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SENATE

FOREIGN AFFAIRS, DEFENCE AND TRADE REFERENCES
COMMITTEE

Procurement procedures for Defence capital projects

FRIDAY, 7 OCTOBER 2011

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SENATE
FOREIGN AFFAIRS, DEFENCE AND TRADE REFERENCES COMMITTEE

Friday, 7 October 2011

Senators in attendance: Senators Bishop, Eggleston, Fawcett, Humphries, Johnston, Ludlam and Stephens

Terms of reference for the inquiry:

To inquire into and report on:

Procurement procedures for items identified in the Defence White Paper, *Defending Australia in the Asia Pacific Century: Force 2030* and in particular:

- a. assess the procurement procedures utilised for major defence capital projects currently underway or foreshadowed in the Defence White Paper, including the operations of the Capability Development Group and its relevant subcommittees;
- b. assess the timeline proposed for defence modernisation and procurement outlined in the Defence White Paper;
- c. assess proposals arising from the Defence accountability reviews, including, the Mortimer Review, the Pappas Review and the McKinsey Report (2010), in regards to enhancing accountability and disclosure for defence procurement;
- d. make recommendations for enhancing the availability of public information and parliamentary oversight and scrutiny of defence procurement in the context of guaranteed 3 per cent real growth in the Defence budget until 2017-18; and
- e. assess the effectiveness of the Defence Materiel Organisation including:
 - i. its role and functions,
 - ii. its processes, management structure and staffing, in particular as compared to similar organisations in the United Kingdom, the United States of America, Canada and other comparable jurisdictions and large Australian commercial enterprises,
 - iii. its full costs, assessed against the timeliness and quality of its output and the service it provides to the Australian Defence Force, and
 - iv. the extent to which it value-adds to national defence and to the long-term viability of Australian defence industries.

WITNESSES

CAWLEY, Mr Andrew, General Manager, Programs, Defence Materiel Organisation 1

CROSER, Mr Peter, Acting Program Manager, Air Warfare Destroyer, Defence Materiel Organisation 1

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KING, Mr Warren, Acting Chief Executive Officer, Defence Materiel Organisation 1

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THORNE, Air Vice Marshal Colin, Head, Aerospace Systems Division, Defence Materiel Organisation..... 1

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THORNE, Air Vice Marshal Colin, Head, Aerospace Systems Division, Defence Materiel Organisation

Committee met at 08:37

CHAIR (Senator Eggleston): I declare open this public hearing of the Senate Foreign Affairs, Defence and Trade References Committee. This is the fourth hearing of the committee in relation to its inquiry into procurement procedures for Defence capital projects. I welcome you all here today. This is a public hearing and a *Hansard* transcript of the proceedings is being made.

Before the committee starts taking evidence, I remind all witnesses that, in giving evidence to the committee, they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee, and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to a committee. The committee prefers all evidence to be given in public, but under the Senate's resolutions witnesses have the right to request to be heard in private session. It is important that witnesses give the committee notice if they intend to ask to give evidence in camera. If a witness objects to answering a question, the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist on an answer, having regard to the ground which is claimed. If the committee determines to insist on an answer, a witness may request that the answer be given in camera. Such a request may, of course, be made at any other time.

The committee is hearing evidence today in relation to its inquiry into the procurement procedures for items identified in the Defence white paper *Defending Australia in the Asia Pacific century: force 2030*. On behalf of the committee, I would like to thank all of those who have made submissions and sent representatives here today for their cooperation with this inquiry.

I welcome the first witnesses, from the Capability Development Group. I remind senators that the Senate has resolved that an officer of a department of the Commonwealth or of a state shall not be asked to give opinions on matters of policy and shall be given reasonable opportunity to refer questions asked of the officer to a superior officer or to a minister. This resolution prohibits only questions asking for opinions on matters of policy and does not preclude questions asking for explanations of policies or factual questions about when and how policies were adopted. The committee has received the Department of Defence submission as submission 21. Do you wish to make any amendments or alterations to your submission?

Air Marshal Harvey: No.

CHAIR: Would you like to make a brief opening statement?

Air Marshal Harvey: Yes, I would. Thanks for the chance to make an opening statement. This will add to the detail we covered on Wednesday this week as well. These comments reflect a joint Defence-DMO statement and seek to address the range of issues raised by the committee, the concerns broached by the various submissions to the committee, as well as providing you with a perspective on the context and complexity of Defence major capital procurement procedures and the initiatives currently in place or being developed to ensure high-quality outcomes for government and the Australian Defence organisation into the future.

Defence projects are complex because of their scale; the levels of advanced, often developmental, technology employed; the demanding environments in which they must operate; and the levels of assurance required. Procurement varies from developmental leading-edge systems with significant capability, cost and schedule risks through to less complex off-the-shelf buys. All these projects involve some level of risk. Risk cannot be avoided but it can be measured, mitigated and managed.

We acknowledge that Defence has had challenges in achieving the rate of project approvals presented to government in the white paper of 2009. While the rate of approvals has been lower than expected, there has been no reduction in the rigour of the approval process. Through a range of internal initiatives and reform implementation, the rate of approvals is now picking up, at the same time as we increase contestability and accountability expectations. Defence also acknowledges that there are challenges regarding delays in procurement activities post project approval and is addressing these on a case-by-case basis at an organisational level.

Defence is committed to enhancing rigour and accountability throughout the capability life cycle. To examine each project's capability, cost, schedule and risk, Defence has established a comprehensive series of internal quality assurance processes through the committees, working groups, stakeholder groups and gate reviews. Shortfalls in capability and capacity of personnel in the Capability Development Group, DMO and in industry to perform at the necessary standards are being progressively addressed through a range of professionalisation and collaborative specialisation and specialist skilling programs that are being developed and implemented.

The Capability Development Group is enhancing early engagement with industry through the Capability Development Advisory Forum and associated environmental working groups to ensure that both Defence and industry have a better understanding of project feasibility options and risks earlier in the process. The Rapid Prototyping, Development and Evaluation Program, which was established in 2005 as a collaborative venture between Defence and Australian industry in relation to network-centric capabilities, has been expanded in its scope, which now is to accelerate and enhance ADF war-fighting capability through innovation and collaboration—and I might note that RPDE now has over 200 industry partners.

Improvements in the capability development and acquisition life cycles are being realised through the ongoing implementation of recommendations from the 2003 Kinnaird and 2008 Mortimer reviews. Additional reform initiatives resulting from the Pappas, Black and Rizzo reviews will further enhance these processes over the medium to long term.

Post project approval, the DMO is responsible for the acquisition and sustainment of the materiel elements of operating capability for the ADF. As a prescribed agency, the DMO utilises a purchaser-provider model, underpinned by agency service agreements, to deliver commercial, engineering and project management services in an accountable, outcome-focused and business-like manner to Defence capability managers.

Since the DMO was established in 2000, there has been a commitment to the process of continual improvement. In that time it also has to be said that procurement in Defence has been the subject of significant external scrutiny and review. This has included the Kinnaird, Mortimer and Rizzo reviews, the Defence budget audit, two white papers and more than 25 ANAO acquisition or sustainment performance audits. More recently, we have also had the major project report as a collaborative effort between the Audit Office and the DMO. These reviews, in conjunction with internal business initiatives, have been major contributors to enhancements in procurement processes and stronger links through the entire capability development life cycle. Across Defence and the DMO, we are now starting to see clear evidence of improvement as a result.

Based on internal analysis of past performance, we believe that the DMO is becoming more effective in delivering projects. The DMO has continued on average to deliver approved projects within the available funding. As has been noted publicly and in committees in this place in the past, the real challenge has been in delivering projects to schedule. In this area too we have seen a steady improvement, but we can and must continue to do better.

Since 2000, we have seen the average level of schedule slippage decrease from over 50 per cent to around 30 per cent, and there remains room for future improvement, albeit at a slower pace. It is also worth noting that DMO's performance in relation to schedule is comparable to the acquisition organisations within the UK Ministry of Defence and the US Department of Defense. Much of this success is linked to identifying and addressing problems and risks earlier in the project life cycle. Even with the best project managers—and we believe we have some very good ones—it is decisions taken and delays suffered in the start-up phases of projects that are the most difficult to recover from as a project matures.

This point is worth restating; it is a point that has been made before about our approach to project risks, whether they are to capability, cost or schedule. In the technologically demanding and expensive defence procurement marketplace, we have to manage risk rather than avoid it. In simple terms, to avoid schedule risk by lengthening project delivery time frames would deny the capability to the war-fighter in the time frame that they need it to. To avoid cost risk by always opting for a fielded capability solution rather than investing in the development of a new technological solution could similarly deny the ADF a capability edge. In seeking to achieve the best capability outcomes for the war-fighter, the best commercial outcome for government and

industry and the best value for money result for the taxpayer, we cannot avoid risk and, even with management strategies in place, we are unlikely to be able to retire all schedule risk from every project.

Defence notes that one of the common themes contained in submissions and witness statements to this committee relates to the inconsistent application of policy and procedures throughout the capability life cycle. Whilst there may have been areas of inconsistency in the past, a number of steps have been taken to improve this aspect, including: under the strategic reform program, particularly the Mortimer and capability development streams, the approval process has been reviewed and strengthened. The revised Defence capability development handbook—I believe that a copy has been handed to the committee—articulates more rigorous governance and process requirements. The internal Defence Capability Committee's business rules and standard operating procedures have also been revised and promulgated. Defence continues to strictly observe the rules stipulated in the government's approval mechanisms for Defence capital investment projects.

Recommendations of the Kinnaird, Mortimer and Pappas reviews continue to be implemented, resulting in increased rigour and reduced slippage rates. Mortimer reform initiatives will clarify responsibilities and result in improved through-life support strategies for new capabilities. Also, implementation and maturation of an early indicators and warning system will improve Defence's and government's ability to react to failing projects.

Other ongoing reforms to defence procurement are listed in the Defence paper submitted to the inquiry, including reforms to early procurement strategies, project management, existing capability management, introduction of an early indicators and warning system and management of projects of concern. Our acquisitions since the white paper show that we are continuing to build Force 2030 and that we can react and adapt to meet emerging capability gaps.

One of the key issues raised throughout the review so far relates to staff skills and abilities. Over the next decade, Defence will continue its major procurement program to deliver the capability requirements for Force 2030. Running concurrently will be the government's strategic reform program, which will improve the way we do business and reduce our costs so that those resources can be reinvested into Force 2030.

Like many other organisations, Defence and DMO face the challenge of attracting and retaining qualified and skilled staff to progress this large number of projects throughout the capability life cycle. Several skilling and professionalisation strategies have been implemented to enhance the skills base of Defence and DMO workforces. Identified skills shortages are being addressed via education and training, targeted recruitment and employment schemes and above-the-line contractor support, when necessary. As part of our commitment to improve our performance, Defence and DMO have introduced a professional industry standards certification framework for procurement and contracting staff. This includes a continuing professional development or CPD program.

A structured Capability Development Group desk officer skilling program has been implemented to address core capability development skilling. This program provides an annual induction course and then a flexible, progressive skilling program to address project and individual needs. Skills shortages in cost estimation are also being addressed through the delivery of structured overview and detail-level training courses for Capability Development Group desk officers. The skilling program is improving the skill base of the workforce. Early indicators are the increasing quality and acceptability of submissions and supporting business cases. Realisation of the full benefits of the initiatives will be protracted, due to the extended procurement life cycles, which are typically two to five years just in the approval process. Overall, CDG managers currently deem 90 per cent of the desk officers to be sufficiently skilled to perform the full range of assigned duties without additional support.

DMO, over recent years, has maintained a strong focus on professionalisation and upskilling of both its staff and that of industry and is working towards an integrated professional workforce with vocational, university and professional accreditation and has introduced a professional industry standard certification framework for procurement and contracting staff. DMO has also completed work with Government Skills Australia and other government agencies on the redevelopment of Australian vocational procurement and contracting competencies and qualifications. DMO attracts and retains engineers and technical staff via the materiel TAFE employment scheme, materiel graduate scheme, materiel undergraduate scheme and the engineering undergraduate scholarships at ADFA. To attract and recruit high-quality engineers and technical staff, memoranda of agreement have been established with Engineers Australia and the Australian Maritime College. DMO is continuing to support the Australasian Procurement and Construction Council initiative to develop strategic procurement courses at Australian Technology Network universities and the University of Canberra.

A number of the issues addressed in our paper were addressed in discussion the other day. In summary, I would like to say that Defence is defining and acquiring highly complex and often developmental weapons systems and supporting systems requiring application of Australia's most complex project management discipline. At the same

time as delivering these long-term requirements, Defence is also progressing a number of short-notice acquisitions to meet urgent operational capability gaps. The Largs Bay acquisition and an additional C17 are good examples of the flexibility to meet urgent demands. The Capability Development Group has been allocated additional resources to address the high workload and has expanded its skilling program to ensure that its people have the right skills to do the job. CDG is also investigating an industry partnership arrangement where Defence skills are boosted by industry.

DMO has become increasingly outcome focused. An analysis of pre-Kinnaird major projects from 1992 to 2005 against all post-Kinnaird major projects currently underway has been undertaken. The analysis has demonstrated that, in relation to cost, projects after second-pass approval continue, on average, to be delivered under budget. There has been a significant improvement in the schedule performance of post-Kinnaird projects and there is an increase in the number of projects where project managers expect to fully deliver the required capability.

Defence and DMO are enhancing engagement with industry through the Defence Industry Innovation Board, the Capability Development Advisory Forum and associated environmental working groups to ensure better understanding of project feasibility options and risks early in the process. CDG and DMO are working together to ensure a greater level of scrutiny and analysis of procurement risk and estimates during capability development processes. DMO will be enhancing its use of performance metrics to improve project and business management, with the objective of clearly identifying risks and to provide triggers for earlier intervention. To improve schedule management, intensive training and development of specialist schedulers is also being conducted.

DMO will continue to ensure that the management of projects of concern and the reporting of projects in the major projects report remain a priority. DMO is committed to strengthening its engineering, logistics and contracting templates, policy, practices and management systems to greater support complex and technically challenging projects and in-service equipment management.

Recommendations of the Kinnaird, Mortimer and Pappas reviews continue to be implemented, resulting in increased rigour and reduced slippage rates. Other ongoing reforms to defence procurement are listed in the Defence paper submitted to the inquiry, including reforms to early procurement stages project management, existing capability management, introduction of early indicators and warning systems and management of projects of concern.

Mr Chairman, both the Capability Development Group and the Defence Materiel Organisation look forward to answering any questions you have.

CHAIR: Thank you very much, Air Marshal, for a very comprehensive coverage.

Senator HUMPHRIES: Mr Chair, could I ask whether it would be possible to make available copies of that opening statement?

Air Marshal Harvey: I will make sure that it is delivered.

Senator HUMPHRIES: Thank you.

CHAIR: It will be in *Hansard*, of course.

Senator MARK BISHOP: Thank you, Air Marshal, for those opening remarks. Let me say at the outset that I too share your optimism based upon significant improved delivery in the DMO in the eight to 10 years that I have been involved in this committee. I have said it in speeches before and I have said it to your predecessor; Mr King, I might even have said it to you from time to time privately. So it is not my view that the DMO is in any way a derelict or incompetent organisation. I think there has been significant qualitative and identifiable improvement on a whole range of fronts in the last four or five years. A lot of the credit for that obviously goes to Dr Gumley as the CEO but also, Mr King, you have been a very senior officer in the DMO for many years and you, too—as you get beaten up from time to time here—should also share the credit for the significant improvement. So I do not particularly quarrel with your comments, Air Marshal, and that should be put on the record.

Also, I have thought about the evidence that you gave on Wednesday and I am quite intrigued by this new approach essentially headed up by the Capability Development Group in its lines of authority and lines of responsibility, both across the wider Defence community and down into different areas. My own view is that a lot of the comments that you made, some of which I might disagree with, nonetheless were principled comments and it would be churlish just to disagree for the sake of disagreement on the new management approach which is being adopted and I presume endorsed by the relevant ministers and government over the last two to three years. I refer particularly to your comments on Wednesday on the difference between pre 2008-09 and post 2008-09. Of course, the proof of that will be in the pudding in three or four years time. It is sometimes useful to put those

comments on the public record so that we are all hoping for similar, if not the same, outcomes in terms of responsibility and productivity.

Perhaps I can lead off on that basis. I have been thinking about the discussion we had with the vice-chief of Navy and the Chief of Air Force on the difference between Air Force retaining all of its engineering skills, putting a lot of people into the DMO so that it could tap into DMO and hence both organisations being up to date and informed and getting on well, and Navy's reduction in heavy engineering numbers over the last 20 to 25 years. Without going into the causal features of that, Mr King, firstly, seeing that you have the sustainment and maintenance responsibilities within DMO, do you have a professional view that the quality of engineering/technical/scientific operating staff in Navy needs to be rebuilt? Secondly, if so, can you outline the plans to which you are giving effect to achieve that end?

Mr King: Could I first of all thank you for your comments. We do recognise the work that Stephen Gumley did, and the rest of the DMO. But can I also say thank you on behalf of all the DMO people that are working because they have worked very hard over the last few years to make improvements, and I will talk about skills retention. But an important part of any job is feeling satisfaction with the work that you are doing. So it is very important for our people, where we are doing a good job, to get acknowledged because they work hard every day and they like to think that their contribution to Australian security is recognised. So, on their behalf, thank you for those comments.

Could I make a couple of comments before I respond to your questions, Senator. First of all, Chair, thank you for your indulgence on the timing of my attendance at this inquiry; I appreciate that very much. Perhaps I could give a broad scale of the scope of work that we do and then I will come back to the engineering skills. I think it is important to put on the record that, as an example, this year, the DMO will spend about \$11 billion. That is 42 per cent of the Defence budget and nearly 0.9 per cent of GDP. To put that perhaps in more tangible terms, that is \$45 million a day that we have to manage, and manage well. Fifty-four per cent of our budget is spent in Australia—so that is about \$5.4 billion of the expenditure we make—and, of that budget, we spend about \$2.8 billion with Australian SMEs. So, to give you some scale, a large proportion of our budget is spent in Australia and, of that, a significant proportion is spent with SMEs.

We run between 230 and 240 capital projects—that is, projects of more than \$20 million—with a total value of \$60 billion. In sustainment, there are 100 products that we support, at \$5 billion a year. We have about 7,500 people and, interestingly enough, we are located in about 40 locations, many of them regional, around Australia. So it is a very diversified workforce. My core point is that it is a big piece of business; it is an important piece of business for government; and, of course, it needs engineering support and many others—commercial, logistics and so on.

It would not be right for me to comment in detail on the Navy's engineering skills. That is certainly the Chief of Navy's role. But, as an engineer in project management, I could perhaps reflect on a couple of issues. Mr Rizzo made it clear in his report that we needed improved engineering skills in Navy and Defence, and I am sure that the Chief of Navy agrees with that. The Chief of Navy and I are on the implementing committee to implement the Rizzo report. So, in a broader sense, I am absolutely certain that development enhancement of engineering skills has to take place.

An important point here is that, for that to occur, it is not simply a matter of recruiting people and training people; that can be done. It is about making sure that the input of the engineering community is taken seriously and treated with due regard. So part of the rebuilding of the engineering base, both in Navy and in DMO, is making sure that the inputs from engineers are well considered, well structured and well regarded by the community in which we operate.

An example would be the need to make sure that the operators of an asset recognise fully the importance of the engineering input to the maintenance of that asset and the preparation of that asset for use. In broad terms, I could differentiate between, say, an air asset and a maritime asset. The difference in the air world—and I am reliably informed by a number of current and ex-Air Force people—is that, if you went back about 20 to 25 years ago, there were a number of accidents happening in the air world—quite a number—and a refocusing of the air world around technical regulatory frameworks, around airworthiness and around the engineering asset was undertaken. The payback is with us now.

I was a private pilot. For example, there is no way that you can fly an aeroplane unless the engineering organisation has signed that aeroplane out to fly. Pilots cannot do it; they have to have that asset signed off. The reason is quite stark. If the plane is not functioning properly, there is a high probability that you will return to earth in a manner that you did not anticipate or desire. So the stark consequences of poor maintenance or poor management of the engineering function are with you immediately. There is a difficulty—and it has been around

since I was in the Navy, which goes back a long time—with engineering of a maritime asset in that it is usually a very large and complex asset that will have at any stage some degree of engineering problems with it. Unfortunately, in a sense, what makes it difficult is that it can have a number of failures but still be a functioning asset and not unsafe. The question is: how long can that continue to go on for until you actually transition from 'it's a reasonable risk that you're undertaking' to 'it's become an unreasonable risk'—and not just on the asset of the day but on the long-term maintenance of that asset, so that you are getting an accumulation of problems or underperforming equipment? In fact, I took over a ship once as the electrical engineer and I found a lot of defects on the ship. So I went up to the then fleet commander and explained that the ship had a lot of problems and we could not go to sea next week, and the fleet commander said, 'I don't know what's wrong with you; this ship was perfect until you took over.' We had a very heated discussion about that.

The greater difficulty is that, in the maritime asset—and I will put aside submarines, which are very much in the same league as an air asset—there needs to be a respect for the engineering and materiel state of the ship, while making judgement calls between a number of failures that might exist which are perfectly acceptable and then recognising that you are actually getting into an area that is unacceptable and has a long-term problem. So respecting the understanding of the materiel state of an asset—which is not just an engineering function but a commanding officer's function; it is everybody's; it is the organisation's function—the maintenance of that asset and the release of that asset for use has to be taken on globally, I think, by our organisation in the maritime environment. Of course, we have to go then into recruiting more engineering, preparing them, making sure that their career progression is well established and has an important end state.

A good part for DMO in that program will be that typically in the Navy, engineering officers have not been able to aspire to the leadership of the Navy; that is clearly an area predominantly for the operational community. But with the establishment of the DMO in its current form and a senior CEO responsible, there is now a career path for the engineering fraternity—be it Army, Navy or Air Force—to become a very senior leader in Defence because they can aspire to and achieve the future leadership of the DMO, which is an important leadership role inside Defence. It is a long answer, Senator, but I am trying to give a comment.

Senator MARK BISHOP: You have given us the context there. As Air Force, for the reasons you have outlined, have retained their high levels of engineering and technical skills—and they were forced to do it because of those losses we faced years ago—is there in your mind sufficient justification but different justification for Navy to be rebuilding to the same level of high-quality numbers of engineering and technical people—specialists and not generalists?

Mr King: I need to be very careful because I cannot answer for the Chief of Navy; it is his responsibility.

Senator MARK BISHOP: No, but I am asking—

Mr King: But because we have had clear discussions about this—we know that we have to respond together to the Rizzo report; we know that we have issues that we have to address for Collins—I am sure that he is absolutely focused, as am I, inside our organisation, on rebuilding or re-establishing the engineering capacity in Navy and in DMO to the level necessary. It may not be to quite the same level as Air Force, but to the level necessary to achieve assured materiel availability and maintenance of the assets. I am absolutely certain of that.

Senator FAWCETT: We have heard a lot—and I agree—about Air Force having done a good job in terms of maintaining the structure. But even Air Force is under stress. One of the reasons that Air Force is under stress is that any professional organisation is a pyramid and you need a lot of people working at the bottom to then graduate a number to the next level, so your engineers then go to your design engineers to your chief engineers et cetera. With continued outsourcing of work, a lot of that growth at the bottom of that pyramid is no longer available. Also, in the air environment, whether it be Army, Navy or Air Force, there is already stress and pressure to actually have the growing ground for people to become design engineers, and a number of the SPOs are deficient. There are already positions where chief engineers are having to be recalled from reserve service because they are no longer growing sufficient people. So a lot of that comes back to the sustainment space that DMO looks after.

I hear the message that you are going to upskill people, you are going to train people and you are going to recruit people, but at the moment Defence holistically does not have the growing grounds for those skills that it used to have. How are you planning to move forward, particularly in that sustainment space, to not just have people with a qualification but to give them the opportunity to actually get their hands dirty doing the job of engineering so that we can rebuild that base of the pyramid? You are right: Rizzo has identified that it has collapsed in Navy, but it is also under stress in Air Force.

Mr King: Engineering in Australia is actually under a good deal of stress. I just wish the community would cherish us engineers more dearly; but there we go. I have a son who became a lawyer, disappointingly! There are a number of things; you are quite right. There have been unintended consequences, I think, in the broader society of a lot of decisions as we have moved forward. If I link it back to my own experience, I started as a tradesman, then became an engineer, then went into industry and so on. While I was a tradesman I obviously worked with my hands and, at the start of my trade, I learned to use my hands. Subsequent to that, when I was in the Navy, the Navy owned shipyards and, in fact, in my career, I worked at Australian shipyards, actually working on ship repair and maintenance, and I had the benefit of working both in the UK and in the USA in a very successful project, building ships in three shipyards over there. In those days we had broader community organisations like PMG and railways that had whole career streams of building apprentices, technicians or engineers, producing them for the community. We know that that had its own inefficiencies that were unacceptable. The shipyards at that time worked at a very unacceptable level of efficiency, but of course you did get the social benefit for the nation of developing experienced engineers and technicians for the broader community.

How are we going to address that at the moment? We are looking at that in several ways, but the most important way that we are looking at it is as a collaborative arrangement with industry, which is placing engineers coming through the services with industry so that they get into design, sustainment or cross-pollination of ideas with industry. An area where we are actually getting very good hands-on experience right now is in the AWD project in Adelaide. We have a number of naval engineers embedded in the project. That is seeing a large-scale project being run, sitting side by side with industry—ASC, Raytheon and other suppliers—and running and implementing a very large undertaking. In the absence of that sort of hands-on work, I think the only way we can really develop that is with cooperation of industry in placing our technical and engineering staff in industry positions. We are dealing with conflict of interest issues, clearly, and how to not have industry take them as soon as we have prepared them—not take them back into industry groups but bring them back into our management stream.

Senator MARK BISHOP: Mr King, what was that phrase you used when you came to the conclusion of your previous response—'assured level of competence and for sustainment'. You were talking about what would be the appropriate level of revisiting of engineers in terms of quality and quantity in Navy and you summarised it by using words to the effect of 'assured level of—

Mr King: Do you mean for what the Navy—

Senator MARK BISHOP: Should be having.

Mr King: What I tried to distinguish was that it may not be exactly the same numbers that the Air Force have; it will be the necessary level for the Navy to do its functions in a similar, appropriately managed manner. I was just trying to say that it will not be exactly the same as the Air Force's application. That is all I was trying to draw out.

Senator MARK BISHOP: Okay. But you do accept the identified shortcomings in Rizzo and you do accept those shortcomings identified in that more recent ANAO report that require urgent remedial attention within Navy?

Mr King: Navy and DMO, indeed.

Senator MARK BISHOP: And DMO as well. That is what I was trying to clarify.

Mr King: Absolutely. I am sure that I am not verballing the Chief of Navy by saying that he would believe exactly the same.

Senator MARK BISHOP: He said that. I asked him in a question on notice to outline in some detail the management plans and authority to give effect to that. So if you also have that—

Mr King: Without a doubt.

Senator MARK BISHOP: Perhaps you could take that on notice and give us that detail so that we have it on the public record; that would be useful. The second question I want to ask arises again out of the ANAO report—and this is probably for both CDG and DMO. The ANAO, in that more recent report, identified chronic inability of the service to retain all of the records that were necessary to do a serious audit, in terms of physical invoices, in terms of systems, in terms of processes, in terms of responsibility levels within the various project teams, in terms of accountability, in terms of the project manager. That is a recurring feature in those ANAO reports and that might reflect a particular mindset of forensic auditors. Nonetheless, when the 'amphib' ships could not sail out of Sydney Harbour back in February, it focused a lot of people's minds on why that was the case. Do you both accept those shortcomings identified in Rizzo and ANAO as to the chronic ongoing inability to do all of that

sound internal records maintenance as I outlined? If so, what steps are being taken within the organisation to ensure that there is not a repeat in future projects post 2008-09?

