



COMMONWEALTH OF AUSTRALIA

# Official Committee Hansard

JOINT COMMITTEE OF PUBLIC ACCOUNTS AND  
AUDIT

**Reference: Review of Auditor-General's reports second quarter 1997-  
98**

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**JOINT COMMITTEE OF PUBLIC ACCOUNTS AND AUDIT**

**Friday, 5 March 1999**

**Members:** Mr Charles (*Chair*), Mr Cox (*Deputy Chair*), Senators Coonan, Faulkner, Gibson, Hogg, Murray and Watson and Mr Andrews, Mr Brough, Mr Georgiou, Ms Gillard, Mr Griffin, Ms Plibersek, Mr St Clair and Mr Somlyay

**Senators and members in attendance:** Mr Brough, Mr Charles, Mr Cox, Mr Georgiou, Ms Gillard and Mr Griffin

**Terms of reference for the inquiry:**

Review of Auditor-General's reports second quarter 1997-98

**WITNESSES**

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**Committee met at 10.04 a.m.**

**CHAIR**—I declare open today's public hearing, which is a follow-up hearing to examine further Audit Report No. 34 1997-98 on the new submarine project. The committee has received one public submission from the Department of Defence in relation to the audit report.

I must ask participants to observe a number of procedural rules. First, only the members of the committee can put questions to witnesses if this hearing is to constitute formal proceedings of the parliament and attract parliamentary privilege. If other participants wish to raise issues for discussion, I would ask them to direct their comments to me, and the committee will decide whether it wishes to pursue the matter. It will not be possible for participants to respond to each other directly.

Second, I remind witnesses that hearings today are legal proceedings of the parliament and warrant the same respect as proceedings of the House itself. The giving of false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. The evidence given today will be transcribed by Hansard and will attract parliamentary privilege.

Third, I refer members of the press who are present at the committee to a committee statement about the broadcasting of proceedings. In particular, I draw the media's attention to the need to report fairly and accurately proceedings of the committee. Copies of the committee's statement are available from the secretariat staff.

[10.05 a.m.]

**ASKER, Commodore Eoin Michael, Director-General, Undersea Warfare Systems, Defence Acquisition Organisation, Department of Defence**

**GAIREY, Mr Mark Christopher, Director-General, Acquisition Planning, Department of Defence**

**JONES, Mr Garry, Deputy Secretary, Acquisition, Department of Defence**

**LAMACRAFT, Rear Admiral Richard, Head, Systems Acquisition (Maritime and Ground), Defence Acquisition Organisation, Department of Defence**

**OXENBOULD, Rear Admiral Christopher John, Deputy Chief of Navy, Royal Australian Navy, Department of Defence**

**WATTERS, Mr Gilbert Michael, Director-General, Acquisition Finance and Reporting, Defence Acquisition Organisation, Department of Defence**

**CHAIR**—I welcome representatives from the defence organisations to the final session of today's hearing. Do you have any opening statement that you would like to make before we ask questions?

**Mr Jones**—No, we do not have an opening statement.

**CHAIR**—There are a number of issues that we wish to continue to pursue. The most important of those, at least in my mind, is cost to complete, so I would like to start with that and I would also like to finish this hearing on that same issue. In other words, I would like you to make a statement now, examine a number of the strategic issues that we would like to cover today, and then finish up with a final discussion once again about cost to complete. So could you tell me, in your view, if you have a fix now on cost to complete and what that is?

**Mr Jones**—At previous hearings, I believe the committee was concerned about the remaining work to be performed, the remaining payments for the Commonwealth to make and, indeed, the funds remaining within the company to perform the work remaining. Through this project, we have continued to closely review the performance of the contractor and his financial liability and we have undertaken further reviews of that. We have had audits audited by auditors—in other words, we have had double audits of some of these things. In summary, our view remains that adequate financial resources are available to the company to complete the work as currently contracted, and I would go further to say that, from the point of view of the Department of Defence, it is our current expectation that we also have current funding approval to complete the project.

**CHAIR**—Does the total funding level include a rework of the fire control systems, weapons management systems—or whatever you call it?

**Mr Jones**—The difficulty I have in answering you is that we will continue to spend money on the combat system—as I would generically refer to it—throughout its life. I believe we have enough funds now to get a satisfactory operational capability of the submarines but, as we will probably tell you later, we have plans to go further with the combat system, and some of those plans will require additional funding. They are matters we currently have before government for consideration.

**CHAIR**—One further thing, then I will start to shift the questioning around. When we read the newspaper reports about the Collins class submarines, I think we are all fairly discouraged.

**Mr Jones**—It would be hard not to be if you believed what was in the newspapers.

**CHAIR**—On the other hand, the committee has received information that the Collins class at patrol-quiet speed is virtually undetectable in its planned area of operation; that it dives faster, dives deeper, can stay down up to four times longer than the Oberons; that its weapons capabilities are many times greater than that of the Oberons. Would you like to comment on those issues and the negatives in the press about it being ‘noisier than a washing machine’ or something like that?

**Mr Jones**—A rock band.

**CHAIR**—And likely to blow up at depth and—

**Mr Jones**—I am not sure how much noise a rock band makes under water! You have really raised a whole lot of issues. I will start by talking generally about the performance of the submarine to date against what we sought in the original contract. We frankly acknowledge that there are a number of issues where the submarine does not meet the performance levels we sought. We would also have to be honest and admit to you that some of the performance levels we sought were extremely ambitious. We are pushing technology in all sorts of areas. Perhaps you could say, and others have said, that it is not unexpected that we will have some issues. But even where we are at today with the submarine is a very impressive set of outcomes.

In my view, probably the biggest issue we have yet to fully resolve relates to the combat system and the software. That, in my view, is the biggest issue remaining for the submarine. There has been a lot of press speculation about other areas of performance of the submarine that I believe is largely uninformed. I do not deny there are some issues that we are working on, but already we can demonstrate very significantly superior performance in this submarine compared to many areas of the existing Oberons or, indeed, any other submarine that is likely to come our way.

From the point of view of the taxpayer and the question of where we are going with this submarine class, I am really very optimistic that the Royal Australian Navy is going to have an excellent submarine. We have got a few problems to work our way through, but already a very clear outcome can be agreed. The difficulty we have in the public arena is that to prove these claims one way or the other requires the disclosure of what we consider to be highly

sensitive information. You would not expect me to sit here today and give you figures that we protect most confidentially in the defence organisation.

I was asked by Senator MacGibbon at another committee hearing recently about how we viewed the submarine's performance. If you would like, I could describe to you my assessment of the submarine acoustically, which is always an issue of great interest to everybody. You have seen the comments in the press about the rock band and other things. You are quite correct in surmising that, at what is referred to as a patrol-quiet state, we already have very superior performance available from the Collins class submarines. That is not to say that we are not seeking even better performance, but it is particularly good. Indeed, I said to Senator MacGibbon the other day that in some ways, at the patrol-quiet state, the quietest thing in the ocean is the submarine—the background noise is greater.

It is probably useful to try and give you a feel for the very low levels of noise we are trying to measure against the ocean background: they are so low that we are having extraordinary difficulty in measuring the amount of noise the submarine makes in the patrol-quiet state. It is not that you can roll by and hear it from 100 miles or something. It is extraordinarily difficult to measure the very low levels of noise the Collins class already makes—we are still working on that in some areas—at the patrol-quiet state, which, after all, was really considered the prime design point in this thing. What was the hardest thing to achieve? What did we most focus on and consider to be the critical design parameter of the submarine acoustically? It was this patrol-quiet state.

There has already been, very clearly, excellent progress made by the Collins class on that. We have been measuring the submarine noise signature. We have had help from allies who have more sophisticated techniques than we have in some cases. I have seen the results of all these trials. As I said, the results are highly classified, but I would like to make a statement to the committee that, having reviewed all those results, it is my very clear view that the Collins class submarine is already a very quiet submarine by any standard. In saying that, I am well aware of the noise characteristics of the Oberon class and of many other non-Australian submarines. We already have a very quiet submarine by world standards and it has, in my view, no significant acoustic vulnerabilities.

We have a number of issues in areas we are working on where it does not yet meet the specification we set—which, as I said earlier, was a very ambitious specification—but we have already achieved as much as any other country in the world has achieved with conventional submarines in terms of quietness. That is a pretty substantial achievement, in my view.

Acoustically, I think we have made excellent progress to date on the submarine, and we have a number of things in hand that we are working on which will make it even better. It is not something that will stop there. It is something that, over the life of the submarine, will continue to improve the noise characteristics. I thought that would be a useful thing to say to the committee up front.

In terms of the general platform, I think we have one of the world's outstanding successes in what I would call the fly-by-wire system that controls this submarine. When we started off on this project that was considered one of the highest risks, but you do not read

anything about it in the newspapers today. Why? Because it is an outstanding success. It really is a fantastic achievement. One of the key reasons we can have a submarine with such a small crew is this quite amazing fly-by-wire control system that we have built into the submarine. There have been some really spectacular successes.

There are some issues we are working on in terms of the platform with reliability for diesel engines. I guess we all express surprise at the fact that diesel engines yet again cause trouble, but it seems to be the history of engineering that what everyone thinks is a simple, easy thing causes trouble. Yes, we have some reliability issues on the diesel engines we are working on.

There are a number of other issues. You would have seen speculation in the press about flow around the submarine hull and things like that. We are working on some things there that will make some marginal but, hopefully, useful improvements in the performance of the submarine. Those things, in some ways, are over and above the achievements we have to date which, in my view, are pretty spectacular by world standards and pretty satisfactory. The issue is, 'How do you judge the performance of a country like Australia in doing something like this?' I have to say that I have a lot of trouble with the way some of the newspapers in Australia are reporting; it seems to me that there is an expectation of perfection.

In large engineering enterprises like this, I think the appropriate benchmark is to look around the world and see how other people perform in building similarly complex engineering projects. If you want to look around the world and look at submarine construction as a specific case, Australia's performance, for a first time builder of such a large and complex submarine, is really extraordinarily good. There are any number of instances where experienced submarine builders have got themselves in trouble. Some of those are on the public record and some are not. There are instances where other countries have attempted to start up submarine building programs and have totally failed. By the benchmark of how other countries in the world have done in building submarines, where we have gotten to today—and where I expect we will be in a year or two in the Collins class submarine—is right up there with world's best performance, in my view. You would not form that view if you read the Australian newspapers.

**Mr COX**—Mr Jones, you said that you believed there were enough funds available to complete the project and achieve satisfactory operational capability. Is that satisfactory operational capability above or below the actual contracted specifications?

**Mr Jones**—I believe that the contractor will be able to deliver to us a submarine that we believe satisfies the requirements—that we are contractually satisfied with, if I could put it that way—for both the funds he already has in hand and the remaining funds we plan to pay him for completion of the contract. Why I am hedging a little bit is that there are some areas of the specification at the margin where we will probably agree to a concession, because it is not in either our interests or their interests to do that particular thing. I cannot give you an absolute statement, but they will certainly, in my view, have adequate funds to complete all of the things we are likely to ask of them.



The issue, to jump ahead a little bit, will be in the combat system, exactly what we agree finally can be delivered as part of the contract, and what we then move to in future evolutions of the combat system. That is probably the most difficult area to give you an unequivocal answer on.

**Mr COX**—Are there other areas apart from the combat system?

**Mr Jones**—Not in terms of the ability of the contractor to afford to fix them. No, I do not believe so. Some of the technical issues may drag on for a time, but when you look at the potential cost of rectifying those things, I believe they are well within the reserves the company has at the moment.

**Mr COX**—There is probably some reservation given the reporting and the high proportion of total project funds that have already been given to the contractor. When they read those things, people will probably wonder whether, with so few boats handed over relative to the amount spent, there will be enough money available or perhaps enough leverage. Would you like to elaborate on the contractor's ability to complete their contracts?

**Mr Jones**—Yes, it has been an issue for this committee over a number of years. The audit office has certainly had concerns about the method we pay in these large contracts. The audit office generally supports the approach we have adopted in the submarine contract, which is paying as you go on some concept of earned value or effective progress. That is what we have done with the submarine contracts. It may look strange to say that we have paid 95 per cent of whatever the figure happens to be today of the submarine contract, but the contractor has done 95 per cent of the work.

If there is only four per cent of the work remaining, that leads to the question: what if they run into problems and it costs a lot of money to fix? I think there are two answers. Firstly, any good contractor, and certainly this contractor, has a management reserve they keep. They have not allocated all their funds to defined work orders. It is a contingency, if you like, for unexpected events. Secondly, they also have a budget for re-work. As in any large engineering project, a percentage of things will need some degree of re-work, and the contractor has a budget for re-work. All of those things are visible to us, and we believe them to be adequate.

**Mr BROUGH**—Did you say they are visible to you and you have access to that?

**Mr Jones**—Yes.

**Mr BROUGH**—You were aware that, as part of the contract, they have an operational reserve, or was that just something they have done themselves?

