



COMMONWEALTH OF AUSTRALIA

JOINT COMMITTEE

of

PUBLIC ACCOUNTS

Reference: Review of the Jindalee Operational Radar Network Project

CANBERRA

Thursday, 5 December 1996

OFFICIAL HANSARD REPORT

CANBERRA

JOINT COMMITTEE OF PUBLIC ACCOUNTS

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Mrs Stone
Mr Vaile

The matter referred -

Review of reports of the Auditor-General.

WITNESSES

GILLIGAN, Mr Michael Francis, 'Waterole', Gundaroo, New South Wales
2620 **24**

JOINT COMMITTEE OF PUBLIC ACCOUNTS

Jindalee operational radar network (JORN)

CANBERRA

Thursday, 5 December 1996

Present

Mr Alan Griffin (Acting Chair)

Senator Gibson

Mr Vaile

Mrs Stone

The committee met at 9.50 a.m.

Mr Griffin took the chair.

GILLIGAN, Mr Michael Francis, 'Waterole', Gundaroo, New South Wales 2620

ACTING CHAIR—We are here to discuss JORN. We have taken a lot of evidence on the issue and are still trying to work through the maze. Certainly, from some of the details we have seen about some of the issues that you were looking to bring up, I think that you will have some very interesting things to say.

Mr Gilligan—I knocked up two pages of, essentially, talking points. I will very briefly go through those. I am here because I got a phone call from Maureen Chan saying, 'Have you heard about the Auditor-General's report?' I said, 'I think I might have heard about it, but how about sending me a copy?' So I had a look at that and the terms of reference. I had a bit more of a chat with Maureen and we thought that perhaps I might have something to offer the committee in terms of its terms of reference. I am more than happy to do so because I regard this as a pretty important project and pretty important business, even though I am not involved in it, at the moment.

By way of background, I guess you have a copy—a sanitised copy—of the report that I did in 1986, which comes in the form of an executive summary and then a large body of essentially detailed argumentation about the issues at the time. That was in response to a concern at the highest levels in Defence that we ought to be putting a bit more intellectual rigour into this technology of over-the-horizon radar, and that was in 1985. There was a document within that which sets out the reasoning of the then secretary and the CDF. I was, at that stage, the Acting First Assistant Secretary, Development and Analysis, and I was given the job of getting together a project team to address that issue. That report was tabled some time in 1986 in Defence and the essential recommendations were accepted. The upshot was that the government announced that it would proceed with the major recommendations, in October 1986, when it was describing the Defence budget.

After that, I was fortunate enough to go back to a quieter area of Defence where we had a lot of operations research scientists. For most of the time, the highest priority was actually looking at modelling the effectiveness of this technology in conjunction with the DSTO scientists. Every bit of work we did there suggested that our expectations were going to be surpassed in every way.

There had been various issues about deficiencies in this because of its reliance on the ionosphere and because of lack of knowledge in some areas. Over that period of three or four years, we did a lot of work looking at a range of targets, from large, fast aircraft all the way through to small, slow aircraft, in high sunspot numbers and in low sunspot numbers, in the day and at night. The worst sort of number we ever got out of that was something like 80 per cent probability of detection in the most extreme circumstances. We were, in general, in the sort of things that were credible, up around 90 per cent over that probability of detection. That was up to 1992. After that I essentially left the department and went to the Australian National University, so I had no more contact with the progress of the project.

The issue in 1986 was essentially whether or not we ought to go ahead with an air force proposal to upgrade the Alice Springs DSTO prototype radar, or whether we ought to be more embracing of the opportunities and put our money where our mouth was, in a sense. The issue was not whether or not this technology was something that was valuable to Australia. The issue was how we would invest in it and how far and how fast, if we were to go into it. The recommendation increased the expenditure from \$45 million to \$500 million. Instead of going for a modest upgrade of a test bed radar, we went for a network of new radars.

As part of that review, we did a lot of travelling. We spoke to people in the US, in particular the major contractors, the research organisations, people in the Pentagon, USAF, USN, those sorts of people. At that point, I can remember visiting the USAF radar at Maine, which was just in its final stages of testing before being passed over. We got the very clear impression that it was a beautiful piece of engineering that they had turned out. GE had done an excellent job but, underneath it all, there were a lot of problems which they faced. They were very frank about those problems, in particular that there were software problems, and they had gone through quite a gestation period on that with TRW, who was their software contractor out of Los Angeles.

