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JOINT COMMITTEE ON PUBLIC WORKS

Reference: Upgrade patrol boat facilities Darwin Naval Base, Northern Territory

TUESDAY, 19 JULY 2005

DARWIN

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**JOINT STATUTORY COMMITTEE ON
PUBLIC WORKS**

Tuesday, 19 July 2005

Members: Mrs Moylan (*Chair*), Mr Brendan O'Connor (*Deputy Chair*), Senators Ferguson, Troeth and Wortley and Mr Forrest, Mr Jenkins, Mr Ripoll and Mr Wakelin

Members in attendance: Mr Forrest, Mr Jenkins, Mrs Moylan and Mr Brendan O'Connor

Terms of reference for the inquiry:

To inquire into and report on:

Upgrade patrol boat facilities Darwin Naval Base, Northern Territory.

WITNESSES

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Committee met at 11.08 am

CHAIR (Mrs Moylan)—It is a great pleasure to declare open this public hearing of the Joint Committee on Public Works inquiry into the Darwin Naval Base patrol boat facilities upgrade, Darwin, Northern Territory. This project was referred to the Public Works Committee on 11 May 2005 for consideration and report to parliament. In accordance with subsection 17(3) of the Public Works Committee Act 1969:

- (3) In considering and reporting on a public work, the Committee shall have regard to -
- (a) the stated purpose of the work and its suitability for that purpose;
 - (b) the necessity for, or the advisability of, carrying out the work;
 - (c) the most effective use that can be made, in the carrying out of the work, of the moneys to be expended on the work;
 - (d) where the work purports to be of a revenue-producing character, the amount of revenue that it may reasonably be expected to produce; and
 - (e) the present and prospective public value of the work.

This morning the committee received a confidential briefing from the Department of Defence, and we thank you for arranging the inspection of the facilities and the opportunity to visit the patrol boats. The committee will now take further evidence from the Department of Defence on the public record.

[11.09 am]

BRADFORD, Mrs Anne Margaret, Manager Technical Services, Corporate Services and Infrastructure, Northern Territory/Kimberley, Department of Defence

HAMMOND, Mr Gregory Byron, Project Director—Australian Capital Territory/Southern New South Wales, Infrastructure Asset Development Branch, Department of Defence

HUTCHINSON, Brigadier Peter John, Director General Infrastructure Asset Development, Infrastructure Asset Development Branch, Department of Defence

MARSHALL, Captain Peter James, Commander, Royal Australian Navy Patrol Boat Group, Royal Australian Navy

ROSS, Mr William John, Principal, Bill Ross and Associates

Witnesses were then sworn or affirmed—

CHAIR—The committee has received a statement of evidence from the Department of Defence. This will be made available in a volume of submissions for the inquiry and will also be available on the committee's web site. Does the department wish to propose amendments to the submission it has made to the committee?

Brig. Hutchinson—Since the project was referred to the committee, there have been two developments that require an amendment to the statement of evidence. Firstly, Darwin Naval Base was renamed HMAS *Coonawarra* in May 2005. All reference to Darwin Naval Base in the evidence should be amended to read HMAS *Coonawarra*.

Secondly, the Minister for Defence, Senator the Hon. Robert Hill, announced on 5 July 2005 that there will be two additional Armidale class patrol boats forward based at the Western Australian port of Dampier. Paragraph 6 of the evidence should have the following text added: 'The patrol boat crews will fly into and out of Dampier to maintain patrol cycles on a rotational basis. Whilst major maintenance requirements will be carried out in Darwin, some maintenance will be conducted in Dampier. The families of the crew members will reside in Darwin with the majority of the fleet.' Paragraph 11 needs to be amended to reflect: 'Fifteen crews will be based in Darwin and will rotate through the 10 hulls home ported at HMAS *Coonawarra*.'

CHAIR—Thank you. I now invite you, Brigadier Hutchinson, to make a short statement and then we will go to questions.

Brig. Hutchinson—The Department of Defence is proposing an upgrade of the patrol boat facilities at HMAS *Coonawarra*, Darwin, Northern Territory. The proposal is to provide infrastructure to enable the new Armidale class patrol boats to safely and effectively operate from HMAS *Coonawarra*. In addition, this proposal will provide appropriate facilities to house the HMAS *Coonawarra* port services organisation.

The Armidale class patrol boat project will provide a contractor supported patrol boat capability that is crewed and operated by Navy. The Defence Materiel Organisation project now provides for a total of 14 patrol boats, of which 10 will be home ported in Darwin, including two forward based to the North West Shelf. The patrol boats will provide an enhanced quick reaction capability to respond to potential threats and will add to Navy's overall border protection capability.

The commissioning of the new Armidale class will change the method of operating patrol boats. The 10 Darwin based patrol boats will have 15 crews residing in Darwin which will rotate through the available vessels to maximise their operational availability. The scope of this proposal includes an extension and modification of the existing wharf to provide fully serviced berths for up to seven Armidale class patrol boats. This component of the project was authorised by the committee in July 2004 as advanced works to the value of \$5.5 million prior to the consideration of the total project to support the delivery program of the Armidale class patrol boats in Darwin. I thank the committee for that authorisation, which has allowed the Armidale to be introduced into service on schedule. This hearing now provides full public disclosure and examination of those works.

An extension to the existing synchrolift is the second component. This enables the Armidale class patrol boats to be lifted from the water for maintenance and safe storage on land and the associated modifications to the land berth hardstand and vessel cradles. The third component is the additional fuel storage to support the operation of the Armidale class patrol boats. The fourth component is a standby crew facility to enable 15 crews to rotate through the 10 Armidale class patrol boats and to facilitate rapid handover and deployment of vessels when they return from patrol. The final component is an associated port services organisation facility which will improve the ability of the port services manager to manage the operation of HMAS *Coonawarra* and the approaches to it.