**Mr Jones**—It is their commercial decision how they structure their reserves and that sort of thing. We have visibility. Some of it is required under the contract and some of it is provided by agreement with the contractor—that is probably the best way to express it.

**Mr BROUGH**—So they are maintaining retentions—

**Mr Jones**—Yes.

**Mr BROUGH**—as is the normal process of their subcontractors, but what safeguard do you have to the major contractor?

**Mr Jones**—No. I was not describing a process of holdbacks from subcontractors; I was describing a process where in their own budget, if you take the total contract price, there would be an element that you might call ‘management reserve’. There would be an element for a series of subcontracts; there would be an element for work they are going to do and have planned; but there is also an element for re-work of their own work. So contractor holdback is a separate thing within the subcontract element.

**Mr BROUGH**—You said that was visual, but what actual facts do you have to support that, other than your gut feeling?

**Mr Jones**—We are aware of what the numbers are, if that is what you mean.

**Mr BROUGH**—Yes, that is what I want. I do not want to know what they are.

**Mr Jones**—Yes, we are aware of what the numbers are.

**Mr GEORGIU**—Acoustics have come out of your transcript, Rear Admiral Oxenbould, the way I read it, as being the critical problem. When did the acoustics problem first raise its head? When did the Navy know about it first?

**Mr Jones**—I think I might ask Commodore Asker, who is the project director, to answer that because it is a bit like peeling an onion.

**Mr GEORGIU**—They all are.

**Cdre Asker**—We became aware of this difficulty when we first ranged the submarine when the submarine was at sea.

**CHAIR**—When you first raised it? It sank.

**Cdre Asker**—‘Ranged’—noise-ranged the submarine and the specific instrumentation, this sort of thing. Prior to that, we have a system whereby each individual piece of equipment of each system is trialled on the bench acoustically. It is then assembled into the system in the submarine. The submarine then goes to sea. We do the initial safety type trials and functioning trials, and then we take the submarine onto the noise range. We have a noise range near the construction facility, and we range the submarine there. After we had undertaken those rangings and analysed the first series of results, it was indicated that there were shortcomings in some areas.

**Mr GEORGIU**—At what point of time was that?

**Cdre Asker**—It would have been 1996 or thereabouts—I think that was the first ranging.

**Mr GEORGIU**—When were you really sure that you had acoustic problems? When did it click that we have problems here?

**Cdre Asker**—It was 1996-97—late 1996. We have been working on those problems since then to resolve them.

**Mr GEORGIU**—It is just that last time we met we did not have to raise the acoustics problem and the acoustics problem was not raised, so I do want to thrash through that fairly carefully. Claims have been made that this is as quiet as Oberon. Are they correct?

**Mr Jones**—You are getting into an area where I have difficulty answering you. I am not trying to avoid the question but I would prefer not to have to make direct statements about whether it is noisy or quiet in particular circumstances. I can certainly give you figures—

**Mr GEORGIU**—No, I do not want figures. I do not want sensitive information. You made an earlier assertion that it is as quiet as the Oberon. There is a statement on the record that it is almost as quiet as the Oberon. Is this as quiet as the Oberon?

**Mr Jones**—Perhaps the answer I would like to give you, if that will satisfy you, is that the Collins class, as it exists today, is not any noisier than an Oberon submarine at patrol-quiet state.

**Mr GEORGIU**—That is not what I asked. The assertions on the record are that this is as quiet as the Oberon, and I think you actually said that it is quieter than the Oberon. What I asked was: is it as quiet as the Oberon across the range of operating conditions that the Oberon is capable of undertaking? I am not an expert but, if you do not get the drift, I will try to simplify it.

**Mr Jones**—The statement I made earlier referred to a particular operational condition of a submarine—the patrol-quiet state—which, as I indicated, was the key performance parameter for the submarine. There are some areas of the submarine performance today that may not be equivalent to the Oberon acoustically—

**Mr GEORGIU**—Worse than the Oberon? Does ‘not equivalent’ mean worse?

**Mr Jones**—Again, I do not want to sound like I am trying to obscure it, but the bottom line of this is detectability of a submarine, so acoustic signatures by themselves are not the whole story.

**Mr GEORGIU**—I appreciate all of that, but I would like to pursue the statement made about Oberon. The statement has been made in an unqualified form—on the record—that this is as quiet or quieter than the Oberon. We are now specifying at some sort of speed—that I do not understand because I am a layman. My layman’s question is: given that there are differences in performances between the Oberon and the Collins class, is the Collins class as quiet as the Oberon across the range of operations that the Oberon is capable of? I do not think that is all that sensitive—it may be. If it is sensitive, we can go into camera. I would like an answer because we have been told that it is like the Oberon at patrol speed, or whatever. I would like to know whether it is as quiet as the Oberon.

**Mr Jones**—I think, Mr Chairman, if we are going to answer the question, we are going to move into different areas of performance for a submarine and I consider that very sensitive information.

**Mr GEORGIU**—I do not want to ask sensitive questions.

**Mr Jones**—I cannot answer your question without, essentially, getting into that territory. I am sorry.

**Mr GRIFFIN**—If that is the case—and, again, it is hard not knowing the sort of detail on this stuff because you will not tell us—I am sure there is no problem from the committee's point of view, if we need to, to go in camera. We have done that on other Defence projects that we have looked at over the years.

**Mr Jones**—I am certainly happy to make a more definitive statement about those issues in camera.

**Mr GEORGIU**—I would like to make it clear that I am not asking for sensitive information because I would not like there to be any misunderstanding about that. We have had precise statements about the operating performances of the Oberon at the patrol-quiet state—

**Mr Jones**—We said our patrol-quiet state that—

**Mr GEORGIU**—I think that is much more precise than I want. I want to know, across the operating characteristics of the Collins, where it matches the Oberon: is the Collins quieter or louder than the Oberon? I have statements saying that it is quieter—on the record, unequivocal, no sensitivity.

**Mr Jones**—It would be a lot easier to explain it to you in camera.

**CHAIR**—May I make the suggestion that, if you are happy with it, we continue the hearing, and go back to that issue in camera near the end.

**Mr GEORGIU**—Could I pursue one other matter. We asked last time about the impact of delays in handover from Oberons to Collins. Could you tell me whether our submarine capacity is now greater or lesser than it was when the Oberons were fully operational?

**Mr Jones**—I think Rear Admiral Oxenbould is probably the best person to answer that.

**Rear Adm. Oxenbould**—At the moment, it is lesser than when the Oberons were fully operational. At that stage, with a mature fleet of six Oberons we would expect at least four Oberons to be available for operations.

**Mr GEORGIU**—So after \$5 billion has been expended, our submarine capacity is lesser?

**Rear Adm. Oxenbould**—No. We are in a transition stage at the moment.

**Mr GEORGIU**—Basically, our submarine capacity is less now than it was with a fully operational Oberon fleet that was conceived of 50 years ago?

**Mr Jones**—Yes, and that was the deliberate outcome of when the project was set up. The thing that has changed—as you are probably alluding to—is that, because of the delays in the delivery of Collins, the number of operational submarines is even fewer than was planned. But it had always been planned to have a dip in submarine capability that was considered to be acceptable in the time frame and in the way the Collins program was constructed.

**Mr GEORGIU**—So how much greater is the degradation in our submarine capacity now than the one we had planned?

**Rear Adm. Oxenbould**—It would be in the order of one or two operational submarines.

**Mr GEORGIU**—Oberons or Collins?

**Rear Adm. Oxenbould**—It is probably Oberons. It is about one or two fewer Oberons than we would have planned to have.

**Mr GEORGIU**—The Collins were supposed to be how much more capable than the Oberons—what was the estimate?

**Rear Adm. Oxenbould**—It depends which area you measure them in. The chairman mentioned that the weapons systems were four times better. That is not necessarily the case because the weapons suite is made up of basically the same weapons that we have in the Oberon. However, where the performance improves markedly is in the depth that the submarine can dive; the speed of the submarine; the battery capacity; the ability to charge the batteries quickly, which therefore gives you a reduced time of detection when you have to charge your batteries; and the manoeuvrability of the submarine. These are all vast improvements over the Oberon.

**Mr GEORGIU**—Overall, Dibb said that they would be the equal of 10 Oberons.

**Mr Jones**—Nine or 10, I think.

**Mr GEORGIU**—That is spot on: nine or 10.

**Rear Adm. Oxenbould**—Certainly, the availability of the boats that we will get when we have the mature fleet of six Collins class is such that we would expect to have around five available for operation at any time. That would be one more submarine available than when we had six Oberon class, and they are significantly more capable, so it therefore gives us a much greater overall submarine capability.

**Mr GRIFFIN**—I would like a time line on that so I have it clear in my head. Give me the time line on it as originally planned and before problems were hit—and I think there is an expectation that there are always some problems with projects of this magnitude.

**Mr Jones**—One way to express it to you is that, on average, we are running about 20 months late.

**Mr GRIFFIN**—Collins was launched in 1993, due to be fully operational by—

**Rear Adm. Oxenbould**—It was launched in August 1993. It would have had more than a year of sea trials, so it would have been at the end of 1995, say.

**Cdre Asker**—I have the dates.

**Rear Adm. Oxenbould**—Okay.

**Mr GRIFFIN**—What I am trying to look at here is that, when we talk about the question of lost, thwarted or delayed capability, it is basically a question of when your Oberons were due to hit the fence and when your Collins class were due to come on deck. That gives you time lines which, at the time, Defence and Navy said were an acceptable dip in capability. I would then like to look at the question of, given the delay so far, what the actual loss of delayed capability has been in that time and what the projections now are in terms of actually achieving it.

**Mr Jones**—And what we have done about it, which includes extending the Oberons a bit, you see. So we have compensated to some extent.

**Mr GRIFFIN**—Yes, exactly. In terms of capability, the actual impact is definable, at least to this stage. I would be interested in defining that a little more. So, Commodore, if you can handle that one, that would be great.

**Cdre Asker**—I think the point here—and Rear Admiral Oxenbould has made the point earlier—is that the differential is between one and two submarines in terms of our submarine force structure. We had originally planned on delivery dates of Collins in January 1995, *Farncomb* in February 1996, *Waller* in January 1997, *Dechaineux* in December 1997, *Sheean* in November 1998 and *Rankin* in October 1999. For various reasons, those dates have moved. They were the originally contracted dates.

**Mr GRIFFIN**—That is in terms of actually commissioning them to be ready for rock'n'roll, on duty.

**Cdre Asker**—These were the delivered—

**Mr GEORGIU**—Fully operational or delivered?

**Cdre Asker**—I will just explain the process. What happens is that ASC delivers the submarine to me. I then pass the submarine on to the Chief of Navy, who accepts the submarines into the naval service. Hopefully, that process is coincident. In other words, I

have the submarine for about 30 seconds before the Chief of Navy or maritime commander's representative signs on his behalf.

**Mr GEORGIU**—This time?

**Mr GRIFFIN**—When you say 'signed on behalf', you mean as soon as that is signed on—

**Cdre Asker**—Accepted into a naval service situation.

**Mr GRIFFIN**—Basically, it has got a crew. It goes out and does submarine type things?

**Cdre Asker**—It is operational. This is on completion of the trials.

**Mr GRIFFIN**—It is ready to go. It is ready to rock'n'roll but not make that sort of noise.

**Cdre Asker**—It is ready to proceed on operations.

**Rear Adm. Oxenbould**—It is provisionally accepted.

**Mr GRIFFIN**—It is an important point. That is what I am trying to get at. What I am trying to get at is capability. You have an Oberon, which can do necessary operational functions as required, so it is there as part of your capability.

**Rear Adm. Oxenbould**—That is right.

**Mr GRIFFIN**—Then there is the question of when you get a Collins class that is of the same readiness so, for capability purposes, you have got that development.

**Cdre Asker**—You have to do work-up.

**Mr GRIFFIN**—Because there are a number of dates in here, I know. It is a question of when it is commissioned, when sea trials are completed, et cetera. What I am really talking about is the key date from my point of view, which is, 'When does the bloody thing work?'

**Rear Adm. Oxenbould**—After the provisional acceptance—when the Chief of Navy accepts the submarines from the acquisition organisation—we have to go through a series of work-ups of the crew and further sea trials. One of the things which dictates when we agree to that acceptance is when a submarine has reached a point where it is going to be of value to us in the Navy to conduct further trials, to conduct the training that we need to for the crews of the submarines, and also for us to gain information. Normally you would expect, especially with the first of class, in the order of at least a year of trials after the provisional acceptance, until we would accept the submarine into naval service.

**Mr GRIFFIN**—Rear Admiral, that date of early 1995 for Collins was when you expected to start getting that 12-month period ticking over. Is that what you are saying?

**Mr Jones**—It was delivery aim.

**Rear Adm. Oxenbould**—No, the actual commissioning and the handing over of the submarine was July 1996. We commissioned—

**Mr GRIFFIN**—Was that when you planned a commission? The point I am trying to get at is that I am sure you had a situation where you knew when you expected to pick up. You had expected delivery dates for the subs.