We spoke to Raytheon as well, who were working on a more modest version—a relocatable version—for the US Navy. We spoke to GEC-Marconi in the UK, more by way of trying to round out our experience of what was available in a worldwide sense, and it was quite clear that there was no expertise whatsoever in sky wave radar there. There was some expertise in surface wave radar, but probably not much more, I would say, than you would find at a postgraduate level in a reasonable physics laboratory anywhere around the world.

On the basis of that, we attempted to put some words into the report which steered things towards what we thought was the most credible contractor, given that this thing was supposed to be a priority. It seemed to us quite clear that GE and TRW were the people who had the most to offer.

Essentially, you will see some rather guarded words in there. In earlier drafts, we tried to steer it in this direction, but we were told that we were stepping over the mark, that procurement people knew all about this and there were bigger issues there. So our job was to paint a picture, if you like, for the procurement people, of this task. We did that, expecting that they would see the obvious. As it turned out—and I think this is the point that I am trying to make—from our perspective, and I think was a fairly common view of all the people on the review team, the obvious was not picked up. The immensity of the task was not picked up and it was assumed that you could just go and take a representative sample of Australian companies—including a telephone company—and get them to run this project.

That was compounded, to an extent, by a rather hands-off approach. Having made

the decision, for whatever reason, that the project would proceed within the framework of competing Australian prime contractors, there was nothing proactive about the way in which those prime contractors were then to match up. The cards were left to fall as they fell and it seems to me that the first person who got on the phone to GE in New York was probably AWA. AWA had been in the business and they knew who had the most to offer.

I then make the point that, as things progressed, people became a little uncertain about the capacity of AWA and, for that reason, the most competent contractor being GE fell away. By a series of default decisions, if you like—that had nothing to do with the probability of a successful outcome—we ended up with a combination that really had no experience, either in the offshore partner or the onshore partner.

ACTING CHAIR—Who was making those decisions?

Mr Gilligan—I was not involved in that at that stage. I was off-line doing the modelling sort of work. I guess the decisions would have been made through the formal procurements committee structure. There was something called the Defence Force Definition Committee and that then reported to some other committee. I could not speak with any credibility on who was making those decisions.

ACTING CHAIR—Were the decisions made within the department?

Mr Gilligan—Yes. As I understand it, the advice would have come from within the procurement area of the department. I had a little bit to do with the contractor afterwards, but it is probably not terribly fruitful to dwell on that. If we are really interested in picking this thing up and making it happen from here, we need some fairly clear thinking on what is required to make it happen. It seemed to me that that was not done before, and we are probably again in danger of not doing that. After five years of fiddling around, has this current contractor got enough experience and expertise under the belt to do it?

It is not a competence that is easy to come by. My observation is that in the US you have a number of contractors who can do this sort of thing. The big American engineering and defence companies have an admirable ability to pull together people with a wide variety of skills to knock these big projects over. You do not see that sort of capacity in the UK or on the Continent.

ACTING CHAIR—Judging from what you said about the USAF radar, is it a matter of making a lot of mistakes first up with any project of this size, but of learning from those mistakes, so that the second time around you are better? Is there that built-in aspect of experience too?

Mr Gilligan—Yes. But the Americans will get on and fix something. If they run into problems, they have the scale and the breadth of expertise over there to just knock it

over. They will eventually knock it over. My worry is that these guys will never knock it over and the requirements will just keep on being whittled away. That is the worry.

Everything that we wrote in our report was predicated upon technology flow and assistance coming from the US. We would have been absolutely aghast at the thought of putting forward those recommendations and that expenditure time frame, if we had known that GEC-Marconi was going to be running this. That report would never have been put out under those assumptions.

Mrs STONE—Given that the configuration of major players is in the process of being rejigged, have you any greater confidence about the completion of the task with the new players?

Mr Gilligan—I know nothing about the new players.

Mrs STONE—The other point you began to make before was that it is important that we complete this task. Another important thing is that we learn from any mistakes, so that this whole problem does not happen again. How do you see us not going down the same path in the future? Is there still the procurement branch type of problem in the defence force?

Mr Gilligan—Again, I do not know; I am not in the department. What is needed is some fairly clear, focused thinking on what is required to make a project of this scale and complexity be delivered.

What are the criteria? I do not think Defence took the step of sitting down and putting down the criteria that were required to make this happen. I am not talking about anything much more disciplined than the selection criteria for a job, but it seems to me that that step was not gone through. What criteria would Defence now apply for making this thing happen? If they are now looking at other options, what are the criteria they have applied to other options and other candidates?