Air Marshal Harvey: Perhaps I can start first on the capability development side. What you are referring to is the 2008-09 audit into planning and approval of Defence major capital equipment projects. Certainly ANAO did review a sample of 20 projects that were approved—they had a look at them—and you are correct: they did find quite a number of shortfalls in terms of the documentation of the processes that were involved there. We have acknowledged those shortfalls at the time. In some cases, it was a matter of the formal final signed document not being able to be found as opposed to a different form of the document that was used. So we have acknowledged that and we have put processes in place to address that. ANAO are just about to start another audit of the two-pass process and we fully expect that those deficiencies at that time will be addressed now. We have put in place formal electronic record management systems. We have put much more stringent rules in terms of the committee process; the documents come from that. Formal signed documents are all now scanned into the system and available throughout. So, yes, there were shortfalls and we have put processes in place. There is another audit coming up soon and we fully expect to get a good result and significant improvement from that.

Senator MARK BISHOP: There were also serious paragraphs in the report about the decision of officers not to comply with policy manuals, not to follow strict written instructions and not to follow guidelines back in those legacy projects. That seems to be an approach wanting review in terms of either culture or organisational behaviour or perhaps simply management responsibilities by the senior project officer or officers. Do you also accept that those criticisms are valid; and, if so, what steps are being taken to make sure that it does not occur again in future projects?

Air Marshal Harvey: Yes, I acknowledge that those criticisms were made. There were shortcomings. As well as just purely the documentation process, we have very much strengthened the committee process—the discipline associated with that—and I fully expect ANAO to come through now and see that we do have the rigour in the process. It is followed completely. For example, we will not accept a process going to a senior committee unless it has been at least through a junior committee, to make sure all the stakeholders are there. There is a very rigorous process now in terms of the joint project directive that the CDF and secretary sign off to all the group heads in Defence—that they identify the exact work that they must do, what they are responsible for. So we have learned from the ANAO audit as well as the parallel reviews that have happened since then and, as I say, I fully expect a good report from ANAO next time around.

Senator MARK BISHOP: Mr King, on those two points?

Mr King: There are probably three things, I suppose. The first is that we need to make sure that we train our people in acquisition and sustainment to a higher level than we currently do; that is my feeling. I do not mean DMO; I mean acquisition and sustainment. My point was that we spend about 42 per cent of our budget on acquisition and sustainment, and any part of our business that consumes that much government money needs to have the professionalisation that is incumbent with that sort of expenditure. We need to make sure that, with people in that acquisition and sustainment community—and that can be in the capability manager's area, it can be CDG or it can be DMO; in fact, I would encourage careers where people move between all three domains—it is embedded more fully in our processes, and we are certainly working as an organisation to do that.

I think we need to invest—and I am sure that the secretary and CDF would say the same—in IT systems that support it. That is a very important thing because, without the systems that support your being able to conduct your work in a managed way, it becomes very hard, particularly with the expectations that we have and the community have of the data you manage and so on.

The third thing is the culture. Without experience in the acquisition and sustainment community, people coming into that community from a background inexperienced in it can sometimes be put under pressure to do things in a certain manner to get it done. Quite often that is a good culture to have. The culture of 'let's get something done' can be a very important culture in certain circumstances. But we need to make sure that people are aware that there is a right way to get it done, and we expect that to be done.

Senator MARK BISHOP: Mr King, about 12 months ago, or maybe longer, your organisation was very helpful in getting me extensive access to senior people in the United States, in the Department of Defense—at under-secretary level, assistant-secretary level and all the different subunits of procurement and the like. One of the comments that they repeatedly made to me was that they had, over a 15- to 20-year period, denuded very badly their procurement expertise to the stage where it was almost non-existent. They had to rebuild and they were talking about hiring 20,000 extra people to rebuild. They also made another point: in a lot of intricate, complex and high-cost negotiations that they have with industry for major capital projects, they would go into the

room in negotiations and, across the floor, there would be 25 Harvard MBAs or 25 people from the Wharton school of finance who would be there for half a morning negotiating a particular point; then they would shift on to the next item on the agenda and those blokes would leave and another similar set would come in to handle the negotiations. That is somewhat of an exaggeration, but they were making the clear point that industry reps were highly educated, highly skilled, highly trained—highly everything—and they were saying that they needed to somehow or other, within the constraints of the US government system, match those skills; otherwise they would just have a short-term loss and long-term loss vis-a-vis industry in terms of costs.

A lot of submissions to this inquiry have been critical of the lack of skills in terms of project management negotiation, contract negotiation, when the job gets flicked from second phase to the DMO. Do you hold the view that there need to be more than just reviews of level, sending people off to certificate level and diploma and higher education level courses, and more experience, but that there needs to be a serious review of the quality of people involved in the negotiations on those big-ticket projects; or is it more that you just need incremental or gradual change?

Mr King: That is a very important point that you raise. I will give a little bit of background there. A couple of years ago, I was seconded to the Pentagon to work for the Secretary of Navy on exactly these issues, so I got to see it inside the Pentagon for a while. If I can just give you a little bit of scale there, the CEO of the largest defence company in the world at that time, I understood, got about a \$36 million salary. We run a course called the business acumen course, which I often participate in, for our people, and I ask: how much is enough profit for industry? We are basically a community of public servants and military people who, if you like, have an ethos built around a national sense. So they will say to me, 'Ten per cent or 11 per cent,' and I will say, 'The answer for industry is whatever they can negotiate.'

So we have a community broadly that is driven by a different ethos from that which drives industry. I do not wish to paint industry in any bad light in this. Industry has a responsibility to its shareholders, to its organisation, to maximise its returns; it is obliged to by law. We have generally a community of people that are not from a business background. In fact, our military people are people that have joined for long-term careers and are broadly, I would say, committed to the values of Australia—to fair and equitable behaviour and so on—and so, in some sense, are not well prepared for negotiation and participation with industry. Similarly, by the way, as both public servants and as military folk, we do not really understand the drivers of industry as well as we might—cash flow; indeed, the need to make a profit. Too often, I think our interactions with industry oscillate between being in love with them or being at combat with them instead of just engaging in business with them.

Harry Dunstall, who is GM, Commercial, might wish to join me here. We are working very much on the issue of business acumen and upskilling our people in understanding how to deal with industry. We are trying to encourage people from industry to join the DMO, so that we would have three types of broad backgrounds in DMO—public servants' background, military background and industry background—in order to be able to pass on that knowledge.

It would be nice to be able to attract more people and to pay more for people with those skills. But it is a very difficult community judgement to make—national judgement to make—to isolate out DMO to be able to offer significantly higher salaries or significantly greater benefits than the rest of the Public Service or the rest of the military enjoy, to deliver those outcomes. Whilst, if I were to be the CEO going forward, I would love that flexibility, I think I would also have to be realistic in that we operate inside an environment where that would be a very difficult implementation.

The best thing I think we can do is certainly aim to be a very attractive organisation, and aim to be an organisation that attracts people from industry—and we are. Mr Aylward has joined us not so long ago from an industry background, and we have a number of independents now on our gate reviews, all from industry. So we can tap into the community spirit in wanting to support government activities and national activities. We will need to, I think, operate within some sort of responsible envelope of government in salary, remuneration and so on, but work harder at giving them the skills, experience and guidance that people like me and others joining the organisation can give in terms of negotiating big-ticket contracts. Despite the fact, of course, that I said we had 240 major projects, any big project that comes up ultimately involves me, Mr Dunstall, Mrs McKinnie or someone. We just do not allow that to happen.

Industry sometimes complain about our lack of ability in negotiating, but there are two different aspects of that. One is that we do not negotiate well because we do not have the skills; the other thing that they can complain about is that we negotiate too well because we do have the skills. So there are two sides to that discussion.

Air Marshal Harvey: When I was in DMO leading the joint strike fighter project, I led negotiations for the production sustainment follow-on development MOU as part of the nine countries consortium over a very long project, which took a couple of years. I had very high level support from the Australian Government Solicitor's office as well—a very experienced lawyer there that helped me. So we had the ability to tap into those resources as required as well. I certainly did not feel undergunned at all when we went into the negotiations.

Senator MARK BISHOP: Mr Dunstall, perhaps I can ask you the same question in a different way. You are senior counsel in a large organisation. There is a large legal section in DMO and similarly in Defence. You have AGS, as the air marshal says, to come and give advice, and you have the ability to tap into private QCs and the like, or whatever they are called these days. I do accept the environment in which Mr King answered my question. That is the real world. You are a government agency. There are all of those other considerations. Having said that, there may well be an argument that a short-term high cost results in long-term high savings. Do you think the shortcomings and allegations that are identified in some of the submissions as to the lack of sufficient high-quality lawyers and negotiators at the more peak levels of DMO have substance or are they just anecdotal complaints?

Mr Dunstall: I think there is inconsistency in our approach across our organisation. I think we have some very good skill sets and we generally apply those obviously to the bigger negotiations with the bigger projects. I think sometimes, with the less complex, less significant projects, we probably do not apply the same level of resources. We have scarce resources, so we apply them in such a way that we get the best bang for our buck, if you like, or we identify the highest amount of risk or the highest amount of dollars. At the lower end, we try to manage that through the use of our templates and our better practice guides and policies. Perhaps sometimes that does not work as well as we would like. We have very good skills for the major negotiations. We have a panel of eight law firms. We do not allow any of those law firms to work for defence contractors. They do work for us. They do not do work for the other side.

We have access to a good range of financial advisers and business advisers, if we need to. I do not think we are out-gunned at all by the other side in negotiations. They can be pretty tough because, of course, in defence negotiations or in the Commonwealth sphere, if you like, it is about the only area of negotiation where the Commonwealth does not have that power. Normally in Commonwealth negotiations it is the Commonwealth against the little guys.

Senator MARK BISHOP: The Commonwealth against?

Mr Dunstall: The little guys. There is the big Commonwealth and 'if you want to do deals with the Commonwealth you basically accept our terms and conditions or you do not do business'. It is not like that in Defence because you are dealing with global primes, for whom Australia is a very small portion of their business. There are very hard negotiations on both sides.

Senator MARK BISHOP: That is the final point. That is the point I was introducing when I outlined my experience with US Defense back some 12 or 18 months ago. The fact that it is a small market, the fact that it is essentially an oligopoly, the fact that the primes in this country are all sub-units of internationals who have operations in 30, 40, 50 countries, the fact that they have experience all over the world, the fact that they are hard bargainers—we all know that. For days and days, they will do it on one dot point. What I am getting to is: does that, in your mind, suggest that because of the size of the budget of DMO, because of the responsibilities your organisation has to the wider defence community and to the government, the fact that you are spending \$11 billion a year and the like in terms of acquisition, in terms of that skill set required for our negotiators and lawyers and finance people and the like, we perhaps need to have a unit or a sub-unit in your organisation that has those people, pays market rates, bargains on an equal basis?

Mr King: Can I make one point first of all, Senator? We get very good legal assistance from the companies and from our own internal legal people. That is not what lets us down. It is negotiating skills. That might be conducted by an engineer, a program manager or a lawyer. It is business acumen. What can you negotiate and what can you not? What are your rates and so on? I would not like to restrict it to a single—

Senator MARK BISHOP: What I am getting at then, having agreed the problem needs a permanent solution, is that highly skilled business acumen unit, well staffed, well trained, well resourced, well paid, different to military, different to the community ethos that you outlined for the rest of the show?

Mr King: I would like to see that become part of our core skilling for the acquisition community. The military people, public servants and external people would all be good to be brought into the mode of that sort of skill set. That was what I meant earlier by developing an acquisition community that exposes them early to business

acumen, how business operates. We do run these courses at the moment, but we need more of it—business acumen, how business operates, what you can negotiate and what you cannot.

The other thing we are looking at doing in the near future is: there are a number of specialist negotiating companies around. We do do this. Prior to going into negotiations, we set up a negotiating directive for our team, which says, 'This is what we are aiming to negotiate with the company.' We obviously do not want to go into detail.

Senator MARK BISHOP: Use us as a scenario.

Mr King: Our bound parameters are: where we are going to go left and right, what is acceptable, if you step outside these parameters, then you will not be able to do the deal. You will have to come back to Mr Dunstall's organisation or me, indeed, if it is big enough. What we are going to try to work more at is getting smarter at that, how to negotiate a deal. Remember, of course, it still has to be a deal. As I said before, some of our people fall into a belligerent state with industry. That is not what you want. Sometimes we fall into 'whatever they need we will just pay it'. We do not want to be in that. We want to be in that middle ground where we are getting a good deal for taxpayers, a good deal for Defence, and leaving industry in a reasonable position to execute the contract.

Senator JOHNSTON: Let me ask this question about legal services. Mr Dunstall, you said you have eight large firms on retainer, and it is an exclusive retainer, notwithstanding that there are Chinese walls in various of those organisations for long-standing prior clients and other circumstances that arise for which you give consent. You have also got how many people in your legal department?

Mr Dunstall: In DMO, we have a very small legal area. I think we have about sixteen.

Senator JOHNSTON: But the department has a staff of how many?

Mr Dunstall: The department?

Senator JOHNSTON: The legal section is not just 16 lawyers. How people many people are in that section, paralegals, all those sorts of people?

Mr Dunstall: I think it is a total of 22, Senator.

Senator JOHNSTON: Twenty-two?

Mr Dunstall: Yes, in DMO legal; that is right.

Senator JOHNSTON: DMO legal. You then have access to the Australian Government Solicitor.

Mr Dunstall: Which is one of the eight firms on the panel.

Senator JOHNSTON: Right. So that is included in the eight?

Mr Dunstall: Correct.

Senator JOHNSTON: So there are seven others?

Mr Dunstall: Seven plus the Australian Government Solicitor.

Senator JOHNSTON: If we take the government out.

Mr Dunstall: Yes.

Senator JOHNSTON: Why on earth would there be seven? Why would you not need three?

Mr Dunstall: That is a very good point. That panel was set up before my time. We would like to adjust that panel arrangement. What the Commonwealth is currently doing on a whole-of-government basis is setting up a whole-of-government multi-use list. We are working with the Attorney-General's Department to set that up. I am, in fact, on the steering committee of that body. That will be in force, we hope, from 1 January next year. That will then allow agencies to procure off that multi-use list. I am envisaging that we will go to a different arrangement from 1 January next year.

Senator JOHNSTON: So commercially we cannot talk about that?

Mr Dunstall: Yes.

Senator JOHNSTON: I come from Perth in Western Australia. Seven large law firms is virtually the field. It makes it very, very unwieldy to have a proper commercial relationship with people who have to fly lawyers in from somewhere else, from firms that are far away. Canberra would be a classic example.

Mr Dunstall: We have a good relationship with those firms. They are all good.

Senator JOHNSTON: I am sure you do.

Mr Dunstall: One of the issues is: from their perspectives, they say, 'Well, Harry, we are making a big investment because we do not do work for defence contractors and we are making the commitment to give you value adds.'

Senator JOHNSTON: All the subcontractors, all the state governments et cetera that are all involved in potential defence contracting.

Mr Dunstall: If they want a greater share of our legal work. We have reduced it to about \$10 million external legal spend. That is not really enough to support eight firms. If we can go to a smaller number and create a really tight relationship with those firms and they get to really understand our business and what we do, they are able to support us better through that mechanism.

Senator MARK BISHOP: A bit like union lawyers and company lawyers. You choose your side and that is it, is it not?

Senator JOHNSTON: Exactly. I thank you for that answer. I think that is very helpful. What you are talking about is that in the new year we are going to see—

Mr Dunstall: The new arrangements will be set up from 1 January. All agencies will have to transition from their existing panel arrangements to using the new multi-use list. Then it is open to the agencies to procure off that list how they would like. So they can package up their work, they can go off on an ad hoc basis.

Senator JOHNSTON: When will you feel comfortable about discussing the panel membership, commercial criteria that gets someone onto the panel? Is it a tendered hourly rate? If you do not feel comfortable about saying that—

Mr Dunstall: No. That is all right. The firms have tendered their hourly rates. What we try to do—it is difficult with law firms; being a lawyer, I know what it is like—is to get them to give us fixed prices or capped fees. It is very difficult with some of the matters, because of course with commercial negotiations it is: how long is a piece of string? I would like to move to a different model, which I do not really want to say too much about. Next year I would be happy to have the conversation, maybe estimates next year?

Senator JOHNSTON: The committee might have a session with you and you can tell us how it all works.

Mr Dunstall: Sure.

Senator JOHNSTON: We can do that in that closed environment.

Mr Dunstall: I am happy to do that.

Senator JOHNSTON: That would be helpful. Thank you. Chair, I have some questions regarding risk, that favourite topic of all of us.

Senator FAWCETT: Just before that, could I follow up on this thing about legal. Mr King, you mentioned before that, rather than focusing on insourcing people, you wanted to assist to have that culture grown. I have just a general question. Given the length of most project lifecycles—you are talking two, three, four years—any particular group might end up doing one contract negotiation in their cycle within DMO. In the same time frame, how many contract negotiations do you expect the EOM's team would have done?

Mr King: They will always put their team to it, of course. One of the things we are doing about that, though—you might want to touch on this later—is the gate reviews that we have introduced. I am very happy with how that is progressing. So prior to a contract negotiation now, the team come to us for a gate review. These gate reviews can have two independent members on them as well, people who have had a lot of industry experience or military experience, or whatever. In the course of that gate review we actually go through the negotiation strategy and the trade-offs and so on. So we are not leaving these people out just to do one and that is all they ever do.

Senator FAWCETT: I accept that. I think the bottom line premise is: no matter how much qualification pre-briefing you get and the actual skill of the to-and-fro of contract negotiation, they are not going to be as competent as people who do probably three, four, five, 10 a year, which brings us back to the point of the panel. Some of the feedback that we have had in the evidence has been that the view in the department is that we must minimise the cost. You have talked about \$10 million a year when your overall spend is \$11 billion. Some of the feedback is that people who do provide some of those services are essentially told 'you have got four hours' or 'you have got X amount', and they can identify areas where they believe they could deliver significant benefit to the Commonwealth, but the Commonwealth, in trying to save \$1,000, potentially spends another one, two, three, however many million dollars. There are a couple of particular examples that I was provided with that talk about savings in the order of 10 per cent that have been achieved by some of these people who negotiate on behalf of the Commonwealth, yet the Commonwealth quibbles with them over receipts for a cup of coffee.

I just put forward the point that we could potentially save ourselves a lot of heartache and money by recognising the value of somebody who brings a range of skill sets, even if we have to pay them, as Senator Bishop said, top dollar for a short period. That is probably a good investment.

Mr King: Senator, I would agree with that. We do too. Harry does too. We do do that. We have a model in our mind that we are going to use. There is a difficulty with above-the-line contracting that we want to address. The difficulty with what we call above-the-line contracting, that is, contracting into the department as opposed to supplying the department, is that it can be a never-ending obligation, if you like. It is: just spend more hours to get it. Spend more hours and spend more hours.

The model that we will probably move towards, in broad terms, is that we will be seeking companies to make offers to us to conduct a piece of business so that they will have some skin in the game as well, rather than just saying: 'We need more this. We need more that. We should spend another 10 hours on this.' You are right. Sometimes one hour would save you an enormous amount of money. On other occasions, unless the supplier of that service to us values their time as well, it can become a bit—

CHAIR: Senator Xenophon, if you are there just let us know if you want to ask questions.

Senator XENOPHON: I do. I have some questions about contestability and capability development and the professionalisation of the CDG. I will wait for your call, Chair.

CHAIR: If there is something, please do not feel hesitant.

Senator XENOPHON: No. I appreciate that, Chair. Maybe in the next hour or so.

Senator JOHNSTON: Now to this question of risk. May I say thank you for this submission. The DMO and the capability group submission is probably one of the most helpful sets of submissions and information that this committee has received, certainly in my nine years. Could you convey to your teams my thanks for the effort that has clearly gone into this because we now have a much better insight into how things actually function inside these organisations.

It strikes me that we all talk of risk from the idea that somebody has or sees or understands in terms of capability development from a very embryonic stage. Do we have documentation or a standard doctrine analysis of what risk actually is? I am interested in knowing how you feel about risk. Is it something we must avoid totally at every turn of every corner, because if we do not the parliament is going to be completely all over us like a rash, or is risk something to be managed which, managed successfully, yields a product, which I obviously think is the case; a product that gives us the advantages we need over our competitors? How do you define risk? What do you do in its management? Let us have an insight into it when we say the word. In terms of the ARH, I see that the MOU has major challenges, major issues and measures of effectiveness. What does capability group perceive the ingredients and proper necessary indicia of the management, identification of management risk, are, and then how does the DMO approach that?

Air Marshal Harvey: Perhaps if I can start off on the CDG side, and thanks for your positive comments. I will pass those on to the team. In simple terms, in terms of risk for projects, to me, it is: something will happen to stop you delivering as you wanted in the first place. Something comes up and prevents you delivering the project as planned. We have a very structured approach to risk management. It has come through as a result of previous reviews, internal work we have done.

Perhaps if I can step through the sort of risk we look at in terms of developing a project approval, the key areas we look at are cost risk, schedule risk, capability risk, technical risk, workforce risk and overall programmatic risk. Let me have a look at each of those. Cost risk, on the face it, looks reasonably straight forward but we need to look at acquisition cost and we look at the sustainment cost as well because we have to take the whole life into account.

Senator JOHNSTON: Who does the analysis of cost risk?

Air Marshal Harvey: Typically within the project themselves, every project has a detailed cost model which breaks down into all the individual elements of cost that contribute to that.

Senator JOHNSTON: Who does that model?

Air Marshal Harvey: In the first instance our desk officers own the cost model but that gets independent assurance by cost analysis branch within the capability investment resources. That is the contestability of that.

Senator JOHNSTON: Who is the cost analysis branch? Are they a bunch of industry experts or are they internal departmental people?

Air Marshal Harvey: Internal departmental within the capability investment resources. That is the cost contestability side. They have professional skilling courses, people who are cost estimators that work there. So the

desk officer develops the cost model in the first place. The cost analysis branch independently assess that model, to see whether it applies, and then beyond that the department of finance will also check the costs as we go forward. Before a proposal goes forward you need to validate a cost model.

Senator JOHNSTON: Before first pass?

Air Marshal Harvey: At each pass you will go through this. So to get to first pass you need to have the cost model validated by cost analysis branch. That will form part of the cabinet submission. Department of finance have to be happy with that as we go forward. It is not just at a very high level, just a cost. You break down all the sub-elements. Each element will have its own risk assessment and an appropriate contingency will be applied against those. So at the top level you get agreement. 'Here is the estimated cost, here is the cost risk, do you have appropriate contingency assigned against that?' Then you progress with the project.

Senator JOHNSTON: We do this on every single project?

Air Marshal Harvey: Every project. So that is on the cost side. It is a very detailed analysis on that. Down to schedule risk then. We have a look at elements of the schedule. Internally, in capability development group, we look at schedule risk of getting it approved through the various stages of government. That is the risk to get it to the kick-off point where you can hand it to DMO to start delivering. We will manage that risk in terms of: have we got the appropriate time to get the committees? Have documents come in on time et cetera? Beyond that we look at the risk of—

Senator JOHNSTON: Just pause there. Do you involve the executive arm of government in that evaluation?

Air Marshal Harvey: We advise now via the early indicators and warnings. There are a number of phases on this. In terms of the risk of getting it to government, we have a regular update in terms of the schedule of submissions going to cabinet et cetera. I have a monthly meeting with Minister Clare in terms of how the forward work program is going, and we do a six-monthly highlights report of projects coming up over the next six months. We would differentiate the risk associated with getting it to government as opposed to the risk associated with delivering the project.

Senator JOHNSTON: If cabinet is not going to meet for some period of time or the schedule of cabinet's agenda is such that there is no room for your project, how does that information flow back to you?

Air Marshal Harvey: Some projects go to cabinet but some just go to ministerial level as well. So not all of them are subject to cabinet time. Typically there is a cabinet meeting a month, and we try to project it. We have a schedule for submissions that goes out for the next few years. As you get closer to the cabinet date, you are much firmer about which ones are going forward. To date, government is willing to try to accommodate our projects to get them through on time. So we have not had any constraints yet in terms of getting them through government. As we ramp up the process, that is something that we have to watch—that we make sure that the processes can handle that.

Senator JOHNSTON: That is schedule?

Air Marshal Harvey: That is the schedule to government. Beyond that is the schedule, the risk of delivering. We have to look at the risk of delivering to get initial operational capability, the risk of getting final operational capability, the risk of developing individual elements in there. Part of the discipline we have adopted over the last 18 months or so is: from DMO side, they give us the key input into delivery schedule. It is to not accept anything more than medium risk in terms of schedule so that we make sure we go forward with a deliverable schedule that has a reasonable balance of risk in there and we think there is a good prospect of delivering on time.

As I mentioned in the opening remarks, on the schedule you have to be careful. You cannot get rid of all schedule risk. If you try to make it too easy, you will never get the gear in on time for the war fighters. If you are trying to make it too hard, you have unrealistic expectations. One of the risk mitigators we have for, say, new equipment coming in is to make sure there is enough life in the old system to balance that out.

Senator JOHNSTON: And enough lead time to have what you ultimately produce effective?

Air Marshal Harvey: Correct. You have to balance all those things. Sometimes you mitigate the risk on a project through another project as a gap filler. Again, there are complex things. You might be familiar with the JSF taking over from the classic Hornets. It is not a 'one day, all are in and all are out'. There is a transition phase of about six years. So there is a bit of flexibility sliding between those.

Senator FAWCETT: You talked about the risk of getting it to government and then you talked about risk of delivery. There is another risk area there for defence capability if we want to link both the war fighter and industry, and that is the delay of government approval. So you have got to government. How many projects currently have you successfully got to government but have yet to actually have a decision on? What mechanism

is there, if you like, to be able to go back to both the capability manager in terms of informing his risk to his people, who need the equipment, about potential delay, and back to industry, who are trying to tool up and measure their work flow and likely gaps and peaks and troughs?

Air Marshal Harvey: In my time, there have been no projects that have gone to government that have not been agreed. The reason for that is—

Senator FAWCETT: Of any level?

Air Marshal Harvey: I am just trying to step through them all in my head. There is a very long process here. The only projects to go forward, in almost all cases, were ones in the defence capability plan in the first case. So government has already agreed at the high level that they want to do this. There is generally a broad cost—I should not say 'broad'. There is a cost provision within the defence capability plan for that; so they know approximately how much it should cost. There is provision there for the sustainment of that. There is the plan to identify when it is required in the broad capability performance parameters. So government has already agreed at the high level that this is what they want to do.

Before getting to government, as I said, we have to engage with the department of finance to validate the financial aspects. We have engagement with the central agencies in developing the proposal, to make sure there are no issues we have not thought about that they are concerned about. We have to go through the secretaries committee on national security. If they have any issues there, we will address them. We work with the minister's office to make sure he is comfortable with it, because it is really his proposal to government for that. Then we go to either one minister, two minister or NSC for that. Because of that rigor to get there and our internal checking to make sure we have thought of everything, certainly in the time I have been there nothing has been pushed back. By the time it goes through that process, you would hope it is of an acceptable position that government are happy with what is in there.

Senator FAWCETT: Could I perhaps put a question on notice then. Could you advise the committee, not necessarily by name, of the number of projects where it essentially has left the capability development group, military side of the process and is in one of those ministerial loops or government loop? Over time how many projects have been delayed? Are there any at the moment that are actually sitting there that you have not got through that process yet?