**Rear Adm. Oxenbould**—Yes.

**Mr GRIFFIN**—You had expected time lines on the question of any completion of trials, et cetera, until you got to operational readiness.

**Rear Adm. Oxenbould**—Yes.

**Mr GRIFFIN**—I accept that those time lines have a bit of variation in there, because these things are big projects. But what I am trying to get at is exactly when you expected the commencement of your planning around this project to have a situation where Collins was operationally ready so you could say in blunt terms, ‘Okay, here is an Oberon. We are going to take that out of the water now, in effect, and we are going to put Collins in.’

**Mr GEORGIU**—As fully operational? Not acceptable—

**Mr GRIFFIN**—The point I am trying to get at here—and I guess it is an unrelated subject, but I will mention it anyway—is that one of the issues around the whole JORN situation was not only a question of various issues around contracting and so on but a question of capability. You plan for a defence acquisition on a question of a capability at given times because you, as the experts, believe that that is acceptable, given the defence needs of the country. You are entrusted with that authority. But if that alters, then that is also potentially a cost to Defence, to government, to the community. What I am trying to do is define that cost in the circumstance of what has actually occurred here in order to be able to get that clear in my mind.

**Rear Adm. Oxenbould**—I have not got that information in front of me, but I could certainly produce a graph which would show you what was planned and what we actually achieved. As mentioned by Mr Jones, we were expecting a different capability in the transition from the Collins to the Oberons, and there were several ways in which we had taken out some form of insurance in case the delivery of the Collins was delayed. One way was that we would be able to extend the Oberon class with the spare running time that the Oberons had before they had to undergo a major refit. But then you get to a point where, if you did have to refit another Oberon class submarine, it becomes very expensive. The cost of an Oberon refit is in the order of \$120 million; it takes two years, and then that gives you a five-year diving cycle that you can operate that submarine for.

We had measures in place where the Oberons were running down and we needed to do that. So we not only acknowledged the reduction in capability, we also needed to transfer the ships’ companies—the crews—from the Oberons to the Collins, and we needed to take them



out of the Oberon class and train them in the Collins class and prepare them to take up the Collins class. That is very important because we have a relatively small submarine arm of around only 600 to 700 people. We always realised that that was probably going to be the most critical link. Our early forecast was that last year, 1998, was when we were going to be under the most stress for that because we were going to have to provide eight submarine crews in a mixture of Collins and Oberons—two different training regimes—and that was one of the things which dictated.

Certainly we can produce for you a graph of what was planned originally and what has eventually occurred. There has been a dip in capability and that dip has gone further than we initially planned because of these delays. But, in the strategic circumstances, that has been considered acceptable. We still have some scope to run the Oberons, but we are down to our last Oberon now.

**CHAIR**—I thought you had two.

**Rear Adm. Oxenbould**—We had two this time last year. The *Onslow* decommissions this month because it is at the end of its five-year running cycle since it was last refitted. If you wished to keep that submarine running, you would have to commit to \$120 million for a two-year refit and by that time we will be into the Collins class.

We have *Otama*, which is running at the moment, and it still has two years of safe diving time left in its refit cycle. So *Otama* could run, theoretically, to the end of the year 2000. We do not believe that will be necessary. We are planning to decommission *Otama* at the end of this year because we believe we will have sufficient capability in the Collins class to conduct the operations that we may have to commit to, at that stage.

**Mr GRIFFIN**—But at the moment you have no capability in the Collins class.

**Rear Adm. Oxenbould**—We do not have an operational capability in the Collins class at the moment.

**Mr GRIFFIN**—So, at the end of this month, you have got one submarine on line; is that right?

**Rear Adm. Oxenbould**—We have one submarine on line. We do have one Collins class, which is operating within the fleet at the moment. We use that for training purposes. We also use that to gain further experience in the Collins class. It would depend upon what operations we had to commit to. There is a great variation in the type of operation—

**Mr GRIFFIN**—You are not planning any war games or any wars at the moment.

**Rear Adm. Oxenbould**—Yes. The Oberon that we have is capable of being deployed across the full range of its capability.

**Mr GEORGIU**—The one.

**Rear Adm. Oxenbould**—The one. We have one Collins class which is able to be employed but not over the full range of its capability at this stage. But we believe that, by the end of this year, we will be quite confident that we will be able to deploy it over the range of its capabilities.

**CHAIR**—One thing really confuses me. You tell us, Mr Jones, on the one hand—and we have been told privately on the same hand—that the Collins class gives a superior performance capability and that it is performing superiorly, generally speaking. There are a couple of little trouble spots that you are working on, but they do not seem to be a major detriment to operating the submarine. Why don't we have more in operation and why aren't we using the bloody things?

**Rear Adm. Oxenbould**—We are using the things because we are using them in training. We have covered in some detail the problems with the acoustic signature. As Mr Jones suggested, we might be able to go into more detail when we talk in camera.

The other issue, which I think is acknowledged as the most significant issue at the moment, is the combat system. We have measures in place to improve the combat system so that it will allow us to use the submarine operationally.

**CHAIR**—Are you telling me that, at the moment, the lack of the integrated system operating as specified is preventing you from firing weapons?

**Rear Adm. Oxenbould**—No, we can fire weapons from the submarine but we cannot use all the information which is available through the submarine sensors and do the analysis of the targets that the sensors provide, and nor can we develop the fire control solutions and pass all that information to the weapons. The combat system, at the moment, has problems in doing that to the extent that we would want if we were going to commit that submarine to operations.

**Mr GRIFFIN**—Is that an upgraded system on the question of what is currently in Oberon?

**CHAIR**—Hang on a minute—they are completely different platforms with respect to the weapons systems.

**Rear Adm. Oxenbould**—Yes.

**Mr GRIFFIN**—But you are saying it is a bit more rudimentary—

**CHAIR**—Hang on a minute, let us have a go one at a time.

**Mr GEORGIU**—Excuse me, Mr Chairman, but when will Collins be operational?

**CHAIR**—You can wait too! The problem I have with this is that you tell us that the submarine is superior and you tell us it can fire weapons but, if we had to go to war tomorrow and we had to use submarines to defend ourselves, could the Collins that we have in the water fire weapons with the same degree of capability as the Oberon?

**Rear Adm. Oxenbould**—No, it could not fire with the same degree as the Oberon, but that is a temporary situation. We have a fix in place whereby we are confident of being able to do that by the end of this year.

**Mr BROUGH**—But can it fire at all? This is a follow-on question. If it cannot fire as well as the Oberon—great!—but what capability at all does it have? Can it put something out of the water and onto a target or nearby?

**Rear Adm. Oxenbould**—Yes, it can.

**Mr BROUGH**—Thank you. Admiral, earlier on you said that we were short two Oberons at the moment in our capability. I thought that we had extended one Oberon beyond what was originally planned—

**Rear Adm. Oxenbould**—Yes, that is correct.

**Mr BROUGH**—Therefore, we were one ahead of where we were scheduled to be originally as in we have kept one on, so that should have been minus one. How can we be short two Oberons? Wouldn't it be that we were short two Collins class?

**Rear Adm. Oxenbould**—On the question of what is our overall shortfall, I said it was in the order of one to two submarines. The question was put: is that one to two Oberons or one to two Collins?

**Mr BROUGH**—It is only a minor point, but I just want to clarify it.

**Rear Adm. Oxenbould**—I think it would be best to provide to the committee the data, which was sought by Mr Georgiou, in a graph of the initial transition plan and the current transition plan. That would show you the difference between the submarine capability we were expecting to maintain and the submarine capability that we are able to maintain.

**Mr BROUGH**—Could I come back to the contract details where I had a few queries right from the start and some following on from the earlier questions. First of all, do you think that the specs you put out were too ambitious, in hindsight?

**Mr Jones**—I think you could make the claim that we were very ambitious in some areas of the specification for Collins class.

**Mr BROUGH**—In hindsight, would you change those specifications to something you now consider to be more realistic if you were to do this project again with this knowledge that you have?

**Mr Jones**—The answer is obviously yes.

**Mr BROUGH**—That is fine. The next question is: you said that there was enough money left in the budget, et cetera, and that you have visual of this amount of money that they have remaining—

**Mr Jones**—The shipbuilder is sufficiently liquid, if you like.

**Mr BROUGH**—But you seem to be hedging your bets as to whether or not the specifications as set out, which they were contracted to deliver, albeit they are very ambitious, are going to be delivered. You seem to be saying that you will be satisfied with less than 100 per cent delivery. How can you quantify that and determine where you are going to compromise and be satisfied?

**Mr Jones**—That is the difficulty and why I hedge a little bit. I cannot quantify it because it is on a case-by-case basis of looking at the thing in the various areas. You asked me if we would write the combat system spec today in the same way as the people wrote it back then, and the answer is no. There are several reasons for that. One is that technology has moved on, and what we can do with technology today is different in some ways. In some ways, the spec was written anticipating where technology would go, and it did not quite get it right. But I point out that the whole area of information technology software is the most difficult area in all these projects. It is not surprising that there have been difficulties.

**Mr GEORGIU**—We have had experience with that.

**Mr Jones**—I will try and give you a concrete example. There were some very ambitious ideas in the combat system spec about how much training you could perform in the submarine while it was under way and conducting operations. In other words, the concept that part of a submarine could be doing its thing, looking after itself, and we could also be training other people. That has turned out to incur some very large overheads in terms of the combat system design software. I suspect that we would take the view today that, while that is a nice thing to be able to do—it was a good idea—it has turned out to be much more difficult and it is probably not worth the pain and effort to do it. In other words, you would achieve that in some other way. There are elements where, as we move forward with the combat system design, we will not do it the same way as people thought back in 1980 or whenever it was.

**Mr BROUGH**—So have there been contract variations drawn up to reflect this?

**Mr Jones**—So far, we have pretty much held the contractor's feet to the fire, so to speak, in terms of all these specifications. There has been, I guess, a range of minor deviations and waivers as we go through the contract, but they really are minor.

**Mr BROUGH**—But you must be coming to the point, given what you have just said, where you are going to have to do a pretty major rewrite of variations to the contract and that will then link in very much to what moneys they have left and their capabilities of delivering them. When are you going to be in a position to do that, and will that be reported to the parliament as a result of the changes to the original operational contract?

**Mr Jones**—We currently have before ministers a proposal for at least some next steps in terms of the submarine, so I would prefer not to speculate on what government would want to decide on that. That will almost certainly involve some modification of the specification of the combat system. It is also fair to say that there is going to be a good quid pro quo. In

other words, if we agree to modify the specification in this area to make it more achievable, they are going to have to do some work in that other area where we now decide it seems much more feasible, and we would like to have some outcomes in that area.

**Mr GEORGIU**—When there are lots of definitions of ‘compliant with contract’, ‘operational’, ‘semi-operational’ and ‘accepted into service’, can I ask what the highest level of definition is that the Navy uses for ‘this thing is ready to go to war—all systems go’? I just want a term. I just want to be told—

**Rear Adm. Oxenbould**—When the submarine is accepted into Naval service.

**Mr GEORGIU**—When is it your expectation that the Collins will be accepted into Naval service?

**Rear adm. Oxenbould**—We are still expecting it will be accepted into Naval service at the end of the year 2000.

**Mr GEORGIU**—What is happening at the moment is that the weapons system, the integrated combat system, that was so central to what we were told about Collins—the integration that was going to be a ‘quantum leap’, I think was the term which Jeffrey Kennett used once, and it worried the hell out of me—is now about to be redesigned. Will there still be an integrated weapons system at the end of that redesign?

**Mr Jones**—The short answer is yes.

**Mr GEORGIU**—Can I have your longer answer then?

**Mr Jones**—I was just going to explain. It has to be because we have 42 crew in the submarine. The way that is achieved will almost certainly be different, but the net effect will be the same in terms of the requirements for the crew.

**Mr GEORGIU**—Will there be a substantial revision of what you expected to get out of the integrated combat system that was so highly lauded throughout the best part of a decade of publicity and which we were told last time was critical?

**Cdre Asker**—If I could answer that, Mr Chairman, what we are talking about here is the evolution to a future state of the combat system as it stands at present. We are not looking at a wholesale rip-out, redesign or billion buck replacement. All we are looking at is evolution. We are looking at evolution in some functional areas. We are picking those bits that have high operational return on investment and those areas that are highly regarded in an operational sense. We are looking at how we might best evolve from where we are now to provide the Chief of Navy and the submarine commanders with the capability that they need. This capability will, in many cases, exceed that which is currently contracted. So what we are looking at is, by the end of this year, a combat system that is more capable in some areas and less capable in those lower priority operational areas.

**Mr GEORGIU**—Would it be an unfair summary to say that we went to a huge cost in defence capacity and finances to create an integrated combat system that we have now

realised we can replace—I like the term ‘a billion dollar replacement’—at some cost and which has set the program back substantially, and we now say that this is an achievement?