ACTING CHAIR—One argument put to us is that there is a problem in procurement in Defence in general, that effectively a brain drain has occurred and that, as was put by one bod we saw, it is a good place to park brigadiers heading towards retirement. So, essentially, there isn't the competency in that section of Defence to really deal with the decisions we are talking about. That is one issue. On the question of criteria, has the overriding concern to try to get Australian involvement with respect to contracting become too costly in terms of the overall operation of procurement policy?

Mr Gilligan—I think it is all very well to generalise about some of the Colonel Blimps being parked in the procurement area. There are quality people within the services. If the services give priority to a project, they will put their best people in there and they will give it the resources. One of the problems with this project is that nobody has

believed in it. That is why someone like me was put in there in G85: to pick it up and give it a shove. You will have heard all of the basic politics; the air force is not interested in it and so it does not really have a sponsor. Therefore, the question is not whether you have good people, rather whether you put the right people in there to make it happen.

ACTING CHAIR—I had not heard that point, although I may have missed something. Essentially, the suggestion is that the hierarchy did not give a stuff about a project that was worth between half a billion dollars and one billion dollars.

Mr Gilligan—The fact that the secretary and the CDF jointly wrote a letter saying that they would set up a project team in 1985 to pull the project out of air force office, and would have a group of people examine it and come forward with options because they were not satisfied with the proposal being put forward at the time, is a pretty good indication that there was no priority placed on it from the air force. At the time, the air force proposal was to spend \$45 million, mostly on accommodation and making things more comfortable in Alice Springs. It involved taking the old transmitters given to us by the Americans 30 years ago and giving them a polish—refurbishing the old junk we had. That was the extent of the interest exhibited by the air force in 1985 and the period leading up to that.

I would not think there had been any basic change of heart. As I understand it, the project has been put into the joint military area. I would think that if you compared it in terms of the quality of people that the navy put on the submarine project, you might—

ACTING CHAIR—We are were looking at the submarine project too and we found that pretty scary.

Mr Gilligan—The strike rate is a little better, but not much better. The second point is that too much emphasis was placed on Australian industry.

ACTING CHAIR—The argument is that that is part of the issue here. If you go for Australian content, IP, et cetera, the result is that it costs more to do the project and therefore there is a cost to the budget.

Mr Gilligan—What happened in Defence in the mid to late 1980s was a terrible confusion and a careless application of what was called defence industry for policy. Defence's policy—and this is the government's defence policy, articulated all the way through—was that we would pay a measured premium to have Australian industry involved if we could see the benefits for through-life support in a priority area. On very few projects was that cost premium ever measured. I do not think the cost premium was measured on this one.

ACTING CHAIR—Was it ever measured accurately? Were attempts made to measure it, or was it merely a question of a judgment being made that it was all right?

Mr Gilligan—At the end of the day, there was a supposition that it would be all right. This particular project was at the end of a long line of these sorts of judgments. I think what we are seeing is the whole thing being taken to an extreme. With regard to the submarine project, the premium was never measured for having submarines constructed in Australia. There was never an explicit judgment made about the cost of building in Australia and of the benefits. The benefits were articulated and said to be this: 'If we build them here we will be able to support this for the rest of our lives.' That was never thrown up against 'It is going to cost us this much to do it.' That costing was never made, and a costing was never made on this.

But there was an assumption made on this, that this thing was going to be so fundamental to us that it was important for us to really get in and understand the innards, particularly the software innards. We had had a lot of trouble with the Americans on the F18 with software. We could not get access to the code and that was something that was dealt with but, on this one, it was quite clear that we really needed to have the code at our disposal and the whole thing would be a constant development, with electronic countermeasures and all of that sort of thing being worked in.

Intuitively, I think you are sensing that there was a very loose application of what was supposed to be a very disciplined process of how far and under what circumstances we would put things out to Australian industry. From my observations, discipline just fell away in the late 1980s.

Senator GIBSON—Having come from Australian manufacturing industry, I am amazed that this happened, and your story on page 2 about instead of being technology-led, and picking the appropriate source of understanding what the hell was going on and then trying to fit in some project management—

Mr Gilligan—And trying to get some technology flow into Australia.

Senator GIBSON—And get something into Australia, it went the other way around. I just find it unbelievable that you could go that way. It is not surprising it is a stuff-up.

Mr Gilligan—I agree, and I would make the point that you are probably, to an extent, trying to follow the innards of what has happened since the contract was signed in 1991, but that is peripheral from the main question. I know there have been a lot of difficulties there.