Air Marshal Harvey: Off the top of my head, I cannot think of any but we will look at it. I say again, in regard to capability development group, you mentioned military capability. It is not. It is mixed military and civilians. So it is a joint organisation with its contestability built in.

Senator FAWCETT: That is not like ADO versus finance-parliament.

Air Marshal Harvey: As I say, as far as I know, there are not any in my time, but we will look at that for you.

Senator JOHNSTON: So we have done schedule. Next one?

Air Marshal Harvey: The key one is schedule. Let us be realistic about a medium-risk schedule that can be delivered, and Warren can follow up on that, if required, later. Capability is obviously the other big one. In relation to delivery, you say, 'What is the risk of delivering the agreed level of capability?' You look at all aspects of that. Again, in regard to a fighter aircraft, you say 'Can it fly as fast? Can it deliver the weapons?' So we look at that, at all of the individual components.

Senator JOHNSTON: Who is 'we'?

Air Marshal Harvey: Again, CDG take the lead, but we will engage the capability manager. We will talk to the contractor as well.

Senator JOHNSTON: So the capability manager, as we understood yesterday, is the man on the ground who carries the responsibility for the end user?

Air Marshal Harvey: That is right. He is the ultimate customer for the capability. They have a strong say throughout the process.

Senator JOHNSTON: When you engage them, is there writing going between people so that people are actually signing off on the parameters that are agreed in terms of this capability's success?

Air Marshal Harvey: We have a very rigorous set of documents. The capability development documentation suite includes things such as the operational concept document, which explains what the capability needs to do. From that flows the function performance specification. They are very detailed documents. They get refined over time. I should have mentioned as well that we go to government, certainly at least twice. We go to first pass, where you bound the options you are going forward with, and you explain the risks and the mitigation for that.

You go out to the market. You come back. Then you go forward to second pass, when you have the information back from industry, very detailed costs, much more refined risks, and go forward then.

The capability manager is engaged all the way through on that. As I say, the majority of the people in the environment groups that work for me, DG Aerospace Development, are Air Force officers and civilians that work with them. As I say, I see them working as much for the Chief of Air Force as they do to me. There is full, free flow of information between them. So we are basically progressing the project on behalf of the capability manager but are cognisant of what DMO needs to deliver at the end within government guidelines. So we work with the capability manager on that.

Mr King: An important shift has been the development of the project directives and a co-signing of the materiel acquisition agreements with the capability manager. My reading of it is that there was an unintended consequence of the implementation of Kinnaird, which I think was not intended, but had the capability manager partially sidelined in the process. As I say, it was not intended. Reading back through the Kinnaird review, it was not intended but that is what happened. Where we are now, after the Mortimer review, is that the project directive, which is the enunciation of what governments agreed, is now formalised. It has three participants in that, the CDG, DMO and the capability manager. Then the MAA, which is the agreement between DMO and Defence to what they are going to supply when, is a derivation of that. Again, all three signed to it.

What that really says is that the capability managers are responsible for giving them materiel which might be costly, but the complexity is actually getting all the other elements together to make that materiel work. It is a capability manager that is signing up to say, in effect, 'If CDG and DMO deliver me this aircraft, ship or whatever by such and such a time, with the spares, with the manuals, with whatever, the facilities, then I will bring this capability to bear and make it available to the nation by this time.'

I think in that sense we have now a very structured approach to not just how to deal with the materiel aspect but how to deal with how we are going to introduce a capability into service. That has been a more recent shift, which I think is positive.

Senator FAWCETT: With the MAAs, can you describe the process in two circumstances: (1) when halfway through a procurement the operational need changes—it might be a new environment, a new threat or whatever—and how that is progressed; (2) when, also in terms of delivery, particularly for a lot of weapons systems where it is very software intensive, you get the situation where the platform may be delivered but the software configuration may be quite unstable and not actually capable of sustaining the mission. Is there a new MAA agreed with the capability manager who then has to start providing a lot of the thick for the platform but does not actually have the capability because of immaturity of the software load? How does that work in the MAA?

Mr King: Clearly what has happened over the last decade has been a lot more visibility about what defence does, how it is doing it, for what price it is doing it, and when the government or the nation is going to get that capability. If you go back 10 years, that just was not there. With the MAA now—

Senator FAWCETT: Senator Bishop and I both understand it. That is why his remarks were so pertinent at the beginning.

Mr King: Yes, I really appreciate it. Clearly, every project aspect is very clear—the budget, the schedule, how we are going. The structure that was missing until recently was, as you know, cabinet-in-confidence documentation made it incredibly difficult to trace what government had approved. I have to say, when I went to DMO, I was stunned when I could not find what the document said and have it readily available. You could find it by going through the rules. But having the document in front of everybody in your project team that said 'this is what you have to deliver by when' just did not exist.

Senator MARK BISHOP: Why would it not exist?

Mr King: Because under the cabinet rules, when the cabinet makes a decision, it is a cabinet document with particular protection and it cannot just sit inside a project office for everybody to look at. So what was created was a very good thing, that MAA, which is an agreement between DMO and Defence, if you like, about what they are going to deliver, when and for how much. That was a very good first step. The difficulty was that it did not necessarily have a direct relationship with what government had approved. I know that might sound strange. We are going back a number of years.

Senator JOHNSTON: Things change. I can relate to that.

Senator MARK BISHOP: Because we did not know what government had approved.

Mr King: No, we knew what government approved in a very high level. The cab sub is approved. The MAA was then more detailed, in fact, a lot more detailed. But sometimes it could have gaps between what was

approved. The link now is a project directive. So at the time that the government makes its high-level statement, it is supported by a lot of detail in the cabinet submission, but the minutes from the government of the day are necessarily brief. Let us say they agree to these points.

With that now is a project directive which represents accurately what the government has approved, a high-level statement about who is going to do what to bring this capability to bear. DMO, from a materiel point of view, has a big chunk of the money to spend, but DSG have to put up facilities. CIO might have to put up IT. The capability manager, of course, makes commitments to bring all those other elements together—personnel, training and so on—so that you have got a capability that is captured in this project directive.

That then gets expanded to an even greater level of detail between DMO and Defence, a broader defence committee, about what DMO is going to do by when, initial materiel lease, final materiel lease, training systems and so on in more detail. Because of that visibility now—and coming back to your question, Senator—if there is a fundamental shift in what the capability manager needs, that is outside the bounds of what government approved, we have this organisation. It is more or less an IPT, or innovative product team. It depends on the frequency and the size of the project. It includes the capability manager, CDG, DMO, chaired by DMO. It meets regularly to look at those very things you talked about.

If there is a, say, shift in occupational health and safety standards, a threat that has changed the need, what we are now obliged to do, as an organisation, is identify the costs and schedule impact of that change, what the change is that is needed, identify the costs and schedule impact and go back to government and advise government if there is a change of scope.

Senator JOHNSTON: Is there a scope creep mitigator and fail-safe?

Mr King: The MAA—

Senator JOHNSTON: I use the word 'scope creep' to mean scope that is changing in an unmanaged way.

Mr King: There are two different things. I think the senator's question was about a real and genuine need.

Senator JOHNSTON: Sorry, a scope-need change.

Mr King: So the MAA protects against scope creep, that is, an unauthorised change or request for more and more capability against the organisation having not approved it. So our project teams cannot operate outside the MAA. But if there is a real and genuine need that has emerged, new threat, because projects are long, then the process now in place is: we go back to the government and advise them of the need, obviously supported by the sponsor, the capability manager, and then government makes a decision to change its approval.

Senator FAWCETT: Is the prime whom you have engaged with involved with the process of developing the option and costing that would be involved in that change prior to going to government?

Mr King: As a contractor?

Senator FAWCETT: Yes.

Mr King: Normally, because they are going to have to give us the costing. We had a case recently where we were putting up one cabinet submission for one piece of capability that affected another platform, and we could not let that contractor know the various options we were considering because that contractor had its own commercial links to one of the suppliers. That is a particular case where we had to make a judgment outside that contractor being involved. But in the normal course of events, of course we would want the same as second pass, quality, cost schedule impact, and it will have all of those typically. So we would need to go back to the contractor to say what is going to be the impact. That piece of advice then goes to government. Then we will have clear traceability. 'There was this thing that changed, the threat became faster, quicker, lower, or whatever, and we need to make these adjustments.' That would then flow into the MAA.

I think the other case you gave, which is the software is not being delivered at the rate we anticipated, is more picked up by the early indicators and warnings. In other words, we anticipated that we would develop a certain amount of capability in a time and now we are not going to do that, for some reason. What we now do under those circumstances is: the warning is triggered. So the MAA does not get automatically changed at all. That was happening, I can say. So prior to this more structured approach, and if you go back to 10 years ago in Defence, if things like this happened we just changed what we were doing and we just went about our business. Now what happens is: we identify that that is late, that there is going to be a slip to capability. There is going to be an impact, obviously, on the capability manager, as you say, in terms of getting crews ready or whatever. We work out what might be a good plan to deal with that. If it is of sufficient magnitude that it is a project of concern, then a remediation plan is staffed up.

I want to make the point that this is not just done by DMO, this is done by DMO in conjunction with CDG and the capability manager. Then that goes to government as a recommendation that this is about a difficult project, it is a project of concern and we will come back to you with a remediation plan, which clearly involves not just DMO but capability managers as well about how we are going to do that.

An example of how that is working really effectively is in Wedgetail where Wedgetail did not deliver at the rate, at the speed, at the time that we anticipated, but we worked very closely with Chief of Air Force—two Chiefs of Air Force now. My latest feedback from the Chief of Air Force is that although he would have liked the capability early, he is very pleased with the incremental introduction of the capability. Stability of software, of course, in that case was absolutely an issue. He is very comfortable that by having a staged approach—I think it is up to six crews now—he has been able to operate that aircraft. Although it is disappointing we are late, it is still a very managed process.

In that case, a project of concern, the remediation plan, when approved by government, would become the new MAA. But it cannot just be altered anymore. It represents the structure of which we are going to deliver and commit to.

Senator JOHNSTON: Capability risk, I think we are all happy with, and are impressed by that analysis, if I may say so. The next one on the list?

Air Marshal Harvey: Technical risk, and here DSTO has the lead. I believe DSTO submitted their technical risk manual as part of these proceedings as well. So again, it is a very rigorous process in looking at the technical risks. At the end of the day, what comes from that is a technical risk analysis which explains the risks involved, what needs to be done to address those.

Senator JOHNSTON: At what stage does that technical risk analysis come onto the table?

Air Marshal Harvey: That supports both first pass and second pass. It is part of, as I mentioned the other day, our capability gate review board. It is one of the fundamental documents that support that process. That needs to be in place. We call it 'gate review' because unless all these documents are in place we do not progress to the next stage.

Senator JOHNSTON: So something that is not in the DCP but is in the white paper has not had a technical risk analysis?

Air Marshal Harvey: We do not if we overview any specific project. We do that as we progress it.

Senator JOHNSTON: The multi-role combat vessel.

Air Marshal Harvey: Sorry, are we talking about the SEA 1180?

Senator JOHNSTON: The SEA 1180.

Air Marshal Harvey: DSTO will be doing work now—doing technical analysis of that—which will become a formalised technical risk and analysis to support the process.

Senator JOHNSTON: The question is pretty fundamental from our committee perspective. How many white paper projects, of which there are \$275 billion worth, have not had a technical DSTO risk analysis?

Air Marshal Harvey: Not a formal technical risk analysis. As we said, Dr Sare mentioned the other day that, in forming the white paper in the CDG, they did a high-level analysis of what is the art of the impossible, laws of physics, does it work. Now we go through the very rigorous technical risk analysis, which would be a detailed report to support going to government. On top of that, the Chief Defence Scientist will do a technical risk certification, which is typically about a two-page document which will give an overall summary of what he thinks the technical risks are.

Senator JOHNSTON: You know where I am going on this, the 12 submarines, over 4,000 tonnes of conventionally powered submarine with all the bells and whistles that are described on page 70 of the white paper. That has not had a technical risk analysis.

Air Marshal Harvey: Technical risk studies have been done.

Senator JOHNSTON: Sure. But not a formal technical risk analysis.

Mr King: Just to make a couple of points—

Senator JOHNSTON: I am pleased you want to haggle with me on this.

Mr King: No, I would not want to haggle with a senator. If I could just add that, in the whole process, although different groups carry responsibility at different times—CDG or strategy or DMO or capability manager—we all participate in each phase to a varying degree. Throughout the CDG management phase, if you like, DMO is inputting on cost schedule, not technical risk but capability risk and programmatic risk. When we go

to second pass, for example, I am still required by secretary, CDF and government to provide an independent assurance on cost, schedule and risk associated with the program.

If I could just go back, the technical risk will be broader as you start off. You have just outlined a big submarine can do all these things. But there are a number of solutions that might emerge as we move closer and closer to first pass of the types of solutions that might not all solve entirely the problem. If I can perhaps use the AWD as an example, we had the option to build a new ship in Australia or to build an existing ship. When AWD was in its formative time, and it was 'we just want a destroyer that can do these many things'—

Senator JOHNSTON: Air missile defence.

Mr King: Trying to make a technical risk about that has to be, by its very nature, quite broad. As you start to hone down the physical options that will meet that need, the technical risks become more specific. So, the technical risk associated with a brand new destroyer includes things like we have never designed one. We might use new steels that have never been used before. The technical risk starts to become very specific to the solution being considered. As we evolve our solution for the future submarine, technical risks will become much more specific to the platform that might best solve that need.

Air Marshal Harvey: If I could add to that. Because we are looking at a very broad range of options to potentially solving it at the moment, one option would be an off-the-shelf submarine. You expect technical risk, low; capability risk, high; versus a new build submarine, capability risk, low; technical risk, high.

Senator JOHNSTON: Capability risk, we hope low, but technical risk high.

Air Marshal Harvey: Yes. But we have to balance all these out. Then you get the sub-elements, the weapons that go with the combat system.

Senator JOHNSTON: Is there a case, from what we have discussed, for the detailed technical risk analysis to be done at an earlier stage? You used the expression 'formal technical DSTO risk analysis'. Is there not a case for it to be done long before first pass?

Air Marshal Harvey: Yes there is, and we do it, but it is not what we call—

Senator JOHNSTON: It is not formal?

Air Marshal Harvey: Not in a sense, it is not the document we call the technical risk analysis. Technical risk studies are being done to inform us and guide us to advise us which options are worth pursuing. Once we decide these are the options worth pursuing, we would have a formal technical risk assessment against those options.

Senator JOHNSTON: Those documents are there, they are available, they are obviously probably classified in some form, and they are being done but they are not a formal technical risk analysis.

Air Marshal Harvey: Not what is defined as a technical risk analysis. We have a number of client reports that are done on specific areas, like where is battery technology going? Where are diesel engines going? Where are air independent propulsions going?

Senator JOHNSTON: AIP going?

Air Marshal Harvey: All those reports are done, and to inform the ultimate—

Mr King: Intending to be done as we develop the solution set for government.

Senator JOHNSTON: In those technical papers, what is the standard mode of conveying the author's opinion? Is it recommendations? Is it simply the grey area of a grading of one to 10? How do they do it?

Air Marshal Harvey: In terms of the ultimate outcomes, what Dr Sare said the other day was that it was not their place to say, 'Do not go here, do not go there.'

Senator JOHNSTON: That is what worries me, you see. I would want him to tell me some of that.

Air Marshal Harvey: 'If you were to go this way, there would be low risk, medium risk, high risk'; but then it is broken down into, 'With this capability there might be three high risks, seven mediums and 50 low risks'. On balance, Chief Defence Scientist will say, 'Overall I believe it is a medium-high risk' and with different risk you have different mitigation strategies.

Mr King: The reason I do not think any one organisation in Defence can draw the conclusion that you should not do it is that the overall summation of that is the programmatic risk and the programmatic benefits. You talked about this interplay between what is the community's appetite for risk and still having the appetite to do things that are important for the nation. The point is that you have to balance up that final assessment of what the department would recommend to government, and obviously government consider is the balance of all of those interplays; the balance of the specific technical risks, cost risks, schedule risks, capability needs. And that has to be taken in the holistic—

Senator JOHNSTON: Who does that prior to first pass?

Air Marshal Harvey: Prior to first pass is when we are trying to narrow it down to viable options to go forward with.

Senator JOHNSTON: Who makes the decision of the DSTO report, the capability risk analysis, the schedule risk analysis et cetera? Who brings all that together and says on their desk, 'I think this can go forward'?

Air Marshal Harvey: We bring together all those documents. We develop the supporting documentation for that. We develop a business case to go forward ultimately to government. We go through the process, we go through the options review committee, so that all the key players in Defence are represented there to make sure—

Senator JOHNSTON: Options review committee?

Air Marshal Harvey: To make sure these are viable options to go forward to government.

Senator JOHNSTON: Tell me who is on the options review committee?

Air Marshal Harvey: I chair the options review committee. DMO are there. It is probably at the general manager level. Sometimes Warren is there as well, depending on the size of the project. The capability manager is there, usually the deputy chief. We have DSTO there, at the level of typically someone like Ian there.

Senator JOHNSTON: Everything in the 2009 white paper has been through the options review committee?

Air Marshal Harvey: Only those that have moved that far so far.

Senator JOHNSTON: But there are some in there that have not been there?

Air Marshal Harvey: Not yet, because they are further out.

Senator JOHNSTON: That is interesting.

Air Marshal Harvey: We pace this as we go forward to government. As we said, it is a continual refinement. So to get into the white paper and the DCP, in the first place there would have been a high-level analysis, a costing provision, a capability description document to get there to make sure they are viable and sensible.

Senator MARK BISHOP: On this exact point, yesterday we had a discussion about the offshore combat vessels. You and your colleagues really outlined in simple detail in the afternoon session that it appeared to be about getting common systems in the different types of capability as a driver of cost saving, or as a result of cost saving to government, instead of having all these specialised units. How does a project get so prescriptively and specifically identified in the white paper and it has not yet been to this options review committee? Then it seems to evolve in this internal consultative process to be something different to what was previously specified?

Air Marshal Harvey: Typically in the DCP and white paper it states they are reasonably broad in terms of: this is the capability we want to deliver, and we think it will be done broadly in this way. So as you go along, you refine that as you go through. At the same time, government also wants options. They do not want to be delivered something that says, 'Take it or leave it.' They want some choice in terms of which way we go. As to the offshore patrol vessels, in this case there is an expectation that a single-type vessel with replacement modules will do the job, which would be dependent upon largely uninhabited vehicles to do a lot of the mine hunting, mine clearing work.

We will go through and analyse that to see whether it is possible to get the right balance there, or probably put an option, maybe have two hull forms with common modules that move between them for different tasks. That is our job to look at what is the desired capability outcome, what are the options to deliver it, and what is the best balance of risk to do that.

It is not prescriptive. Often we will put forward what is called an exemplar. If that is the capability you want, we have to cost it against something, and we will have an exemplar capability and we will work to that. We still come forward to government with options that are fully costed, risk assessment, so that we can progress to approval.

Senator XENOPHON: Chair, could I ask a follow up?

CHAIR: By all means, Senator Xenophon.

Senator XENOPHON: In terms of this whole issue—the line of questions from Senators Johnston and Bishop—until the late 1990s there was a force development analysis division; is that right?

Air Marshal Harvey: I believe that is correct, the approximate time frame.

Senator XENOPHON: That was about carving contestability to capability development?

Air Marshal Harvey: I am sorry; I missed the last part of the question, Senator.

Senator XENOPHON: Sorry. I understand that until the late 1990s there was a force development and analysis division which was about having contestability in capability development.

Air Marshal Harvey: That is correct, Senator. I must admit here I am a card-carrying member, former member of the force development analysis and worked there for three years.

Senator XENOPHON: But we do not have that now, do we?

Air Marshal Harvey: I do have some history in this.

Senator XENOPHON: It is good that you do. We do not have that now, do we?

Air Marshal Harvey: Not in exactly the same form. I can say what we do have is capability investment resource division within capability development group. They perform broadly the same tasks as FDA. That was a decision made to bring the organisations closer together to achieve contestability but also to avoid the barriers between the organisations as we progress the proposals.

Senator XENOPHON: So when Dr Andrew Davis and Dr Mark Thomson, who both do work for the Australian Strategic Policy Institute, say, in a private submission, that the force development analysis division should be reinstated as a matter of utmost urgency, because there was an independent scrutiny and analysis of capital investment programs and projects, what do you say to that?

Air Marshal Harvey: I would disagree with their assessment. I think they are out of date and they do not understand how the process actually works. The way it works now is that the CIR division do provide that independent scrutiny. We try to do that in a non-confrontational way. CIR division look at the submissions from the knowledge of what is required from government in terms of level of evidence to progress the submission. They look at whether there are any gaps in the argument. So it is a complete, independent look at what is required. As I say, they are independent of the sponsor and of the capability manager, but their view is to make sure it is a sound case put forward to government and we have addressed all the issues that are required.

Senator XENOPHON: My final question on this—and thank you, Chair, for letting me jump in—is: you say it is a non-confrontational approach. Given what is at stake here, both in terms of getting the best for our troops and in terms of the use of taxpayers' money, would not a bit of structured confrontation be a good thing in terms of that level of rigour and that level of testing and analysis?

Air Marshal Harvey: Contestability is good. One of the key challenges is getting the balance right between identifying issues early, to make sure things are addressed early in the process, or waiting to the back end of it where we identify a gap which may have to start the process again. So the challenge is having the independent contestability, but in a way that helps early in the process, because it is not just at the end game before you go to government. It is a matter of trying to make sure that people are looking at the issues early enough to make sure they are going down the right path so that when you make the final submission to government everything has been addressed.

Mr King: Senator, perhaps I could add to this understanding of contestability from FDA days to what is happening now. My understanding is that FDA was about 50 people that provided contestability into the source selection implementation project implementation aspects. What happens now is actually far more structured than what happened then, in my opinion. That is not to say there is not a role for that sort of organisation. John said how that works now. For example, it would be pretty clear that a capability manager's focus, or the organisation's focus, is on capability schedule and costs, in that order. Their organisations are not always as well as informed as they might be about the various risks of the projects that they seek to have undertaken. How that is offset now is in more than just having FDA. For example, we talked about DSTO who put in technical risk assessments that say, 'By all means go and get that product that you want but you should be aware, secretary, CDF, minister, government, there are high risks associated with, let us say, the software that is being developed or the materiel being used, or whatever.' In addition, the CEO of DMO gives independent advice, can I say, to secretary, CDF and to the ministers on cost schedule and risks associated with that project, and the CIR group then also puts in the overall FDA-like approach: how does this sit in a balanced investment? Is this the right way to spend that much money with this much risk against all the other things that are undertaken? In many ways, my experience is that the level of contestability, debate, analysis that goes on in project progression at the moment is greater than any time I know.

Air Marshal Harvey: If I could add to that—

Senator MARK BISHOP: Sorry to interrupt. Interestingly, this discussion over the last two days has been the first time a lot of this stuff has been put on the public record, which is going to educate some others as well.

Air Marshal Harvey: It is out there in terms of Defence, description of the organisation. Unless you drill into it, it is hard to know. Also now, compared with the days of FDA, the central agencies have a much stronger role as well in terms of contestability, in terms of looking at our proposals as they go through. I might also add that CIR division is actually larger now than when FDA finished. At the moment I think the FTE is about 73 people, slightly larger. They have a very strong independent voice.

The aim is—and we are all working towards the same outcome—to make sure that all the issues are addressed on the way through.

Senator JOHNSTON: If I can come back to these other indicia, I do not want to drill into them as much as I have but there is one last point I want to make with respect to the risk management issues. We have technical risk analysis by DSTO and about two or three others.

Air Marshal Harvey: Technical risk analysis and signed off by technical risk certification by the Chief Defence Scientist, which is the independent advice to government. Workforce risk was another, just to make sure we have the people in the right place at the right time to do the work. The other one, as Warren mentioned, was overall programmatic risk. Can you bring all this together in the right place, right time at right cost to make sure you deliver? All those assessments are formalised at a description of what the risk is. All of those are presented to government in the formal submissions, and mitigations are required to be in place to address those.

Senator JOHNSTON: In your opening statement on page 3 you say that the unprecedented volume of capability projects associated with white paper 2009 has exceeded Defence's ability to progress projects through the second pass government process at the rate initially expected. Was that identified as a risk in the construction of the white paper?

Air Marshal Harvey: In the development of the white paper people did identify the risk with that. Did we have the throughput to get them through?

Senator JOHNSTON: We do not, obviously.

Air Marshal Harvey: It is a risk. I say it is a risk, and it was realised—

Senator JOHNSTON: And the risk came to pass.

Air Marshal Harvey: True. And that becomes an issue. The issue is: we cannot get through the rate. That is why we are now building up the capacity through that.

Senator JOHNSTON: Is that risk identified anywhere in the white paper?

Air Marshal Harvey: What we were talking about before was the risk at the individual project level. What we are talking about now is the risk at the portfolio level.

Senator JOHNSTON: But the portfolio is comprised of individual projects which, drawing them all together, provide our national disposition to Force 2030.

Air Marshal Harvey: At the time of developing the white paper, the risks of getting it through the committee's process were identified. There was a plan to ramp up staff.

Senator JOHNSTON: To whom?

Air Marshal Harvey: Internally in Defence it was recognised that it was a challenge to do that, but it was considered to be achievable. The other point I will make is that it is not a plan that needs to be delivered in 2010 or 2011—it is Force 2030. There are a large number of projects to get there. The first year and a half or so was slower than expected, but we will deliver. There is no fundamental threat to delivering Force 2030. The first year and a half of—

Senator JOHNSTON: It just might be 'Force 2040'?

Air Marshal Harvey: No, no, because most of the capabilities are delivered well before that. It is just that the initial project approval rate was lower when we started, but we are ramping up the rate now.

Senator JOHNSTON: Very good. Thank you.

Senator LUDLAM: I want to backtrack before we move too far off and come back to the question of contestability. I must have missed a step, but is it the intention that the new Associate Secretary Capability is effectively your new devil's advocate; is that the intention?

Air Marshal Harvey: The proposed structure resulting from the minister's announcement responding to the Black review is that the capability investment resources would be broken away from the capability development group, and would sit parallel to that group but now underneath the Associate Secretary Capability. So work would be in the same mode but to the associate secretary rather than direct to me.

Mr King: It is more of an over-arching capability development co-ordinating function. If you think about devil's advocates, in a technical sense the DSTO plays that role. In a programmatic sense DMO plays that role. The associate secretary will play the co-ordinating role of the balance of investment, appropriate time of the investment and the resulting capabilities.

Senator LUDLAM: I am still not clear how far upstream that contest occurs. At what point do those arguments get had? At what point does the public get to find out about them? One of the papers that this committee has received—I am not sure if you have had time to review the material that has been submitted to us—is by Derek Woolner, who is a visiting fellow at ANU at the moment in the Strategic and Defence Studies Centre. Are you familiar with that submission to us?

Mr King: Partially.

Senator LUDLAM: Partially. So you are aware of it. He takes up this issue in some detail. It is his proposition that perhaps the new associate secretary would be the devil's advocate. He makes the point that the really sensitive stage where things can go wrong is in the first 10 to 15 per cent of a particular project's life span, where decisions get crystallised, decisions get made, and it is very difficult to change direction after those things have been locked in.

Mr King: Indeed.

Senator LUDLAM: You would agree with that basic proposition?