**Cdre Asker**—Yes, because the major portion of that combat system will still be used. It is our anticipated evolutionary path that over the next five years we will change the baseline, the architecture, of that combat system. We will do it gradually. We will do it at evolutionary—

**Mr GEORGIU**—Currently we have the lowest submarine capacity that we have had in decades. Is that unfair?

**Mr Jones**—Could I give an example that might help—and I will not use numbers but I will use proportions—as you would imagine, one of the things a combat system in a submarine has to do is to track the targets that are detected by the various sensors, typically—

**Mr GEORGIU**—Do not stumble into sensitive areas because I really do not want to know.

**Mr Jones**—When the specification was written, the specification was to successfully track, let us say, X targets at any one time.

**CHAIR**—We have read that, in fact.

**Mr Jones**—What the maximum number an Oberon can track is, let us say, Y targets, which might be a third of X—just for the sake of this argument. Today, an Oberon can track a third of the number of targets, for this hypothetical example, of what we specify. Where we are with the Collins is a situation that it cannot meet its full specification but it can still track a lot more targets than an Oberon could track.

**Mr GEORGIU**—I should hope so.

**Mr Jones**—You might argue that the Oberon was pretty good actually. I do not think anyone is really saying the Oberon is significantly deficient in measuring.

**Mr GEORGIU**—We spent \$5 billion replacing it.

**Mr Jones**—Age caught up with the Oberon as much as anything. What we are saying is that already the combat system in that particular element I described exceeds the Oberon but does not yet meet our specification. That is what we are pushing to achieve.

**Mr GRIFFIN**—I am just wondering about variation. I think you covered it before, Commodore, but—

**CHAIR**—Hang on.

**Mr GRIFFIN**—Mr Chairman, the question of whether it is accepted into the naval service relates to the same point. Mr Jones, you are saying that the first Collins will be

accepted fully into naval service at the end of 2000 and that the same submarine will be acceptable in some respect later this year.

**Rear Adm. Oxenbould**—That is correct. This is normal with the bringing of new capabilities into service; for example, it applies for the Anzac class frigate. The Anzac class frigate is not yet accepted into naval service and we are not expecting that to happen for some months now, but we have been able to deploy the Anzac on operations. It has participated in deployments to South-East Asia and has gone down to Heard Island and McDonald Island on a fishery protection operation. That is the normal process. The acceptance into naval service is when it is fully compliant with what has been contracted and it meets all those requirements.

**Mr BROUGH**—Just to follow on from that, you said earlier that the Oberon finishes up at the end of next year. Is that the last of the Oberons?

**Rear Adm. Oxenbould**—We are planning for *Otama* to decommission at the end of this current year, but it has the capability to serve through till the end of the year 2000.

**Mr BROUGH**—So the very last capability we have without a full refit of the Oberons is basically December 2000.

**Rear Adm. Oxenbould**—That is correct.

**Mr BROUGH**—Your best estimate for the first Collins class being accepted into naval service is basically December 2000?

**Rear Adm. Oxenbould**—Yes. Before that date, we would be able to employ the Collins operationally and it would reach the minimum standards that the Chief of Navy has set for deploying the Collins class into conflict situations of operation.

**Mr BROUGH**—How can you be sure of that when we are not at that stage now?

**Rear Adm. Oxenbould**—Because they are the milestones we have set in the areas where we have concerns and note deficiencies at the moment. We believe that the programs that we have in place will be rectified by the end of this year, which will satisfy that minimal operational capability to deploy the submarines.

**Mr BROUGH**—Are you perfectly confident that we will always have at least one operational submarine?

**Rear Adm. Oxenbould**—Even if there is some slippage there, we would be able to then revert to the running of the *Otama* on through to the year 2000.

**Mr BROUGH**—You need that now though. You do not expect the operational—

**Rear Adm. Oxenbould**—No, we are planning for *Otama* to stop running.

**Mr BROUGH**—That is the one that is going to finish up this year?

**Rear Adm. Oxenbould**—No. We are down to one Oberon submarine at the moment, from this month, and that is *Otama*.

**Mr BROUGH**—Right.

**Rear Adm. Oxenbould**—It has the capability of remaining in service through until the end of the year 2000, but our plan is that it will come out of service at the end of this year because we will have sufficient capability in the Collins. We should have three Collins available to us at the end of this year. We are expecting that four will have been provisionally accepted, but one will be in a post-delivery availability. So we will have three Collins available at the end of year, and we will have sufficient capability within the Collins force to allow us to decommission.

**Mr BROUGH**—I was just trying to get the point that you have a 12-month gap, which you can do some coverage—

**Rear Adm. Oxenbould**—It is a contingency, if you like.

**Mr GRIFFIN**—Are you currently planning to have a 12-month gap where you do not have a fully operational submarine? Is that what you are saying?

**Rear Adm. Oxenbould**—No, I am not.

**Mr GRIFFIN**—Correct me where I am wrong.

**Rear Adm. Oxenbould**—The point that we are striving to reach at the end of this year—the standard which has been defined by the Chief of Navy—is where we would be happy to deploy the Collins class into what we predict as the full range of the submarine operations.

**Mr GEORGIU**—The same capacity as Oberon or greater?

**Rear Adm. Oxenbould**—That is a very general term. That is where we get down to this problem when people say the same capacity as Oberon. I think in virtually every area, yes, you would exceed it. In some areas you would exceed it significantly, many times over.

**Mr COX**—But it is still a level of capability that has been set by CNS, and it is not near the standard of contract specs.

**Rear Adm. Oxenbould**—It is still short but in only one or two areas, and that is what we are expecting at the moment. We are expecting to regain those one or two areas within about a year.

**Mr COX**—They are the combat system and what else?

**Rear Adm. Oxenbould**—The combat system—



**Mr Jones**—I think by the end of this year we would hope that it would be only the combat system where we would have any difficulties in terms of the specification.

**CHAIR**—That is good to know.

**Mr COX**—There has been a fair bit of publicity, and there have been some profoundly disturbing propositions that have come from people who have been involved in the project that have certainly reached this committee and have reached Defence that relate to the integrity of the hulls, to valve operation, to the weapon data converter and to the weapons discharge system. Would you want to deal with those in camera or do you want me to start on those now?

**Mr Jones**—No, I think we can have a fair go at those in the public forum, if you wish.

**Mr COX**—That would be good.

**Cdre Asker**—Mr Chairman, if I could lead off. I think the topics were welding—I did not get the second one.

**Mr COX**—Valves.

**Cdre Asker**—Valves and the weapon data converter.

**Mr COX**—Yes.

**Cdre Asker**—With respect to the welding, it is a fact that we have experienced some variations to the welding standards in two sections in HMAS *Collins*, the first submarine. These two sections were constructed and put together in Sweden. We have recently subjected them to a 100 per cent ultrasonic examination. This is an examination on top of the ultrasonic or non-destructive examination that has already occurred. The reason we did this was some vagaries, I guess, in terms of the records that Kockums—the people that put these sections together—had in terms of the standards. We had various welding standards. Kockums undertook the inspection in Sweden.

On subsequent review, there were some variances that we decided that we should further investigate. We have since 100 per cent investigated all of the welds in those two sections. We found a number of welds that require rework. The point that I would like to make here is that this rework has been considered necessary to ensure that the through-life hull characteristics are not compromised in any way. At no stage—and I have this formally from both Kockums and ASC—has there been any danger to any of the personnel in the submarines. There has not been any restriction on deep diving depth as a direct result of this examination or any shortcomings in the welding process.

**Mr COX**—Are there any restrictions for any other reasons on deep diving or other performance characteristics?

**Cdre Asker**—No, not at present.

**Mr COX**—Have there been concerns and limitations before?

**Cdre Asker**—Yes. This is normal during a first-of-class trials process where there have been defects in some systems or subsystems. It may not be a matter of direct safety to the crew but, because we operate on a very high factor of safety, we purposely limit the operational envelope of the submarines so that we are working within our one-in-a-million probability of a significant hazard to the submarine.

**Mr COX**—Is there any truth to the claim that two of the hull sections for *Farncomb* were adjusted using heat and sledgehammers?

**Cdre Asker**—It sounds like a very blunt way of putting a submarine together, but there were concerns in the alignment of those two sections. Because we are very risk averse and very conscious of our responsibilities, we checked and rechecked the alignment of those two sections, as we normally do. The quality of the welds that were undertaken was examined independently of ASC using Defence Science and Technology expertise. Incidentally, that expertise has been used by the USN in some of their submarine work. The outcome of that is that the strains that were thought to have been introduced have been relieved and that the long-term hull life in that particular area has not been compromised.

**Mr COX**—Was there some rework done as a result of the investigation?

**Cdre Asker**—Yes. What we are talking about here is a 7.8 metre diameter hull loaded with equipment being brought up to another section of the same diameter—two sections of roughly 300 to 400 tonnes each. The accuracy with which we are required to perform this operation is about five millimetres, and all we are looking at here is distortion of less than that. As I said before, we are risk averse. We are very concerned when things do not go according to plan, and I do not believe they did go according to plan in this particular instance. Through the proper exercise of engineering expertise and caution, it was overcome. But sledgehammers and other blunt instruments have no place in submarine construction.

**CHAIR**—Can I change the tenor of the questioning a little bit. You did say before, Mr Jones, that the contractor has reserves and you believe that he is sufficiently liquid to complete the contract. Does the Auditor-General have access to those records?

**Mr Jones**—I believe so. I think we have provided that information both to this committee and to the Auditor-General.

**Cdre Asker**—Management audit branch had access to those informations. Of course, ASC is a private company, as you are well aware.

**CHAIR**—That is leading on to the next question.

**Cdre Asker**—The intimate details of its financial operations are normally kept within its—

**Mr Jones**—I thought, subsequent to the last hearing, we provided—

**Mr Watters**—We did write to you on 25 May last year providing further information subsequent to the initial hearing.

**CHAIR**—And that included the information regarding their reserves?

**Mr Watters**—It did not include raw numbers. It talked about percentages. The raw numbers are very sensitive to the company. We have talked to the company and they agreed, however, that we could provide you with the data we did.

**CHAIR**—Right. It is very sensitive to the company, I understand that, but let us go now to the broader issue that this raises. You tell us that they have sufficient reserves to complete. Quite frankly, without any independent ability to access those numbers, I have less than 100 per cent confidence in your statement, Mr Jones.

**Mr Jones**—I understand entirely, Mr Chairman.

**CHAIR**—And you would understand the reasons why. That being true, I want to address the generic issue that this committee keeps coming back to time and time again—that is, the reluctance of Defence to put in its contracts that the ANAO, the Auditor-General, will have access to the contractor's premises and to all documents during the term of the contract. We understand that that is a 100 per cent requirement of the United States defence establishment and we do not understand why the defence department in Australia cannot give us what we ask for so that when you come here and make bold statements like, 'They have reserves and enough equity to complete the project,' we can in fact test those assertions.

**Mr GRIFFIN**—Or have the Auditor-General do it.

**Mr Jones**—On the first part, about testing those assertions—and I accept that you have every right to be unconvinced, if you wish—however—

**CHAIR**—History does instruct me!

**Mr Jones**—As you are well aware, the Audit Office has crawled all over this project and, indeed, has spent a considerable part of time with the project office over a large number of years.

**Mr GRIFFIN**—And expressed considerable concerns in the audit report about this sort of issue.

**Mr GEORGIU**—But not about noise.

**CHAIR**—Let him answer the question.

**Mr GRIFFIN**—Mr Jones, paragraph 12 on the—

**CHAIR**—Alan, give him a go!

**Mr GRIFFIN**—It directly addresses this point. This is the point I wanted to pick up on earlier: you suggested that the Auditor-General was agreeing with you on the question of what you were actually doing, when clearly from the report it does not.

**CHAIR**—Order! I would like him to answer the question, if you do not mind.

**Mr GRIFFIN**—I am trying to make sure he doesn't give you the wrong answer.

**Mr Jones**—That is very kind of you.

**CHAIR**—Settle down!

**Mr Jones**—Mr Chairman, the first point I was going to make to try to help you with your concern was that, because of the size and complexity of the submarine project, over the life of the project we have had an independent audit—performed by a recognised audit organisation—of the company's affairs and accounts that addressed all the sorts of things you are concerned about. But it is my understanding that, on top of that, in more recent times we have had a second audit performed by another independent commercial auditor. We asked exactly the sorts of questions that you have asked—that is, how they are going, whether there appears to be enough money to complete the project and all those sorts of questions. It is my understanding from those reports that both those auditors independently formed the view that I have expressed to you. They may be wrong, and I may be wrong, but I think that is a reasonable level of assurance in a commercial sense. We have had two independent auditors take a look at it—and they had full access to the company's books, which is more access than you and I have—and they formed that view. That is the first point.

**CHAIR**—I understand that, but remember that we are here representing the parliament. The Auditor-General's job is to audit the Commonwealth books on behalf of the parliament. What I am asking you is why Defence continues to deny giving, in a contractual sense, the Auditor-General access to contractors' records.