HMAS *Coonawarra* is located on Commonwealth land. The proposed work will be carried out entirely within the base. The value of the project is expected to be \$19.2 million. This includes construction costs, professional design and management fees, furniture, fittings and equipment, together with appropriate allowances for contingency and escalation. Funding for the project was foreshadowed in the 2005-06 budget. The ongoing support costs for the facilities are in the order of \$0.646 million per annum. Subject to parliamentary approval, construction of the remaining facilities is planned to commence in late 2005. Project completion is planned to occur by late 2006.

CHAIR—From the outset, for the public record, could you give us a little more detail about the budgeting. As you outlined in your opening statement, the committee approved \$5.53 million separately for the wharf extension and then there is a line item in the budget. Without divulging confidential costings, could you explain how that has worked?

Brig. Hutchinson—The costings I have given you of \$19.2 million is an exempt GST figure—that is, net of GST.

CHAIR—And the \$5.53 million?

Brig. Hutchinson—The \$5.5 million is included in that \$19.2 million. In fact, the original approval has come in at less than that. Again, I will not go into the detail of that, but the \$19.2 million is a total budget including the preapproved works of the committee.

CHAIR—Thank you very much for clarifying that for the public record. There is another question that I want to ask. I understand that, with defence establishments, you do not have to work through the local planning authority or indeed through the Environmental Protection Authority. Is it correct that you are not obliged at law?

Brig. Hutchinson—In terms of the Commonwealth land, we are not compelled to adhere to local state or local government regulations. However, where possible, we will always attempt to comply with the spirit of those regulations. In terms of environmental regulations, we are subject to the Environmental Protection Act and we go through the normal processes there.

CHAIR—Perhaps there will be more questions asked about that later. On the planning issues, do you have a process for, as you say, being the good citizen and making sure that you are in touch with the local authorities?

Brig. Hutchinson—We have extensive consultation, which is referred to in the statement of evidence, with the local authorities. As well as what is recorded in the evidence, I might just point out that we conducted a local industry briefing, especially on the Armidale class introduction, in August last year. We have regular Defence and industry briefings. We conduct Defence and industry briefings annually in the Northern Territory. We conduct an annual Northern Territory government and Defence consultative forum, where we provide forward warning and consultation on developments here.

We have very close liaison with the Northern Territory government. They have a defence support section—and I note that representatives of that section are at this hearing today. I spoke to them on my last visit here. My people regularly deal with them and with other local authorities. The full list of people consulted is given in the statement of evidence. We have conducted the environmental studies and have had extensive consultation. From the environmental side of things, the studies have determined that this is not a controlled action. We have gone through all of those processes.

CHAIR—I am sure that there will be some more questions in relation to that. I understand that the Department of Infrastructure, Planning and Environment has a height restriction of seven metres, but the new operations area of the new building will be eight metres. Is that causing any problems?

Brig. Hutchinson—We have had no feedback from the department that that is a particular concern. I guess their height restrictions are normally based on standard type buildings. This building is actually required to provide the control of the port, and the reason that we have gone for the eight-metre height is to give us that elevation in order that the port master can do his or her job of controlling the port. That is a particular exemption based on the operational requirement that we have there, and there has been no feedback from any of the local authorities that they have any concerns over that.

Mr BRENDAN O'CONNOR—Paragraph 57 of your submission makes reference to:

The design of all power supply, electrical and mechanical equipment will include an assessment of energy use applying life cycle costing techniques and power demand analysis.

Has the energy use assessment been done? If so, what were the results? Also, could you outline or explain, in layman's speak, what the phrase 'energy use applying life cycle costing techniques and power demand analysis' means?

Brig. Hutchinson—I will ask Mr Bill Ross to answer that question.

Mr Ross—To date, what we have done is determine what the anticipated annual power consumption will be and the effective cost of that. That then becomes the basis for us to try to improve on the energy consumption of the building. We have only gone to a concept design for the building at this stage. Effectively, we have established a target for ourselves to try to beat as we go into a more detailed design.

Mr BRENDAN O'CONNOR—How do you do that? How does that work?

Mr Ross—You start with the simple things like energy efficient light fittings and so on and controls which allow the lighting to be switched off when the room is not used—very simple things. The building itself is a relatively small building. It does not lend itself to major plant or major systems that are able to, if you like, make big inroads into energy efficiency, but there are still plenty of opportunities.

Brig. Hutchinson—To follow on from that, the buildings will conform to Commonwealth and Defence energy policies—the Defence sustainability policy and the Defence green building requirements. They will also be covered by the regional energy management plan from the local corporate services and infrastructure group. Our experience on new buildings shows that this will result in reduced energy and water usage and a reduced footprint for the buildings in terms of greenhouse and everything else. But, seeing it as at the design stage only—and that we are going for a design and construct—we will be building those sorts of requirements into the documentation for that design and construct. So we have the concept there and that will be built into our contracting.

The building orientation and the length to width ratio is pretty much set by the site that we have there. However, it is almost ideal in the way that it is laid out—probably more through luck than good management—for energy efficiency, and that will be further adjusted during the design. As Mr Ross said, we are looking at energy efficiency—fittings and that sort of thing—in the design. But, because of that small footprint of the building, it has limited opportunities for large ecologically sustainable development savings.

Mr BRENDAN O'CONNOR—In the same paragraph there is a reference to building management systems, and it says:

Facilities may incorporate building management systems, metering and other provisions to measure energy use ...

Again, is that something that will be done or is it just being considered?

Brig. Hutchinson—We are trying on all of our bases to have building management systems. In general terms, we are trying to move to have these centrally monitored so that it provides efficiencies of scale in managing our energy use. Mr Ross may wish to add something.

Mr Ross—In fact, that was what I was getting at. The building itself does not tend to warrant a building management system of its own. We are trying to link into another base or similar building.

Mr BRENDAN O'CONNOR—Because of its size?

Mr Ross—Yes.

Mr BRENDAN O'CONNOR—Earlier today we had a very comprehensive inspection of the project site. As I understand it, the hull size of the Armidale class patrol boats is the reason that there has to be an extension to the cradles. Is it effectively the case that the Fremantle class has a smaller hull and the extension is required to lift larger boats?