Senator GIBSON—I actually built a paper mill, and the first thing you do is go and find out whose technology you want to buy, and you want to make sure it is the best you can buy for the money. You have got to then search the world for the best project manager—hopefully as local as possible—and then squeeze the local people in as much as you can, and build a successful project. It is done all the time here. Why the hell Defence

did not do that, I just do not understand. Why was the thinking within Defence that we could go with Australian companies?

Mr Gilligan—As part of this, I tabled an excerpt from a speech given by Kim Beazley at the ANU on Wednesday, 29 November, and I can leave a copy of this here for you. This speech is a pretty good indication of the thinking at the time. There is an argument in this that the defence industry in Australia was to be revitalised. That was never really articulated as a principal component of defence policy in the sense that if we want to revitalise Australian industry through defence, or we want to revitalise the Australian defence industry, within what sort of parameters do we do it? Within what sort of cost constraints? What sort of capability sacrifices do we make? Those sorts of things were never addressed in a way that would make you believe that the proposition had been thoroughly thought through.

Senator GIBSON—So are you suggesting that in fact the minister was forcing, if you like, a philosophy?

Mr Gilligan—I would not want to suggest that the minister was forcing anything. All I can say is that, on the evidence, there was a very careless—I think I used the word ‘careless’ in my notes—application of defence policy for industry, within Defence.

Senator GIBSON—Within the bureaucracy.

Mr Gilligan—And there was some very proactive advice coming from Defence to the minister at that time.

ACTING CHAIR—So far as I see it, from what you have been saying—and I admit that it fits in with a lot of others—the central problem here is a bit like the broken home analogy, in that what happens beyond that is a question of the victim more than anything else. You could almost feel sorry for Telstra and, to an extent, Marconi.

Mr Gilligan—That is right.

ACTING CHAIR—In the circumstances, what you are saying is that it was not a question that there could not have been an Australian prime contractor involved here; the problem was that Defence did not take a policy and apply it. What they should have been doing in these circumstances—as has been said by the other witnesses—was that if they had concerns about AWA, they should have been saying to GE, ‘You’re putting this on a competency basis but we have a problem here on the financial basis. Reconfigure and you would be very well placed because of the key question of what we require.’ That is what they should have said and done.

Mr Gilligan—Yes, I guess anywhere along the way—before that final decision was made—there were any number of ways of patching it up. I would go back even

further and say that the prime contractor should not have been Australian; it should probably have been GE but with some very hard-headed negotiations about transfer of technology to Australia. We do this all the time.

ACTING CHAIR—We do, but I recall having gone through the submarines corporation issue, where attempts were made to make that really tough. When we had hearings, we heard a lot of evidence of Kokums cocking up, so to speak; that's what I mean about that sort of stuff.

Mr Gilligan—Yes, I do not think anything is ever going to run smoothly.

ACTING CHAIR—A matter of dodging their obligations—

Senator GIBSON—That was another exercise in misleading thinking; of what could be done and what could be achieved and what could be transferred to Australia and the optimism that has overrun the actual practicalities of it. It was just the same as what you have basically said; it was not actually thought through and it was not quantified and, as a consequence, it has cost us bloody heaps and heaps and heaps. Nothing much has been transferred.

Mr Gilligan—Those are my views.

Senator GIBSON—I think there are a lot of parallels between the two, actually.

Mr VAILE—There are and they jump off the page at you. I will just go back to a fairly simple question to start with. So as far as the project and what was set out to be achieved, and has still yet to be achieved, you have no qualms with the benefits which will accrue to Australia from achieving that?

Mr Gilligan—No.

Mr VAILE—You indicate here that for what it is ultimately going to cost, even if it runs over budget, the benefits which will accrue will be, relatively speaking, far greater than those from a project like the submarines one.

Mr Gilligan—Yes. I do not think there is any doubt about that. I would see this almost as a fundamental pillar of Australian defence. I have often spoken to some of my students in past years about how it was in the old days when we had to think about defending this country while realising that we would never know, with any real significant probability, what was going on around us. We used to do all sorts of probability-based calculations on intercepts of fishing vessels and stuff like that. We were playing around with numbers like 10 per cent. Now, here the whole thing is transformed into a position where you really do know what is going on, almost all the time. The efficiencies that can flow from that are just enormous.