**Mr Jones**—Okay, I will turn to the second part of your question, Mr Chairman. You commented on the United States situation, which I would put to you is very different from Australia. In the US, the vast majority of defence contracts are operated on a cost-plus basis where the US audit office crawls all over the accounts and agrees on the attribution of overheads, chargeable activities and all sorts of things. They have a very intrusive financial regime that is typically in a cost-plus but sometimes in a variable price environment. They have a huge set of rules and regulations that govern the awarding of their contract and a huge work force who spend their days crawling all over companies' books. That is not a regime we tend to operate in in Australia. We tend to go for fixed price contracts and pay the guy accordingly.

The Defence view is basically that, if this parliament wishes the Auditor-General to have that facility, it should legislate accordingly because I think it will cause some difficulty for a whole lot of defence contractors, particularly small contractors, to have this blanket ability of the Auditor-General to come in and go onto the premises and inspect the books. The vast majority of things we buy from industry in Australia are on a fixed price basis and are not

on a basis where I think it is reasonable to then ask the company to open up their books. They quoted competitively. It was awarded competitively. They are entitled to be paid what was agreed in the contract. I think it would imply a whole lot of risk and overheads to many Australian companies to have this threat hanging over them.

**Mr GRIFFIN**—With respect, though, that is a gross oversimplification and it is taking us off the track of what we are looking at here. I could say back to you that, in the circumstances of this particular contract, there is a situation of how much money was paid up front. Is that really fair? It is a situation where there are arguments about the question of professionalism in relation to the project office, which were concerns raised by the Auditor-General around the question of establishing the level of risk that actually was being exposed. There is a question of our attempts at technical capability that are basically years behind schedule. There are some pretty major concerns there which do not strictly relate to the question of just merely a fixed term contract for a price. These things are not that simple. You know that, Mr Jones; so do we.

**Mr Jones**—Mr Chairman, I thought we were talking about the generality of the issue, not the question of the submarine contract.

**Mr GRIFFIN**—At the end of the day, we will get back to submarines and we will get back to some specifics. If you want to argue in terms of generalities in that context, you are still going to end up having to come back to the specifics as to why there is a problem.

**Mr Jones**—Yes. Mr Chairman, the point that I was trying to make, and that Mr Griffin does not seem to be accepting, is that if there is a blanket authority provided to the Auditor-General to come in and inspect and audit the books of businesses on the premises of everybody that we do business with, I believe that will raise Defence's net costs of doing business because people will be more risk averse, and we will pay for that. If that is what parliament wishes, that is fine; but I think there are some downsides to that process.

**Mr GEORGIU**—We have been given a variety of assurances over time on this that the thing is going to come in on contract—no more expenditure and on contract. Reading between some of the lines that have been delivered today, I get the impression that you are going to revise the specifications; you are going to add new dimensions to what you were previously requesting so that there will be more expenditure; and that there will be more moneys spent on this project beyond the contract as originally written. Is that correct? I do not want to know how much. I just want you to say, 'Yes, that is the case,' or 'No, it is not the case.'

**Cdre Asker**—We do not know.

**Mr Jones**—There will be more money spent on this submarine than is in the contract. That would always have been the case and always will be the case because the configuration will never be static. Throughout its life, we will continue to evolve what our requirements are. There is no fixed point that says, 'That is it. We stop. We are not going to spend any more money on the submarine.'

**Mr GEORGIU**—Mr Jones, that is a new one. We have always been told that the submarines will be produced for the contract price.

**Mr BROUGH**—I think you are mixing up two points there.

**Mr GEORGIU**—You were just redefining the whole—

**Mr Jones**—I think we are talking at cross-purposes.

**Mr BROUGH**—You are, because you are talking about the life cycle of the submarines and we are talking about up to acceptance into the Navy. That is the contract. Forget the rest beyond that, because we realise there will be upgrades and changes. That is your point, isn't it, Petro?

**Mr GEORGIU**—Yes, precisely. Of course there are changes, but we have always been assured that the thing will be delivered and accepted within the context of the original contract price. That is not what I am hearing now.

**Mr Jones**—I will try to restate it, if you like. It is our current view that the contractor will deliver an acceptable product for us—

**Mr GEORGIU**—Contract compliant?

**Mr Jones**—I have to qualify that because I cannot give you an absolute guarantee. It will deliver an acceptable and equivalent product. It may be that in some areas we will agree to concessions. It may be that in other areas we will get extra performance out of the submarine.

**Mr GEORGIU**—We have been given assurance after assurance that the submarines will be contract compliant before they are accepted into service.

**Cdre Asker**—Yes.

**Mr Jones**—That is true at a general level. But in the thousands of line items and the millions of things that comprise this submarine, not everything can or will be delivered exactly as was intended. Indeed, there is a whole process going through these things of agreeing to things that are better or slightly different to what was originally intended. I cannot make an absolute statement to you, but for all engineering intent—

**Mr GRIFFIN**—Some of those will be capability adjustments and some of those will be cost adjustments. Is that what you are saying?

**Mr Jones**—In aggregate, none of them are cost adjustments in that we still expect to get the product we are after for the current contract price.

**Mr GEORGIU**—They will either be equivalent or better submarines. There are no negative trade-offs within that. You are not going to compromise on noise?

**Cdre Asker**—No.

**Mr GEORGIU**—And you are not going to pay any more for noise?

**Mr Jones**—We are expecting the contractor to deliver in terms of the noise performance of the submarine.

**Mr GEORGIU**—Contract-wise?

**Mr Jones**—It may be that, at the end of the day, we agree that some element of the specification for noise is not achievable in any practical way.

**Mr GEORGIU**—So that will be a diminution as against the contract specification—

**Mr Jones**—In that case, we will have a concession.

**Mr GEORGIU**—So that would be the least—

**Mr Jones**—Yes. In other areas it may exceed what we are asking for.

**Mr GRIFFIN**—But you are saying it is around the edges?

**Mr Jones**—Yes.

**Mr GEORGIU**—We will come back to that.

**Mr Jones**—I am just concerned that a literalist will want to quote me a year later when I said there were absolutely no things, when there will be a couple of ways that will raise a whole lot of ups and downs.

**Mr GEORGIU**—We have been through JORN together, Garry. We never quote you literally—a \$600 million loss for Telstra later.

**Mr COX**—Can we move on to valve 31 and its supposed incident.

**Cdre Asker**—This was raised at the last Senate estimates by Senator MacGibbon. I am not sure that he referred to valve 31 or he called it valve 35, but in any case I think the occasion to which he was referring relates to valve 31 in the main bilge system of HMAS *Collins*. This particular valve is operated by an actuator, which is designed to shut off at a certain depth. During trials in, I think, late 1995—and these trials are very carefully controlled and monitored—it was found that the actuator was not in fact shutting this valve off at a particular depth. As with any valve on the main bilge system of a submarine, there are backup valves and isolating systems. These backup valves were operated; the actuator—there is some wiring in there—was corrected and that was the end of the problem.

**Mr COX**—Was there anything approaching a catastrophic incident?

**Cdre Asker**—I think this is one of these instances where there is a grain of truth that is taken up by the media and then amplified out of all proportion, rather like a rock concert or something like that. It does not do anything for the people who serve in the submarines or the project or the contractors involved. In many ways, this sort of thing is detracting from our national interest.

There was no danger to the submarine or the personnel in it. It was largely a hardware problem with the control of this actuator. The backup valves were in place, and the system that we have that monitors open-and-shut indications on the valves picked the situation up and we used that indication to rectify the problem.

**Mr COX**—Can we move on then to the weapon data converter?

**Cdre Asker**—The weapon data converters, of which there are two in any submarine, are designed to transfer what we call weapon presets and specialist information from the combat system to the weapons. So when you are setting up to actually discharge a weapon to a target, you use the weapon data converter to put the settings on the weapon.

We have had some difficulties with one of the weapon data converters, and we believe that is a back plane problem, a wiring problem. I know that back plane has been replaced, and in that particular submarine we have not had any other problems.

**Mr COX**—What is a back plane?

**Cdre Asker**—A back plane is essentially a plane, a board, full of wiring that connects the logic elements of the computer processing within the weapon data converter to the rest of the combat system. So the back plane is the interface with the rest of the combat system.

**Mr COX**—We have been informed by a former manager in ASC that there are potential risks, and I am not sure whether this person is actually an expert in this area.

**Mr Jones**—Could I ask if Mr Cox is referring to some unsigned correspondence?

**Mr COX**—I am not.

**Mr Jones**—There is some other stuff around that is unsigned.

**CHAIR**—We are aware of that. Thank you, Mr Jones.

**Mr COX**—This is stuff that we understand has been looked at by the Inspector-General but, given that it has been given to this committee, I think it is appropriate that we ventilate the issues so that they have been dealt with.

**CHAIR**—It is confidential.

**Mr BROUGH**—He has not spoken about who it is.

**CHAIR**—You can talk about the issues but not the individual.



**Mr COX**—Yes. He describes one of the abnormal states for a torpedo as a hot run, which is when the engine apparently starts and the torpedo is not discharged. Apparently, a range of difficulties can flow from that. Probably the most extreme one is the discharge of the weapon before it leaves the boat, which would obviously be terminal. Are there any issues relating to that?

**Cdre Asker**—I am not aware of any particular issues here. The situation you describe is pretty standard. Yes, there is a very low possibility of the weapon running up inside the tube whilst the tube is flooded. What happens then is that the internal safety interlocks within the weapon allow the propeller to spin around and the weapon to be held firmly against the bow cap until the fuel has been expended. There are certain venting arrangements within the tube that enable this hot run to occur, but the eventuality that you discussed there is most unlikely because of the interlocks on the weapon—that is, the weapon cannot explode inside the tube.

The worst that could happen would be that parts of the weapon would melt, and you would run the risk of a meltdown in the explosive head. It is extremely unlikely because of the separation between the fuel tank and the explosive itself. As I said, the water will get hot, it will vent off and other water will come in. In terms of safety interlocks in things like this, that situation has been considered. The people who designed this particular system, Strachan and Henshaw, are the weapons system designers for the Royal Navy and other navies. They have had a lot of experience in this particular area and, in designing the tubes and the interface with the tubes in terms of loading the weapon, these sorts of eventualities are always considered and designed for.

**Mr COX**—Has there ever been an incident in modern naval history where a torpedo has exploded in the tube?

**Cdre Asker**—I am not aware of it.

**Mr COX**—You probably would be if there had been one.

**Cdre Asker**—Mr Cox, I might correct that. My adviser, Mr Gairey, says that he believes that in the case of the USS *Scorpion*, a mark 37 torpedo suffered a hot run and that led to the loss of the submarine.

**Mr COX**—Can you remember which year it was?

**Mr Gairey**—No. I think it was in the late sixties or early seventies—that sort of vintage.

**Cdre Asker**—But in answer to your question, Mr Cox, there has been nothing in recent years.

**Mr BROUGH**—Are torpedoes these days like many weapons systems, where they have to travel a certain distance before they arm themselves?

**Cdre Asker**—That is one of the safety features.

**Mr BROUGH**—It is not time run; it is actual somehow projection of distance?

**Cdre Asker**—That is one of the safety interlocks.

**Mr BROUGH**—It is a bit hard to do that inside a torpedo tube.

**Cdre Asker**—The reason that I am a little bit reticent to give the full information is that this information is confidential in some areas.

**Mr BROUGH**—I would have thought that was pretty standard. It is with most rockets and things, isn't it?

**Mr COX**—The Auditor-General was, however, concerned about the quality control on the software for the various parts of the weapons system. He did recommend that Defence consider a review of the weapons data converter system by independent experts, as proposed in paragraph 5.50 of report 34. He recommended there be an independent review of the quality of a whole range of software systems. Defence have actually disagreed with that recommendation. Can you elaborate?

**Cdre Asker**—Certainly. I would like to make the point that, whilst we formally disagreed with that recommendation, the reason we are disagreeing is that we are tackling it from a different perspective, as it were, to achieve the objective that I believe that ANAO was after. What we have been doing is looking at the relevant software safety case, and the software development standards and associated standards, and one of these standards is a new Australian standard called DEF(AUST) 5679.

What we are trying to assure ourselves of—and I am sure this was the aim of the ANAO comment—was that the software systems in the Collins class are not safety critical. We have conducted a range of assessments to date in respect of the propulsion and weapons systems, and these assessments have not indicated a change in previous advice with respect to these software safety aspects of the Collins class.

We are also doing additional software safety case studies covering the integrated ship control management and monitoring system, the ship information management system and the ship information system. These are software systems that are essentially used to control the submarine once it has dived and also to gather information for repair and maintenance purposes.

We have also engaged the support of the Defence Science and Technology Organisation and the University of Queensland's Software Verification Research Centre to support this safety case work.

**Mr COX**—You don't think there is a good case for getting an independent expert from one of our allies who is particularly expert in submarine software to give some reassurance?

**Cdre Asker**—Yes. We have also engaged the Naval Undersea Warfare Centre from the USN to look at specific aspects of our combat system, both from a hardware perspective and a software perspective.