Mr King: Yes. Indeed, I do. I have offered the same testimony myself. There are a couple of aspects about that. If you set the project up understanding your risks and understanding the challenges, and then you make provision for enough money and enough time to do the job correctly, your project can still be quite successful. The big issue, I think, about the first and second pass that is perhaps overlooked at certain times is that the move from first to second pass is a funded period where we look to understand or mitigate risk; the feasibility study, in effect, that industry uses. So the first and most important part—I think Senator Johnston or Senator Bishop touched on it—is the formulation of the broad understanding of the capability that we seek. You have the option review committee, which moves it into the first pass domain. You can think of it as a group of options that are quite broad at that point. At the first pass we say to government: these are the options we would like to look at. We would like a certain amount of money to study these options between first and second pass. We will come back you to at second pass with a better understanding. A key part of minimising the risk that Mr Woolner talks about is doing good analytical objective analysis between the first and second pass of the options available and the risks associated with them.

For example, with the air warfare destroyer, do we build a new design or do we have an existing one? A similar piece of work will have to be done on the future submarines when we move into that stage. That is part of what can go wrong in the first period, getting that more clearly defined.

Senator LUDLAM: What the eight of you do is an example I was going to raise. But, since you have mentioned the submarines, what do you do when the white paper tells you that you are going to have a conventionally powered submarine, you are going to have 12 of them and you are going to build them in Adelaide? That is quite prescriptive. I think Senator Johnston was canvassing some of these issues the other day. You people have described the white paper as though it is a kind of over-arching document out of which much more specific work flows. What do you do when the white paper is so prescriptive that to an outsider it looks as though some of these stages have either been leap-frogged entirely or have happened during the drafting of the paper itself?

Mr King: Anything a nation does is a balance between keeping options open and being prescriptive about what a nation wants. You have to start at some point and move forward. For example, when you start at the Snowy Mountains Scheme it was prescribed that it would be in the Snowy Mountains. You could not start off by saying, 'We will have a water scheme but anywhere'. You start with some sort of boundary of solution; otherwise you will be in the land of theory forever. The boundary we have as a nation is we have conventionally powered ships and submarines. If a government of the day wants to change that boundary, then we would have a different option. But at the moment the nation's direction is that we have conventional submarines. We have a ship building hub that we, as a nation, have invested in Adelaide. It is logical to say it will be centred around Adelaide, because that is where we are building our skills and our capacity and physical infrastructure.

The third thing—it is not my area, it is John's area—is that 12 submarines are needed to meet the job. That is the boundary under which we now do the rest of the work. Within that boundary there are an enormous number of options that will have to be worked out; what size the submarine is, what cruise range, what depth, what weapons it will carry, how many crew, what type of conventional propulsion, how we will do damping, how we will

minimise the noise signature of submarines. The amount of work remaining inside even that envelope is a very large body of work to get to the solution. If we did not have that boundary, by the way, we would waste a lot of money. For example, if we did not have the description that it is conventionally powered, then the number of submarines and options we look at would be different again, and a vastly different piece of work would be undertaken.

Senator LUDLAM: Something that is difficult for an outsider to establish, having not being closely involved, obviously, is the degree to which the communities that you represent, the people that you work with, are involved in drafting that foundation document in the first place. Or do you get to read it when it hits the table at the same time as everybody else?

Air Marshal Harvey: Senator, are you talking about the white paper itself?

Senator LUDLAM: Yes.

Air Marshal Harvey: Is that not what we talked about the other day? The white paper was preceded by a force structure review which addressed a range of potential force structures to do a range of tasks to meet strategic guidance. Each of those force structures required a number of projects, so Defence certainly provided input into what the content of the force structure was to help inform the white paper.

Senator LUDLAM: That process is now starting to unroll again for 2014?

Air Marshal Harvey: It is the five-year cycle. So we do an annual defence planning guidance, then the force structure review, starting up now, to lead into the next white paper.

Senator LUDLAM: Again, to an outsider it looks as though some of the assumptions under the 2009 white paper are being substantially unpicked. Are you anticipating that the direction taken in the 2014 white paper will be substantially different? Is this a moving target that you folk are trying to hit?

Air Marshal Harvey: Given the 2009 white paper was looking a fair way out to Force 2030—I am not doing the force structure review of it—I would not expect any fundamental change to the path we are following.

Senator LUDLAM: So you were set a gigantic task at that time. The section of the white paper, from memory, that talks about the budget only spends a couple of pages on how this is going to be funded. We are substantially behind already, but I think at different times you both expressed what sounded to me like complete confidence that everything is still on track; that we are still going to meet the objectives that were set out there.

Air Marshal Harvey: If there is any pressure, it is in terms of the rate of project approval, but there is no fundamental threat to delivering what was expected to Force 2030 overall. So there are some challenges. Individual projects of themselves are challenging. Delivering that total portfolio of projects is challenging as well, but no fundamental threats are to be found.

Senator LUDLAM: One thing perplexes me. In the postwar era we are seeing greater and greater computerisation of defence assets and a more important role for software and for intelligence systems and subsystems in the things that you design and use. Yet, this is a field of technology that is changing blindingly rapidly: Moore's law, doubling the processing power every 18 months or so with computer systems. I do not envy you this task, but how on earth do you design a submarine to come into service in 2040 which will not be using 2011 era technology?

Air Marshal Harvey: I have one example. As you know, in the Collins class submarine we have adopted the US combat system, the US torpedo system. Inherent to that is an ongoing technical refresh that we inherit as part of being a partner in that project. They are the sorts of things we have looked at for the future as well. Nowadays you have to incorporate in your projects the ability to refresh as you go through, so you cannot expect something to be locked in place. Open systems and the ability to use commercial systems that often move quicker have to be part of the design.

Mr King: It was a challenging problem in the eighties and nineties, and maybe even in the early part of this century, where military computer systems were very much designed bespoke for the solution, including the hardware and the software. That created a very expensive process and a very difficult process for upgrade. The trend now in the software world is what they call 'open architecture'. So the software is designed and the hardware is much more around commercial hardware. The main thing to consider in the design of the platform is that you have sufficient space, sufficient power and sufficient cooling for the electronics. You design the enclosures, from a hardware point of view, to be plug-and-play upgradable for increased processing power and for the software to be more portable. It also has this open architecture which allows external applications to be added to the software. So what they mean by 'open architecture' is that the interface to the software is made available—I would not say publicly—to those companies that have a capacity to develop solutions to add to that.

That work has been underway for about a decade, and it is becoming increasingly more able to meet those objectives. Even some of the heritage software is being made 'open architecture'. It is ongoing. Our platforms go for 40 years. The design cycle and implementation can easily be 10 years, and clearly in that pace software, and the hardware in which it is embedded, grow a lot.

Senator LUDLAM: I want to come back to the Woolner paper where he discusses the contestability, particularly during the first 10 to 15 per cent of the project's life span. Not knowing how or where you are with some of the specific recommendations in this paper, he proposes, in part, that there be some form of parliamentary oversight early in the process to provide that degree of contestability when some of these decisions are being set down. Are you familiar with that part of his paper?

Air Marshal Harvey: I am aware of it.

Senator LUDLAM: Is that something you fundamentally and strongly disagree with?

Air Marshal Harvey: I guess there are some pure physical challenges in the early stages of the process. It is very broad, anyway. At the early stage, prior to first pass, all we are doing is gathering assessments on the risks, what you might do to mitigate them, and what might be realistic options. That is the basis we go forward with. We try to get broad input into that. Early on, anyway, the task is to shape where you go next. The idea at that stage is to identify the risks and progress sensible options. As long as that stays in sensible bounds, I do not think any additional external scrutiny would help in that phase.

Mr King: As a principle, parliamentary inquiry into what we are doing and understanding what we do is welcomed by me. Broadly, we do not tell our story well enough about what we do, the complexity of what we do and the quality of work we do. As a matter of principle, I am perfectly comfortable as an individual with the idea of parliamentary understanding of what we are doing. I do not speak for the department. The thing you would have to balance up there is the degree of additional time that might take, and also the degree of preciseness at each stage that can be brought to the table. But in regard to the notion that the parliament should see what we do and understand what we do, we probably do not discuss enough about what we do.

Senator LUDLAM: We have been provided with your procurement flowchart; it takes up most of one of the walls in my office. No wonder there is a degree of ambiguity around this stuff. On page 10 of that submission to this committee is a specific proposal for an annual declassified report to the parliament explaining the evaluation of the various factors, arguments and counter-arguments you are weighing up around different projects and different capabilities. Could we take a question on notice from both of you on that proposal? I will come back with some questions later.

Senator FAWCETT: I am interested in your governance, or your systems engineering approaches to tracking risk. I agree with your comments about FDA, which are better known as the 'forces of darkness and annihilation' for their latent role in chopping off a number of projects, as opposed to contributing. But in that contribution—and you have highlighted the role DSTO plays—where people identify risks, whether it be in workforce or, particularly, technical risk, how under the current system are those individual risks tracked and addressed? Put in the framework that we discussed on Wednesday, there are many aspects to this; each area will contribute its understanding, and those contributions will get rolled up into a corporate decision as to whether to proceed.

I am certainly aware that in the past risks have been identified by people working at one of the early stages, whether early in the process or early in the reporting chain. As that roll-up has occurred, what is a critical risk to the capability has been overlapped by other factors that appear to mitigate it; yet at the end of the day that risk has not been addressed throughout the life of the project. I can point to a couple of risks right now that are still impacting the capability because they were not identified. In some cases, I know that the reporting of the risk was actively prevented by DAO, as it was then, going to the capability manager for his assessment and comment on that level of risk. Under the current system what is your systems engineering approach? What are your governance processes to ensure that a risk that is identified early in the process or low in the reporting chain receives adequate visibility and attention? It is a bit like you were talking about with Navy engineering operators—the risk receives due cognisance, so that the capability delivered has mitigated that risk, as opposed to it just being lost in the roll-ups.

Mr King: The risks are now amalgamated. So we have identified the risk structures, and we go to second pass and government approves solution A or B, or whatever it is. All those risks are now retained in the project, particularly if they are materiel risks. There are other risks that sit with the capability manager—getting crews ready for the next class of ship or so on. They are managed then in that project in the risk register and they are reviewed with the PMSG, these IPTs—integrated product teams—in effect. The risks that are emerging, or getting larger, are brought to the top. There is a problem we need to deal with in defence more rigorously than we

sometimes do: we become a bit unreactive to red alarms. In other words, we see a risk and we watch it go through to fruition and say, 'Oh, yes, indeed it did happen'. That is happening less and less where we are focusing on what is a risk and what we are doing about it. Unfortunately, sometimes that materialises in a project of concern, when we have to go and do a new remediation project to get it right.

What I certainly encourage inside the DMO management of the risk portfolio is this. I say to my folk that there are only really two sins that you can commit. You can make errors of judgment—anybody can do that. The two sins are not knowing your risks or problems, and not telling anybody about it or doing something about it. The rest is forgivable. So we are trying to encourage our people, when they have this risk, to not just talk about how they are 'monitoring it' or 'actively checking it', but to have a real plan to remediate. That is the biggest thing. We in defence—not just them—more often than we would like have had a risk that we have allowed to come to fruition without a real remediation plan. We need to work harder at that.

Risks emerge that you never ever thought of. For example, we did some trials on a missile recently. We had an Australian aircraft with an Australian pilot in America to do that very critical trial, and he fell off his bicycle and broke his thumb. It was not in my risk register. Then the target we were using got blown over by a storm. That had never happened in the previous 10 years of the range's history. Then the crane that we sent out to lift the target up broke down at the target. We made a decision then we were going to fly the missile anyway and pay for the crane. Fortunately, we did not have to. We got the crane out of the way. But there are risks that emerge down the track.

Senator FAWCETT: I understand that. What I am more concerned about is what we have in place regardless of training—because training is good, qualification is good, books of process are good. I come back to the air force example that people have kept highlighting; you not only have that training process but you have an internal review loop that shines a light on how rigorously people are applying those processes and reports independently, essentially back to your capability manager or the regulator for the particular process. What processes do you have within DMO—I know you talk about your IPT and at certain periods you have your gate review—on a more regular ongoing basis that have that internal review to make sure that that light is being shone on how people are performing the things that your process says they should be doing?

Mr King: I do not think we could do it more regularly than we are doing; just a pure resource business. For example, the gate review: 250 projects. To get through a review of each project is obviously five a week. Of that, one is a major project; one is a category ACAT1 project. Given the sheer volume of work involved in review of where the project is and where its risk register is and what risks it is mitigating, it would be impossible to do it more often than once a year.

Senator FAWCETT: Impossible for the reviewers, or impossible for the project staff?

Mr King: Mostly for the reviewers, ensuring the quality of the review. The biggest concern I have about gate reviews, which I am very keen on, is keeping up the quality. The real essence of what you are saying, I think, is: who is applying intellectual rigor to what this risk is, who is doing something about it, and who is checking that something is being done about it? I think that is the nub of the question. We require the risk register to be developed. The hard part to get through peoples' minds can be for them to make sure they are looking at true and tangible risks that might emerge. Do not just leave it there. Each project manager has a project charter to me, which is a commitment to me that they will exercise their role as a project manager. One of the things I have to be very careful with is making sure that I distinguish between charging a project manager to execute a project and expecting them to do it well and giving them guidance and help, as opposed to allowing oversight. Just to be clear on this, I did a little study on one of my projects about 18 months ago, and 67 per cent of their time in that year was taken up with governance. I have to be very careful that I balance external reporting and laying back and allowing the system to find that there is a problem and fix it, as opposed to the individual taking responsibility for the project and doing those things that we would expect that individual to do.

Senator FAWCETT: I completely understand that. By the same token, the feedback we had on Wednesday from some people in the air environment was that, in complying with the annual airworthiness review process, they found one of the most helpful things was to apply their own internal rigour and see for themselves where the dark spots were that they needed to shine some light on. They said, 'This is very welcome. It helps us to do our job knowing that the review process is going to occur in some forensic detail'.

Mr King: So internals for DMO? It is an annual. Or, if any one of the early indicators and warnings are triggered—that is cost schedule impact—then it is a separate review. So you have an annual review just to make sure that business is going well, which is very much like the airworthiness board. Then we have the 'on occasion' need. A couple of projects have put their hand up—I welcome this—and said, 'We have problems. Can we do a gate review?' So that is an encouraging change where we are not looking to blame the project. There are only two

concerns I have—that the project does not know where it sits in the world, and that it does not report it and engage.

Senator FAWCETT: After the morning tea break I would like to come back to the gate review and talk about that.

Mr King: Sure.

Proceedings suspended from 11:01 to 11:26

CHAIR: Senator Xenophon has asked to ask some questions because he has to leave, so I will let him do that.

Senator XENOPHON: It is just a couple of questions in relation to some seminal issues. We talked about the whole issue of managing risk: costs and scheduling capability and technical risks. Is there a preliminary issue? Davies and Thompson—the witnesses may say that they are out of date or out of touch—say they believe there is an over-prescription of equipment solutions in the defence white papers and the defence capability plan. Their view is that there must be latitude to make trade-offs between risks, schedule cost and capability as information becomes available during the development of projects. We have heard evidence how some projects, by their very nature, take a number of years to implement. To what extent is there that latitude in this current capability assessment? Is there a lack of latitude which constrains the effectiveness of purchases and the long-term capability of the defence forces?

Air Marshal Harvey: I would argue that, even after projects are in the defence capability plan, there is still quite a degree of latitude in terms of how you would provide the solution. The white paper and the defence capability plan generally provide a very high level description of what the outcome required is, and generally not the materiel solution. That is why we spend a fair bit of time getting even to first pass to look at what the viable options are. Inherent in that are the cost/schedule/capability trades you make within those options. We get that to a viable number of options to progress. As was explained before, at first pass government agrees that they are the options to pursue, and they are funded to get to the actual approval stage. In fact, it is a requirement—the government does want us to provide options, so they can make those trades when we do get to second pass.

Senator XENOPHON: When it comes to the issue of options, there is the whole issue of whether an off-the-shelf option is included until the second pass project approval. Does the DMO, does your group, consider bona fide off-the-shelf options from an existing production line for each and every proposal, or is this simply done at a theoretical level?

Air Marshal Harvey: Wherever we can, we try and use an off-the-shelf solution as a benchmark to progress an option. But at the same time you will need a good reason to move away from an off-the-shelf solution in terms of cost and risk. We always try and look for whether there is something off-the-shelf to deliver the capability. It is clear that it does reduce cost and schedule risk, at least in the materiel solution.

Senator XENOPHON: That leads to the suggestion in the 2009 white paper, which Senator Johnston referred to a couple of days ago, about a replacement for the navy's current patrol boats: mine hunters and hydrographic ships and oceanographic vessels were a single class of vessels, the SEA 1180. That is clearly not an off-the-shelf solution, is it?

Air Marshal Harvey: The expectation is it would be developmental, but it still will not be delivered for quite some time yet. Between now and then a number of things could happen. Somebody could develop something along those lines. We could potentially do something collaboratively with another nation. So it is not constrained to that. That is the expected way to go, but we have a lot of studies to do even before getting to first pass; that is why we put the user requirement and the invitation to register out there—and 63 companies have responded already. Again, the risk of providing a solution would be a key part of the analysis of what has come back.

Senator XENOPHON: When it comes to off-the-shelf purchases, do you take into account that as a general rule they perform better in terms of being on time, on budget and to specs, and that generally the scheduling is better than starting from scratch?

Mr King: Yes; with off-the-shelf we do not exceed budget on average. We operate at about 98 per cent. Very few of our projects go over budget; and on average we are on budget. We find that off-the-shelf solutions are more likely to deliver on schedule. Our analysis shows that off-the-shelf solutions typically deliver ahead of schedule by a few per cent.

Senator XENOPHON: So you take that into account when you are assessing the options? Is that built into the risk assessment?

Mr King: Yes, it is. When I provide the independent assurance to SEC/CDF and government on schedule risk, there is clearly a different schedule for a developmental solution compared to an off-the-shelf solution—even a

modified off-the-shelf solution. If I use AWD again as an example—I was then the project manager for that—the advice to government was that the developmental solution would take three years longer and have a significant cost risk.

Senator XENOPHON: Thank you.

CHAIR: Does that conclude all your questions?

Senator XENOPHON: Yes, it does for now. Thank you.

CHAIR: Thank you very much, Senator. Senator Fawcett?

Senator FAWCETT: To get it on the record, and following from Senator Xenophon's question, could you tell the committee about commercial off-the-shelf options. There is a lot of talk about COTS—commercial off-the-shelf—options, or MOTS, and C17 is often used as an example. We were talking yesterday around the fact that, where you are looking at a platform, it is almost operating by itself; that can be a reasonable model. Could you put on the record again for the committee some of the considerations about integration and why quite often there is no true off-the-shelf option. Could you tell the committee about the impact on industry sustainment. If, for example through an FMS case, there is no opportunity for industry to be involved in the supply chain for some of those options, what does that do for industry here? Also, particularly around certification, we may have different requirements, for example, regarding crashworthiness that may well meet the commercial off-the-shelf certification, but in terms of what the government holds Defence accountable for, there may well be modifications. Why do very few off-the-shelf solutions require no work when they actually come here?

Mr King: Yes, sure. It is wide-ranging, but you might remind me which parts of your topic I forgot to get across—I am an older person. Maybe we go through true off-the-shelf and integration first of all. It is true that it is rare that an absolutely off-the-shelf solution, untouched, will meet all of the objectives. We come back to this trade-off of capability need, cost and schedule balance. The Abrahams tank was an example where we needed no modification, and I think C17s are very close to it. But there are several things that you need to integrate into an off-the-shelf solution to be acceptable to Australia. One is a technical capability; the other is integration into our occupational health and safety and certification standards. They do play a role, obviously. Australia, being a sovereign nation, has its own requirements in that regard; crashworthiness and so on. It is my experience that Australia has a very high standard of safety, definition of risk, and also materiel control; for example, asbestos. In America I think under one per cent is determined to be asbestos-free and in this nation we have a zero tolerance for asbestos. So although we could get a product from offshore in an existing capability that is asbestos-free, it is only certified to be asbestos-free to one per cent. So we have to check that any elements in there that might have asbestos content, like brake linings or whatever, are genuinely asbestos-free. If they were not, then we would have to find a replacement solution for that.

Coming back to off-the-shelf, you often find that the off-shelf solution in the platform—so the truck, the aircraft, the ship—can exist. It has the right speed, the right height and the right sorts of parameters. Then we would want to integrate with a couple of things. You have mentioned an industry issue, and I will come back to that. Also there is communications. We often have a different range of communications because we are operating our combined forces differently to, say, America or Europe. We often have to have communications changes. We also often have to have compliance with other requirements—in the air world, aviation standards and aviation communication equipment. We still use a different suite of air navigation equipment in Australia than overseas. So we might need to make changes around that.

Some of those changes can be small and accommodated, and there is sufficient space. As you would be aware, Senator, from your background, with issues like power and cooling control, particularly in confined spaces like an aircraft or a submarine, there is a need to find physical allocation of an area to do something like that and to not impact the other systems that are already fitted in that platform. So we can often find an off-the-shelf platform. We can often find an off-the-shelf platform that meets the vast majority of our needs, but we will need to do some additional work to make it compliant with the measures you touched on, such as compliance with Australian regulations on safety. Sometimes that is quite easily achieved and quite easily predicted, and we make the cost adjustments and so on. Sometimes we also have to integrate highly sensitive equipment where we want to add protection for our service men and women, such as protection against ground attack with missiles. We have to get very sensitive equipment from the US and have to have it fitted under US control, and things like that.

Finally, the integration in industry sustainment is often raised as an issue, but I do not think it has turned out to be as big an issue as we might have thought. The F-111 was and FA18s are more than adequately sustained in Australia, even though the OEM—the original equipment manufacturer—was in the US. If I look at the history of Australian sustainment involvement, it has been growing, and it continues to grow. It is a pretty stable workforce,

I have to say, if we look over even a decade of work, and look forward a decade. One of the things we have to pay attention to is that sustainment and making sure that we have an industry base to support it. What we are seeing potentially with JSF, for example—and I think we will see with C17—is a global support network that we have to find the right way to mesh into, so that we have adequate support and skills in Australia to maintain those aircraft, or whatever it is, at the level that we want, but also take advantage of a global supply chain and the efficiencies that might bring. I do not know if I covered broadly what you wanted to talk about.

Senator FAWCETT: That is fine, thank you. I will come back to the strategic approach to industry capability later. To return to where we left before the break, the gate reviews, could you inform the committee about who is on the gate reviews—their skill sets and backgrounds and their current role within the defence organisation. Are they still pursuing careers or are they essentially senior retired, greybeards, who have come back? And, importantly, who do they report to?

Mr King: My first claim is that I introduced those into DMO, so I am very happy about that. That might tell you that I would be biased about the advice I give you. I copied it from industry, without a doubt—from an industry process. Now I would actually like to change the name 'gate', because we are using it in a far more sophisticated manner than just blocking the progress of something until it is ready. This is where it has grown beyond what I hoped for, and into something really important. With 230 to 250 projects, trying to get through all the gate reviews is quite challenging just in a resources sense. Getting to them at least once a year is important, and I do not want the quality of the gate reviews to deteriorate. What is critical is that they get to the heart of issues, whether they are technical, commercial or resource. We have to be able to see what the real issues are and address them. We must not allow it to fall into just a process.

One of the great strengths is that we have a team of people, not the gate reviewers themselves, that are within the independent program performance office, which is independent of the line management. We have various streams. We have the land system division, the maritime system division and the aerospace division—helicopters, and so on. We have our line management. This group sits independently of them. I was very keen, and we are very keen, that they are not seen to be outsiders as well. In other words, they are part of the solution, not just sitting back and observing. They also have to be contributors. But they do sit outside. This team goes off and does field work with the project, and not just the project. For example, if it is likely to be a diagnostic gate review, which is a gate review that has been triggered because of a problem with the project, as opposed to routine, then they might also talk to industry. If industry is involved in the problem, they will talk to industry. That group of people—normally experienced EL2 level officers or that sort of O6 level in the military—go off and do field work. That is really important. It is to meet the project. As I mentioned earlier, we are distributed around Australia. It is no good doing it from Canberra—you have to go out. You have to get the feel of the thing as well, because it will not be just technical; it will be the commercial relationships, the relationships with industry, the relationships with the capability manager. You have to understand those things. They will collect a lot of background information and provide a brief to the gate review team.

The gate review team is headed up by the chairman, who is a general manager not in the line control of that project, but who may be assisted by the general manager who is in the line control, but not the chairman. He will be assisted by two independent members. We have—I will have to correct this if it is wrong—somewhere between 18 and 24 independent members now. As I mentioned, I have been heartened by the almost volunteer status of the people who are coming forward—often with industry background, department background or military background—who have no skin in the game any more than to get a good result. They have had the experience of 'scars', as we would say; they have been involved in big projects that have been difficult, or whatever; they turned out to be massively good contributors in understanding where something is; and they have been able to distil the problems that face a project.

It takes quite a long lead-up to get all the material together. The gate review itself is often three to four hours. We invite the CDG representative, depending on the level of the project, the capability manager and so on, to come to the gate review and participate—not direct participation, but to put their position on various issues to the table. The gate review will typically also draw on lessons learned. Incredibly valuable lessons have been learned. We always ask: how does an organisation make use of lessons learned? We have had lessons learned databases and things like that. Where I think it works incredibly valuably in the gate review is that people in the gate review and in the preparation for the gate review will get out the lessons learned. So, for instance, recently we did a gate review on the next air traffic management system for Australia, where we are hoping to co-ordinate with Airservices Australia. We drew on the ADATS lessons learned as part of the gate review process to understand the challenges that come when you introduce something like that.

So in that gate review we then highlight the various issues coming out of that. If it is a gate review prior to second pass, or projects of concern, that gate review outcome is shared, obviously, with the capability development group, shared with the capability manager, but, more importantly, taken up to the Defence Capability and Investment Committee, DCIC, and when we are considering taking that project to government, or whether it should be made a project of concern, all of the matters are put on the table in front of the DCIC secretary, CDF capability managers and so on, and issues are discussed.

For example, the gate review finds that an element of a solution is technically more challenging than anybody anticipated and it is going to mean that the project will be delayed at least two years getting that technology into service. The gate review does not necessarily direct what to do about that, although internally we will direct how the project will go about it. The important thing, for example, is to ask the capability manager, in light of the fact that that technology will not be there when you planned, or when you anticipated, do you still want it? That is a fundamental question. Given that it is going to be late, or given that it does not perform exactly to the level that you anticipated, do you still want this technology? That, for example, was a lesson learned from the LCM 2000 project, where early on it was seen that that solution would not deliver what the capability managers wanted and a considered discussion around that at that time would have been a very valuable undertaking. So that is the first thing that is confirmed. Then when we understand that the capability manager and CDG's management of that is still wanted, we look at the impacts, whether it is cost and schedule, and how we will do it. Then that goes to government as a recommendation. So the ministers or, if it is large enough, NSC are informed of the implications of the problem, an assurance or not that its capability is still wanted, even though it may not be on time, and then we reset the project based on that. That is the default condition. What we are aiming for—we probably will never get there—is to not have projects that get into problems, that we have made adequate provision for cost schedule and risks before we have leapt off into the project.

Senator FAWCETT: In that default model is industry involved both in the preparation for the gate review and as the prime contractor sitting at the table during the gate review?

Mr King: We usually do it separate to the project team. Projects of concern are not always involved with industry. Sometimes we, in defence, have not done as well a job as we should have. It is not an industry responsibility. It is us failing to do something in a time frame that the government anticipated. So some projects of concern we are just investigating ourselves.

Senator FAWCETT: To come back to the makeup of the team, you said that you had 18 to 24 independent people?

Mr King: Yes.

Senator FAWCETT: Do they cover the range of commercial, sustainment engineering, operator type backgrounds, and does every gate review have a mix of those skill sets?