Mr VAILE—That begs the next question as we go through this process. That comment that you made—in regard to there being no sort of sponsor, no individual arm of Defence riding this horse—is a concern. At some stage in this process, there are going to be some decisions made and, ultimately, they may cost the taxpayer a lot more money. I think it is important that this committee understands, or is comfortable with, the fact that, okay, if someone has mucked the whole process up and there have been some bad decisions made, well, that is one thing. There can be retribution or whatever harsh words about that. However, the point still remains that if, to achieve the result and if government is to ensure that result happens, then it has to cost more money, well, it has to cost more money. At least the benefits are going to be there to do that.

Mr Gilligan—I would agree with that.

Mr VAILE—I see that as one of the roles of this committee: having a look at this off the back of the Auditor-General's report, along with—as we were just saying—seeing and identifying the similarities between this and the submarine contract. This committee made a number of recommendations with regard to the submarine contract, and there may be some similarities with the recommendations that we make with regard to this and, hopefully, somewhere along the line they will be picked up. That is very important. Regarding some of the information that you have given here on the decisions and the way they were made, you are saying that there has not been a lot of reference in that decision making process or cognisance of a lot of the expert advice that was given.

Mr Gilligan—You say 'a lot of the expert advice': there are experts and experts. Let me answer your question straight out. Our report made it quite clear that the recommendations were predicated on a US source. I just picked it up and had a look at it as I was going through. We didn't name contractors, but everywhere we talked about the transfer of technology from the US.

ACTING CHAIR—I got the 'S' and the 'K' mixed up.

Mr Gilligan—Yes, something happened somewhere along the way. We ended up in the swamps of Essex rather than the forests of Maine.

ACTING CHAIR—What about the question of analog versus digital technology? To an extent, one of the feelings I get from what we have heard so far is that analog could do the job, and that digital could do a few more things but at significant extra cost and with additional requirements, and that possibly part of it may have been looking ahead—star trekking, if you like—and thinking, 'Analog can do this, digital can do more and, as they both develop, digital will develop more.' I have the feeling that one of the main reasons Telstra was picked was because of its development on the digital front and a view that this might actually lead to a greater increase in capability over time as the system developed.

Mr Gilligan—There was a bit of noise about that at the time. I can remember the claim that there was a superior analog to digital converter coming out of the UK. I must admit that I took that with a grain of salt. There was a lot of development going on in the US. Even if it was right, I would have regarded it as a pretty marginal proposition in terms of the main requirement for pulling together a project that is dependent on massive software interaction. It was quite clear that it was a software project. No, I do not think that was a significant factor.

ACTING CHAIR—I worry that, with the star trekking approach to some of this, the digital stuff is seen as being a bit sexier, if you like.

Mr Gilligan—I can remember being at a meeting in Hawaii where our scientists put pressure on them for their latest analog to digital stuff and they said, ‘We are not too sure we can release it. It’s pretty hot.’ We would have got it eventually. They were talking about that at the time. It is not as though, by going with the US contract, that we would not have been into the digital age. Heaven help us, if we were to get it out of Essex we would have eventually got it out of the US. Otherwise it defies all understanding of the two civilisations.

Mrs STONE—One of the things we hoped to do was the commercialisation of the intellectual property. Let’s imagine this project is completed according to all its original design specifications; in your view, is this something that is going to be able to be commercialised elsewhere in the world? I have heard that, because of our geophysical characteristics, it is not something that is going to be able to be transplanted very readily.

Mr Gilligan—Do you mean our defence application?

Mrs STONE—Or whatever.

Mr Gilligan—You have to have a very large country and an interest in very wide spaces. Maybe the Japanese could be interested in it; they have the characteristics for it. You could quite easily see that they would find this sort of thing a significant increment in capability, if you set it back on the islands further out in the Pacific looking towards the part of the world that they are worried about. There may be some civil applications—weather and that sort of thing—but they would be pretty marginal.

When I was in contact with DSTO, it was clear that we had some intellectual property, which I think came out of DSTO, that was valuable. It was valuable in a defence sense—tracking algorithms and stuff like that. How much you would actually say that had enduring commercial value, I am not too sure.

Senator GIBSON—Do you think that within DSTO and within Australia there was a significant increment to what GE already had?

Mr Gilligan—Undoubtedly. We had lunch with people at GE, and they said that they would be delighted to join with us in this project. They would be delighted to get some of the technology that we have got. They were talking about getting technology from us.

ACTING CHAIR—As there are no further questions, I thank you for coming, Michael. It has been very interesting. You certainly cut to the quick of the issues, which is probably why your hearing only went for half an hour rather than two and a half hours, as in the case of some other witnesses.

Mr Gilligan—Maybe being away from it for a few years helps.

Committee adjourned at 10.27 a.m.