In answer to your question, I believe that with the Naval Undersea Warfare Centre, the University of Queensland and the Defence Science and Technology Organisation, we do have an independent assessment of the safety aspects of our software, not only of the combat system but also the platform system and other systems as well.

**Mr GEORGIU**—Do you have an estimate of what it has cost the Commonwealth in terms of personnel, maintaining Oberons in service and all the associated costs of this delay in commissioning Collins?

**Mr Jones**—I do not have the figure.

**Mr GEORGIU**—Is it possible to get the figure, because this has been a costly delay, I should think, when compared with your original objectives in terms of the handover from Oberons to Collins? Could we get an estimate of the costs of components, staff, training, and maintaining Oberons by getting old equipment from wherever—a nice story about cooperation between country and city? I really would like it because, once again, my concern is that we always say that it is coming on contract and all the costs are out there somewhere.

**Cdre Asker**—Yes. I think what we are talking about here, Mr Georgiou, is, in fact, in the order of 1½ submarines for perhaps 18 months to two years—call it two years. It would be 1½ Oberon submarines for two years—is that the sort of thing you are looking at?

**Mr GEORGIU**—Yes.

**Rear Adm. Oxenbould**—We could certainly look at it and see how we could provide that information you are after, but the costs of running on the Oberons have been offset to a large degree by the fact that we have not been operating some of the Collins in the slippage within the Collins program.

**Mr GEORGIU**—But I thought it was more expensive to operate the Oberons than it was to operate the Collins.

**Rear Adm. Oxenbould**—Certainly it is to refit the Oberons.

**Mr GEORGIU**—Okay. Can we do it at the level of capability delivered—bangs for your bucks?

**Mr COX**—That is probably a bit complicated.

**Mr GEORGIU**—But they would know. I think we know what we are actually talking about because, basically, we are talking about a project that actually did not deliver on time, that had significant strategic impacts and that also cost money. But, at the end of the day, the usual line we get out of Defence is, 'But we are not paying any more', which in this case is not going to be true anyway.

**Mr Jones**—We are not paying the contractor any more.

**Mr GEORGIU**—We are not paying the contractor any more but the Commonwealth is paying more through the necessity of keeping other capacities in place. You are impacting on your training schedules and I also think you are impacting on your morale, but that morale is an intangible. I would just like to see the dollars.

**Mr COX**—The Oberons have much larger crews, haven't they?

**Rear Adm. Oxenbould**—Yes.

**Mr COX**—So that would be a higher expense.

**Rear Adm. Oxenbould**—Yes.

**Mr GEORGIU**—That is a sensible question.

**Mr COX**—Has there been any additional refitting done to any of the Oberons because of the extended—

**Rear Adm. Oxenbould**—Yes, there has. I mentioned earlier that the Oberons normally operate on a five-year cycle and part way through that cycle they have to have a mid-cycle docking. Over the last Christmas period, we committed HMAS *Otama* to a mid-cycle docking so that she was able to run on for these next two years, if needs be. So that is an additional cost that we have incurred, but it was in the order of \$6 million.

**Cdre Asker**—In doing that, we have not expended that money on Collins repair and maintenance. Essentially, what you are doing for the Oberons you would probably spend on the Collins.

**Mr GEORGIU**—I would be very happy if it was a zero net cost.

**Cdre Asker**—What you cannot cost is the cost of capabilities.

**Mr GEORGIU**—We have paid lots of money for this. In this case, the opportunity cost is a real one. It is not the absence of a capacity; it is the loss of a capacity and its non-replacement by a new capacity, to put it crudely.

**Mr Jones**—Can I debate you a little bit on that?

**Mr GEORGIU**—Sure.

**Mr Jones**—In a sense, these things have a finite life. In the period in which there was a delay, if it had turned out that we did not need them, we would actually acquire that extra life at the end. So in some ways there is also a saving.

**Mr GEORGIU**—Yes, and if by some chance we actually do need them, we are doing very well! That is why we have a military force: just in case we need it in some particular strategic environment.

**Mr Jones**—That was the risk equation at the time.

**Mr GEORGIU**—But that is why we pay the money: to avoid those risks.

**Mr Jones**—The Australian taxpayer could have paid a whole lot more money and had full Oberon to full Collins, but the decision was taken not to do that.

**Mr GEORGIU**—My point was that, in the case of JORN, for example, we were actually acquiring a new capacity that had not previously existed. In this case, we are actually replacing a capacity that does exist and has deteriorated over time. That is quite different and much more worrying.

**Mr BROUGH**—In relation to the Collins that we have there at the moment—and this is from my layman's point of view—five things that come up are your power pack, weapons systems, noise level, integration of your systems and diving. Are any of those now complete or are they all still at some degree of completion?

**Mr Jones**—You run us through the list and I will try to answer them.

**Mr BROUGH**—The power pack you mentioned earlier.

**Mr Jones**—The diesel—yes, that is on the Collins now.

**Mr BROUGH**—I did not think you would want to run through them individually, but that is fine.

**Mr Jones**—I can give you a quick answer on each one, if you like. The reliability of the diesel engine is not fully resolved at this time, but we have no reason to believe that it will not be.

**Mr BROUGH**—We have already spoken of the weapons systems so we know about them. What about the noise level on that one?

**Mr Jones**—We are still working on the noise level.

**Mr BROUGH**—You are obviously happy at patrol-quiet state but are there still some problems with some of them?

**Mr Jones**—Yes. Could I add, because it is important, that we are actually seeking to go further and doing a number of things in parallel. Some of these are with the government for decision at the moment—that is why I did not want to go into it too much—but we are looking to go further, because we have now been given the opportunity to go further. We have been given access to some technology that we did not have access to before.

**Mr BROUGH**—You have basically touched on the integration of the systems, which is probably not going to reach the specifications you originally wanted anyway. With what you are compromising on, where is that at?

**Mr Jones**—As Admiral Oxenbould said, we believe that by the end of this year we will have an operational submarine. Our general position would be that probably 12 months later we will have the whole thing.

**Mr GEORGIU**—What was the second point there about ‘probably 12 months later’?

**Mr Jones**—At the end of this year, we are looking for a level that is acceptable for operational use, but we want to go a bit further by the end of the next year.

**Mr GEORGIU**—Which is when?

**Mr Jones**—That is the end of 2000.

**Mr GEORGIU**—That is your benchmark?

**Rear Adm. Oxenbould**—That is what we are aiming for—the acceptance into naval service.

**Cdre Asker**—That is the number one. That is it—all over red rover. We have got it. It is working.

**Mr BROUGH**—That goes back to what we have been talking about, except it is in a naval service—

**Mr GEORGIU**—I thought we would actually have an explanation.

**Mr Jones**—Our plan is that it will be acceptable. It will be accepted in naval service but, in parallel, we will have plans under way to further enhance the submarine. That is a separate thing.

**CHAIR**—We understand that.

**Rear Adm. Oxenbould**—The acceptance into naval service is an all encompassing thing. It is not only the capability and the operational performance of the submarine but also the documentation—the integrated logistic support system is in place, the servicing schedules—which is necessary for the Chief of Navy then to run that submarine in service.

**Mr BROUGH**—Another one I had there was diving: has it actually reached its maximum depth at any stage?

**Mr Jones**—I believe we have no issues in terms of diving, is that correct?

**Rear Adm. Oxenbould**—No issues at all. It is fully—

**Mr BROUGH**—No, we are right there with that.

**Mr Jones**—We get a tick for that one.

**Mr BROUGH**—Done. Going back to the weapons systems you are talking about—its tracking, its capability, et cetera—where are we at with the actual delivery of live torpedoes and other weapons systems?

**Mr Jones**—I think the answer is that we can deliver the weapons but we still have some issues at a more detailed level. Do you want to help me there?

**Mr BROUGH**—I mean ensuring they hit what they are supposed to hit.

**Mr Jones**—Probably their hitting is no lower. There are some issues that are more complicated that are to do with your ability to do multiple things, to do things in certain sequences and things like that.

**Mr BROUGH**—At one time.

**Rear Adm. Oxenbould**—That is right—the number of weapons that you can control. We have conducted the torpedo firings.

**Mr BROUGH**—Live torpedoes?

**Rear Adm. Oxenbould**—They are all practice torpedoes. That is the normal way we fire.

**Mr BROUGH**—Do you ever fire live torpedos—not from your Collins, but in normal training with your Oberons?

**Rear Adm. Oxenbould**—We are planning to do a live torpedo firing later this year.

**Cdre Asker**—We are talking about a warshot firing.

**Mr BROUGH**—I am talking about being at the other end.

**Rear Adm. Oxenbould**—We are planning a warshot firing against the ex HMAS *Torrens* off Western Australia later this year.

**Mr BROUGH**—In part of your annual training, does the Oberon normally do one or two or whatever rounds a year?

**Rear Adm. Oxenbould**—Not warshot firing. The submarine has to be certified in firing torpedoes and they will fire a number of practice torpedoes. They are for all purposes exactly the same torpedo. They have a telemetered head. They are recovered after the firing and then the firing is analysed—the success of the information that was inputted into the weapon, whether that was the correct information and whether—

**Mr BROUGH**—That is more useful than a live round for you anyway.

**Rear Adm. Oxenbould**—That is exactly right. The reason why we would conduct a warshot firing is to prove other parts of the weapons maintenance as well—that the routine

maintenance of these weapons is effective. I think we do those most infrequently. The last warshot firing—

**Cdre Asker**—Was against *Colac*.

**Rear Adm. Oxenbould**—was against the *Colac* about 10 or so years ago. It is about that order.

**Mr COX**—What about the Harpoon?

**Rear Adm. Oxenbould**—We have not fired the Harpoon from the Collins because we have to deploy to a range where we can conduct that firing, which is generally in Hawaii at the Pacific missile range facility. We would be looking to deploy Collins to participate in Exercise RIMPAC 2000 and that will provide us with an opportunity to conduct the firing then.

**CHAIR**—On the weapons system, you said that the Collins had the same capability as the Oberons, yet we have been advised that it can also take Tomahawk missiles which the Oberon cannot.

**Mr Jones**—It can. It is how you define the word ‘capability’. The weapons we are going to see within the Collins are essentially the same weapons that are in the Oberons; but, yes, the Collins has a whole number of features that in the end will make it superior to the Oberon. One of those is its potential ability to take other weapons.

**Rear Adm. Oxenbould**—The weapons suite that we have in the Oberons at the moment is a very sophisticated weapons suite when you talk about Harpoon missiles and mark 48 torpedoes. But there are other projects in place at the moment to look for a replacement of the heavy torpedo to the ongoing development of the mark 48 torpedo, which the Oberon currently uses, and we are transferring it to the Collins.

**Mr GEORGIU**—At the moment we have one fully operational submarine.

**Rear Adm. Oxenbould**—That is correct.

**Mr GEORGIU**—The *Otama*.

**Rear Adm. Oxenbould**—That is correct.

**Mr GEORGIU**—If something goes wrong with the *Otama*, do we then have no fully operational submarine capacity at all?

**Rear Adm. Oxenbould**—We do not have a submarine which would be at the level we have defined as the minimum required to deploy in a wartime operational situation. However, if we needed to deploy a submarine for something less than that, we would have a capability. There is clearly some capability available in the Collins class submarines which are at sea at the moment. It would depend very much on the strategic circumstances and the risk that the government is willing to accept in deploying them.



**Mr GEORGIU**—But, fundamentally, if something significant but non-threatening goes wrong on *Otama*, we have not got anything at a full operational capability. No submarines at all.

**Mr Jones**—You are not going to get us to say yes to that statement because it really depends on what we want to do with the submarine.

**Mr GEORGIU**—Yes.

**Mr Jones**—And Navy sets an extremely high set of standards in relation to—

**Mr GEORGIU**—We will have no submarines that have been fully operational, that have been fully accepted into the—

**Mr Jones**—Full-scale battle, is what you are saying.

**Mr GEORGIU**—No. I get the nuances in all this. But, basically, if *Otama* goes out when we have got to operate, we have no effective full bore operational capacity, do we?

**Rear Adm. Oxenbould**—It is a hypothetical question, but the answer to your hypothetical question is yes.

**CHAIR**—Would you now, in retrospect, say that this phase-out phase-in planning years ago could perhaps have been done a bit better?

**Mr Jones**—My suspicion would be, if the same decisions were taken today, the government and Defence would be prepared to pay more to have less of a dip in the capability. In other words, I think the circumstances we face today would have people make different choices. So I suspect we would have spent more money and had less dip in the capability plan. That still would not have dealt with the issue of the delay but would have ameliorated it.

**CHAIR**—Following on that, was it a bit naive to think that we could undertake to build modern, conventional submarines with very advanced weapons control systems and firing platforms in Australia and not experience significant development delays?