Capt. Marshall—The cradle geometry is determined primarily by the shape of the hull but also the disposition of weights through that hull. You have to set each cradle to meet those two parameters. Because an Armidale is 15 metres longer than a Fremantle, we have to create an extended cradle and disperse the weight across the keel. It is also significantly larger in beam, so we need to create the facility to accommodate that beam as well as the location of underwater fittings.

Mr BRENDAN O'CONNOR—Are they new cradles? For the record, are we looking at an extension or replacement of the actual cradles?

Brig. Hutchinson—What we are looking at are two cradle sets that were modified and one new one.

Mr FORREST—Does that mean that one set of cradles can only be used for the old class? You are going to have a mix of classes coming in. Will that provide a logistics problem with storing big cradles for the bigger ships, or is there some flexibility in the design—that you have one big tray and the individual cradles can be preassembled? Do you get the drift of what I am trying to say?

Capt. Marshall—There is some flexibility in the design of the cradles, but we will have dedicated Armidale cradles. But, in the introduction of the Armidales and the phasing out of the Fremantles, we will have to have dedicated cradles for each—as, indeed, we do now, for example, for the landing craft heavy that was out of the water. We manage that by having the cradles located in some of the empty hardstand berths. That is all coordinated in accordance with a program. It is not a significantly difficult program to coordinate.

Mr FORREST—The cost of preparing these cradles is in the estimate you have provided. Without going into the detail, which item in the cost estimate is it?

Brig. Hutchinson—The confidential cost briefing that we provided had a separate line item for the cradles.

Mr JENKINS—There will be three cradles for the Armidale—

Brig. Hutchinson—Three sets of cradles.

Mr JENKINS—and three extended berths. Potentially, you could have five Armidale class patrol boats if you had two in the shed and the three. But a decision has obviously been made that three are sufficient. Can you take us through that?

Brig. Hutchinson—I will ask Captain Marshall to expand on it but the concept is that we take the boats out of the water for two reasons: one is for maintenance or storage and the other reason is for cyclone protection. The best method of cyclone protection is for the boats to put to sea and to outrun the cyclone. So therefore the assessment has been made that given the 10 boats, of which two would normally be working the North West Shelf response and the eight doing the more northern approaches, most of those boats would put to sea during a cyclone requirement. The risk assessment and the assessment of the amount of maintenance that we would need is that three would be sufficient, but I will ask Captain Marshall to expand on that.

Capt. Marshall—The primary employment for the ships is to be out at sea, with 3,000 available days for the eight hulls, noting that it is pro rata for the additional two. There are 100 days when the boats are effectively alongside—365 less 250 days at sea. If we activate surge, that 100 days alongside decreases. An analysis of that indicates that we really only need a maximum of three boats out of the water at any one time, noting of course that the major maintenance will be subcontracted out by Defence Maritime Services and they have access to other shipyards for the conduct of maintenance.

Mr BRENDAN O'CONNOR—That is also assuming the store is capable of withstanding cyclones. Is that the case?

Capt. Marshall—The shed was built to withstand cyclones and all the advice I have is that it is a cyclone-proof shed. It has been up for 24 years now and it has certainly withstood cyclones in that time.

Mr FORREST—Considering the length of time it takes to lift a boat and then drag it up and put it in the hardstand, and given that cyclones come pretty quickly, how long does it takes to get a boat secured?

Capt. Marshall—I am estimating a bit but it does not take long. There is probably more time in preparing the boat to move into position against the dolphins outboard of the synchrolift and then moving it into the synchrolift than the actual lifting of it onto the synchro, which is probably in the order of 30 to 45 minutes. Once it is out of the water we move it around the transfer tray. The tray is pulled by a tractor, so it happens reasonably slowly, but it does not take very long. So I think once it is out of the water there is probably about an hour's work to have it lashed down in position, and maybe a tad more to get the cyclone lashings on properly.

Mr JENKINS—Was the extension of the hardstand berths, the excavation works, subject to environmental inquiry?

Brig. Hutchinson—Yes.

Mr JENKINS—Were there no factors that came out of that inquiry?

Brig. Hutchinson—An environmental review under the EPBC Act was undertaken and it was determined that there was no requirement for referral. In terms of the specifics of the subsurface requirement, we conducted an examination of the marine environment in 1997 as part of the assessment for those redevelopment works. There were no threatened species present. The environmental review against the EPBC Act for this project was undertaken in 2004 and again there was no requirement for referral. There were no issues of major significance. There were a couple of issues that were mentioned in the evidence as minor issues. They were:

- a. Potential impacts to marine biota from the construction operation of the new wharf; and
- b. Potential impacts to marine mammals from underwater noise and vibration during the construction activities.

The report concluded:

That while the impacts may occur, they are not deemed to be significant.

As I understand it, the Territory Wildlife Park has recently dived in the basin at HMAS *Coonawarra* and commented very favourably on the water quality and the abundant marine species in the basin. As I think was pointed out on the tour today, there are dolphins, crocodiles, sea turtles and so on that inhabit the area.

Mr JENKINS—I think the submission says that the wharf has a life of 50 years.

Brig. Hutchinson—Yes.

Mr JENKINS—There is a technical term for the way in which the pylons are preserved under the water.

Capt. Marshall—The term is ‘cathodic protection’.

Mr JENKINS—Does that require some stripping-down of the pylons? Do marine biota attach to the pylons even with that corrosive protection?

Brig. Hutchinson—I am going to have to look for some assistance here, perhaps from Mr Ross.

Mr Ross—I cannot give you a specific answer, but the base for the cathodic protection goes on before the piles are driven. So, once the pile is in place, the marine biota can come and repopulate, if you like.

Mr JENKINS—So it is not an ongoing process?

Mr Ross—It is a charge. I do not know what effect the charge has on marine biota.

Mr JENKINS—But the charge is through a coating rather than any input?