Mr King: We try and mix it relative to the stage and state and type of project. So we have engineers, economists and, I think, lawyers. They have a mix. Most of them are younger than me but well into their experience of life. We try and match that group of people with the type of project. Some are in the start-up phases and we are preparing a submission to government for second pass, some are well into the project and it is a detailed technical issue that confronts us. So Admiral Purcell, who used to be in procurement for navy, for example, some time ago, might be applied to a problem that relates to upgrading a naval ship or something.

Senator FAWCETT: On any individual review you do not necessarily have a range of those key operator/sustainer/maintainer and procurement expertise?

Mr King: No; we do not always cover everyone. The board is normally about five people. So you have commercial background and technical background on it, plus the two independents plus someone else. So there is a range of skills and experience on each board, making sure that we are covering things like resourcing, budgeting and operational capability. The capability manager or representative is invited to each of these gate reviews

Senator HUMPHRIES: Can I ask a couple of general questions that arise out of your opening statement, Air Marshal Harvey. You talk about some of the evidence of improvement in the way the pace of approvals has been managed. You point out that there are problems associated with the complexity of issues, the process having to be re-engineered to take into account more decisions and getting better early indicators and warning systems. You talk about the staffing gaps within your organisation and DMO. You talk about complexity of defence projects. Yet you say that the pace is picking up to increase the pace of output. You say, 'The rate of approvals is now picking up and at the same time we increase contestability and accountability expectations'. Is it possible to give us the stats to demonstrate that you are actually picking that up?

Air Marshal Harvey: Over the last two years, the total number of first and second pass projects approved has been 28 projects each. That is about the historical average over the last six years or so. For the year coming up, which we have started already, we expect to do well above that. The final numbers are still subject to a number of processes yet. So far this year in the first three months available we have already got nine projects through, and we have quite a few projects well developed in the pipeline progressing through to government, which would give a strong indication we will get well above that 28 projects for this year.

Senator HUMPHRIES: As you know, Dr Thomson from ASPI argues that there have only been 10 first or second pass approvals in the last two years. You say there have been 28 in each of the last two years. What is the difference in those?

Air Marshal Harvey: Twenty-eight total projects in terms of first pass, second pass, combined passes and other passes associated with projects such as intermediate passes, et cetera. I was talking about the total number of all of those put together. I think he was focusing on just first passes.

Senator HUMPHRIES: First and second passes, I think.

Senator MARK BISHOP: What is an intermediate pass? I have never heard of an intermediate pass.

Air Marshal Harvey: Intermediate passes typically occur when you have a large project in a phase—for example, if you are getting approval to sign a memorandum of understanding which is not actually a formal first pass or a second pass but it is a step along the way to something. We have done a couple of those along the way. For example, air warfare destroyer would have gone through—it may not have been called an 'intermediate pass'—to government a number of times.

Mr King: That project went to government on seven occasions.

Senator HUMPHRIES: With respect, if a project gets so many passes that you multiply the number of times you have to make the decision in order to get to the approval and execution of the process, in that case the number of capability projects you have approved, in your language, Air Marshal Harvey, does not multiply the number of projects getting on the table. It just means you are taking more time, more bites of the cherry, before you get the thing on the table.

Air Marshal Harvey: It just adds to the process. As we said, we have been slower than expected. Part of that has been the number of projects and approvals we do need to get through. Part of the task has been building the numbers of people in the organisation, building the skills, getting more standardised process to get through the process—

Senator HUMPHRIES: I understand all that. But what you are telling us is that in the first and second pass concept there have not been 28 approvals in each of the last two years because some of those approvals are effectively multiplications of a first or second pass approval, anyway.

Air Marshal Harvey: That is right. They contribute towards the ultimate approval; yes, but they are not first or second passes.

Senator HUMPHRIES: When you talk about there being nine approvals so far this year, are you talking about conventional first and second passes, or are you talking about these other—

Air Marshal Harvey: I believe in this case they were either first or second passes. I will confirm that. I do not think we have had any intermediates as yet. Some of them will come back to government for guidance on something else. I will check if they are first, second or how they are characterised.

Senator MARK BISHOP: Air Marshal, for the first time in 10 years you have introduced a new concept post-Kinnaird and Mortimer. No-one in this committee—or anyone who has been on it since 2003—has heard the two words 'intermediate phase'—

Air Marshal Harvey: It is 'intermediate pass'.

Senator MARK BISHOP: It has never been raised, it has never been discussed, it has never been explained, and you outline it now as something that is routine and current practice. I just looked at every member of this committee and they are all rolling their eyes and saying, 'What is he talking about?' We are four-fifths of the way into an inquiry about acquisition process of capability in the DMO. We are going to have a discussion in 10 minutes time as to whether we come back after lunch, and you have introduced this new concept of 'intermediate phase'.

Air Marshal Harvey: For example, one we are working on at the moment is Air 7000 phase 2B; the acquisition of the P8 aircraft for the future. We are looking forward to going to an intermediate pass soon about whether or not to enter into the production sustainment MOU for the ongoing involvement and sustainment for the aircraft, and whether we get into the next increment of the project. It is not a first pass for the overall project

or a second pass for the ultimate buy of the aircraft, but it is an important step along the way, worthy of going back to government. We want the formality of the process, but it is not either the first or the second pass. It is a matter of how you characterise that.

Mr King: Senator, the two passes remain and that is our core business: first pass, second pass. For very large or incremental projects—I will use air warfare destroyer, again—given the difference between being approved to go and look at two designs and then coming back two years later with a proposal to spend \$8 billion, the government wants some points at which it needs to either make a decision about some commitments of funds or some decisions about progress. So, for example, on air warfare destroyer, one of the selection processes was choosing the combat system, Aegis, which is a billion dollar choice within the confines of the first and second pass process, and obviously one that a government would want to play a role in approving. It is all still structured around the fundamental first pass, second pass. These interim stages are only introduced where there is a large interim spend or a large key interim decision that needs to be made to progress to second pass or into the project.

Air Marshal Harvey: It is potentially a bit of first pass in that it is refining options, but also a bit of second pass in that you are approving funding to do some specific work. So it is a matter of what is the appropriate terminology for it. It is a serious decision by government; they need to have a look at these things.

Senator MARK BISHOP: Thank you, gentlemen.

Senator HUMPHRIES: With respect, you talk about 28 major defence capability projects being approved. The casual reader might assume that means there are now 28 projects approved to go ahead, when in fact we are talking about a much smaller number of projects actually approved to go ahead, are we not?

Air Marshal Harvey: What we typically say are 28 major 'approvals'. Typically when we talk about a project being approved, we tend to refer to the second pass, which is approval of funding. So the first pass is an approval but it is not the project approved as such; it is approval to go to the next stage.

Senator HUMPHRIES: I understand the process you are describing, but it does not demonstrate, per se, that you are picking up the pace. You say here, 'We are picking up the pace'. Those figures do not demonstrate that, do they? If anything, they demonstrate that you are slowing down because you are having to have more goes at the exercise before you get to make a decision.

Air Marshal Harvey: In the number I mentioned for the first three months of this year, nine, I think they were either first or second pass. But there is an intermediate coming up as well in terms of a large project, which is the P8—not in those numbers yet.

Senator HUMPHRIES: If you got through nine first and second passes in a year you would be doing well; I agree with that.

Air Marshal Harvey: Those nine are from the first three months of this year.

Senator HUMPHRIES: Yes, that is right. Even if that is all you did this year, you would be improving on the performance of the last two years? You only had 10 first and second passes through in two years.

Air Marshal Harvey: I will get the breakdown of the total 28 for you. We can give you those numbers. As I say, there were nine in the first three months, and we expect to get well above the 28 for this financial year.

CHAIR: Before we break, I table the full and complete version of the opening statement made today by Air Marshal John Harvey. Thank you.

Proceedings suspended from 12:03 to 13:05

CHAIR: The Air Marshal tells me that he has been able to get answers to some of the questions that were asked this morning. If it is the committee's view, we will hear those answers now.

Air Marshal Harvey: Thank you. First, in answer to the question from Senator Fawcett about whether any proposals are being held up through the committee process by government, I can confirm that, as I suggested this morning, there are no delays through that process. Occasionally a project may slip a month or so in terms of scheduling with the cabinet, but there have been no material delays with any implications for delivery of capability at all over the last few years or so that we are aware of. As to the second question, we were talking about technical risk analysis, when that is done in the process and how early it starts. I was reminded of another step in process—the technical risk indicator. That is a high-level technical risk assessment. I should not use the word 'assessment'. It is an analysis done to support the Options Review Committee. What happens is that you have a broad study to understand the field and what might be possible. You will talk in general terms about what the technical risks are and that helps to inform the options review committee in order to determine which options to pursue. After the options review committee, when you refine the number of options you want, you then do the formal technical risk assessment. As you know, until you have an idea of what the option is, it is hard to do a

detailed formal technical risk assessment. That is identified in the Technical Risk Analysis Handbook that you have on page 18. That identifies that.

In terms of the number of project approvals in fiscal year 2009-10, the number of first-pass approvals was six, the number of second-pass approvals was 13 and the number of other approvals, which I will cover in a second, were nine, adding up to 28. In fiscal year 2010-11 there were eight first-pass, 13 second-pass and seven other approvals. The others cover such things as approval for project development funds, capability technology demonstrators, study funds and a number of projects that have come back to government for an update as we go through the process.

The other question was on the discussion of intermediate passes by government. I refer you to the capability development handbook, of which you have a copy. Page 44 defines the intermediate consideration and review by government. I will briefly read the description there. 'Although the requirements phase is generally described as a two-pass approval process, there may be a need for additional decision points. This need particularly arises in the case of capability proposals of major strategic significance that have very high costs, have major workforce impacts and/or are politically sensitive. Proposals for new combat aircraft or for major surface or subsurface combatants are examples of DCP projects likely to involve additional government consideration.' That was in the previous version of the manual as well. It is indirectly referred to in Mortimer. There is an explanation that, in some cases, more than two passes will be required. The terminology we use in that case is 'intermediate pass'.

CHAIR: If there is no comment from members of the committee on that, we will resume where we were.

Senator HUMPHRIES: Going back to questions about progress that has been made and lifting the pace of decision making, you said in your opening statement, Air Marshal, that since 2000 we have seen the average level of schedule slippage decrease from over 50 per cent to around 30 per cent. Can you table the figures that demonstrate that mathematically?

Air Marshal Harvey: I might defer to Mr King, because that is post second-pass approval.

Mr King: I think it was in the submission—maybe not the raw numbers. I can certainly give you those.

Senator HUMPHRIES: You say this is post second-pass approval?

Mr King: What that was saying was that, for projects that have gone through the two-pass process—that is, from 2003 onwards—in their actual schedule for implementation, the slip on average is significantly less than it used to be before the two-pass process was introduced. It is not about the slip of projects getting to second pass.

Senator HUMPHRIES: You did not actually mention in the statement that it is post second-pass approval. But, if you could give us the figures anyway, that would be useful. You also say that it is worth noting that DMO's performance in relation to schedules is comparable to the acquisition organisations within the UK Ministry of Defence and the US Department of Defense. Can we also have the figures that demonstrate that?

Air Marshal Harvey: I believe they are in the submission, but we will confirm that.

Senator HUMPHRIES: You also make the comment that, as CDG attempts to deal with the problems you have encountered with implementing the early stages of the white paper, there has been a review of the Defence Capability Plan to ensure that it takes better account of factors such as slippage, contingency funding, indexation and overprogramming. As part of this review, the minister has directed a reduction in the level of overprogramming within DCP. Can you explain how that works?

Air Marshal Harvey: With a large portfolio of individual projects, each of them complex in their own right, you develop a schedule of how you are going to get the projects approved to deliver the capability. As you progress along that path, some things will come up. A new risk will be identified, industry does not deliver the information you want or a new option arises. So things will affect that delivery time. That then affects when contracts go out to industry. What you typically do is have a level of overprogramming—that is, you progress more projects than you have funding for to ensure that you take full advantage of the funding that is available. That is referred to as overprogramming. You can never spend more than you have money for, but you progress projects and adjust the numbers as you get more information and as you get further along. There is a bit of a trade-off there. You can work a very broad front of projects with a high level of overprogramming to ensure that you get some through, but the problem in doing that is that you dilute your efforts because you are working on so many. The alternative is to go down to a small number of projects—that is, just enough to use the funding available. But, if even one falls over, you then do not use the funding available. So you have to get the balance right between a high level of overprogramming, and diluting your effort, and a low level of overprogramming and focusing, but making sure you get enough through in time.

Senator HUMPHRIES: So can we quantify how much overprogramming there has been in the DCP before this review was ordered?

Air Marshal Harvey: Typically it is a matter of the time frame. But, looking out over the decade, it is down in the order of five per cent or so. It is relatively small, but in terms of numbers of projects it is significant because you try to work more at the front end.

Senator HUMPHRIES: So it is done by value of projects rather than number of projects?

Air Marshal Harvey: Typically it is, because it gives you a bit of a measure. It is basically driven by the funding availability. You try to keep the number reasonably small, but it does mean that you have to have more projects in the pipeline.

Senator HUMPHRIES: If the minister has said that he wants a reduction in the level of overprogramming, you must have an existing level and a new level that you are going to. What are those two levels?

Air Marshal Harvey: As I have said in the past, it is in the order of five per cent or so. The number varies quite a bit. He would like to see it down closer to zero.

Senator HUMPHRIES: But, as you point out, there is some value in having some overprogramming.

Air Marshal Harvey: That is right.

Senator HUMPHRIES: So it is going to end up somewhere around one or two per cent or below?

Air Marshal Harvey: Looking at it over the window of about a decade, the number would be quite small. That is why we are doing the DCP review—to get the right balance between the number of projects and funding available and, as I said, to get the balance between the risk of progressing too many, where you dilute your efforts, and focusing on the key ones. You also have to factor into that the criticality of projects and make sure that you focus on the ones that are more time-dependent.

Senator HUMPHRIES: Just going back to the first and second passes, attachment 1 to the department's submission lists the projects that have had second-pass approval and first-pass approval as well. As has been pointed out already, of the \$275 billion program outlined in the white paper, as of February this year \$7.2 billion of projects had been approved either at first or second pass. But I note from that table that, of those approvals, one project—AIR 6000—accounts by value for half of all that have been approved so far—\$3.2 billion. Would it be fair to say that the rate of pass approvals is artificially being kept up by approval of small projects—\$20 million, \$30 million or \$40 million projects—and the bigger ones are the ones that are proving more difficult to keep within the time frames outlined in the white paper?

Air Marshal Harvey: It is a feature of the DCP that there is a mixture of some very large ones, some medium ones and a lot of small ones. It is not an artificiality; it is just the nature of the DCP. There are a lot of small projects in there.

Senator HUMPHRIES: But it would be unfair to say that some of these smaller projects have been brought forward to keep the rate of approvals up and it is the bigger ones—the complex ones—that are being pushed back in the time line?

Air Marshal Harvey: No, it is not the case at all. For example, a project that is quite small or even as low as \$30 million can often be just as complex as one costing 10 times as much. There has been no adjustment based on size to do that.

Senator HUMPHRIES: You made some comments before, I think, Mr King, about the difficulties in making decisions. Air Marshal Harvey, you pointed out in the opening statement that projects are technically complex and some have taken more time than was originally anticipated in order to mitigate technical risks ahead of government consideration. You also point out that there was an election, there was a longer caretaker period than had been expected and this accounts for some of the delay that ensued. I think you would be aware that Dr Thomson from ASPI has pointed out that, in the next few years, when these issues are piling up to be given approval to, we have another federal election and another iteration of the white paper, both of which are factors that tend to delay decision-making. I will come back to the question that has to be asked: is it feasible that the sorts of decisions that will need to be made in the next 24 months will get made to put us within reasonable striking distance of the target set by the white paper?

Air Marshal Harvey: Hopefully, we have learned some lessons from last time in terms of the nature of the potential delays that occur associated with those processes so that we do get ourselves ready for them. We have already learned the lesson about building up the resources in capability development group to be able to handle the progress of projects. Also, because this white paper and the DCP look so far out and we are not expecting any fundamental changes, I expect that we will be able to continue with this high rate of approvals. There is bound to

be some sort of pause at some stage when you go into caretaker period, but I believe we will be planning and ready for that by having as many ready to go as we can before that occurs.

Senator HUMPHRIES: You would agree that we need higher rates of first- and second-pass approvals in this and the next two financial years to get reasonably back on track in respect to?

Air Marshal Harvey: Certainly higher than we have achieved in the last two years. As I say, we are ramping that up.

Senator HUMPHRIES: When you refer to the problems with skilled staff being available to handle the approval process, you say that you have made significant efforts to increase resources and improve skilling. Has any of that involved remuneration for key personnel within DMO or CDG for that matter?

Air Marshal Harvey: On the CDG side, we are looking at higher pay for specific individuals who are particularly valued by the organisation. That is one means of doing it. But also we are looking at getting industry support in as well and just increasing the numbers available in the capability development group. There have been some approaches through salary as well for some of the civilians involved.

Senator HUMPHRIES: Just on the first point about wages, everybody inside DMO is either a public servant or a person from the Defence Force who is seconded into DMO.

Mr King: That is broadly the case. There are some contractors.

Senator HUMPHRIES: In either of the organisations we are talking about, how do you increase the pay of an individual who is seen as being critical to retain within the organisation?

Mr King: It is DMO now that I am focusing on. The area where we are most keen to keep experience and skills is at what we call the executive level 1 and 2 level—EL1 and 2. At that level, we have introduced a building defence capability plan, which allows some flexibility to add increased base salary payments and retention payments for a commitment to stay three years or something like that. They are proving quite successful in retaining skills.

Senator HUMPHRIES: These are Public Service Act staff, not contractors, that we are talking about?

Mr King: That is right.

Senator HUMPHRIES: And you say that is on the basis of staying two or three years? You cannot—

Mr King: It is normally three. We like a bit of longevity.

Senator HUMPHRIES: Can you write a contract with a public servant to that effect?

Mr King: Yes.

Senator HUMPHRIES: Can you take on notice how many individuals within CDG or DMO have received such consideration?

Mr King: Sure.

Senator HUMPHRIES: You also mentioned increasing resources in an area. I assume you mean putting more people into a particular area to deliver additional capacity.

Air Marshal Harvey: Generally, yes, in terms of FTE, or full-time equivalent, staff. By working to get an industry partner to help to beef up support in that area. That requires money and resources and we are doing that.

Senator HUMPHRIES: Where does that money or those resources come from?

Air Marshal Harvey: I have a baseline funding availability. If I need additional, I go back to the CDF and secretary through what is called the WFMC—the Workforce Financial Management Committee—to basically bid for resources if required. So far, they have been very supportive because this is a key area for Defence.

Senator HUMPHRIES: Is this unallocated funding available for just such a contingency or is it a matter of taking it out of other operations of the department?

Air Marshal Harvey: It is generally money at the total Defence portfolio level that is in competition with others for various issues or challenges that arise and that you bid for.

Senator HUMPHRIES: So it is unallocated and it is bid for as areas of the department need it?

Air Marshal Harvey: That is right.

Senator HUMPHRIES: Is it the same model within DMO, Mr King?

Mr King: Because we are a prescribed agency, we operate under a slightly different structure where we have direct appropriation for our workforce. But, within that level, as the CEO I can operate within that budget.

Obviously, as an integrated part of the Defence team, we also look to harvest savings and efficiency, like the SRP that the whole of Defence has to face. But, broadly, I operate the budget inside that envelope.

Senator HUMPHRIES: Would it not be easier to engineer those sorts of adjustments to the resourcing or the payment levels to critical areas of your organisation—particularly your organisation, Mr King—if, as both Mortimer and Kinnaird recommended, DMO were an executive agency?

Mr King: They were recommendations, but the government decisions were that DMO act as a prescribed agency and that is how we operate.

Senator HUMPHRIES: I know that, but wouldn't you have a level of flexibility in dealing with those very resourcing issues that you cannot achieve under the Public Service Act if you had an executive agency?

Mr King: There are different flexibilities that an executive agency would offer an organisation—and I will ask Mr Dunstall to go over that—but, in structuring the way DMO operates, you also have to be mindful of not just workforce issues but also its entire relationship with Defence. The decision made—and it is one that I am comfortable with—was that we operate as a prescribed agency and therefore we can operate in an integrated matter with the whole of Defence.

Mr Dunstall: There seems to be some misunderstanding around executive agency. I know that Mark Thomson, when he was presenting, was also operating under a misapprehension. With executive agency you are still under the Public Service Act. All it does is allow the CEO of a prescribed agency or the relevant agency to also have the workforce controls. Currently, as a prescribed agency without executive agency status, the CEO obtains those workforce controls through delegation of the secretary of the department. Under an executive agency, the minister gets to appoint the CEO or fire the CEO, as the case requires, directly and the CEO has the same workforce powers under the Public Service Act for that agency as if they were a secretary of a department. It is not as though executive agency would move DMO outside of the Public Service Act environment; it is just that the CEO then has the direct accountability under the Public Service Act rather than taking it through the secretary by delegation.

Senator HUMPHRIES: There must have been some significant advantage in being able to operate under an executive agency model that led Messrs Mortimer and Kinnaird to make the recommendation.

Mr Dunstall: I think the only additional flexibility is that there is direct report to the minister through the CEO and the CEO has direct powers in relation to the staff allocated to that agency under the Public Service Act as the secretary does. Technically speaking, the secretary is able to delegate to or withdraw that delegation from the CEO as the case requires. So, to that extent, the secretary retains control over the workforce in that agency.

Mr King: And I operate under a delegation from the secretary at the moment.

Mr Dunstall: I am just not sure that executive agency—

Mr King: I was not in their minds when they made that recommendation, but I am imagining that at the base of their recommendation was the ability to offer different salary structures and higher remuneration and so on. As I said earlier this morning, that has an implicit attraction. But we are also part of the government body of business. We have to be mindful of this: we have to work alongside our colleagues in the rest of Defence. I think we have to be very careful. In the DMO, we want to do our bit of the business very well and some of that business we do is different from what other elements of Defence do. That is why we do it. But we also have to be conscious that we have to operate in the broader tapestry of Defence. If you create an environment where the group in DMO looks significantly different from the rest of Defence, for example, it will have its own issues about how the relationship works in what is a very complex portfolio. So there would be the nice response which is, yes, we would love to pay more money. Of course, that would make life easier. But I also have to recognise that we are an integrated body within that broad Defence group and we have to operate broadly in that environment.

Senator HUMPHRIES: That is the consequence of the decision the government has made about how you operate, isn't it? You do not have to operate in quite the way you do at the moment. If it was the view of government that you should have a different—

Mr King: You could have different models, but, as we discussed this morning, it is a very complicated piece of business. I do not mean just the DMO's business; I mean the whole development of capability needs, translation into what the material solution is, the acquisition and sustainment of that and the servicing of that. Any of those models must appear to everybody in the organisation to be cooperative, engaged and integrated. If you introduce anything that creates too much separation then, while you might solve one problem, you might introduce another. Any thinking about what the DMO structure should be needs a careful consideration of all of the issues around it, not just the one of salary, which, of course, is important.

Senator HUMPHRIES: How many people did DMO have to dismiss in the course of the last financial year?

Mr King: I will have to get to the number, but I think from memory it was a small number like nine. But I would really need to take that on notice.

Senator HUMPHRIES: Is it fair to say that others would have been transferred into another government department or—

Mr King: I certainly do not encourage that. We work under the same rules as the whole public service in this regard, of course, as you would expect. The military people work under their management regime as well. If we have a person who is performing poorly then we have a performance management regime. It is a well structured regime. What I am very conscious of is not transferring people but managing that performance management scheme and for it to take its natural course. That could be that the person is put under a performance management regime and given advice and assistance to correct their difficulties or it could be that that does not happen and then they get managed out.

Senator HUMPHRIES: I want to turn to a different subject if I could, Chair: the Defence Capability Development Handbook.

CHAIR: Yes.

Senator HUMPHRIES: This was released in August and replaces the Defence Capability Development Manual. Can you give us a description of the key differences between what the handbook now says and what the manual used to say?

Air Marshal Harvey: Certainly. The main thing was really to update the document from before, taking into account recent developments and what we have done in terms of the structure of the committee process, getting more rigour into some of the business rules for the processes et cetera, changes such as—I believe it is incorporated here—the capability development board becoming the capability development gate review, which I mentioned before. Part of that was to reshape that committee to ensure that it was acting as a gate before going further—to make sure everything is in place so as to progress further along. But in general terms it was updating what was there in the previous editions.

Senator HUMPHRIES: So it is a document to take into account recent developments in acquisition policy, if you like?

Air Marshal Harvey: Yes, and things such as Early Indicators and Warning requirements and the fact that we now have joint project directives. We try to keep this as a living document. There is a balance between keeping it up to date and keeping it as stable as possible.

Senator HUMPHRIES: You say that it takes into account recent developments. Does it incorporate the knowledge gained from both the Rizzo and the Black reviews?

Air Marshal Harvey: No, I believe the Black review outcomes were on 9 August. This was completed before that, so it would not have taken that into account.

Senator HUMPHRIES: As I understand it, the Black review and the handbook were released in the same month—in August.

Air Marshal Harvey: That is true. The Black review was done earlier. The minister's response to Black did not come out until 9 August.

Senator HUMPHRIES: You would have been involved, wouldn't you, in the development of a response to Black?

Air Marshal Harvey: Not directly. I think it was largely led by the Strategic Reform Group. This explains in a fair bit of detail the current committee process, but, as you know, the Black review and the minister's response called for an overall review of the committee processes. Once decisions are made on what the new committee structures will be, this will have to take that into account. For example, I believe that Black recommended that, instead of the Defence Capability and Investment Committee, it will go to the Defence Capability Resources Investment Committee, which is broader in scope. As to how that affects the process in here, we have to work that through.

Senator HUMPHRIES: Doesn't it beg a question: you are releasing a handbook guiding Defence capability development, you have a major review that looks at this very process and the handbook is published before the reforms outlined in the review are actually incorporated into the process.

Air Marshal Harvey: This is the challenge we always face. There are always reviews and reforms going on. At some point you have to say, 'Let's benchmark where it is now so that people can move on with the process.' As the new reforms come through, we will update this as required.

Senator HUMPHRIES: So this could be effectively republished on a continuous basis with changes in the way it is working?

Air Marshal Harvey: Yes. In fact, this is not publicly published as such—it is an electronic version and it is on the intranet. It was released to the committee for the sake of informing the committee. But it will need to be updated.

Senator HUMPHRIES: There were comments made about the capability development life cycle and process in Rizzo and Black. Are the comments in the Rizzo report incorporated into the present version of the handbook?

Air Marshal Harvey: Not as yet. We will go through that now as well and look at it. As I say, it is a balance between trying to keep some stability in this. We will look at the Rizzo outcomes—whether there are any fundamental changes. This talks about the process, the committee structure et cetera. We will check whether we need to change any of that in here. We will look at that at the appropriate time to update this next time around.

Senator HUMPHRIES: I think you even said in your opening statement that recommendations from Kinnaird are still being implemented. I assume that none of them would need to impact on later versions of the handbook.

Air Marshal Harvey: The processes are updated. Rolling those into projects that have a long gestation—it takes time to implement them fully into the projects. But the process is fully updated.

Senator HUMPHRIES: I assume it is fair to describe the new processes as being more onerous, more detailed, requiring more boxes to be ticked and processes to be checked than was the case with the manual.

Air Marshal Harvey: We would use the term 'more rigorous'.

Senator HUMPHRIES: That is another way of putting it. 'More bureaucracy' would be another way of putting it. What are the implications of that for both resources and time frames?