**Mr Jones**—Mr Chairman, I would prefer you to use the word ‘ambitious’—

**CHAIR**—I am sure you would.

**Mr Jones**—rather than the word you used.

**CHAIR**—I will not withdraw the word, Mr Jones.

**Mr Jones**—You are really getting into one of my favourite topics, which is the concept of contingencies, and particularly schedule contingency. I think it is a difficulty in the Australian public arena and our expectations of these large projects that we seem generally to be unwilling to recognise the points you make and allow for schedule contingency. It

seems to me that your assumption is correct, that even with the best planning in the world the prospect of building that submarine exactly as planned to the contract date originally set out was quite low. One of the reasons for that, by the way, is that we take on some of the risks—the so-called ‘force majeure risks’ are risks to the Commonwealth. We accept that as part of doing business and sharing risk. So when you heard the contract dates read out, the probability of delivering that submarine on that contract date was probably about zero because it was going to rain or there were going to be other things happening along the way. So there needs to be some schedule contingency.

It is a continual source of difficulty for my part of the defence organisation to negotiate and secure any schedule contingency in the projects we run. I would be much happier if we were operating in an environment, as you describe it, where we said that these are complex undertakings. We need to hope for perfection but not expect it. In other words, it will probably be the case that there will be some things that nobody could contemplate that would take a little bit longer. I think if you want to criticise the defence organisation, it is principally in that area that we are most subject to criticism—that we were too confident about the prospect of no schedule slippage.

**CHAIR**—When you started that paragraph, you seemed to imply that somehow it was our unrealistic expectations—or the public’s, or the parliament’s, or the Auditor-General’s unrealistic expectations—and that you always knew secretly in your hearts you would never make it but it was our fault that this has caused a huge public outcry. Mr Jones, don’t you really think it is Defence’s responsibility to point these things out to the parliament, to the public and to the executive at the time that you make these complex progressive decisions?

**Mr Jones**—You are absolutely correct, Mr Chairman.

**Mr BROUGH**—You did make contingencies, didn’t you?

**Mr Jones**—We made financial contingencies.

**Mr BROUGH**—No, not financial. In relation to the Oberons, et cetera, you made contingencies. What you are saying is that they were not sufficient. They were ambitious as well.

**Mr Jones**—That is correct.

**Mr BROUGH**—What we have a problem with in the public, and I guess even wider than that, is that it becomes the perception that you did not have the brains to make any sort of a contingency—whereas you did, but it simply was not enough. There is a big difference between you not making any at all and making one that is insufficient. That is accurate, is it not?

**Mr Jones**—The point I was trying to make—

**Mr BROUGH**—I am defending you here.

**Mr Jones**—Thank you.

**Mr BROUGH**—I do not do that very often.

**Mr Jones**—The point I was trying to make, that the chairman was objecting to, was that you can make those criticisms of Defence but you also have to look at the environment we operate in at large. That is set by the parliament, by you people, by the Audit Office, and by the press. We all operate in a real world where there are pressures on us. My point was that at least part of this issue is the Australian perception about what success is in these major projects, and an expectation that everything will work perfectly right on time, which I think is not a realistic expectation in these sorts of things. The other alternative is not to do these very complex things.

**CHAIR**—Perhaps you have an education role that you are not undertaking.

**Mr Jones**—Perhaps.

**Rear Adm. Oxenbould**—There are two other aspects to that as well. If you took further insurance to run the Oberons on further, it would be very expensive. It was in the order of \$120 million to refit another Oberon class submarine. The other thing is whether it would be achievable, personnel-wise. If we tried to overlap that period further and have a large number of Oberon class submarines running at the same time as a large number of Collins class submarines, we would not be able to provide the crews. That is a problem.

Last year was the peak, as I mentioned before, where we were expecting to have to provide eight submarine crews. That was really stretching the capacity of a small arm of 600 to 700 people, with the consequence of the intangibles of not being able to provide shore service for these submariners, et cetera, and increasing wastage rates and all those issues.

**CHAIR**—I am not trained, but I would be happy to give you a week!

**Mr GEORGIU**—Basically, these things are done on advice. As I said, what is very illuminating are these differences between this and JORN. JORN may not have been an incredible accomplishment and Telstra may have lost \$600 million on it, but at least that was just the capacity that it was good to have and not the capacity that we were denying ourselves. In this particular case, we have lost a pre-existing capacity. Surely it must be a concern that, if something goes wrong with the last Oberon, we have no capacity. I am not being critical; I am just saying that that would really worry me.

**Rear Adm. Oxenbould**—Of course it is a concern and we are worried about it. We are working extremely hard to make sure that that eventuality does not arise.

**CHAIR**—On a more positive note, we understand that some of the systems built into the software and practical systems on land allow maintenance requirements for a submarine to be forward planned to its dock so that repairs and maintenance can be undertaken in micro quick time to put the subs back out to sea again. Is that something you can talk about?

**Mr Jones**—Our overall objective, what we call submarine availability—that is, a percentage of the total time it is available and not in refit or repair or something—for this class of submarine is significantly better than for the Oberon. At that macro level, that is an

absolutely true statement. That represents the investment we have made in technology in the submarines. I am sure Commodore Asker can talk about some of the maintenance systems, which also are a generational step forward from anything the Navy has had in previous classes of ships.

**Cdre Asker**—We have invested a hell of a lot of money in the integrated logistic support aspects associated with this submarine. As you are aware, integrated logistic support has many elements, one of which is repair and maintenance. This is what you were discussing.

To assist this support activity, we have various information systems. They stem from a master database that is run by the Australian Submarine Corporation which has many fields. There are selected fields that are downloaded or selected into another information system—I mentioned it before—the Ships Information Management System. This is the master system that contains all of the support documentation, from engine bearings to the nuts and bolts that secure cupboards, bunks or whatever. It will identify the supplier, pattern numbers, stock numbers, and all of these sorts of things.

In addition, on that particular system, we have the maintenance requirements, the drawings and the procedures that maintainers have to follow to do the routine maintenance. If there is a breakdown, there is information that will assist you to diagnose the fault and then rectify it: what spares you might need, and where the carried-on-board spares are or where the spares are in the base or whatever. An enormous amount of information is delivered, on the basis of minimum paper, to the maintainer, the cook, the captain, the watch-keeper—anybody can access this on board the submarine or you can access it ashore.

The information regarding running times, for instance, of equipment on the submarine is captured by an on-board system called the Ships Information Management System. When the submarine comes alongside, all of that information is downloaded to the SIMS system, and that will help the caterers and the victuallers ashore identify what consumables and food is being consumed during the patrol and enable them to restock the submarine. This is the cutting edge of technology. We are in the strategic quadrant of information systems with respect to this.

**CHAIR**—Thank you for that. If we had bought a ready-made platform like the F111 but as a submarine—

**Mr BROUGH**—It would not work very well!

**CHAIR**—Thank you very much, Mr Brough, I do appreciate your advice! Could we or would we have been likely to have had the same capacity?

**Cdre Asker**—There is no other submarine in the world, and I include the Americans in this, that has a system as sophisticated or as useful as the system that we have.

**CHAIR**—Very interesting. Mr Jones, if you were making the decisions today that were made a decade ago to build the Collins, would you make the same decisions?

**Mr Jones**—I certainly would be a supporter of building the submarines in Australia and going about it in much the same way. It is my view, and this is only a personal view, that it not only was cheaper to build the submarines in Australia than overseas but also had enormous benefits to Australian industry and our ability to support those submarines through life. I would be a strong supporter of replicating it. The downside for us as a country is that we are never going to have a submarine fleet that is large enough to have a continuous submarine building program. So, while there is a lot of benefit, there is also some pain at the end of the program.

**CHAIR**—Would you handle project management in the same way?

**Mr Jones**—I think project management has improved in that time. You may not be aware that the Australian Submarine Corporation went to some considerable trouble to get world's best practice into its management regimes. The Chicago Bridge and Iron, for example, was part of the consortium in the early days, and other large organisations provided considerable support. They developed what, for that time, was quite advanced management systems, but we could do a lot better today I believe.

**CHAIR**—Would your costing systems, that lead to progress payments, be handled on a different basis today if you were doing the contract again?

**Mr Jones**—Yes, although some of the elements that are in the submarine project are still currently considered best practice—that is, an attempt to pay as you go, paying on the actual accrued value of the work performed. The way to describe our typical defence contract these days is we pay on a combination of milestones and on what we call 'earned value'. We are leading the world in that respect. I am not aware of any other large defence organisation that has got to that stage, although everyone is watching us very closely, and we think that is quite an advance.

**CHAIR**—On a future major contract of the same nature, albeit maybe one that has wings instead of fins, would you consider in that cost control system—that approved progress payment—looking on the other side of the equation, not at what is completed but rather at what is left to complete as a variance, if you will, against what is completed and to adjust progress payments on such a basis?

**Mr Jones**—Yes, Mr Chairman, any concept of progress payments, or payment on value as you go, must always comprehend a concept of what the budget is to complete—in other words, where you are in terms of the likely completion outcome.

**CHAIR**—But not all contractors and not all purchasers operate on such a base.

**Mr Jones**—We do operate on the basis you describe for our large contracts. In other words, the concept of earned value comprehends the current budget to complete of the project.

**CHAIR**—Then how do we get to a position of 95 per cent of the contract value having been paid with only one sub floating around but not even fully accepted?

**Mr Jones**—Because 95 per cent of the input, the value of the work, has been done.

**CHAIR**—While we do not have 95 per cent of value of the sub?

**Mr Jones**—Now you are entering into a much more interesting discussion about what is ‘value’. One example is that a helicopter will not fly until you bolt the rotor blade on the top of it, but you will have 98 per cent of the value of the helicopter there the moment before you bolt the rotor blade on.

**Mr GEORGIU**—I tell you what value is: value is not having spent \$5 billion and having a lesser submarine capacity than we had with the Oberons fully in operation, and value is not being in a situation where you worry about whether the last Oberon will go down and we will not have any submarine capacity at all. That is value.

**Mr Jones**—Mr Chairman, our current approach to contracting would be not only to recognise that accumulating value of the work done but also, as part of the milestones—and remember I said we used a combination of milestones and earned value to put a value on the actual delivery—so that not only do they get some payment as they go but also there is a clear, visible incentive to actually get to that final completion point. We believe that mix of incentives is probably the best. The only other alternative that I am aware of is a situation where we say to the submarine builder, ‘We will pay you when it is finished and trialed.’ In that situation, I would guess the cost would have been probably \$12 billion or something because there is not only the question of financing it but also the perception by industry of it implying much greater risk to them.

**CHAIR**—I want to go back to the question I asked before: do you actually calculate cost to complete?

**Mr Jones**—The answer to that is, in our current contracts, yes.

**CHAIR**—You do calculate how much work is left to be done and the cost to the contractor to finish the contract?

**Mr Jones**—Yes. But that of course depends on your view of what that work is. At that stage, it is still only an estimate, as it always will be.

**CHAIR**—Of course, if it has not been done.

**Mr Jones**—That is an integral part of the concept of earned value.

**CHAIR**—Does the total—in other words, earned value plus cost to complete—ever equal more than 100 per cent?

**Mr Jones**—No, it should not if the system is working correctly.

**CHAIR**—I know it should not; that is not what I asked you. Does it?

**Mr Jones**—It is possible because of reworking and re-baselining that is not forecast. An example might be that, if you have developed 50 per cent of the software and it looks right and you give that value, and then it turns out not to be right because of rework, then you have to reset your objectives. That is where the rework allocation budget and other contingency budgets tend to take that into account.

**CHAIR**—My understanding is that, when you reach 95 per cent of payment, you stop further progress payments—is that right?

**Mr Jones**—No, we continue to pay the submarine contractor for the work he is doing for the first time under the contract. He does not get paid for his rework or other things like that.

**CHAIR**—Put it this way, when you reach 95 per cent of the payment and there is more than five per cent of the work yet to complete in terms of value—

**Mr Jones**—Is this a hypothetical or are you claiming this has happened?

**CHAIR**—Did that happen?

**Mr Jones**—This is the same question you asked me earlier about whether there is enough money in the contract to complete it. I have really got to answer the same question. Our view is, if you look at how much they have done today, what we know of to go and the contingencies the shipbuilder has, we believe you will get there within the current contract price.

**CHAIR**—But if that shipbuilder went bottom up tomorrow—

**Mr Jones**—We are all in big trouble.

**CHAIR**—Thank you.

**Mr COX**—I want to get back to some of the original contract terms in the form of contract guarantees, late delivery penalties and performance shortfalls. Have any payments been made by the contractor to Defence for late delivery?

**Mr Jones**—Can I take advice on that?

**Cdre Asker**—One of the techniques or strategies that we employ in the defence project management is where there is obviously some delinquency on the part of a contractor, and liquidated damages or some other damages are payable, we will tend to trade those damages off for improvements in capability or some other benefit to the Commonwealth rather than have a direct payment of dollars.

**Mr COX**—For late delivery, according to the Auditor-General's report, there is a penalty of \$125,000 a week. That is capped to a maximum of \$2½ million per submarine. In my calculations the penalty reaches a peak at 20 weeks, and we are now 20 months behind.