Mr Ross—It is a steel pile. It is applied at the top of the pile.

Capt. Marshall—The use of electronic input is known as active cathodic protection. We do not have active cathodic protection in the wharf. It is provided by coatings attached to the materials used in the construction of the wharf paints et cetera.

Mr JENKINS—So that is a natural process with the seawater, is it?

Capt. Marshall—Yes.

Mr FORREST—Following that environmental theme, you started to explain the work you have put into justifying why this project is not a controlled action. That obviously required preparation of a report. Is the report which goes through the issues available to the committee? I am particularly interested in the excavation at the hardstand as well. That looks like soft limestone. How hard is it? Is it going to need blasting and all those sorts of things? Where is the fill that is excavated from that going to be placed? Do you have a report that you could make available to the committee?

Brig. Hutchinson—We could certainly make that report available.

Mr JENKINS—On that excavation, I am assuming there are no heritage matters.

Brig. Hutchinson—The excavation is an extension of an existing excavation. There have been no Aboriginal or heritage issues identified in that particular area, noting that we are only extending that existing excavation by an additional four metres. Already, the top of that excavation, as you saw, has an existing car park on it. So that land that we are dealing with is not untouched land anyway.

Mr FORREST—Probably a reading of the justifying report would satisfy me, if you are able to provide that.

Brig. Hutchinson—I can certainly provide the report. I would just note that the report covers mainly the impacts and the assessment as to whether that is a significant impact and therefore a controlled action or not. A lot of the issues that you are referring to will be covered in our construction environmental management plan, which will be produced once we have the approval to move forward with the works and we move into the contracting phase. So, in terms of how we dispose of the fill, we have not actually planned exactly how that will happen, but that is a regular construction occurrence. That will be built into the construction environmental plan subsequent to now. So I cannot give you a definitive answer on that yet. That would depend on who wins the contract and what their plan will be.

Mr FORREST—They might put in a price based on using it somewhere else around Darwin or something.

Brig. Hutchinson—Yes, that is right.

Mr FORREST—I wanted to ask about that subsequent plan. To whom would you report to ask if it is an acceptable plan? Who is the ‘policeman’?

Brig. Hutchinson—For each of our bases we have an environmental management plan. That provides the overall guidance and the processes that we have to go through to have specific construction occur. Our contractor, as part of their contract, will then provide us with a construction environmental management plan, which would have to be agreed through our corporate services and infrastructure group. We have an environmental officer in our corporate services and infrastructure group, whom I notice is here today, who would get to oversee that and to approve or require changes to that construction environmental management plan so it meets all of our environmental requirements.

Mr FORREST—So that is basically regulated within Defence and there is not an external supervising body to make sure that you do not make a mistake somewhere?

Brig. Hutchinson—Yes. Going back to the original question from Madam Chair about our legislative requirements, the act that we meet is the Commonwealth environmental protection act, not a local act.

Mr FORREST—I understand that, but that is not a controlled project. That means that they do not exercise any oversight.

Brig. Hutchinson—The process is that if, as you point out, it is not a controlled action, that is a self-regulation action that we take on board. Our environmental people work very closely with the Department of the Environment and Heritage to ensure that we are meeting all of those requirements. In HMAS *Coonawarra* today we have spoken about the harbour itself. I mentioned that the water quality there is good. This is reclaimed land and in fact the environmental record that we have got over 25 years is that we are actually promoting the establishment of marine life in that environment, so I think we have got a pretty good track record here and I could give you examples—say, Army training areas—of where we have bought what was degraded farming land and the areas have become, through our management processes, environmentally pristine.

Mr FORREST—You are driving marine piles, which makes a lot of noise underwater. You have mentioned dolphins—and it is a pity we did not see some today—and that noise would have a fairly dramatic impact on dolphin life. I am interested to know if someone has taken any sonic measurements underwater and established that the noise is within a tolerance that is not going to frighten off a dolphin.

Brig. Hutchinson—I will ask Mr Ross to respond to that. We have taken some measurements.

Mr Ross—The environmental review that we carried out went into a fair bit of detail in looking at the impact on marine mammals, including reference to other studies to establish how far the impact would travel. The conclusion that they came to—and I am not an environmentalist—was that, given the noise travel in the water, the topography of the harbour and the transient nature of marine mammals, the chance of an incident occurring was low, notwithstanding that there is a process that is within the controls that if marine mammals are sighted in the vicinity while construction is taking place then there are procedures that have to be taken.

Brig. Hutchinson—I would also point out, Mr Forrest, that the actual pile driving is a relatively quick process, as has already been mentioned. It takes 20 to 30 minutes to drive a pile. We are trying to minimise that impact. You have seen how many piles have already been driven. There are not a lot; the total number would be under 20 for the wharf.

Mr FORREST—At what stage will you be ready to have the ongoing management plan in place? You will not wait until the project is finished; you will have established some procedures during construction and subsequent to that, and it will be produced in some sort of document.

Brig. Hutchinson—Going back to what I said before, the base already has an environmental management plan, so we have a plan for managing those things. That plan also details what happens when you want to do new actions or whatever and what processes you go through. So that is taken care of.

The other plan I was talking about was the construction environmental management plan. That is specifically to manage what occurs during the construction. But before, during and after that construction the overall base environmental management plan continues, so there is no lack of continuity. There will be an additional plan superimposed over the standard environmental management plan which looks after those construction activities. If we have a number of contractors, then each contractor will have their construction environmental management plan that they need to adhere to. So we might have a number of those plans running concurrently, if you like.

I will follow on from two of the questions that you asked. There are 18 piles in total, four of which are remaining on the wharf extension. Cathodic protection is only corrosion protection; it is not to discourage marine biota. In addition to the processes that we go through in terms of the environmental issues, we have independent audits undertaken by consultants to confirm that we are meeting our legislative requirements.