Air Marshal Harvey: It eventually means more resources required at the front end of the program. The aim there is to spend more time at the front end to avoid the problems in the back end of the project overall. As we said, with such things as Early Indicators and Warning you do have to put more effort in at the front end but the aim there is avoid the bigger problems at the back end. So, yes, we do have to put more process in and more effort up front. But we expect the major pay-offs at the back end of the project.

Senator HUMPHRIES: Are you confident that this will lead to resources necessary at the moment at the back end of the process being moved up the front so that there is no overall increase in the resources necessary to get these decisions implemented?

Air Marshal Harvey: For example, we spend a lot of time up front doing risk analysis work. As I said this morning, technical risks, cost risks—you can spend effort at the front, put money in to a study and reduce risk levels associated with a project and explicitly therefore need to apply less contingency against that project, which is an explicit outcome of less money needing to be allocated to that project. That is a clearly visible impact of spending money up front to reduce money in the longer term.

Senator HUMPHRIES: That is the theory but is that what is going to happen?

Air Marshal Harvey: It does happen in practice. We have an agreement with Finance that the amount of contingency we need to apply to a project is directly related to the risk level we assign to it—that is, low risk, medium risk and high risk have different levels of contingency. And we can only drive the risk down by an explicit study or proof that the risk is low.

Mr King: It is pretty well established by research as well. Some industry calls it front-end loading.

Senator HUMPHRIES: I understand what you are saying. It does make sense to front-end load these sorts of decisions. I want to know, though, whether it will lead to an increase in—you make the point in your opening statement that these projects are increasingly more technically complex than they were before. That factor has to be overlaid against the way you are now trying to identify those technical issues up front. At the end of the day, it is not unreasonable to expect that a combination of doing more up front and increasing technical complexity might lead to a need to throw more resources into each project to identify what is going on with it—not just more at the beginning but also more overall. Can you assure us that we are not talking about having to put more resources overall into projects?

Mr King: I can address that in several ways from the execution of a project point of view. There are a number of direct savings. If you get your schedule and your development cycle right then we save in our manpower and are more predictable in our manpower in DMO. For example our Wedgetail project, which has run over schedule, has a project management team in Seattle. If we had not gone that far over we would have saved that money and those people would have been free now to apply to other projects in other parts of our business. That is just a direct saving on the project. If you get the project of concern status, for example, it requires additional manning and additional effort just to get that project back into shape. The other cost impact and people impact is on the capability managers. When they are gearing up to get some new capability into service and that gets delayed on them their plans go awry, and the efficient use of their workforce to get ready for that capability is also very costly. So there is absolutely no doubt that improved work early in the process to get the projects right saves—

Senator HUMPHRIES: I am not arguing with that proposition. I completely agree with you. But can we concede that because first- and second-pass approvals come early in the life of a project, more or less, doing it this way—front-end loading—is likely to lead to delays in getting those first- and second-pass approvals relative to the total life of the project.

Mr King: I do not think that is a necessary outcome of doing good work early. I think you can do good work early. You might have an apparent short-term delay in some approvals for some projects. But that will broadly be because between us we have not thought the project through well enough, understood the issues well enough and been able to present a cogent enough picture to government to get approval. The biggest risk we would face is trying to accelerate that project approval unnecessarily and not have well thought through approvals—

Senator HUMPHRIES: No-one is suggesting that.

Mr King: which would create long-term problems. I think the biggest issue we face internally in that process is making sure that our folk are focused on the key issues that they have to resolve before they get to first and second pass and do not get caught out but just a process oriented approach to the project. In other words, what are the big-ticket items that need to be understood, comprehended and have the risks bounded for each of those projects so that we can confidently move forward to the next step? We have got to do some work on that internally between various groups in Defence to make sure we keep a focus on the key issues in building those approvals.

Air Marshal Harvey: We need to focus more on getting the first pass right. I think that in the past people said, 'It's only first pass; it's just a step along the way.' The more effort you put into getting the first pass right, the easier it is to get a completely considered second pass, which makes it easier to deliver the project on schedule. So we are trying to drag that focus up front.

Senator HUMPHRIES: What you say makes perfectly good sense. The more you invest in getting the first pass right, the more quickly you will get to the second pass and implementation. But I would have thought, adding in the point you make about increasing technical complexity, it is almost inevitable that it will slow down the process of getting to first pass. It has to be the case. You are putting more work into the first pass, as you just said, Air Marshal Harvey. You are investing more in that process. Inevitably you will have to consider, in some cases at least, slowing down moving to first pass because you have not got that work done yet.

Air Marshal Harvey: As Warren said before, we have to plan ahead effectively for that. We are going through a very rigorous forward work program taking into account the time it takes for those processes. As we said before, DMO will not accept higher than a medium schedule risk as we move forward. We need to have more realism in that. You talked about more rigour in the process. We do that, but a way to compensate for that is to make sure we standardise our processes as we go through. So even though there is more rigour, if we standardise that it is more efficient as we go through as well.

Senator HUMPHRIES: What involvement does the Capability Development Group have in remediation of projects of concern?

Air Marshal Harvey: Once they formally become a project of concern?

Senator HUMPHRIES: Yes.

Air Marshal Harvey: We take part in all the major meetings for that. I will leave it to Warren; he takes the lead in those fora.

Senator HUMPHRIES: We have had fairly detailed briefing in estimates as to what DMO does. I am really asking what CDG does.

Air Marshal Harvey: Post second pass, once the projects are approved, CDG is basically the sponsor of the project. We are basically the owner of the scope that government has approved. So we keep an eye on making

sure that we are performing to meet the cost, schedule and capability that has been approved by government. Any discussions on changes of those beyond what was approved—we are the holders of what was approved by government. We will be involved in any discussions on clarification of exactly what the scope was and what the risks will be. We work on behalf of the capability manager and with the capability manager to see what was required and what the mitigation strategies are on the way ahead, how you might address the risk as you go through. So we keep involved throughout the process.

Senator HUMPHRIES: Are you checking what is going on in DMO and ascertaining that it is on track—looking over its shoulder—or are you adding some separate level of inquiry or investigation that is not done in DMO?

Air Marshal Harvey: We work with them as part of the review boards. We talked about gate reviews et cetera. We are present for those. As I said before, we are a co-signatory on the material acquisition agreement—ourselves, DMO and the capability manager. As the sponsor of the project we are the holder of the specifications, what government has agreed, and we ensure that everything is being done to deliver what was agreed.

Mr King: I will just add how that might work. We conduct PMSGs about every one to two months, in which capability managers, CDG and DMO are all involved. Let us say it has become a project of concern. We will develop a remediation plan. That remediation plan may say that that capability will not get into service as anticipated; it will be, let us say, two years late. The sort of combined thinking that then goes on includes, as I mentioned earlier, whether the capability manager still wants that capability if it is going to be late or if it is not living up to the same performance. Things the CDG input to that process include whether it will cost more money and whether we have money available in the DCP program to call on. If it has a knock-on effect, for example, on other capabilities that are also being introduced under the DCP that are dependent on it or interrelated with it then the CDG look at those dependencies and the impact on the broader capability program we are introducing, to make sure we understand all the consequences of that remediation. You need all three parties coming up with the solution, understanding the impacts of that solution and then implementing it.

Senator HUMPHRIES: Presumably in some projects of concern there will be an issue about industry capacity; there will be a problem with industry being able to deliver. Who does the industry assessment work?

Mr King: DMO.

Senator HUMPHRIES: CDG does not take part in that process?

Air Marshal Harvey: DMO clearly have the lead on that. We will work with DMO as required but they clearly have the lead.

Senator HUMPHRIES: I think that is all for the moment, thank you.

Senator XENOPHON: The DMO's decisions are being predicated on the white paper—is that a fair assessment? It is being driven by the policy assumptions underlined in the white paper?

Air Marshal Harvey: Sorry, Senator, can you clarify that?

Senator XENOPHON: I am asking whether what is being suggested in the white paper is driving the purchases—is driving the decisions made in relation to the capabilities needed for our defence forces.

Air Marshal Harvey: The white paper puts the broad picture of what is required, which delivers the Defence Capability Plan. The Capability Development Group is responsible for progressing that to government approval. We provide the decision quality advice to government. Once it is approved then DMO take the leadership in delivering the materiel for that.

Senator XENOPHON: But are the assumptions made in the white paper contested at DMO's level, or do you take it as a given?

Air Marshal Harvey: It depends what you mean by 'the assumptions'. If you are talking about the broad strategic thrust, the threats to be faced et cetera, it will generally be Strategy Group that will provide advice. That is captured in the white paper to a certain level of detail but if we need more detail on that we will seek Strategy Group advice to refine the area of operation, the basis of provisioning and the threats we might face. It is an iterative process throughout.

Senator XENOPHON: And if things change in terms of assessment threats? We go down a certain path of spending billions of dollars on a particular procurement. If the strategic environment changes dramatically, how nimble can we be in changing direction?

Air Marshal Harvey: It depends somewhat on which stage of the process you are in. If you are pre approval, we have a formal update of the strategy on a yearly basis in the Defence planning guidance. If there was a fundamental change, we would have to adjust the requirements that we are progressing to government approval. If

you are through government approval and you are already in contract, it gets a bit more challenging. You may have to look at some form of upgrade or adjustment. Pre approval we will adjust if we can before project approval with government. Post approval we may have to go to government to change the scope of what is being done. But then it gets into a DMO contractual matter, trading off what is in contract versus whether there are any shortfalls.

Mr King: Also there are acquisitions and sustainment beyond just a DCP process—for example, operations and opportunities. For example, in operations counter-IED is emerging on almost a daily basis and we as an organisation respond to that in real time to put new capabilities into Afghanistan. In opportunity terms the *Largs Bay* acquisition, for example, showed how nimble Defence and government were in being able to approve and acquire that ship. I think it was under a month from when it became clearly available to when we put the offer in.

Senator XENOPHON: I will go to another issue. This relates to the timeline proposed for defence modernisation and procurement that has been outlined in the defence white paper. As I understand it—please correct me if I am wrong—the government has deferred substantial defence funding to beyond 2012-13, presumably to hasten a return to surplus for the Commonwealth. Is that correct?

Air Marshal Harvey: There have been a number of budget adjustments over time but there have been no fundamental changes to the content of Force 2030. The exact timing of delivery of individual projects may vary but there has been no overall change to Force 2030.

Senator XENOPHON: I understand that. But there has been a deferral of funds to beyond 2012-13, hasn't there? I am referring to the concern raised by Andrew Davies and Mark Thomson that:

... the deferral of funds to beyond 2012-13 has created a five year period where spending will need to grow in real terms by 6% a year to regain the promised '3% real growth over the decade'.

Do you agree with that assumption? If you do, is that going to cause capacity limitations in catching up with that expenditure down the track?

Air Marshal Harvey: I believe that it is true that in the future there is quite a rapid ramp-up in terms of some of the spending required. But, again, often it is a matter of individual projects getting into large spends. In the joint strike fighter, for example, we are getting to the phase where we are looking at buying up to 15 aircraft a year. Those investments in those capabilities we believe will be achievable because of the nature of the buy—off a mature production line by then and large numbers of equipment. It depends on the type of project and the mix in the years you are talking about.

Senator XENOPHON: But will the deferral of some defence funding to beyond 2012-13 cause either capacity constraints or governance constraints within DMO in assessing those projects. In other words, if there is increased spending in subsequent years will there be the resources to assess the risks to do with the additional projects and the additional investments that are being made.

Mr King: We are comfortable that we can operate within that envelope. As I said, for our workforce we get a direct appropriation. We can operate within that envelope. The limiting factors could be industry capacity to take it on. We have seen that Australian industry can probably only expand by about 3½ per cent to 4 per cent a year, reliably. But as Air Marshal Harvey pointed out, some of the larger expenditures are off production line—JSF, for example—and therefore do not bring with them a need for significant industry expansion in Australia.

Senator XENOPHON: Given that Australian industry would have difficulty in expanding at more than 3½ per cent to 4 per cent a year, and if there is going to be an expansion of defence expenditure beyond that rate in subsequent years, does that mean we will inevitably need to invest more overseas than in local manufacturers because of that capacity constraint?

Mr King: The analysis we have done at this stage, which has to be at a broader scale of course, is that the growth rate the DCP brings to Australian industry is manageable. Contrary to some of the reports I hear from defence industry, it looks like a healthy workload going forward and a reasonable growth rate for the industry. At this stage, with the balance of capabilities being sought, I think we are in the 'soup is just right' sort of category: not too hot and not too cold.

Senator XENOPHON: Okay. We will check the temperature of the soup in a few years time, I guess. Thank you.

Senator LUDLAM: First I want to check two administrative things. On the schedule we were provided with, it looked to me as though we were seeing CDG first, with you, Air Marshal, and a number of your staff, and then the DMO were going to kick off in the afternoon. When did the format of the day change, and on whose motion?

CHAIR: It evolved during the day.

Senator LUDLAM: It was like that when we got here. I have not noticed any evolution. Was that a decision that you folk took unilaterally?

Mr King: No. We answered questions that were asked.

Senator LUDLAM: It is just that for example you, Mr King, were not due to appear until one o'clock. I am not trying to be picky; I am just wondering when the format changed.

Mr King: You are right, Senator, but Capability Development Group and DMO obviously share moving these projects forward, so I appeared at the table here and just—

Senator LUDLAM: They have not let you go.

CHAIR: That is essentially what has happened. We evolved it during the morning and we have not let Mr King depart.

Senator LUDLAM: Just checking. You must have a very large number of staff backstage.

Mr King: We do, and if there are any particular areas you would like to discuss that we cannot handle, we are delighted—I am sure they would love their moment in the sunlight.

Senator LUDLAM: Since they are here, yes. The other point relates to a big flow chart that Dr Gumley provided to the committee a short time ago titled 'Organisation process and milestone map for capability'. It is a couple of metres across, in very fine print and very complex. What is the status of that document? Is that public material?

Mr King: I think Dr Gumley showed it at the D&I conference. I think it was public. You would have picked up the errors in it, which I have corrected.

Senator LUDLAM: Actually I have not! Okay, so that is a public document. I was just not sure what its status was. I will pick up where Senator Xenophon left off. Some of these issues are gone into by Mr Thomson in the ASPI study of June 2011, which is now one budget statement behind, obviously. One of the trends they picked out is that of the delays in first- and second-pass approvals—most starkly in first-pass approvals. They talk about a bow wave and then a long drought, which we have spent much of the day discussing the consequences of. You have expressed confidence that you will be able to make up the shortfall, but in what financial year do you think the reality will match the projection? When will we be back to where we thought we would be?

Air Marshal Harvey: In terms of project approval rates, as I said this morning, I think that when we report at the end of this financial year you will see a number well above the average over the last few years. So far this year we have had nine approvals, one first pass and seven second passes, in the three-month period, which is already a good positive trend.

Senator LUDLAM: But it would have to catch up enormously. We are hitting—I am quoting from the old figures, which you are probably sick of hearing about from us—13 per cent of first pass approved on schedule, and second pass significantly higher but still just under 60 per cent. You are coming off a very low base.

Air Marshal Harvey: The DCP was very front loaded in terms of project approvals. As I said, it is Force 2030—it is looking to a force a long way out. The first couple of years have been slower than planned but we are ramping up that rate. A feature of the white paper is that it was very front loaded, and the number of approvals drops off quite quickly thereafter.

Senator LUDLAM: Everything was wanted right now. You have alluded a couple of times to shifting resources internally so that you can hit some of these targets. Where are you shifting the resources from?

Air Marshal Harvey: In Capability Development Group we are not shifting; we are getting more resources in.

Senator LUDLAM: Where from?

Air Marshal Harvey: Part of it is at the portfolio level in Defence. CDF and the secretary can allocate otherwise unallocated resources to us in terms of personnel. That provides personnel cover and provides dollars to pay for them. But the real challenge is getting the right people with the right skills for that. Part of that we can do with internal training, but for particular agencies—Capability Development Group, DMO, Finance and PM&C—finding people with the analytical skills to do the contestability work is a challenge. But we are pretty well filled up to our increased levels now.

Senator LUDLAM: I guess it is ASPI's job to be critical and to go looking for elephants in the room. Do you disagree with their rather pessimistic assessment in that document of last June?

Air Marshal Harvey: I agree with the assessment that we have been slower but I do not agree that there is a long-term problem. We are picking up the rate. The DCP was quite front loaded and I think we will see at the end

of this financial year that our approval rate has gone up quite well, with no fundamental challenges to the long-term delivery of the plan.

Senator LUDLAM: The other question that you are running into, though, is a larger scale one in the sense that the government is trying to get its budget back into surplus. There is a lot of money that you are unable to spend that government figured you might be that has disappeared from your portfolio and is going to other places. If you do catch up to your schedule, will you be able to afford to do it? Will the money be there?

Air Marshal Harvey: We have two views here. One is 'Can we spend what we've got?' The other is 'Do we have enough to spend?'

Senator LUDLAM: No, it is if you get back to schedule, which I would still treat as reasonably hypothetical.

Air Marshal Harvey: As we said in the previous discussion, there is quite a ramp-up of funds available in the not-too-distant future, so we are making sure we get the project approval rate up to match that funding.

Senator LUDLAM: Who decides which projects get up and in what order, if you are trying to squeeze a huge volume of work through a pipeline that is narrower than you thought? Who is making the decisions as to which go through and in which order?

Air Marshal Harvey: At the very top level, the Defence Capability Plan itself came with a schedule of deliveries of projects. So that is laid out in broad terms already. We have published that in the public Defence Capability Plan—albeit that the projects are banded to some extent about when they are due to be delivered. Within that, if we do not have enough resources to progress all of them or there is a delay out there, we will tend to focus our efforts on the most time critical ones. Generally it is not the case that if you do not deliver the project by June 2012 it will be the end of the world. Usually there is a period in which you phase out something old and phase in something new. So generally the DCP provides guidance and we will work to that but focus on the ones that are more time critical as we go along.

Senator LUDLAM: What role does the minister play in that? What role do politics play? What happens when the minister says, 'No, I want that one first, not that one'?

Air Marshal Harvey: I do not see it as a political matter. The minister will have his view on strategic priorities and we will work with that, but it is generally to deliver the DCP as planned and we will have to make judgements on the strategic priority—typically about when the capability is needed versus when something old needs to go out.

Senator LUDLAM: And how often do those two things bump into each other—a ministerial view and your plan?

Air Marshal Harvey: As we mentioned this morning, nothing is being held up in terms of getting through the process. The minister is certainly focused on delivering the DCP as planned. He will keep a close eye on how we are progressing there. I have a monthly meeting with Minister Clare. He certainly encourages us strongly to deliver the DCP as published.

Senator LUDLAM: The Submarine Institute gave evidence quite a while ago. They noted that Kinnaird's recommendation regarding up-front investment to minimise the risk we spoke of earlier has not been realised in relation to future submarine projects. Would agree with that assessment?

Air Marshal Harvey: We have not invested a lot so far. The amount approved so far is of the order of \$20 million for very early studies. We expect to go to government within the next six to 12 months for the next stage of clarification of strategic guidance and the next round of funding. Now that we have learned from the very early stages we will step into the next stage of studies to progress ahead, and that next stage will step up to a significant level of funding. But there will be a lot of money spent up front on that project. It is essential that we do that.

Senator LUDLAM: There is nothing expected in the 2012-13 budget beyond the \$20 million that has already been appropriated, then?

Air Marshal Harvey: I expect we will make announcements before that time.

Mr King: I imagine the government will make a decision before then.

Senator LUDLAM: So we might see something in excess of that original study phase in the forthcoming budget that is being put together now.

Air Marshal Harvey: The exact timing is a bit dependent on when we actually get to government on that. But certainly we are getting ready for the next phase of funding.

Senator LUDLAM: Can you provide us with a brief update on how much of that money has been spent and how far along those studies have come?

Air Marshal Harvey: Of the SEA 1000 funding?

Senator LUDLAM: Yes.

Air Marshal Harvey: Can I ask Rear Admiral Moffitt to answer that. He knows where every penny has gone.

Rear Adm. Moffitt: The funding to date in total that has been approved is \$19.306 million on a December 2011 price basis. Of that, a total of \$10.055 million as at 30 September 2011 has been expended or committed. We have a forecast expenditure of \$8.643 million for 2011-12 at the moment, but that will be dependent upon a visit to government and any approval that we might get for further funding. So we have expended or committed 52 per cent of the current budget.

Senator LUDLAM: What form will the piece of advice that you are about to provide the government with take?

Rear Adm. Moffitt: Subject to ministerial agreement, we will be seeking to outline some strategic guidance around the submarine capability broadly. We will outline our approach to conducting further development of the program and a forecast schedule of decisions and deliverables or outcomes and the sort of funding that we would seek that we think is necessary at this stage to deliver those to government.

Senator LUDLAM: Are you still reasonably confident—I recognise that it is early days and a big project—that you will be able to produce these vessels in advance of the Collins being retired or are you a bit concerned about how long this is taking?

Rear Adm. Moffitt: The answer to your question I guess really needs to be approached from two directions. What it is that we are going to deliver and how long that will take need to be married against what the Collins class is capable of given that the sorts of numbers in terms of life of type that have been discussed so far are based on design parameters that were built around a certain usage profile. So it is all theoretical.

Senator LUDLAM: You are using some very simple and very complicated language, but can we flog the Collins a bit longer if the new ones take longer than expected?

Rear Adm. Moffitt: It is not quite as simple as we would all like it to be. These are very expensive pieces of highly complex equipment that were designed for a theoretical life.

Senator LUDLAM: They have been mostly theoretical submarines.

Rear Adm. Moffitt: We have not used them in quite the way that we had foreseen—

Senator LUDLAM: They have spent a lot of time in dry dock.

Rear Adm. Moffitt: so the usage of that life has not been as it was forecast to be by the designer when we gave the designer our aspirations. So, because of the size of the investment we have made in them, we need to have a clear idea of how long they will last and how long they will be capable of giving us service. Until we can marry what we are actually going to build or acquire to replace them and when it is necessary to replace them, giving you a simple answer to that question, which is a simple question, is kind of difficult.

Senator LUDLAM: You are a master of understatement. I have one more on submarines. How far has your thinking been allowed to stray outside of the box of what was in the white paper? Have you been given the freedom to explore ideas of purchase of off-the-shelf submarines or modified submarines from elsewhere or are you committed to working within the parameters that were set down in the white paper?

Rear Adm. Moffitt: The parameters that are set down in the white paper are quite broad. They do not prohibit me from examining any option except nuclear propulsion and that is exactly what we are doing. We are involved and we have a plan of work to deeply explore all of the available off-the-shelf options as well as various other option sets, up to and including how we might execute a completely new design.

Senator LUDLAM: A new design and/or basing them somewhere else—do your thoughts run to that degree? Could we end up with smaller, shorter-range submarines and put them in the Northern Territory or something, for example? Are you ranging that widely?

Rear Adm. Moffitt: Absolutely, including the involvement of outside Australia forward basing options and the implications of doing that, were that to be possible, for the nature of the submarine that might be needed.

Senator LUDLAM: Excellent. Congratulations on having nuclear ruled out. Is anyone internally agitating for a rethink on that one?

Rear Adm. Moffitt: There is agitation—

Senator LUDLAM: Is there?

Rear Adm. Moffitt: broadly in the community. You will have seen it, as I have.

Senator LUDLAM: For nuclear submarines?

Rear Adm. Moffitt: Yes, indeed. There has been public domain agitation for that in a number of fora. But the government's direction to me in the white paper is crystal clear and in very few words: it will not be nuclear.

Senator LUDLAM: I will leave it there and come back a bit later.

Senator FAWCETT: When the terms of reference were expanded in the middle of this year, subpara (e) goes to looking at comparisons with international procurement. Tied up with that, because we are talking around capability, is international sustainment. So I have a few questions about benchmarking our processes and outcomes with international bodies. First off, in terms of dedicated work internationally looking at problems, the Association of Professional Engineers, Scientists and Managers Australia gave us a submission just recently that highlights the Haddon-Cave review. I am aware that Defence has used that recently or in the last few years to benchmark the airworthiness system to see how they stack up. A lot of the Haddon-Cave review goes very specifically to the sorts of issues that Rizzo called out around the denuding of engineering skills and competence, the impact of outsourcing and contractors and a declining regulatory base for engineering. Has the DMO, particularly from the sustainment perspective, analysed that report in detail to benchmark and inform itself on where it may be in similar places to the UK MOD?

Mr King: No, I would not say to that extent, but I am not sure that Haddon-Cave sets your actual benchmarks that I could see that you can measure against. It sets you a culture and approach and we are certainly very mindful of that. In fact, our CEO or acting CEO goes out and addresses all of our areas once a year and talks about different issues. We call them our business process reviews. The Nimrod outcome is always drawn to the attention. All of the work we do—SRP and all of that work—starts with attention to safety. And, of course, safety is very much in that mould. We are also doing work on professionalising our engineering. I forget the percentage, but we have moved the percentage of certified practising engineers in DMO significantly higher.

In terms of actually benchmarking how much you do internally and how much you do externally, one of the things, of course, that the air world uses is making sure that the industry base has similarly authorised organisations to undertake engineering on behalf of Defence and therefore works in the same framework. I think that is part of what we will have to look to in the maritime sector as well. Mr Rizzo pointed that out. So it is a focus, but, in terms of our benchmark against that, I do not know that we have quantitative data in that sense.

Senator FAWCETT: Qualitative is equally valid in this space.

Mr King: Certainly in a qualitative sense, if you look at the size of the organisation, the US procurement organisation is 150,000 people. We are 7,000. Of course, in the Navy, in a very short period of time they have a good chance to get all of their major projects. The professional engineering and the professional approach we apply to procurement, whether it is in contracting or engineering, is really high in relation to the UK and USA, where I have worked both in a government capacity and in a private capacity in both Defence industries. I think that, person for person, we are at a very high capability. I think we have a tight organisation. In fact, in many ways, it is a lot tighter than the US. Although there is an overall acquisition group, they still run three services as well. So I think we are in good shape, but clearly, from the Rizzo report and challenges we are having with Collins, there is considerable room to improve and we are working at that.

Senator FAWCETT: I am glad you came back to Rizzo, because I would have to say, looking holistically, we cannot say we are in good shape when just this year we have had both the amphibious ships issue and the Rizzo report that have highlighted that we have gone down very much the same trajectory that the MOD has in terms of our sustainment that has directly led to both the service being denuded of its regulatory structure—so understanding what it should be asking DMO and industry to do—and DMO's capacity to actually hold industry to account and manage that. Just this year, very clearly some of the lessons of Haddon-Cave, if applied 24 months ago, could have actually given us 24 months of lead time on where we are at now with Rizzo. So I would argue that there is very much a case for that. To date, nobody has mentioned land forces, but I would be very interested if somebody did that comparison—a Haddon-Cave or Rizzo type exercise—and looked at our logistic support, configuration management and design assurance for land capability just to see what kind of shape they are in.

Mr King: I think it is in reasonable shape. Once again, just in response to your point and not to diminish your point at all on the work we have to do, Land Systems, of course, within DMO runs the Land Engineering Agency, which is a pretty well resourced engineering agency within the land environment that focuses very heavily on engineering analysis, design control and design management. But, certainly, it is a good piece of work that we can undertake.

Senator FAWCETT: Secondly, looking at overseas experience in terms of small items, all of our discussion today has been around procuring large capital equipment. Many of the things that have brought capability

managers grief in terms of availability, modified equipment and people in the field have been when a small item has come through. Overseas there are a number of models that appear to be applied, particularly coming to small, stand-alone items—for example, man-pack, individual items that are heavily software driven or night vision devices where there is a rapid update in the marketplace. Some overseas forces use their special forces essentially as a very rapid procurement and testing ground where they accept a high degree of failure. It is like 'We've tried it and it didn't work—throw it out and let's move on.' But it also gives their people the opportunity to be at the cutting edge of technology. Where are we looking to go in that space?