**Cdre Asker**—If you look at the other clause there, it says it is a maximum of \$15 million exposure on the part of the contractor in respect of liquidated damages.

**Mr COX**—Would you be able to give us some commentary later on about what performance improvements you have relative to the delays and what you could have got in terms of liquidated damages? Are you actually able to quantify that?

**Mr Jones**—I think we can give you some indications. Could I expand a little bit on what Eoin is saying. As you would imagine, when we sit down to write a specification for something as complex as a submarine, we do not get it 100 per cent right either. Typically, you get to the point where the contractor says, ‘Your specification says this,’ and we say, ‘We don’t agree with that, we think it says this,’ and you get into an argument or we say, ‘We admit we got that wrong and it should have been a little bit different.’ That is the sort of area you get in that you typically trade liquidated damages for—either to resolve disputes or to get something that you really wanted but you were not able to pin down well enough in the first place.

**Mr COX**—Have you gone through that as a conscious process and logged them?

**Cdre Asker**—Yes. What happens is that this is managed through the contract change process. For instance, it could well be that liquidated damages are traded for lack of Commonwealth performance in, say, supplying government furnished equipment, services or something like this—something that is totally beyond the control of the project. It could be bad weather, for instance, and we cannot sail the submarine or one of the support vessels to carry out a trial, yet the submarine is out there and ostensibly available for a trial. We have been unable to provide that service, so obviously the contractor claims damages from the Commonwealth.

**CHAIR**—On that issue, as I recall, without digging through the audit report, the auditor was somewhat critical of the level of liquidated damages specified in the original contract. I believe that is correct.

**Mr Jones**—Would you like me to comment on that?

**CHAIR**—Yes. I suspect I know exactly what your answer will be, having been a contractor to governments for many years, but go for it!

**Mr Jones**—My own view is that it would have been very desirable to have a higher level of penalties but it seems to me that in any of these contracts, it is always a nice balance between incentives and penalties. These are always matters for negotiation. I can assure you that some of the biggest defence contractors in the world are very hard to get to sign up for these sorts of things, and in the end you have to decide how far you are going to push it. That is probably the answer you expected.

**CHAIR**—Absolutely.

**Mr Jones**—It is never a separate issue; it is part of a whole web of issues in the contract negotiation as to who bears which risks and all those sorts of things.



**CHAIR**—I grew up in the commercial and industrial life in the United States and, quite frankly, I never heard of liquidated damages until I came to Australia.

**Mr Jones**—I would not like to leave the impression that we always trade liquidated damages. We have quite a number of contracts where the contractor literally pays up. If you want an example, the company involved for the late delivery of a C130J aircraft is paying liquidated damages to us—or we are netting it out from the invoice.

**Mr COX**—What about performance shortfalls? Have there been any payments for performance shortfalls?

**Cdre Asker**—The answer is no, because the trials program is yet to be completed. Until we have completed all of the trials, we are not in the position to negotiate or at least compare performance with that which was contracted.

**Mr COX**—Given that they are capped at either \$3 million or \$1 million for speed and endurance, I presume that there is a range of other performance shortfall penalties in other areas. Relative to the capability that we thought we were buying or that we were trying to buy, they look like pretty minimal penalties if we do not actually get it.

**Cdre Asker**—There are a couple of points there. Your presumption is wrong. The penalties apply to those performance figures as described in that part of the contract. There are subsidiary performance specifications and things like that, but they are not necessarily subject to damages. We would expect the contractor to get them right.

**Mr Jones**—We have not waived our common law right to sue him for non-performance or something like that. We still have all those rights. That is actually an issue because most of the large American contractors want you to waive common law right and we generally refuse to do that.

**Cdre Asker**—Getting back to your further question, in respect of the quanta for these damages, I think Mr Jones has already covered that. If we had our druthers here, we would have gone for something greater, but it is a negotiated outcome.

**Mr COX**—The last thing is indemnity. Can you give us an idea of precisely how much to date the Commonwealth has had to pay out because of the indemnity?

**Mr Jones**—Pay out because of the indemnity?

**Mr COX**—That replaced the commercial insurance.

**Mr Watters**—Indemnity for insurance claims—we did provide you with a list of all that back in May last year.

**Mr Jones**—You are alluding to the decision that was taken to terminate the commercial insurance and take the risk—

**Mr COX**—Yes.

**Mr Jones**—upon itself because it was seen to be not cost effective. The auditor had some difficulty with some aspects of that, but my view would be that it was a wise decision and is still seen to be a wise decision. Trying to insure a submarine, in many of its aspects, just attracts unreasonable premiums because the market is so small—

**Mr COX**—Short of a catastrophic event.

**Mr Jones**—That is even harder to insure against than what we were even then insuring against.

**Mr BROUGH**—Mr Jones, on completion, we have this figure that the chairman was talking about that we had paid 95 per cent and so, in theory, to the wider public, that means we have got five per cent left. We all know that that is not accurate as far as delivery is concerned. So a simple equation that I would work out is that funds not yet paid to the contractor, plus your assessment of money retained by the company which they can put into the contract, does equal completion.

**Mr Jones**—Yes.

**Mr BROUGH**—You have that information. We do not have that information. So, in theory, they could still have 30 per cent of the moneys that they have already received sitting in some sort of contingency and, therefore, we are 35 per cent away from completion. Or we could be six per cent away. We, as a committee, are none the wiser as to how close we are as a percentage of the total cost. Can you throw any light on that for us at all, please?

**Mr Jones**—Yes. You will appreciate, Mr Chairman, this is considered very sensitive commercial information by the company.

**Mr BROUGH**—Do you want to tell us that afterwards in camera?

**Mr Jones**—I was about to suggest that the information we provided after the last hearing may well provide the answer to your question. That talks in percentages and not absolute amounts, so it was easy to—

**Mr BROUGH**—I am not worried about absolute amounts. I can deal with percentages.

**Mr Jones**—I am not familiar with the detail of that. Gil, can you help with what the figures were? Or we can talk about that later, if you like.

**Mr Watters**—I would agree to do that.

**Mr BROUGH**—Okay. If we can deal with that, I think we will all have a much more solid handle on it all. Thank you.

**CHAIR**—Are there any further questions before we go in camera?

**Mr COX**—There is only one other thing and that is an item of public accountability that the Auditor-General raised on page 10 of his report. In the August 1996 budget context, Defence, in its portfolio statement, said:

Submarine 01 [*Collins*] has completed contractors' sea trials . . . To date, the performance of the submarine has met or exceeded the specified requirements'.

Do you think that was an excessive and ambitious statement at the time?

**Mr Jones**—Contrary to the Auditor-General, I believe it was technically an accurate statement, but it was not well expressed. In other words, what they were trying to say was that, of the trials they had done to that point, it was all looking good. What they did not say and perhaps should have said was, 'We have still got a lot of trials to go,' and they are some of the things that subsequently caused us difficulties essentially.

**Mr GEORGIU**—Can you take this on board?

**Mr Jones**—We are trying to get better.

**Mr GEORGIU**—No, seriously. I really do understand that one likes to project positively but it just gets you into trouble three years down the track when people say, 'Why?'

**CHAIR**—Are we all done?

**Ms GILLARD**—What mechanisms do they use in defence contracts in the States to ensure compliance if they do not use liquidated damages and they waive their common law rights?

**Mr Jones**—They do not have a system of common law, as we know it.

**Ms GILLARD**—Yes, but what contract compliance—

**Mr Jones**—There are highly structured regulatory systems that are substitutes for that. It was the chairman who said they did not have liquidated damages in the US and not me. I think some of the US DOD contracts probably do have liquidated damages.

**CHAIR**—It might be now, but in general industrial terms they do not.

**Mr Jones**—Most people think liquidated damages are not a very effective tool, that you would often do better to create other ways of incentive and things. It is a last resort. Everyone says, 'Well, why didn't you sue them for liquidated damages?' but you probably should go back a couple of steps and say, 'Why didn't you have a better set of incentives in place to encourage them to perform?' That is probably the real question.

**CHAIR**—To answer that question, in 25 years of project management in either industrial instrumentation and control systems or building construction, I never once paid liquidated

damages, and every contract would have had them. They are very ineffective. They are a very blunt instrument. They are very difficult to enforce.

**Ms GILLARD**—I am just trying to see if there is a better mechanism we could be using in—

**Mr Jones**—Incentives is the general answer to that, I believe, and a better understanding of risk sharing. I think one of the problems for a public sector is that we are, at least implicitly, under a number of pressures to try to put all the risk on the contractor, to not have the Commonwealth take any risk. That is quite unrealistic in these sorts of contracts. As I sit here and answer these questions, I as sure as hell know that I take a lot of risks and cop a lot of questioning no matter what I contract with these guys. I fully appraise the fact that we always retain risk.

The key thing, I think, is to work out which things your contractor really can do and try risk. We think it is not really reasonable to expect it. That depends a bit on the technology, the size of the firm and things like that. I would expect British Aerospace, Boeing or something like that to be able to take on a lot more technical risk than a little company down there in Fyshwick in Canberra. I think we need to adjust our contract and our risk sharing to recognise those sorts of circumstances.

**CHAIR**—We would say to you on behalf of the parliament that we ask you to manage that risk well.

**Mr Jones**—Yes, indeed. That is perfectly reasonable.

**CHAIR**—In fact, we insist on it. The Auditor-General carries out inquiries on our behalf from time to time.

**Mr BROUGH**—The whole point of personnel and change of key personnel in this project is a problem through all Defence projects. How would you address that in future?

**Mr Jones**—I would have to put it in the carrier of work-in-progress inside Defence. We had this Defence Efficiency Review and Defence Reform Program for a year or two that made a number of recommendations, and some of those are still being implemented. Part of it was changing the structure of my organisation considerably. Part of it has been increased emphasis on training. You are absolutely correct that continuity of people is one of the issues. I would like to see my program and project managers have a higher level of experience by the time they get to manage some of these projects and do what the average person does.

**Mr BROUGH**—If you take the uniform personnel, normally it is a changeover—one leaves the base; the other one arrives on the base. In these instances, wouldn't it be necessary for the commodore to have an almost 12-month changeover, a six-month changeover or whatever else so that there is a real passage of accurate, detailed information and a knowledge of the personnel that he has been dealing with and the build-up of those relationships so you know where you are at? It is expensive, I might add, but it helps with promotion.

**Mr Jones**—Yes. What I would prefer more than that is that we get more opportunity for the people in uniform to stay longer in projects and cycle back through projects more often. I would have to say that, in some of our big Navy projects, we have actually had very good continuity of uniform people. Some of our best project managers in Defence are uniform people. But across the board there is a lot of turbulence of uniform people. There is also, I have to tell you, a lot of turbulence for civilian people in the organisation too. We are in the wrong end of the market in this business.

My organisation currently is about 200 people short of what I am authorised to have, and that is literally because I cannot go out and hire them for the amount I am allowed to pay them. I am 200 people short. It is having some impact on my ability to deliver. We have a very aggressive program in bringing in young graduates and training them. We have the middle management program and all sorts of training programs. We set the competency standards for procurement and for project management for the Commonwealth. We bear those overheads. But even with all those things, it is still a major problem for me to keep the skill level of people that we would like.

It is not as if I can go out to industry and just hire people to do the function. I need to explain that. In contracting out, we contract out 95-plus per cent of what we do. In the Anzac ships project, for example, I think 98.2 per cent of the money we spend goes outside Defence. Our bit of the total project is actually very small. We contract in some, but we contract out a whole lot of it. There is not much scope to do less there. We really need more flexibilities—and we are working on some of these things—in how we obtain and retain our work force.

**Mr COX**—Have you actually got the money to hire those 200 people, if you could find them?

**Mr Jones**—Yes.

**CHAIR**—Is it the wish of the committee to go in camera?

**Mr GEORGIU**—Mr Chairman, I would like to say something before we go in camera. Basically, there have been a number of assertions made about the Collins quietness being superior to that of the Oberon.

**CHAIR**—That is what we are going to talk about in camera.

**Mr GEORGIU**—No, they have been made on the record. When we are probing, we are going in camera. When we probe for the accuracy of that across the range, we have to go in camera. So I am happy to do that.

**CHAIR**—Have we agreed that we are going in camera?

**Mr Jones**—Yes.

**Ms GILLARD**—Could I just ask a question. That is 200 unfilled jobs out of how many?

**Mr Jones**—It is about 10 per cent of my work force.

Resolved (on motion by **Mr Georgiou**):

That the committee authorises publication, including publication on the parliamentary database, of the proof transcript of the evidence given before it at public hearing this day.

**CHAIR**—In terms of the public part of this hearing, you have promised us some information which we will look forward to receiving at the earliest possible date. We would like to wrap this thing up. On behalf of the committee, I thank you for coming today and for your—hopefully—honest and straightforward answers, which they appeared to be.

**Mr Jones**—Totally honest.

**CHAIR**—Absolutely. I declare this public hearing closed.

*Evidence was then taken in camera—*

**Committee adjourned at 12.21 p.m.**

