. Environmental Impact The Department of Science and the Environment examined the project and advised that the preparation of an Environmental Impact Statement was not required. It identified, however,

the need for contact with local authorities to ensure that heavy traffic movement in the adjacent residential area is regulated to minimise inconvenience to residents. (See paragraphs 79 - 84 below)

62. Wharf Services Services to Berth coping points will run underground where appropriate and be contained in a duct in the wharf decks, suitably protected against corrosion and damage.

63. At each berth three shore connection points for vessels will be provided incorporating 60 hertz supply, 50 hertz supply, ship earthing, and telephone connections. Connections will also be provided for sewage disposal, welding, compressed air, salt water for fire fighting and fresh water. Defuelling of clean oil from the vessels will be provided by Navy-supplied engine driven portable pumps to the wharf terminal points and via pipework to the 200-tonne storage tank.

64. Defuelling of contaminated oil from the vessels will be provided by a similar method to a 50-tonne contaminated fuel storage tank. The tank will be emptied by local contract. Oil wastes from the vessels will also be handled by Navy-supplied engine driven portable pumps at the wharf terminal points and via pipework to a 50-tonne storage tank. Collected oily waste from the tank will be pumped through an automatic oil separator. The oily residue will be collected in a 5-tonne storage tank for later removal by local contract.

65. Refuelling facilities will be provided by gravity to the wharf at each berth, fed with diesel fuel from a 200-tonne storage tank.

66. The Committee was assured that all possible measures will be taken to prevent oil spillages. However, should a spillage occur, it could be prevented from entering the harbour by the use of oil retaining booms.

67. Hydraulic Services The sewerage system to serve the buildings and berths will comprise a sewerage pumping well onshore with gravity sewerage lines to the well from all onshore sewerage sources and a pressurised rising main from the berthing points.

68. Raw sewage will be pumped through a pressure pipeline to the existing sewerage reticulation. The hydraulic gradients of the existing sewerage system can accept the extra load produced by this project without any modification. Water will be provided from the established mains

reticulation in the Military Area, although existing mains will need diverting. Stormwater drainage including pipes and pits will be provided to discharge directly to the sea.

69. Fire Protection Selected building areas will incorporate early warning detectors connected for automatic alarm. Manual push button call points will be installed throughout. All fire alarms will be monitored at the guard building and locally at a control centre.

70. An automatic fire sprinkler system will be provided to protect the entire maintenance and stores building with the exception of the covered maintenance shelter.

71. The 'stripping and cleaning' area and the 'glass reinforced plastic' room will be protected by fire suppression automatic Halon gas flooding systems. Fire hose reels will be installed in all buildings, with hydrants installed externally throughout the site. The fire hydrants adjacent to the fuel tanks will be equipped with foam making equipment. Hand extinguishers will be provided in accordance with the Commonwealth Fire Board recommendations.

72. A salt water pressure main and hydrants will be installed at the wharves and covered maintenance shelter.

73. Small Boats Pontoon and Boat Ramp A 9 metre by 5 metre floating pontoon will be provided for berthing and mooring small craft as shown on site layout plan B and a boat ramp for small craft will be constructed adjacent to the eastern breakwater within the harbour.

74. Security Provisions Security equipment will be installed to the requirements of the Department of Defence and security signals will be monitored at the guard building and locally at a control centre.

75. Landscaping The objectives of the landscaping will be to enhance the environmental effect of the excavation and to contribute towards sun shading, wind and noise protection.

76. Suitable trees, shrubs and palms which do not require regular attention will be selected.

77. The Committee understands that special attention will be given during landscaping to those areas exposed during excavation which would be susceptible to erosion in wet periods and could also create a dust nuisance in dry periods. These areas could be treated by landscaping, bitumen sealing, paving etc.

78. Committee's Recommendation The Committee recommends the construction of the work in this reference.

OTHER OBSERVATIONS

79. Traffic The Member for Port Darwin, Mr. T. Harris, MLA, raised the objections of local residents to a second entrance to the Larrakeyah Military Area off Larrakeyah Terrace as proposed in the submission by the Department of Housing and Construction and the proposed route to be taken by heavy construction vehicles. The local residents object to the use by heavy construction vehicles of narrow residential streets, particularly as the proposed use of Marella and Malabar Streets could endanger children attending the Larrakeyah Primary School.