Mr King: We are doing that too. Our special forces often are the first to encounter a new technology. They see it with allied forces or something or are aware of it or describe the need for it. In that area they are often buying just a small quantity of items or we buy them for them and provide them to them and field test them. The other place we are also testing now is in Diggerworks. Inside DMO we have Diggerworks, which I think is a really good initiative. If that holds great potential, we will then, under a rapid acquisition—and this is very much military off-the-shelf—acquire the requisite amount of equipment for broader operations. Chief of Army or operations typically break it into outside the wire and inside the wire, obviously, being protected areas. Then we will do a rapid acquisition and we run risk about that. We have also fielded, for example, protective upgrades to PMVs. Although we have done engineering behind it, we will run a certain degree of risk to get that capability into the field as either an aggressive capability or a protective capability for the troops. So we run a very similar model. In fact, I was delighted to get some correspondence from Operations and from the Chief of Army over the last month to our Land Systems division about the quality of the work they had done in upgrading various elements from individual soldier items all the way through to PMVs and the speed and the quality of what we had done. So I think on that score we are doing a good effort.

Air Marshal Harvey: Can I add that we have been focusing so far on major capital procurements as well. There are minors projects that you are probably aware of that the capability managers have much more lead in. So there is another string of procurement that they lead.

Senator FAWCETT: I guess part of the reason for that question is that not so much this committee but the joint standing committee has had feedback from some of the special forces areas that there is a deal of frustration in a couple of niche areas. I am happy to talk offline with you about where that approach, which Diggerworks and other things have been very successful at, does not appear to have been consistent. It is good to hear the broader policy.

In terms of the running system, as in the people doing sustainment and managing procurement projects, what is your broad policy on that? You do get a situation where people who are predominantly focused and their system is around running existing capabilities then have to interface with a procurement, whether it is something like electronic warfare, like Echidna, that has a big impact on frames or a subsystem within the frame. Do you have a future direction that you are looking to go in in that space?

Mr King: Do you mean keeping that more than in the SPO area? Is that what you are looking for?

Senator FAWCETT: Essentially, overseas experience seems to be very much saying, 'Let's take an asset from the operator, give it to industry or another organisation to do prototyping and then, when it is developed to a mature stage, give it back to the SPO to actually do the fleet-wide implementation.' The Australian experience recently has not gone down that path and it appears to have caused a number of fleet shortages for the operator by having partially modified assets that are not then available. I am just wondering if there is a strategic direction that Defence is looking at going in.

Mr King: There is, but you cannot have one plan that fits all, unfortunately. Certainly, one of the bigger problems that I think we face in the organisation—and I think we are starting to get on top of the major acquisitions—and what is becoming quite apparent is the competing demand to get that core asset and upgrade it, quite often with a number of upgrades to be managed that are concurrent or close to concurrent. In the case of C-130J and P3s, for example, we are proposing in one case to go back to the US, which has exactly what you talk about, and have the lead system or two systems done in the US—all of the installation kits proven and the installations proven—and then have the balance of the work done in Australia. But the real optimisation that has to be done under what is a very consistent and heavy workload at the moment for the forces is the freeing up of the assets out of very high operational tempo and being very precise about the time for getting those assets upgraded and returned to the capability manager. I do not think we have one policy on that, but we are very conscious of the planning for all of that. The other thing that is becoming very apparent—and you mentioned the land forces—is that land forces are moving much more into being a networked land force. We are seeing there that new trucks can be worth less than the radio and combat systems that are going to go into them. So Army is moving very much into that sophisticated command and control, better management system domain. They also,

with their large fleets and the need to rotate and keep fleets available, will have to have much more careful asset management, fleet management and upgrade management as we go forward.

Air Marshal Harvey: Can I add to that. When you try to standardise the C4I system across otherwise MOTS products and vehicles, you then have integration problems. So standardisation one way creates a challenge somewhere else as well.

Senator FAWCETT: I understand that. I guess the thrust of my point is that we have discussed at length over the last day and a half the significant effort that has gone into improving our governance around major capital procurement. What I am trying to tease out is this: is a parallel amount and direction of effort going into how we manage the minors and those cross-platform systems that are having a very real impact on the capability managers?

Mr King: Indeed. The place, in my mind, that that is captured best is in the MSA—the sustainment agreement. That is the partner agreement. On the acquisition side, we have the material acquisition agreement and, on the sustainment side, we have the sustainment agreement. That is managed by SPO directly for the capability manager. It is there where the planning and integration of all of these different and competing demands has to be managed in terms of keeping the managed fleet availability that the capability manager wants. But we are getting an increasing number of demands for upgrades: physical, mechanical upgrades for protection or electronics, communications, counter-IED and all of these other requirements that are coming into the platforms.

Air Marshal Harvey: Another recent development is that the minister directed that we adopt the two pass process now for minors projects as well to make sure that there is the high level of governance and that the broader view is taken into account for that. An example is trucks. It is a complex one—both the vehicles themselves and the C4i system. So we tend to treat LAND 75 and LAND 125 projects now as LAND 200 and take into account JP 2072 as well—another project. And we have now initiated the three-star steering group—the Chief of Army, me and CEO DMO—to make sure that all of that is brought together.

Senator FAWCETT: One of the things that you highlighted before with the gate reviews was the value of those senior people with experience to actually capture lessons learned and bring forward that forensic evaluation of the options that are being considered and how the project is progressing. How do you capture that same approach with your minors or your cross-fleet modifications of a smaller project?

Air Marshal Harvey: I will introduce Mrs McKinnie, who is the General Manager, Systems. She handles the bulk of the sustainment activity inside her group. She can perhaps address some of the matters that she is doing.

Mrs McKinnie: To go to your first question, in terms of some of the initiatives that we are putting in place to improve overall sustainment, last year we conducted a complexity study that was aiming at benchmarking the complexity of our sustainment activities with the private sector and other government sectors. That work was done by Helmsman. That provided us with a good basis, in a similar fashion to what we have been able to do in the project area, to compare where we sit on the complexity scale and to look at, in sustainment, where the activities we are running compare on the complexity scale as well. That leads us to a couple of things. The first is to understand those sustainment activities that are inherently complex due to the nature of what it is that we are managing. For example, a Collins class submarine is inherently complex because of the nature of submarines and the technology in them, as is a Jindalee over-the-horizon radar network. That is inherently complex because it is Australian developed and was at the leading edge of technology at the time. We are the parent organisation to manage that.

As a part of that study, what we identified was the need to establish a standardised business model for how we operate in sustainment to be able to more clearly have more standardised processes, more standardised systems against which we can manage our performance and also standardised metrics against which we can measure our performance. In the complexity review, what we identified was that, although in our major acquisition area we had the same processes that we operate and tailor right across the DMO, in sustainment we tended to have unique processes arising in each division without really looking at whether, in order to implement reform more quickly and easily, we can have a more consistent set of processes for doing things. We are currently working on that sustainment business model at the moment with the view of completing the model by about the end of this year and then to start rolling it out progressively throughout the DMO. That work was recognised in the Rizzo review as being the sort of activity that we have underway and we are now seeking to monitor implementation through the framework set up under that Rizzo review.

Senator FAWCETT: On that review of sustainment, to what extent are you working with the services as they seek to re-establish their technical workforce and regulatory technical capability to make sure those two work hand in glove?

Mrs McKinnie: We have done some internal work initially looking at the key DMO issues. We are now engaging with each of the capability managers to ensure that our interface with the capability managers in terms of our processes fits neatly into their processes. That work is underway at the moment. In addition to that, as part of the Strategic Reform Program, we have an activity that we are running with all of the three technical regulators. What we are looking at is how we can better harmonise the processes that the three regulators use. We are currently working with them to establish the sorts of rapid improvement events that we might be able to go through to try to improve those processes. For example, because the three regulators have similar but different processes, when we get to the configuration management systems, the DMO has to have three different ways that we manage configuration data in the IT tools that we use. If we are able to better harmonise those processes, we may in fact be able to have one approach to how we do configuration management.

Senator FAWCETT: In terms of the review of sustainment, and I am assuming that your engagement with industry is part of that, how much are you looking at engaging the capability managers to assess their concerns about things like technical mastery and the opportunity to have uniformed people at different levels of activity of engineering and maintenance, and how much are you looking at their need to be able to rotate people for respite and, indeed, pick up some of that industry capability to put forward into operational level maintenance to allow that kind of rotation of workforce?

Mrs McKinnie: Within the DMO we work closely with the three services for them to put people into the DMO. The major issue that we have is really the availability of their people to move into various slots in the DMO, particularly when we do have high operational tempos. Certainly, if the three services require people to be placed into the DMO for experience then we would welcome those people being involved.

Senator FAWCETT: I guess the key issue though is not so much the DMO Defence interaction. The DMO are the ones who contract and often it is the contractor's willingness, whether it is IP or other issues, to have uniformed people embedded or to provide people going forward. So I guess my question is not so much on your relationship with Defence but your relationship with industry. How much are you taking Defence's requirements around that? Ultimately, that is the only way we are going to really build this engineering and specialist capability.

Mrs McKinnie: If Defence would like to have people inserted into the maintenance organisation of a contractor then we are happy to negotiate that. The real issue for us in negotiating those arrangements with the contractors is providing a level of certainty over those people being provided by the military to fill those positions. That usually runs into how we are going to manage the risk associated with that should we not actually have the people to go there. We have negotiated arrangements where we have incorporated military people into the contractor's workforce with provisions in the event that we cannot provide the people. We have done that.

Senator FAWCETT: In the light of Rizzo, have you had approaches from the capability managers to look at change in contracts to make this allowable?

Mr King: I can answer that, because I am with Chief of Navy and I share the Rizzo implementation. Chief of Navy is obviously the lead. We are definitely looking at that. But, for example, in the AWD alliance, I forget the number of positions but a significant number of positions are resourced from the military and/or public service. I think perhaps to make it clear, although DMO is an organisation, the military people that move into it might have been in the Chief of Navy's direct organisation, if you like, yesterday and with us today, and they will be back with the Chief of Navy tomorrow. It is a continuum of military people that we see as an integrated plan to encourage their engineering.

Mrs McKinnie: I think one of the key issues we did learn from the amphibian fleet support SPO and that we are trying to get a better handle on is ensuring that the boundary between work that we do in the DMO and work that we do in industry is not pushed too far into having industry do too much, where we lose our informed customer status, or push it too far so that we are doing work that industry would better placed to do. As we are going through, particularly under the Strategic Reform Program, and looking at how we might institute reform, we are saying, 'Let's test where those boundaries are. If we have put them too far one way or the other then let's move them to a more optimal point.'

Senator FAWCETT: Would that optimal point potentially include—and obviously circumstances will differ—a concept where you insource industry capacity as opposed to outsourcing the maintenance role or the engineering role?

Mrs McKinnie: Quite possibly.

Senator FAWCETT: Coming back to my original question to Mr King around the gate review, within the sustainment space, when you are doing procurement-like activities, how are you trying to capture lessons learned

and apply that same rigour of review to procurement done through the running system like it is done through the major capital procurement?

Mrs McKinnie: We do not have similar processes like gate reviews in the sustainment area. I guess most of the contracts we let in sustainment tend to be smaller contracts.

Senator FAWCETT: What I am talking about here, though, is procurement that sustainment organisations are doing.

Mr King: It is subject to the same charter. If it is a procurement being exercised by the sustainment organisation, it still comes under that same charter.

Senator FAWCETT: So, right at the scoping stage, when people are deciding how they are going to do it and whether they will do a fleet-wide, partial progressive model or give up an asset for prototyping, that would be subject to a gate review before it is approved?

Mr King: In terms of how the asset is going to be released?

Senator FAWCETT: In terms of the whole approach to how you are going to run the procurement, because it is quite a different model.

Mr King: If it is a procurement and if it comes out of the DCP, even though it is going to be managed by a sustainment organisation, it is still subject to the same reviews and gate reviews.

Mrs McKinnie: To address that, we are currently developing guidance. We are coming up with the concept of sustainment planning strategies. The intention is that, for each of the major fleets that we manage, they will take a long-term view of that fleet and work through how we are going to support it in the longer term. They look at all of the upgrades we see coming through the DCP or other areas that are planned and establish, if you like, an integrated master schedule that looks at all of the things that we know we will be doing on those platforms to plan them out. Also, we are in a position to work with the capability managers to identify when they may need to release those platforms and to try to optimise the amount of time we take them offline in order to do the upgrades. That piece of work to establish the guidance under which our SPOs will operate to move to a more strategic, well-planned basis for operating fleets is underway at the moment. As a part of that, there may be a series of reviews that we put in place to oversee significant decisions that need to be made, but we have not got that detail.

Senator FAWCETT: The last question I have goes to early engagement with industry. We had a discussion on Wednesday about how soon you can actually start bounding your procurement decisions so that industry has some certainty on where it tools up. Now that you are here, Mr King, I would be interested to hear your perspective given that you are an industry division at the moment. What we are hearing from industry is that they cannot take the current PICs and SICs to a bank. They are saying, 'If we want to be able to actually plan our workload and plan our investments, we will need to have some more certainty around whether this project that is in the DCP is going to be an FMS or a COTS, offshore or onshore maintenance, whether it is going to be modified here or developmental here,' so that they know how they can start feeding into the process to measure workload and how they can start tooling up. Is there a case for part of industry division to be more closely linked with capability development so that capability development is actually looking at industry capability as part of government's decisions? I say this in light of decisions of countries like Korea and Japan. For example, with the AH64 in Japan, they pay probably twice per unit what they would have to pay if they bought an FMS, specifically so that they can build their aerospace industry base. That is a very deliberate decision they have taken. We do not appear to make that very early decision that bounds our procurement approach based on our understanding of industry capacity.

Mr King: PICs and SICs, of course, are part of our industry landscape around what the government and Defence think are critical capabilities for Australia. They are established and published. If I went back about 10 years, I probably appeared in front of one of these predecessor committees as an industry representative and said very similar things. I do not deny the point they are making. There is a bit of a difference, though, between a strategic plan and a tactical response to a DCP by DCP entry. On the strategic industry engagement, certainly about 12 months or so ago, strategy group has also taken responsibility for strategic industry planning. That is broadening that horizon about what industry talks about: what am I investing in this country for and why, and what certainly do I have.

I know that we could do some better things, but I would just like to paint out the landscape that the Australian defence industry has when compared with broader Australian industry. We have almost reliably 54 per cent of our budget being spent in Australia and, of that, nearly half of it being spent on SMEs. Apart from a slight downturn next year, we expect year-on-year growth for the next decade. That is a pretty strong and good tapestry in which

to conduct your business when compared to broader industry, which has to engage with pressures like financial crisis and so on.

What we do need to pay a lot of attention to is the strategic capabilities we are going to develop—what is really important to us as a nation, what gives us that edge that we need or that sustainable defence base. If we look at our sustainment industry base—the sustaining of air platforms, maritime platforms and so on—it is very stable work and very predictable work. It has not varied much at all. It continues to grow and our projections are that it will continue to grow. The area that industry probably have the most concern about is acquisition—where SMEs with particular skills and particular technologies would like to introduce those through the Australian Defence Force into the world market. The PICs and SICs are definitely a step in the right direction there. We have the global supply chain initiative that we put in place, which is to get work for our industry beyond our shores. That has developed I think \$350 million worth of contracts already. In terms of what is coming in the DCP and what their engagement may be, I am sure it was mentioned on Wednesday that we have the environmental working groups, where they get to impact on what we should be looking for. Then, in the DMO's case, of course, when we provide advice to government we also provide advice to government about the Australian industry impacts of decisions, positive or negative. So I think when you couple all of the different aspects together—the certainty of work or almost certainty of work, the focus on skill sets and development of skill sets, the SADI program, developing skills in industry, the global supply chain support, the DEU or Defence Export Unit that we stood up—I think broadly we are engaging in most respects with industry and I would be really interested in the specifics that they do not think we are engaging in. Let me put it another way. What other customer—

Senator MARK BISHOP: In response to that specific point, Mr King, what they are saying is that there needs to be greater focus on the period prior to first pass to develop solution options and more appropriate equipment acquisition strategies. When we put that to Air Marshal Harvey on Wednesday, he and his colleagues said, 'Yes, we understand that, but there are serious probity issues and serious independence issues in terms of non-desire on the part of government to disclose information that might be used in an anti-competitive sense or a pro particular company positioning.' That was what they said. That was the response.

Mr King: Can we move away from the strategy and into what I would call the tactical response. An opportunity comes up in the DCP to provide something. The first place they can engage is, as I understand it, through the environmental working group, with what is being looked at in each environment—land, maritime or whatever. Then, quite often, somewhere in that first or second pass or even before that, we will put out a request for information—

Senator MARK BISHOP: Can you stop there. That is what Air Marshal Harvey said on Wednesday. The request for information or tender proposal was about to go out in respect of a particular project. Their response was, 'No, that is too late. It should be well prior to that, because the special expertise or knowledge that we bring to the table is (1) we are subunits of multinationals; (2) we may well have had detailed exposure to similar or the same programs overseas and hence we have experience,' and they would like the opportunity to put that out well prior to the stage you now mention so that that in a general or conceptual or strategic sense that can go into the mix.

Air Marshal Harvey: Can I add, though, that, as well as the formal environmental working groups, the formal RFI that goes out and the ITRs as well, we are happy for informal engagement, one on one, of the desk officers with industry. The probity concern is to make sure that we treat everybody equally. We cannot show favouritism. If someone comes in and says, 'We have the solution,' we cannot shape our proposed way ahead to match that company.

Senator MARK BISHOP: We are having the same discussion now. Mr King was outlining where he thinks it is currently appropriate—

Mr King: If I have a view, it is that sometimes a certain element of industry shapes CDG too much. They might have got in there very effectively lobbying for their approach and their solution. Quite honestly, if we talk about contestability inside the department, I find myself putting the case to a capability manager or a desk officer area in John's area: 'Well, I know that looks like a very good solution—A, B and C; build it here or buy it there or do whatever.' I am quite often arguing, 'I understand that, but we need to go to the market because there might be even brighter ideas yet that we have not investigated.'

I think if you look at Australian defence industry and their opportunities, and the engagement between the department and industry, it is pretty open. Most countries would welcome the DCP. We have a DCP. I can say from my industry experience that we only treated the immediate few years of the DCP as our real planning tool. The 10-year DCP gave us a view that we might be able to grow our workforce from 1,000 to 1,500. There are a couple of opportunities coming up and this is the space that we are in, but that is a long way away and I am

looking at this next two to three years. What am I really going to be able to tender for, what do I need to have the skill sets for to take on that work? So, as that DCP comes in, you get much more focused on where you are going to invest your marketing money and your tendering money and everything else in that area. That was certainly my experience with industry.

The starting point is that we have a DCP out there and that is a very informative document for industry—schedules, bands of costs, types of capabilities being looked for. Then we have the environmental working groups that they work through. Then they have the ability at any time to go in and talk to desk officers, capability managers and indeed DMO about skills, capabilities and capacities they are offering. They interact with our industry group in DMO. Then we shape further through going to non-binding requests for information. They are non-binding proposals. I do not know if you have been to a tender briefing, but at the very point that industry say they want to have more engagement, they often go silent and there is a very good reason. A long way out, they want to shape: 'You really need my product, not their product, because of this.' But then, as you get closer in towards the actual process where you are going to go to the market, they become increasingly more silent. There is a very good reason. They want to keep the offer they are going to make—

Senator MARK BISHOP: Secret.

Mr King: It is to their commercial advantage and they want to maximise that. So you run into this point as you transition—

Senator MARK BISHOP: Let me make this suggestion, because we had a lengthy discussion on Wednesday around this topic and you have now supplemented it with those four things you just put on the table—you say there are significant amounts of industry engagement at different times and on different levels. I do accept that unreservedly. Having said that, they made some very strong comments to us on the issue of greater focus on the period prior to first pass to develop solution options and more appropriate equipment acquisition strategies. I am not advocating their case, but I am hearing them say that they are dissatisfied with that space that we are talking about. The committee may or may not have a view on this in due course. I simply think it might be a useful idea, when you have each of the CEOs in, as you do quarterly or next time, to say to them, 'Look me in the eyes and tell me what you told Senator Eggleston's committee in private and I will think about it,' so that we do not have to have this backwards and forwards—

Mr King: I would be happy to do that.

Senator MARK BISHOP: without telling you how to suck eggs.

Mr King: We do want a more mature and more capable way of interacting with industry. We do not want to waste their time, but we want them to compete. And I will talk to them about acquisition strategy. My bottom line is twofold in this respect. I prefer open tendering or going to the market on every occasion, other than when there really is only one solution left. But, broadly, I prefer to be in the marketplace and, broadly, we very much like to give Australian industry every opportunity to participate. As you know, we run the quarterly CEO meetings and I will put it on the agenda for the next meeting—absolutely.

Senator FAWCETT: On the point you made then about preferring to go to the market, does that also apply to a UOR? If a capability manager has a real-time need and says, 'Our allies are using product X and I would like product X'—

Mr King: If we have people in harm's way and the capability manager says, 'I need that product for my soldier,' or whatever, we go and get it.

Senator FAWCETT: Even if there was an existing program that they had to change halfway through because of a new need and he said, 'Let's stop the market evaluation—the need is now this,' he would have sway in that situation?

Mr King: He has sway. The way I see it—and this is my personal view—the only real output of Defence is the three capabilities in operations: land, sea and air. That is our output. We do not exist for any other reason than to make that force available for Australia. Our obligation is to give that force the equipment they need and the protection that they need. I am not in the game of trying to second-guess a capability manager who is responsible for troops or pilots or whatever and who says, 'I must have that to protect or to pursue the obligation I have to government.' I am not in a position to, I do not want to be in the position to and I would never pretend to be in the position of second-guessing that manager needing that. That is why that manager is a statutory officeholder and that is why he has that responsibility. I have to fill that need. As you come down to that urgency, we do get into the area of contestability: 'I only want this truck.' I might say to the Chief of Army, 'I think it is in your interest.' By the way, anything that I suggest or we suggest as an organisation, we only suggest because we think it is in the capability manager's interest, not because we think it is good for DMO. If we suggest that it is good to go to an

open tender, it is because we think we will be able to deliver a better result for the capability manager. That is the only reason. We are only motivated by giving the capability manager the best outcome we think we can.

Mrs McKinnie: Just recently a tendering process was underway for a major project. An urgent operational requirement came up. We fast-tracked the finalisation of that selection process and did a rapid acquisition under different terms than we had intended for the longer-term acquisition so that we could deliver the equipment into theatre very quickly. That worked particularly well.

Senator LUDLAM: I am interested in the concept of interoperability and what it means for your day-to-day work. The concept was floated again in the last AUSMIN joint communique on 15 September. In fact, it has its own little section. For the purposes of what we have been debating in this inquiry, what does interoperability mean?

Air Marshal Harvey: Interoperability occurs at a number of levels. In general terms, we have to make sure that any piece of equipment we acquire is interoperable with the system itself that it operates—for example, the radios et cetera in vehicles, to make sure they are compatible with that. We have to make sure that it operates with our own forces and that it also operates with forces of any allies that we are likely to work with as well. So interoperability occurs at a number of levels and can be achieved through common equipment, equivalent equipment or even equipment that just works to the same standards.

Senator LUDLAM: What does it mean in the context of the way that it is referred to in the AUSMIN joint communique, which does not refer to a systems-specific level? It makes it sound as though the entire ADF is being retooled to be interoperable with the United States.

Air Marshal Harvey: At the strategic level it is to ensure that our forces can work in conjunction with US forces when required to.

Senator LUDLAM: It is not really spoken of much. It is the kind of thing where we need to read between the lines. It has not come up at all, as far as I am aware, in the course of the work of this committee, although I am aware that I have missed some bits and pieces. To me, it seems that, if you are required to do that and if that is part of your mission statement, that must colour nearly every decision that gets made in the procurement space—and sustainment, for that matter.

Mr King: I do not think so. I am not in Operations; I am an engineer. But I think there are three broad levels of interoperability: there is what you might call operational interoperability, which is practices and procedures that you use, and then there is technical interoperability—can one radio talk to another—and then probably, in the support area, support into operations. Many of the allies are interoperable without running exactly the same pieces of kit.

Senator LUDLAM: But we are not out procuring Russian military equipment, are we?

Air Marshal Harvey: No, we are not.

Senator LUDLAM: I am speaking particularly about our largest and most important military ally, I guess—the United States. How much does the requirement to be interoperable with United States military assets, customs and conventions colour the work that you both do?

Air Marshal Harvey: It is a significant consideration. As we said, at the strategic level we need to be able to work with the US. However, it is not a driver of the outcome; it is just to make sure that, if required, we can work with the US or other allies as required in the future. So it is a consideration, but it is not the key driver.

Senator LUDLAM: I am a bit surprised. I would have thought it was a key driver, to be honest. The key driver behind the white paper, for example, seemed to be that we were able, by 2030, to mount expeditionary invasions of places with the United States; it was not really to be a stand-alone military force, as far as I could tell. Surely that is a key driver.

Mr King: I thought the inference you had, but I may have been wrong, was that, because we need to be interoperable, it drives the actual piece of equipment we buy.

Senator LUDLAM: Yes, that is where I started.

Mr King: What I am saying is that that is not necessarily correct. It drives the fact that we have to buy equipment that is interoperable, but it does not mean that it is US sourced, for example. The allies in general have developed systems and equipment that is interoperable. The data links, for example, work to a standard and once you meet that standard you are interoperable. The radios are chosen with certain characteristics and frequencies and, so long as you adhere to them, you can be interoperable.

Air Marshal Harvey: It goes much further than just equipment as well. You want to use common fuels, common ammunition and common fuel receptacles. It is much broader than just equipment. I was trying to get to

the point that, if people have the idea that 'interoperable' means the same systems, that is not the point. It is just that they are able to work together.

Senator LUDLAM: Yes, I get that. It is about compatibility more than anything else. But these standards are being handed to us, aren't they—we are not, presumably, having a huge say. We are interoperable with them, not the other way around.

Air Marshal Harvey: No, most of the standards are developed on a collaborative basis. There are some that are NATO standards and we work with those. But each of the services has its own standardisation committee. I used to be the chair of the air standardisation committee with the five countries involved and we worked together on that. It is interoperability so that we can work together. As I said on the fuel, it is connectors and those sorts of things. That is why we work together to make sure that we are interoperable but not the same.

Senator LUDLAM: What you are describing there is at a very technical level. In the broader picture, though, how much contact would you have with the United States military officials to make sure that at various levels through the hierarchy the ADF is interoperable with the US?

Air Marshal Harvey: In each of our projects we will consider the interoperability aspects of the potential purchase. As I say, we go to first pass with a number of options and one of the considerations of each of those options is whether we will be able to interoperate with that with our allies as required.

Senator LUDLAM: I am speaking particularly of the US government, though—you keep trying to generalise it and I am trying to make it more specific. These are the ones that we have and that we are signed up to various treaties and agreements with and so on. On the giant flow chart that we have been discussing—I am trying to put this question to you in a way that is comprehensible—how often do you refer back particular bits and pieces of decision making to US military officials or defence contractors, for example?

Mr King: I am not too sure where the question is going. In the broader coordination role, for example, we have bilateral discussions annually with my equivalent in the US Department of Defense looking at broader issues of harmonisation of requirements and so on. If you are asking whether, when we go to buy a particular piece of equipment, we consult with the US on what we should buy: no. We know the standards that we need to work to. These are published standards to make us interoperable in a technical sense with a communications link. They do not play a role in selecting that equipment. We have the sovereign responsibility to do that.