Mr BRENDAN O'CONNOR—On an entirely different matter, in paragraph 65 you refer to approximately 30 workers who will be required for the project during the construction phase. You have also indicated that you currently have approximately 20 workers on site. I know that they are approximations, but are they effective full-time levels of employment? Are we talking about 20 full-time workers working on site now and 30 full-time workers that will be required?

Brig. Hutchinson—I think we are talking about full-time workers there. I will ask Mr Hammond to expand on that.

Mr Hammond—Yes, we are talking about full-time workers, but that also includes subcontractors who are only there for that particular component of work.

Mr BRENDAN O'CONNOR—Given that you have used the number of workers as a measurement of labour units, we can conclude from that that it is effectively 20 times 38 hours per week, approximately. It is not like 20 workers, one of whom might be working for two hours a week—or is it? That does not really give us any idea as to the level of employment required if I cannot determine how much each worker might be working in a given week, month or whatever.

Brig. Hutchinson—That is very difficult to project.

Mr BRENDAN O'CONNOR—You have talked about subcontractors. Are there companies contracted to the project that have employees working for them or are they all separate, independent contractors?

Mr Hammond—At the moment we have one contract out with Steelcon for the extension of the wharf and the upgrade of services. Underneath that particular contractor there are subcontractors.

Mr BRENDAN O'CONNOR—And they do particular types of work?

Mr Hammond—That is correct—the upgrade of electrical services et cetera.

Mr BRENDAN O'CONNOR—How much longer would the 20 or so workers have to work to finish that part of the project? Do you have any idea?

Mr Hammond—The wharf extension and services are currently on track to be completed in late September. We are working towards approval of the rest of the works and commencing some of the civil works for the next phase of the project around that time as well.

Mr BRENDAN O'CONNOR—Subject to successful tendering and subject to approval by the committee, is it anticipated that some of the contractors performing works now will tender for the works we are considering today?

Brig. Hutchinson—The pile driving and that sort of thing, when we are looking at the synchrolift extension, is similar to the works we are currently doing.

Mr BRENDAN O'CONNOR—It would be rather specialised, though, wouldn't it?

Brig. Hutchinson—That is right, and that is why we would expect to end up with similar contractors tendering for those works. However, the building construction would be different, as would the cradles and the excavation. The excavation works for the hardstanding would be different. I do not really know, but the company that currently has the work is a medium sized company. It is a relatively good size in the Northern Territory.

Mr BRENDAN O'CONNOR—I am just envisaging that you will have works completing, subject to all things going well, and new works under this project commencing around the same time. I am also interested in how much work is undertaken under the phrase 'additional effort associated with off-site prefabrication'. A number of workers additional to the 30 or so workers would be involved in prefab work—is that right?

Brig. Hutchinson—We have covered that in the evidence. To clarify this, the 20 workers we are talking about would be the maximum on site at any particular time. I do not think, for example, that when they are driving piles they need to have one person operating the crane and 19 looking on or something like that. It would be a maximum number, and it would be variable. I would also like to clarify that Steelcon, who have the contract for the wharf extension, also do civil works. So some of the other works that I have mentioned, such as the extension of the hardstanding, would certainly be something you would expect them to be interested in as well.

Mr BRENDAN O'CONNOR—Is the principal contractor a local company?

Brig. Hutchinson—Yes, they are; they are a local Darwin company.

Mr BRENDAN O'CONNOR—And the subcontractors, I guess, would be local.

Brig. Hutchinson—Yes.

Mr JENKINS—Without going to the figures, in the costings given to us there were two line items: the stand-by crew accommodation and the port services organisation facility. In figure 1 of the submission, 13 items are listed. I take it that items 8 through 13, which are the proposed main building, the proposed workshop/store, container and fender store, POL store, seaport storage and the existing building, are all covered by those two line items.

Brig. Hutchinson—Yes, that is correct. All those buildings in the cluster, from 8 to—

Mr JENKINS—Eight to 13.

Brig. Hutchinson—Thirteen is an existing building.

Mr JENKINS—Just to clarify before we move on—obviously I was not paying enough attention—what is a POL store?

Brig. Hutchinson—Petrol, oils and lubricants.

Mr JENKINS—Obviously, yes. More seriously, because I do not think this was explained to me and it is perhaps assumed that I should understand: it talks about the stand-by crew facility having working accommodation. I am sorry to have to ask this but does that mean that the crews will be living in the building or working out of the building? Which does it mean?

Brig. Hutchinson—I will start and then ask Captain Marshall to expand on this. We have said there are 15 crews for 10 boats. As was mentioned in the confidential briefing, when the crews are not at sea they conduct a number of other activities, such as leave, external courses and internal training. A portion of their time before they go back to sea again will be used to prepare for their next voyage and mission. So the crew building is focused on providing a space where they can do the activities that they need to do when they are not on leave or away from Darwin on a course or whatever.

Capt. Marshall—The third and fourth drawings in the submission show the layout of the ground and first floor of that facility. They show the basic design of the building. The top right of the drawings is the port services organisation closest to the harbour. The other end of the building is all for the stand-by crews. You will notice that that is all office space, be it individual offices or open-plan office working areas. There is no intention for the crews to sleep there. I think the term 'accommodation' which we have used is a misnomer. It has fallen into our lexicon, which I think we need to work at correcting.

Mr BRENDAN O'CONNOR—I imagine quite generous recreational leave would be required for crew who have to work extended periods on vessels. What is the ratio? What is the

longest people could possibly be at sea in normal circumstances before they would be relieved? Is there a standard? I do not know.

Capt. Marshall—We are planning that crews will be attached to a boat ideally for about six weeks. We have gone to the Defence, Science and Technology Organisation to develop an optimised planning tool which marries the crews with the boats and with the operational missions on an ideal cycle. In the optimisation algorithms in that model we have had to allow flexibility rather than just a blanket six weeks. We run from about three weeks to 10 weeks for a crew attachment to a boat. Ten weeks is extreme, because the crews will get very tired spending 10 weeks on a patrol. We are trying hard to avoid that.