80. The Corporation of the City of Darwin objected to the traffic route proposed by the Department of Housing and Construction and also raised the matter of possible damage to road surfaces by heavy construction vehicles.

81. In evidence to the Committee, the Department of Housing and Construction stated that from a construction point of view, it favoured the use of Packard Street and had posed the Marella and Malabar Streets route and the access off Larrakeyah Terrace as a means of minimising the traffic disturbance to local residents and the possible danger to school children. A single access point is preferred by the Department of Defence for security reasons.

82. The Department of Housing and Construction agreed that further consultations should be held with the Northern Territory authorities to determine the preferred route to the site and other matters relating to the use of the roads by heavy construction vehicles.

83. The Committee also believes that the Department of Housing and Construction should take all possible steps to minimise inconveniences to local residents during the construction phase, e.g. noise from blasting, dust etc.

84. Committee's Recommendation The Committee recommends that the Department of Housing and Construction liaise with the Northern Territory authorities to ensure that inconvenience and hazards to residents of Larrakeyah from heavy vehicles during construction are minimised.

85. Project Management In a submission to the Committee, John Holland Holdings Ltd proposed a number of alternative methods of executing the work. Whilst appreciating the interest shown by John Holland Holdings Ltd in this matter, the Committee believes that it should await the result of the examination of the project management system presently being undertaken by the House of Representatives Expenditure Committee. However, the Committee notes that the Department of Housing and Construction will be examining a number of possible alternatives before determining the contractual arrangements for this project.

ESTIMATE OF COST

86. The estimated cost of the work when referred to the Committee was \$18.3 million at June 1979 prices. During the public hearing, the Committee was informed of two matters which resulted in the estimated cost of the work being reduced to \$17.75 million.

- An additional cost of approximately \$1.1 million will be incurred for the bulk of the armour material for the breakwater to be supplied from external quarries and not from excavated material as originally proposed;
- a cost reduction of approximately \$1.65 million in the berths' estimates as studies have shown that it is not necessary to incorporate a vertical concrete wall in the wharf construction.

87. The revised estimate of cost of \$17.75 million is made up as follows:

	\$
Breakwater, dredging and excavation	7 300 000
Berths, vertical-lift facilities and transfer yard	3 650 000
Buildings	3 000 000
Engineering services	3 800 000
	<u>17 750 000</u>

PROGRAM

88. Subject to the necessary approvals, it is proposed to call the main tender for excavation, breakwaters, dredging and wharves in October/November 1979.

89. Further tenders will be called for the building, engineering services and vertical-lift facility with a view to achieve substantial completion by February 1982.

RECOMMENDATIONS AND CONCLUSIONS

90. The summary of recommendations and conclusions of the Committee is set out below. Alongside each is shown the paragraph in the report to which it refers.

	Paragraph
1. THERE IS A NEED TO PROVIDE A NEW PATROL BOAT BASE IN NORTHERN AUSTRALIA.	15
2. THE EXISTING TEMPORARY FACILITIES AT DARWIN ARE INADEQUATE FOR THE SUPPORT OF THE PRESENT ATTACK CLASS PATROL BOATS AND WOULD BE UNABLE TO SATISFACTORILY SUPPORT THE NEW FREMANTLE CLASS PATROL BOATS.	15
3. THE COMMITTEE BELIEVES THAT THE LARRAKEYAH SITE MEETS THE OPERATIONAL REQUIREMENTS FOR A PATROL BOAT BASE IN THE DARWIN AREA.	37