Senator LUDLAM: They play a role in setting the standards that we then have to meet?

Mr King: A lot of the standards are NATO set. You can hardly be interoperable unless everybody agrees to be interoperable. Having said that, it would not surprise you that the countries that are spending the most money on developing standards or developing equipment have a big say in what that standard is going to look like.

Senator LUDLAM: The US government spends more than on military purchases than the rest of the planet combined, so that is why I tend to head back in that direction. Do you have something to add?

Air Marshal Harvey: I have an extract from the Defence white paper 2009 defining 'interoperable capability'. Interoperability is principally concerned with the ability of personnel and systems of different nations and agencies to work effectively together safely and securely. Where it makes sense to do so and is cost-effective and in keeping with the policy settings in the white paper, capabilities and systems should be designed to be interoperable from conception and not as an afterthought in the capability development process. The key point there is that we need to think about interoperability from the very start of the process, not at the back end once you have bought something and it would be expensive to modify.

Senator LUDLAM: The last batch of questions from me relates to something that you have mentioned in passing, but I do not think the committee has spent much time thinking about it. It is cyber warfare assets or however you define it. Again, it gets a little chapter in the AUSMIN communique. I am just wondering if you can step through—because this is stuff that is right through the services—whether there are any peculiar or specific procurement practices that apply to that area that we should be discussing.

Air Marshal Harvey: All projects, even the classified projects and intelligence-related processes, follow through the normal two-pass process.

Mr King: Obviously, the exposure of some of those to the broader community is not done for security reasons, but they follow the same management and rigour that we would expect.

Senator LUDLAM: I think it is relatively well understood what kinds of offensive and defensive assets in terms of traditional hardware we are in the market for and the process of putting it together. But it is probably much less well understood what we are doing in that other domain. What can you tell us on the public record,

without taking the committee in camera, about offensive cyber capabilities that the Australian government is deploying or developing?

Air Marshal Harvey: That is not my area of responsibility and I expect it is nothing that—

Senator LUDLAM: Is there someone out the back who has been waiting around all day to take these questions?

Mr King: It is managed by a separate area of Defence.

Senator LUDLAM: Do you want to point that area out to us? Who is that?

Air Marshal Harvey: We will get back to you, Senator.

Senator LUDLAM: That procurement is managed by a separate area of Defence? Is that part of your bailiwick or not?

Mr King: No, we and the DMO support that area for their acquisition. Any sensitive area of acquisition is still supported by the DMO processes broadly.

Senator LUDLAM: But, when you say it is separate people, they were not people who were invited along today?

Mr King: No, you were asking about a capability aspiration. They are not here today.

Senator LUDLAM: What do you mean?

Mr King: You were asking about a particular element of the cyber capability that might be sought.

Senator LUDLAM: It is not even a particular element. I am asking very general questions at this stage. If I had asked you a question about Navy or Air Force, you could bring the right folk to the table.

Mr King: I cannot on this occasion.

Senator LUDLAM: Can you tell us what the name of the area is? Where is it in that gigantic flow chart? Whose responsibility is it?

Mr King: That flow chart is not specific. That flow chart is for acquisition, full stop. It does not name each capability manager. It is in the intelligence and security area of Defence.

Senator LUDLAM: Is there any reason that they were not invited along today?

Mr King: I do not know.

Senator LUDLAM: You chose who you would bring.

Air Marshal Harvey: The strategy group came in on Wednesday morning. As to the capability managers, intelligence and security is one of those areas. There was a representative here on Wednesday afternoon, but no questions were asked at the time.

Senator LUDLAM: I missed my opportunity. I might put some bits and pieces on notice for you. I will leave it there. Thank you very much.

Senator XENOPHON: I do not know if it is relevant at this time to raise some of the matters raised in the ANAO audit. I do not think it has been covered. An ANAO audit of the life cycle of 20 major acquisitions for the Navy established that Navy CDG and DMO did not have a shared understanding of the risks to the generation of the expected capability for Navy projects and had not taken shared responsibility for mitigating those risks. That was a comment made by the Auditor-General on 11 August this year. Can I ask how the witnesses would respond to that criticism?

Mr King: I am familiar with the ANAO report. Certainly we had to address it, and we have. I think it related to a period around the time when we formalised the first and second pass process and the Kinnaird report, where the centralisation of the capability development under CDG group and the DMO operating as the acquisition organisation appeared to disenfranchise the capability managers in the process. That led to a period where, despite us having the processes in place, we were not interacting, coordinating and integrating as well as we might.

Senator XENOPHON: So you are saying that the processes were in place, but the processes were not being implemented or undertaken. Is that what you are saying?

Mr King: As well as they might. So, particularly in the maritime space, I think what had happened was that the customer base—the capability manager—had developed a feeling that DMO would just pass something or throw something over the fence at them and they would have to take it. I think they had fallen into a mode of 'Well, I'll see if I like it when I get it.' I am being very simple here.

Senator XENOPHON: Sure.

Mr King: I think that, over the last two or three years, we have really broken down that process. I mentioned earlier that we have introduced the project directives and we have introduced the fact that the capability manager is a cosignatory to those and to the MAAs. We have reinforced the integrated product teams that we call the project management stakeholder groups. I think that every indication is that things have improved dramatically. One tangible example I can give on that was the problems we were having with the FFG program. We were late in delivering it. The capability manager at that period was unhappy. Industry was unhappy. It became a project of concern. We got everybody focused on remediating the project and I think now we can say that those ships are a great success. They are the best FFGs in the world. We have had one on deployment to the Middle East and we have had one in operations off Hawaii. I think the ANAO was reporting a state that we were in. I do not dispute that. I think we have done a lot better and moved a lot further on than where we were then.

Senator XENOPHON: I appreciate your candour in saying that there were processes in place but they were not being carried out. You are saying that that would not happen now—if there are processes, they would be adhered to and implemented?

Mr King: I think the processes were being carried out, but with anything you do it is a matter of the culture and the attitude of the people in the organisation who are executing them. I think we had allowed that to fall into a state that was not as good as it could have been. I think we are working very hard and have worked very hard and have already made significant improvements. In particular, DMO is responding to and engaging with our capability managers and making sure that they are fully engaged and fully understand what we are doing and the challenges we are facing. I would be fairly confident or I would like to think that they would agree that we are making big steps forward in that direction.

Senator XENOPHON: Can I take you to three concerns that were raised by the ANAO in their evidence of 11 August 2011. I will take you to the first one. The ANAO stated that the improvements in acquisition outcomes would not take place without greater discipline by Defence to implement its own policies.

Mr King: I am sorry—I missed that.

Senator XENOPHON: Maybe I will run through all three. These were three matters that the ANAO referred to on 11 August. It is in the *Hansard*. They said that improvements in acquisition outcomes would not take place without (1) greater discipline by Defence to implement its own policies; (2) improved communication and collaboration across Defence during a project's life cycle; and (3) maintenance of adequate records to support appropriate monitoring of capability development and performance. I think the latter one has been dealt with in some questions from Senator Humphries. Could you address those in order?

Mr King: Certainly the adherence to policies and procedures has been re-emphasised. I know what they are saying, but it is not just a matter of going through the process; it is a matter of the commitment of the culture behind it to addressing the issues and resolving them. That is certainly in train.

Air Marshal Harvey: I would add that most of those comments came from the original audit of the two-pass process back in 2008-09. I acknowledged this morning that they did identify some issues there in terms of documentation of our processes. It was not as good as it should be. We have certainly been working on that process.

Senator XENOPHON: I think some of my colleagues—in particular, Senator Humphries—have raised that during the course of the day.

Mr King: The second one, I believe, was the communication. I believe you raised that.

Senator XENOPHON: And collaboration.

Air Marshal Harvey: Yes, that is right. I think again that post 2008-09 we have increased the role of the capability manager. He explicitly signs off on the MAA now. The joint project directive certainly clearly specifies the role of the capability manager in actually bringing all of the elements together. The revamped capability development steering group, the project manager steering group and the three-star steering groups that I sit on all have capability manager representation.

Senator XENOPHON: The Black review found that committees tend to function to confuse accountability, blur strategic focus and disperse decision-making capacity. How do you respond to findings that committees serve to confuse individual accountabilities? Do you think that was a valid criticism from the Black review? How are things being done differently now?

Air Marshal Harvey: The minister's response to the outcomes of the Black review was only announced on 9 August, so Defence is working through the implications of that. We will be reviewing the committee structure. Like most complex things, it is a matter of getting the balance right. While it is good to have individual

accountability and individual responsibility, you want that decision to be informed by as broad a range of groups as possible. I see our committees as good in that you get all of the representatives there, but at the end of the day you need one person accountable for that. It is that balance that they will be trying to strike as they implement the outcomes of the Black review. I chair a number of relatively large committees and they do not particularly worry me. I like to get all of the experts at the table with a relevant view. But, at the end of the day, as the chair of the committee I make the decision and I am accountable for that. But I do like to have all of the views and all of the key stakeholders.

Senator XENOPHON: Sure. Given that we are talking about 9 August, when do you think there will be a comprehensive response to the matters raised in the Black review?

Air Marshal Harvey: I think one of the considerations is the new secretary. When he gets his feet fully under the table, it will be a key role for him to implement that, I imagine. I imagine that will be a key consideration for him as he takes over.

Senator XENOPHON: Can I go to a general question. It is not intended to be inflammatory. Some who have a particular interest in Defence have made a point. I will put it simplistically. How many people work in DMO—is it 8,000?

Mr King: It is 7,500.

Senator XENOPHON: It is simplistic, but can I put it to you. They say that the UK has a much bigger defence budget, obviously, and their equivalent body is much smaller than the DMO. How do you respond to that criticism? I am sure there is an answer to it, but—

Mr King: It is quite inflammatory, but I will be measured in my response.

Senator XENOPHON: I am putting to you what has been put to me. That is why I have couched it in those terms. I am sure there is a logical answer to it. That has been one of the things that has been put to me on several occasions.

Mr King: I will answer you. They say you should never measure your own success by someone else's failure. However, we are leaner than both the UK and America. The American acquisition organisation is 150,000 and we are 7,000. The UK I think is larger. I forget the number, but the thing you have to be conscious of in the different organisational structures is what body of work the equivalent organisation does in that organisation and what body of work we do in our organisation. I am quite convinced from the numbers we have that we are quite lean. Our budget is \$11 billion. We have about 7,000, as I said, or 7,500 people. That is \$1.54 million per person that we manage. The UK MOD has a \$21 billion budget with 21,000 people. That means each person is managing \$1 million worth of business. It is about the same in the US. It is about the same per capita management. So we are actually managing about 50 per cent more per person in the organisation. As I said, you should not measure your success by others' failure. We compare that to BHP Billiton. On average they have about \$60 billion in revenue and they have 40,000 staff. So they do \$1.58 million per person and we do \$1.54 million. Woodside Petroleum is \$1.65 million. The leaner organisation seems to be Rio Tinto at \$2.36 million. But we do not know how much they outsource and how much they manage. For example, we could make our numbers look a lot better by outsourcing more of our core capability. The question would be whether it is in the best interest of the nation to do that or would we be in a position that was mentioned earlier by Senator Fawcett, for example, where we had outsourced too much and did not have the residual capability left to actually know what we were managing and undertaking. My response is that we are leaner than our equivalents in the Western world and we are about on par with an industry standard of a large organisation, but we could always look to do better.

Senator XENOPHON: I am grateful for the answer, because I think that has put it in a good context. Thank you for that. I have no further questions at this stage.

Senator HUMPHRIES: I want to go to the Air Warfare Destroyer. It was a project that was at one stage held up as demonstrating good process—I think it had been back to government seven times or thereabouts in order to get it right. But we have seen recently problems with the timeliness of that program. Can you give us an update on what we have learned from those more recent issues, if anything, and how that has been reflected in any of the processes that we have talked about today?

Mr King: Before I introduce a colleague I will take responsibility, because I was the responsible officer for the first and second pass, although it would have been nice to flick it to them and make them accountable. I think we did just about everything we thought we could do in standing up that project to give it the most chance of success. But we always understood that there would be challenges. Let me go back to some of the things that industry said they wanted to do. We invited industry to participate in the process prior to the first pass. We down-selected to the industry participants at first pass. We paid all of their costs and ours to go from first pass to second

pass. We compared a developmental program with a quasi-off-the-shelf, modified-in-Australia option. We went back to government with an incredibly extensive risk register, risk evaluation and planning schedule. We compared the schedule to overseas. I do not think there was much that we could have left undone in that process in terms of adhering to the spirit and the process that was required. What I think basically we encountered in there was a risk that I did not expect, which was that a part of our industry base had lost some of the skills that we thought it had and I think industry thought it had. We underestimated how quickly a skill set can atrophy if it is not being used. That is the broad overview, just to take responsibility. I will pass to my colleague for the detail on the state of the project.

Mr Croser: Going back to the industry base, I think we have learned something from this program about how to evaluate the capability but also the capacity of the industries that are supporting the program. It is very important that it is contextually based on time. Things do change. There are multiple levels of structures within organisations that underpin that capability. For instance, it is not just about the blue-collar worker or the technician or the engineer; it is about the management structures and the ability to be agile in an environment that is building a very complex ship, as a subcontractor and also within the alliance. I think it is really important that we understand that it is not simply about a level of resource—of say 300 in a shipyard. It is about the structure of that resource, its experience, its management structure and its ability to understand as it is working through the program what effect brings about what change that needs to be made to meet the challenge of a new program.

We have not built a ship of this complexity in Australia for a very long time, if at all. The submarine was a complex program. It is similar in complexity, but it is a different vessel and it was at a different time. We have built smaller ships, but we have never built them under a block structure, as we have here. Most ships of the past were built plate by plate and welded or riveted together and basically built up as a single-place structure. This is being built across many shipyards throughout Australia. They are using many subcontractors. It is a very big logistics task to bring it together and integrate it. Our focus is upon having the diversity in that structure to be able to manage it centrally from the AWD alliance, which is formed for a very good reason—it brings together the central industries that are managing the program effectively and manages the risk of bringing together multiple sites and multiple blocks and then brings it to an integration point and sets it to work. I just want to bring that complexity to light.

Senator HUMPHRIES: Does the process of putting the AWD program in place follow the capability development manual?

Mr King: At the time, yes.

Senator HUMPHRIES: Given that there has obviously been a problem with the process, how has the next iteration of the manual—the handbook—been changed to reflect those problems?

Mr King: I do not think it can, and it has not. It would not address it. The question you rightly put is: what did you get wrong? It was not about process. It was about an assessment that we undertook about the risk of taking on a shipbuilding program in Australia—as it turned out, two shipbuilding programs concurrently—and underestimating the risk of the impact that would have in the yard, which was until that time our premier surface ship construction yard. It was not that the process was flawed; it was that the judgments were flawed.

Senator HUMPHRIES: While we have you here, is there any update on the extent of delay with AWD at this point in time? It was one to two years, I think, last time.

Mr Croser: Nothing has changed with respect to that. In fact, effectively we are running on a cycle at the moment of an integrated master schedule. The indicators are that we are mitigating risks and we are moving forward in a positive way to, let us say, an internal schedule that we want to drive for so that we can mitigate some of those risks. But we have a lot of the program to go. The role of the alliance in this is really important. It is about making sure that we identify those risks, treat them and bring them back into control. It is a bit of a seesaw. You identify an issue, you bring it back into control as much as you can and you move forward. Right now, we are confident that where we sit with the program and the announcements that were made in May is where we are. We are moving forward with contractual arrangements around blocks for ship 2 and ship 3. Ship 1 is the lessons learned for ship 2 and ship 3. So the plan is moving forward and the alliance structure is working well in managing forward our projections. By December we hope to have the next master schedule published, which will take into account all of the things that we are putting in place contractually for ship 1, ship 2 and ship 3.

Senator HUMPHRIES: Are any of the blocks being built in Spain at this point?

Mr Croser: At this time we have five keel blocks starting in Spain. They were set to work in the last couple of weeks. We also have the sonar block—

Mr King: They have started work.

Mr Croser: Yes, they have already started work. That is part of the restructured plan that was announced in May.

Senator FAWCETT: Can I go back to something you were talking about. You mentioned judgement did not perhaps pick up the fact that those skills around welding that affected the shipbuilding had atrophied in industry. I would be interested in both CDG's and DMO's perspective as to whether you see the maintenance of an industry skill set such as that as the responsibility of industry or of government. That goes to the heart of whether we view industry as part of our defence capability. Do we just say it is all competition and, if they cannot stump it up, we will go offshore or do you take the approach of the Koreans and Japanese, for example—they actually bound their procurement to make sure there is a steady and ongoing workload to maintain a set of skills in the country. I would be interested in your view as to whether you see that it should have been our responsibility to work within industry and make sure those skills remained or whether we should have assessed and recognised the fact that industry no longer had them.

Mr King: First of all, for example, as Peter was saying, it was not just about blue-collar skills. It was the whole management and execution structure and how it all works and comes together. I do not think in a sense that we have an obligation to industry and therefore we pursue that. But we do have an obligation to consider our national interest. Industry plays a big role in our national interest. So, to that extent, we need to be clear in our minds as a nation about the skills that we think are important to keep active and alive for cases of conflict where we might need a rapid expansion or be able to respond. If it were a point response that we would have, we could rely on our allies to supply materiel to us. The concern that I personally hold is that, if we have a broader international response that we need to respond to, we may be very reliant on our own industry base to provide ongoing support and, indeed, new equipment to take on that task. My personal leaning—and I stress that it is my personal leaning—is that we need to be carefully planning those skill sets that we need in our industry to support the role as a nation we would like industry to play as we go forward.

Senator FAWCETT: Is LAND 121 a fairly classic example on the desire to have an offshore option? We have invested some millions of dollars in JLTV, which now looks as though it is possibly going to be defunded by the US because it is too heavy and does not meet the needs even of their users. Yet it has been quite a battle almost for industry to get manufactured and supported capability in Australia on the table and considered by government when that is something that clearly is going to go to all of the points that have just been raised about not only keeping some skill sets in manufacturing but also keeping the whole management and procurement capability within industry on a more level footing.

Mr King: All of those things need to be considered. The only thing reason I am hesitating there is that we are about to finalise our recommendation to government on that matter, so I think—

Senator FAWCETT: Sure. I do not expect you to highlight that. But it goes to the point: shouldn't part of our strategic consideration of defence capability be where industry is at? If we want the capability, shouldn't we bound some of our procurement decisions to make sure that they have the workload to sustain both the technical management and the engineering skill sets that we may want to draw on into the future?

Mr King: As I said, so long as we approach it from the point of view that we as a nation make the decisions we want in our interest and not in the pursuit of industry's interest then that is fine. I think that, broadly, is considered. The difficulty you clearly get, for example, as in shipbuilding, is in big lumpy projects where you have to ramp up very large numbers of people to take on a very complex project.

Senator FAWCETT: Can I interrupt. Are they only lumpy, though, because that is the way we have defined them? Surely if we said, 'We only want to build one ship every two years over X number of years,' that would actually smooth that whole cycle out and we would then have an ongoing update or replacement program as opposed to a block build, atrophy of skills and rapid ramp-up?

Mr King: Ultimately, you have to balance it, of course, against the nation's capacity and budget for such a program—and a capability gap. If we had had a perfect world when we were entering into the AWD and LHD projects in 2004, we inside DMO at that time—and I am pretty sure inside Defence in general—would have loved to have been able to stagger those projects by about eight or 10 years, because clearly we had the problem of two large shipbuilding projects sitting right on top of each other because of a need, which is an output need, to have two new ship classes. It is quite apparent that we need them with the ageing amphibious fleet and the FFGs, of course, in the tail end of their life. They had to come together for a capability need. If we were just applying an industry consideration, for example, we would have loved to have staggered those projects. But it is a complication for the nation.

Senator HUMPHRIES: I want to ask about the impact of the SRP on the minor capital works projects that are approved. I know that there has been a recent change that provides for projects between, I think, \$8 million and \$20 million to go through the first- and second-pass approval process. The SRP obviously has an impact across the board in terms of how resources are allocated. Does the SRP and the savings required from that have any impact on that new process with respect to minor capital works?

Mr King: I am not aware of any impact. The SRP is in place essentially so that we can save costs in one area in order to ensure that acquisition areas get the funding they want. I am not aware of any reductions in that respect.

Air Marshal Harvey: I am not aware of anything other than the general requirement for cost-conscious Defence, which applies to everything we do. I am not aware of anything in relation to the process applying to those projects.

Senator XENOPHON: If we have covered this earlier today in the blur of questions, I am sure you will tell me. The ANAO said in their submission to this inquiry that continual changes to project managers and frequent contract changes in a wider context of ongoing organisational change to procurement processes and structures have made it difficult to benchmark or measure procurement projects across their life span. How do you respond to that concern raised by the ANAO?

Mr King: I think you were saying there were two aspects: changes to the management and changes to the contract.

Senator XENOPHON: Yes, in the wider context—changes to managers and contractual changes; that is right.

Mr King: First on changes to personnel, certainly from a DMO perspective—and I believe that Defence agrees and is supporting this—we would like to see longer postings of personnel to DMO. Certainly the capability managers try to meet that need for us. The complication of course is that they are military officers and need to progress their careers and fill other needs, particularly when we have operational needs. From a DMO point of view I would like to see as much stability as we can engender in project management teams. Having said that, many of our projects are 10-year projects, and for the younger generation coming through that is about two or three lifetimes of employment. So I think we will have to learn to live with some degree of turnover that we would prefer not to. I think part of the way to overcome that is to make sure we get the fundamental records of what we are doing—like the IT system, recording of the projects, recording of what the commitments are, recording of what the capability of the project is going to be—well embedded and the processes consistent across all of DMO in the various domains so that when a new project manager comes in they know exactly where to go, where to start and how to continue the job.

Senator XENOPHON: I do not want to cut you off, but this harks back to some of the issues about expertise. One of the views expressed by Andrew Davies and Mark Thomson is that to break the cycle of this:

... DMO needs to attract and retain individuals with commercial acumen and technical knowledge, including by paying private sector salaries where necessary. Reliance on short-term military appointments to projects should be minimised.

I understand what you have said—that people are in the military and they need to advance their careers—but is there something to be said for the idea that for this specialised area of procurement, assessing projects, you have people who are there for the long term and build up corporate knowledge?

Mr King: Yes but, as I mentioned earlier today, I would like to see us work harder in Defence, not just DMO, on career management for what I would call the acquisition and sustainment community. I think 17 per cent of our workforce in DMO is military. It is about seven per cent of the military. They are a very important element of the DMO's work. They bring with them domain knowledge. They are engineering and logistics specialists. They know exactly how these capabilities are going to be used, employed and maintained in the field. They understand the capability needs. I am quite convinced that they are a very important element of the work we do—and some of the most qualified people we have in engineering and so on. I think we have to concentrate not just on giving them stability in their job but also on recognising the importance—since it represents about 40 per cent of the Defence budget—of the work that is conducted in the acquisition and sustainment domain in terms of getting a true capability outcome. I think the focus is more on stability of the career than on stability of the appointment.

Senator XENOPHON: Does that mean that a desirable change would be to have people staying within DMO for longer periods and getting that specialist expertise?

Mr King: Yes, except that why I stressed the acquisition and sustainment domain is that it is not purely DMO. For example—

Senator XENOPHON: Sure—in Defence generally.

Mr King: it is very important for a Navy engineer to spend some time in a ship. That is not in DMO's place, but when I get a Navy engineer assigned to my project for the next torpedo or something, I would really want that Naval engineer to have the experience of having served in a ship, maintained it and seen what the problems are and to understand what that asset is. One thing that worries me about engineering in general in Australia is that it is getting very remote from the engineering place: the reality of being in the ship, aircraft or tank and understanding what real engineering is, whether it is design, production or sustainment. So it is about stability of career rather than stability of just one job.

Senator XENOPHON: The Defence Teaming Centre in its submission took the view that the DMO should manage contracts with industry and allow industry to manage the projects. There was an argument that DMO takes an adversarial approach to industry. I am not quite sure what was meant by that. How do you respond to that sort of criticism that there is an adversarial approach?

Mr King: I think on occasions individuals have fallen into an adversarial approach. But that is certainly nothing I would encourage. A contract is a joint, mutual undertaking by two parties to execute a body of work at the right standard in exchange for money. There is no room for an adversarial approach or anything else. It is just a business undertaking.

Senator XENOPHON: How do you deal with that, though? If something is needlessly adversarial or does not add value and acts as an impediment in achieving outcomes, what do you do? Is it a question of retraining internally? Is it a question of directives? How do you manage that sort of adversarial approach, which has been the subject of negative comment not just by the Defence Teaming Centre but by other industry participants?

Mr King: It ranges across a number of things. First of all, we are conducting business acumen courses for all DMO people so that they understand what motivates and drives industry. I have to say that there are people in DMO, both military and Public Service, who do not understand the business drivers and their imperative for cashflow and so on. But those from business are not as pure as the driven snow either, and sometimes we need to be alert to ensuring on behalf of the taxpayers that we are getting responsible commitments to what industry have undertaken of their own free will to do on our behalf. Having said that, there is no room for an adversarial approach. Some of the time—apart from education and training—the real problem breaks out when a contract has been set up that industry is no longer able to deliver on the schedule or for the budget they contracted to do. That starts to really, as you would imagine, cause a breakdown in the relationship between DMO, the company and, of course, the capability manager who wants that capability. One of the things we do on occasions when that happens—as well, of course, as the projects of concern—is sometimes resetting or restructuring the individuals both in DMO and in industry. On occasions we have sat down with the industry leader of a particular company and said, 'We really need to refocus what we are doing here.' We look at what that refocusing would be. Sometimes, because of the experience both parties have had with this contract, it is better for everybody if new people are brought into the contract and it is taken forward from there.

Senator XENOPHON: Thank you. And what safety valve, what mechanism, is there if there is slow payment or an unnecessarily adversarial attitude on the part of someone within DMO? Where does industry go to resolve that, or could there be a concern among some in industry that it could lead to repercussions if they make a complaint?

Mr King: There would certainly be concerns. I have no doubt that industry would on occasion be concerned to raise a matter like that. But when I was a general manager, and I think the other general managers—our doors are always open to industry. I can say for a fact—but I do not want to name the examples—that industry leaders have spoken to either my general managers or me about these issues and we have resolved them satisfactorily on a number of occasions.

Senator XENOPHON: So essentially the mechanism is that your door is open if there is a genuine dispute?

Mr King: Yes. Where we find it more difficult in these cases—and I understand this from both parties' points of view—is if you are in a regional area of Australia and you are one DMO office and one supplier contractor and you are in one geographical region. That is a very difficult one to re-manage. You are not operating in a broader environment; you are operating in a very specific environment. But we do do it and we do get those mature conversations. Probably it has happened most when a project has got to the level of being a project of concern, where we have all needed to refocus everybody and figure out the way forward.

Senator XENOPHON: Thank you.

CHAIR: I thank the witnesses for appearing today. I think today has been a very productive session. A lot of information has been provided and that will be very useful to the committee in writing its report and drawing conclusions. Thank you very much indeed.

Air Marshal Harvey: Chair, could I just correct one statement I made to Senator Ludlam when we were talking about interoperability. I made the comment that it was a key consideration but not a key driver. I was trying to get to the point he was leading to—I understood he was getting to common equipment with the US. I was trying to make the point that we do not just buy common equipment. Interoperability itself is a key driver of our decisions but it is not common equipment.

CHAIR: Thank you for making that point; that clarifies it for the record. I will close this session. Thank you very much.

Committee adjourned at 15:49