Mr BRENDAN O'CONNOR—I wanted to ask about that before I asked about recreational leave. What leave entitlements do crew at sea have?

Capt. Marshall—All sailors and all defence personnel get their basic 20 days annual leave. Sailors at sea might get up to an additional 10 days of sea service leave. For service in the Northern Territory based from Darwin, an additional five days of remote location leave may be granted. At the commanding officer's discretion they can get an additional five days recreation leave to compensate for keeping duties in harbour while the ship is alongside, for example. That is up to 40 days leave in total.

Mr BRENDAN O'CONNOR—So it is up to seven weeks.

Capt. Marshall—Yes. That is the crews' annual leave entitlements. If they are at sea over weekends, those weekends are lost. So they have 40 days annual leave and that is it. There is also provision for a commanding officer to allocate, I think, up to three days of unchecked leave at his discretion. I would not expect that to happen every time they came alongside.

Mr JENKINS—How many are in a crew unit?

Capt. Marshall—A core crew is 21. We would aim to have a couple of additional trainees posted to a boat most of the time.

Mr JENKINS—In this stand-by accommodation, there are two sets of office space, including separate offices for the CO, XO and BO/STO. Are there something like 12 workstations? Should I take figure 4, the layout of the office space, as gospel, or is it indicative?

Brig. Hutchinson—It is an indicative layout. The expectation is that there will be some flexibility in how we finally come up with that. It has been described by my compatriot here as a Qantas Club type concept because the people will be filing through; they will not necessarily all be there at once. So the desks that you see are not assigned to 'Mr Jenkins' and 'Mr O'Connor' and so on.

Mr JENKINS—Are you down to the detail for each of the crew units as to how many workstations you are actually supplying and how much space there is for each workstation?

Mr Ross—Yes.

Mr JENKINS—What standards have been used?

Mr Ross—The standard Defence approach of 6½ square metres average per workstation area and 12 square metres per office area.

Mr JENKINS—So that is a standard set by DoD?

Mr Ross—It is a standard. I do not know that it has been formalised.

Capt. Marshall—There are Defence Public Service guidelines—they are guidelines, not rules—which articulate the broad guidelines for office space for particular individuals.

Mr JENKINS—What is the gender ratio of crews at the moment?

Capt. Marshall—The *Armidale* is the first time that we can accommodate females, particularly junior sailors, in patrol boats. Because of the accommodation, the sleeping space is on the ship. That will typically move in blocks of four or two, so we would aim to have four female junior sailors to fill a four-pack. If we have female junior sailors we will aim to have a female senior sailor or a female officer; and, because we have cabins of two, we would aim to have two of those. Our projections on the numbers of females in Defence or in Navy at the moment would indicate that, while we are targeting to have about four female junior sailors and then one or two senior sailors or officers, we will not be able to achieve that in every crew. That is certainly a target for us to achieve.

Mr JENKINS—On the *Bunbury* today there were two female senior officers.

Capt. Marshall—There were two female junior officers. One was a trainee and one was a navigating officer.

Mr JENKINS—And what is the complement on the *Armidales*?

Capt. Marshall—The *Armidales* have four female junior sailors and no female senior sailor or officer.

Mr JENKINS—That will do me for this bit.

Mr FORREST—I would like to talk about the synchrolift; it is a nice little bit of clever engineering. There is obviously a lot of work to do, which will interfere with the operation of getting ships in and out for maintenance. How do you plan to coordinate that? Have you allowed for continued operation during construction?

Brig. Hutchinson—I will ask Mr Ross or perhaps Mr Hammond to give a bit more detail—but, yes, we have taken that into account and clearly we will be looking to consider exactly what boats we want to have out of the water at the time that we start the work. That would be more boats that are there for long-term maintenance or for long-term storage. You are right to point out that that is going to have some issues for us, depending on the stage of construction that we are at. Perhaps I will ask Mr Ross to comment on that.

Mr Hammond—I will respond to that one. The staging of the works will have to consider the dry/wet season turnover. Notably, during the full calendar year the synchrolift is required for maintenance, but during the wet season in particular it must be there for that capability to lift the vessels out for cyclone avoidance. The staging of the works will be around the dry season rotation and around the maintenance cycle of the vessels, but the project will negotiate with the port services organisation about their requirements for the synchrolift in their maintenance cycles of the vessels. All works will be completed during the dry season, having it ready, once again, for cyclone avoidance during the wet.

Capt. Marshall—We have also recently been through, in the last 12 months, a major maintenance cycle on the synchrolift. We had it out of operation for periods of up to a couple of weeks. That all proceeded very smoothly. We have a regular program of maintenance to the synchrolift, which does take it out of operation from time to time, and we can phase our work, our operations and the movement of our boats around that maintenance period. I do not see that the upgrade to the synchro will impede those operations in any way, based on that evidence.

Brig. Hutchinson—The final point that I would make, and it has already been mentioned, is that there are commercial facilities available in Darwin which can also lift boats from the water. Particularly from a maintenance point of view, that is the fallback. If we cannot get access to our own workshop because something unplanned occurs, then we have these commercial facilities that we would look to utilise.

Mr FORREST—But presumably you would be looking at months of unavailability, wouldn't you? Perhaps I will ask this question first: does the platform that raises up and down have to be structurally connected to the existing platform so it all stays as one, or is that going to be separated?

Capt. Marshall—It would be joined as one, because you have to maintain the even loading across the keel of the ship; otherwise, you break its back.

Mr FORREST—Okay. So there is a fair bit of work to do—

Brig. Hutchinson—We have done the planning, but—

Mr Ross—It is such a complex operation; for example, the way the piles have been driven on the new wharf is not the way we originally planned it, and it has produced some time savings. We have not actually gone through a work planning study yet to see how we would sequence that style of construction sequence onto the synchrolift. Again it depends on the tendering philosophy, because it may be that Steelcon do not actually do that work. So there could be a different approach. For example, they are building off the existing wharf. They may not be able to do that on the synchrolift. They may need to be barge mounted to drive the poles. We have done the planning on the basis of what we think is a likely scenario; but until we actually get to a bit more advanced stage—even to the extent of tendering and getting a response—it is hard to know how long that is going to be shut down. It is clearly critical and complex.