Paragraph

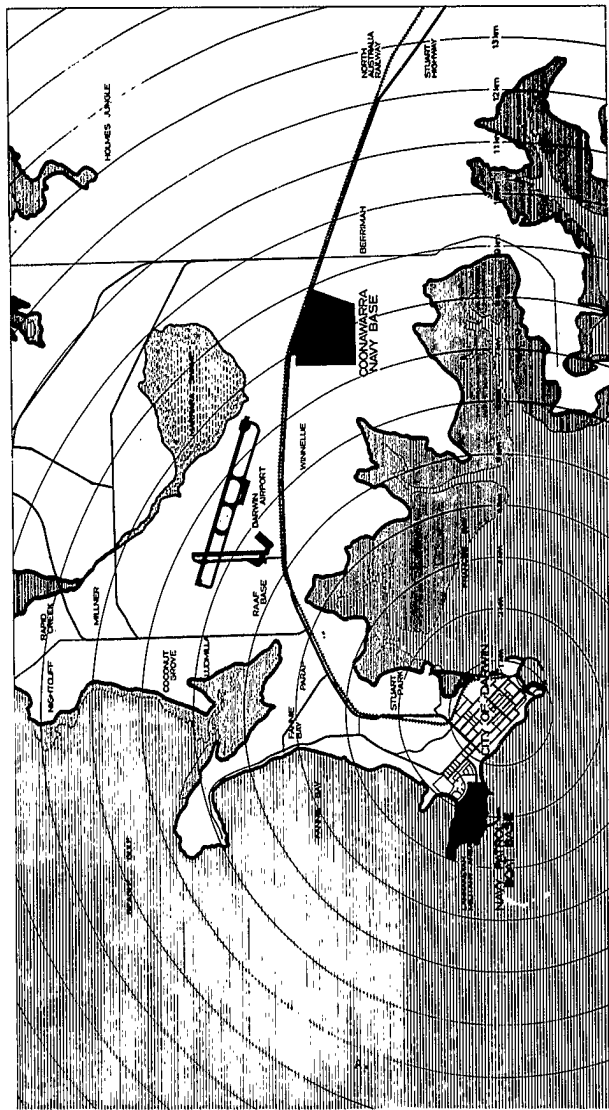
4. THE COMMITTEE RECOMMENDS THE CONSTRUCTION OF THE WORK IN THIS REFERENCE. 78
5. THE COMMITTEE RECOMMENDS THAT THE DEPARTMENT OF HOUSING AND CONSTRUCTION LIAISE WITH THE NORTHERN TERRITORY AUTHORITIES TO ENSURE THAT INCONVENIENCE AND HAZARDS TO RESIDENTS OF LARRAKEYAH FROM HEAVY VEHICLES DURING CONSTRUCTION ARE MINIMISED. 84
6. THE ESTIMATED COST OF THE WORK AT THE TIME OF THE PUBLIC HEARING WAS \$17.75 MILLION. 86

Keith Shum
Chairman

(M.H. Bungey)
Chairman.

Parliamentary Standing Committee on Public Works,
Parliament House,
CANBERRA, A.C.T.

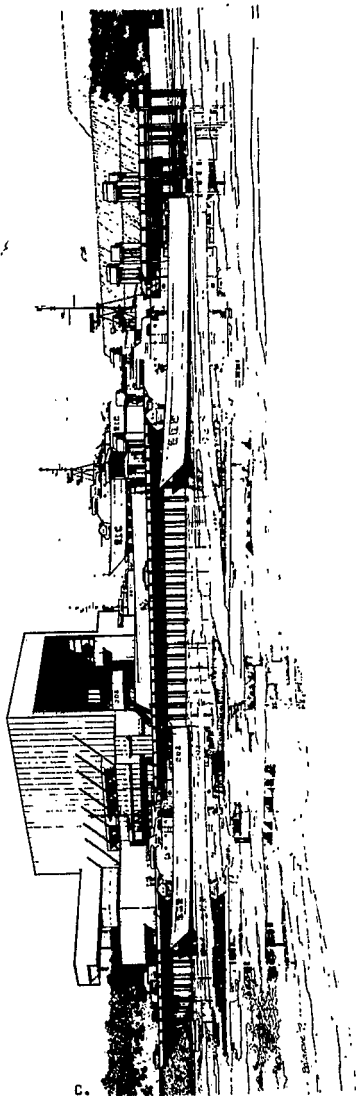
20 September 1979.



**DARWIN - NAVY
PATROL BOAT BASE**



25143/79-L



PERSPECTIVE OF DARWIN PATROL BOAT BASE