Mr FORREST—How long do you envisage the whole of the synchrolift will not be in operation? What is the best estimate you can give now?

Mr Ross—Six months.

Mr FORREST—On that same piece of structure, today I was told that tidal variation is a maximum of seven metres—

Capt. Marshall—It is 7½ metres.

Mr FORREST—depending on the time of the year. With the cross-section you have provided, there is a water level indicated. I am curious to know what mean tide level that is and whether or not there will be dredging required. Again it is an environment related question.

Brig. Hutchinson—No, there is no dredging planned for the project. Clearly that is because we do not see that dredging is required for this particular project.

Capt. Marshall—It is a routine maintenance activity we conduct in the basin. It was last conducted in 1999. Dredging is forecast as part of our risk managed works program, and the next dredging of the basin is next financial year. That is a routine maintenance operation within the basin itself, not specifically for the works that we are planning.

Mr FORREST—With the construction of those pier walls, the whole littoral drift changes. There would be increased deposits, I would estimate, right in the front of where the synchrolift is located. You obviously have to measure that regularly, do you?

Capt. Marshall—Yes, we do have a regular program to monitor the water level in the basin and the sediment movement across the basin.

Brig. Hutchinson—I would also make the point that the Armidale class has a similar draft to the Fremantle class. Although it is a bigger boat, it does not need more water.

Mr FORREST—If you showed us this management plan, I would see regular reference to dredging operations at the opening of the port area, would I? That is a major environmental intervention.

Capt. Marshall—No. We last dredged the basin in 1999; 2006 will be the next time we do it.

Mr FORREST—So that will be seven years.

Brig. Hutchinson—The effects of dredging and that sort of thing are considered in the environmental management plan, as I understand it.

Mr FORREST—But how is it done? Do you suck it up, put it in a barge and cart it somewhere else, or do you just pump it out—

Capt. Marshall—I cannot comment on how it was done in 1999; I was not here. But I have certainly seen that method used a number of times previously.

Mr FORREST—Just put it into a barge and cart it away?

Capt. Marshall—Yes.

Brig. Hutchinson—My understanding is that now the environmental requirements for dredging, particularly if you are going to be dredging in a harbour where you might have deposits in the silt and that sort of thing, would not normally allow you to dredge and deposit elsewhere—the old concept of a dredge from here to dump over there. My understanding is that environmental requirements these days would require you, probably, to extract that from the site.

Mr FORREST—I am getting a bit nervous; I want a better answer. I want somebody to confidently tell me how the dredging operation is done. You can take it on notice if you want to or need to.

Brig. Hutchinson—I would point out that it is not part of this project, but we will find that answer for you. Have we got anyone who can answer that?

Mrs Bradford—No.

CHAIR—It is an on-going operational matter.

Brig. Hutchinson—As I said, it is not part of this project.

Mr FORREST—Nobody is keeping an eye on it; that is my point.

Capt. Marshall—As we have previously said, we have an environmental management plan at HMAS *Coonawarra* and an environmental plan more broadly across defence. The activities we undertake in this regard are monitored under that environmental plan. I am not personally familiar with it.

Mrs Bradford—We have an ecosystem monitoring group that operates there as well.

Mr FORREST—I would be more comfortable if I could see this management plan. Is it available on notice?

Mrs Bradford—Yes, it is.

Brig. Hutchinson—Could I also make the point that we conducted an overwater survey to establish the levels in the basin last year and that confirmed that dredging was not required at that time. We can table that management plan.

CHAIR—Do members accept the tabling of a copy of it?

Mr FORREST—Yes. That will shut me up for a little while!

CHAIR—We expect you to brief the committee on it!

Mr BRENDAN O'CONNOR—We are going to examine Mr Forrest's understanding of the report at the end of the day!

Brig. Hutchinson—I note that the plan has the previous name of the facility on the front cover. It should be amended to HMAS *Coonawarra*.

Mr JENKINS—I would like to follow Mr Forrest's prickly questions with a few more. Obviously, I understand that the Darwin Naval Base—now HMAS *Coonawarra*—had to be the site. I am interested in a comment in paragraph 21, in the 'options considered' section of your submission, that 'a number of technical options have been explored which resulted in more economical design solutions'. On the basis that aspects of HMAS *Coonawarra* are fairly recent, in the last four or five years, with the pier and so on, was it the wharf facilities or other aspects of the previous operation that led to that comment about the 'more economical design solutions'? Are there some examples of them?

Brig. Hutchinson—I will pass that across to Mr Ross shortly, but I will just start off by saying that part of the economical solutions that we looked at for the project was the combination of the port services facility with the crewing facility so that we would just build a single facility there. That proves far more economical than building two separate facilities. The reuse of the existing facilities, such as the reuse and modification of two of the cradles for the boats, is the sort of thing we are talking about. Perhaps Mr Ross or Mr Hammond can go into it in a bit more detail.

Mr Hammond—The second part there says that a number of technical options were explored to result in economical design solutions. You may have noticed today when you walked out on the wharf that the actual width of the wharf is narrower in total than the rest of the wharf, which cut down on pile-driving and therefore on expense. But it was based around a crane being able to still transit to the end of the wharf for onloading and offloading as required from Armidale class. In addition to that, the standby crew facility port services organisation has been value managed, workshopped well and truly with all the users, to ensure that we have got the best possible outcome for Commonwealth resources without building too much contingency into it—just to limit the design to the capability as required by the user.

Mr JENKINS—My next question is a general question about the state of the construction market in Darwin. I take it that a lot of the items—the synchrolift and the wharf—in a way are special type aspects, but the cluster of buildings at the end of the day is buildings. How much of a premium are we really paying up here because of the isolation, and how competitive is the construction market? Is there an overreliance on government work as against private work?

Brig. Hutchinson—I will start the answer to that question by saying that our recent experience here gives us a good indication of the costs that we are going to pay. The estimates that you have seen are based on local cost estimates, not a cost estimate from somewhere else in Australia superimposed here. So that is what we expect to pay in the Darwin market. We have been doing a lot of work up here in the Northern Territory. The committee would recall the 1st Aviation Regiment project, which you approved two years ago and which is now probably at the peak of its production—in fact, probably just past the peak of its production and starting to wind down in some areas. It has shown us that the prices in the Northern Territory have been escalating at a pretty high rate, much higher than other areas of Australia. The escalation is trade specific and skill specific, so there are some particular skills up here that are hit harder than others.

Mr BRENDAN O'CONNOR—Because of a shortage?

Brig. Hutchinson—Because of a shortage of tradespeople, because of the isolation here and because there are other projects that are being run up here where people are being paid very high rates to attract them, perhaps, to mining sites or those sorts of projects. So escalation at the moment is running at about 15 per cent across the board, which is much higher than the rest of Australia.

Mr BRENDAN O'CONNOR—But in some particular trades, for example, it would be higher than that; that is the average?

Brig. Hutchinson—Some trades might be higher than that and other trades would be lower. It is great for the Northern Territory but there is a lot of work going on up here with both mining offshore and the developments at East Arm. If you superimpose the government work on that, particularly the defence work—

Mr BRENDAN O'CONNOR—Defence housing.

Brig. Hutchinson—Yes. There is a lot of work. I would say the market is certainly very heated in the Northern Territory. We have factored that into the estimates we have made here.

Mr JENKINS—I have two quick concluding questions. I thought that the material that the treads would be made of would probably be aluminium, but is it a rubberised tread?

Brig. Hutchinson—It is fibre reinforced plastic on top.

Capt. Marshall—Fibreglass is the generic name, but it has a special—

Mr JENKINS—The coating is non-slip, or something.

Capt. Marshall—Yes.

Mr JENKINS—For my general knowledge, what is it with patrol boats and bulls? Is that the mascot? Is each boat numbered?

Capt. Marshall—Each boat is numbered. In fact, every ship in the RAN and in fact most warships are numbered with what is called a pennant number, which is a way we visually identify ships. It is somewhat similar, for example, to a radio call sign. The bulls symbolise that the boats are based out of Darwin. They are buffalo horns.

Mr JENKINS—It is not peculiar to the patrol boats. Did the Armidale have bull 300-and-something on it?

Capt. Marshall—No. I do not think the Armidale has a bull on it yet.

Mr JENKINS—Thank you.

CHAIR—At paragraph 56 of your submission, you talk about the philosophy adopted for the design of fire protection systems. Given that fire protection is clearly an important component of any construction, could you explain for the public record what that philosophy is? Paragraph 56(c) talks about departures from the building code of Australia and the necessity, therefore, to have the project technically assessed by a defence specialist. Will this project be subject to departures from the building code? If so, what is this assessment process and what kinds of departures do you anticipate?

Brig. Hutchinson—The issue in paragraph 56 is more about the general processes. I will just describe those general processes. In relation to fire protection, in the building code of Australia there are two approaches. One is the straight legislative approach, which we colloquially call the bricks and mortar solution. That is about building separations, fire resistance times and all those sorts of thing with a bricks and mortar approach. The second approach that the building code of Australia allows is to have an engineered solution. That is where you might get a fire services engineer to actually examine the building that you are building and to look at it from the point of view of the use of that building and then to seek fire engineered solutions that go beyond the standard bricks and mortar approach where everything has to be two-hour fire resistant and there are distances from appliances and everything else.

Depending on the use of the building and the people you have in the building, you can actually come up with a fire engineered solution that is still in accordance with the building code of Australia but is certified by qualified fire engineers to say that this is a different way of doing it from the straight bricks and mortar type approach. In the case of the building that we are talking about here—the port services building and the crew facility—it meets the standard bricks and mortar approach and does not have a fire engineered solution to it. It just meets the building code of Australia requirements.

CHAIR—How do evacuation facilities in the building work? Obviously, that has been factored in as well.

Brig. Hutchinson—Part of the code will specify, particularly for a two-storey building, which this one is, how many fire escapes you need to have and how far those fire escapes can be from where people are located. All of those sorts of things are standard requirements that have been built into the concept designs but they will be checked again when we get the final design. It will be part of the design process to make sure that we meet the code.

CHAIR—In paragraph (c) are there any recommended departures from the building code?

Brig. Hutchinson—At this stage there are no recommended departures, noting that we are at concept design stage and that we would still need to go to a final design to confirm that there would be none.

CHAIR—Perhaps you will let the committee know when you finalise that, given the importance of fire protection and evacuation systems.

Brig. Hutchinson—Yes.

Mr FORREST—I will briefly go through this document. It looks like everything has been done well, except that it is required to be audited every five years, which means that it is due for review next year. So obviously the timing of this extra work and a review of this manual is quite timely. Is that under way?

Brig. Hutchinson—I would ask Mrs Bradford to speak to that as the local corporate services representative.

Mrs Bradford—At this stage it is not underway but we are waiting for dollars to ensure that that process is followed.

Mr FORREST—Waiting on a few dollars from whom?

Mrs Bradford—For risk managed works dollars within defence, for that to be allocated.

Mr FORREST—It is a budget matter?

Mrs Bradford—Yes.

Mr FORREST—We will give you a bit of a hand—I will make it a requirement.

CHAIR—Before closing the hearing I would like to thank the witnesses who have appeared today. Thank you very much again for facilitating the inspection for the committee this morning.

Resolved (on motion by **Mr Brendan O'Connor**):

That, pursuant to the power conferred by section 2(2) of the Parliamentary Papers Act 1908, this committee authorises publication of the evidence given before it and submissions presented at public hearing this day.

Committee adjourned at 12.27 pm