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SENATE

FOREIGN AFFAIRS, DEFENCE AND TRADE REFERENCES
COMMITTEE

Reference: Naval shipbuilding in Australia

FRIDAY, 28 APRIL 2006

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SENATE

FOREIGN AFFAIRS, DEFENCE AND TRADE REFERENCES COMMITTEE

Friday, 28 April 2006

Members: Senator Hutchins (*Chair*), Senator Johnston (*Deputy Chair*), Senators Mark Bishop, Hogg, Joyce and Stott Despoja

Substitute members: Senator Bartlett for Senator Stott Despoja

Participating members: Senators Abetz, Adams, Bartlett, Boswell, Brandis, Bob Brown, Carol Brown, George Campbell, Carr, Chapman, Colbeck, Conroy, Coonan, Crossin, Eggleston, Chris Evans, Faulkner, Ferguson, Ferris, Fielding, Fierravanti-Wells, Fifield, Forshaw, Hurley, Kirk, Lightfoot, Ludwig, Lundy, Ian Macdonald, Marshall, Mason, McGauran, Milne, Nash, Nettle, Payne, Polley, Robert Ray, Santoro, Siewert, Sterle, Trood, Watson, Webber and Wortley

Senators in attendance: Senators Mark Bishop, George Campbell, Fierravanti-Wells, Hogg, Johnston, Payne and Trood

Terms of reference for the inquiry:

To inquire into and report on:

The scope and opportunity for naval shipbuilding in Australia and in particular:

- a. The capacity of the Australian industrial base to construct large Naval vessels over the long term and on a sustainable basis;
- b. The comparative economic productivity of the Australian shipbuilding industrial base and associated activity with other shipbuilding nations;
- c. The comparative economic costs of maintaining, repairing and refitting large naval vessels throughout their useful lives when constructed in Australia vice overseas;
- d. The broader economic development and associated benefits accrued from undertaking the construction of large naval vessels

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Committee met at 11.16 am**CLIFFORD, Mr Craig Robert, Managing Director, Incat Australia, Pty Ltd.**

ACTING CHAIR (Senator Johnston)—I declare open this meeting of the Senator Foreign Affairs, Defence and Trade References Committee here in Hobart. Today the committee will conduct its fifth public hearing into Australia's naval shipbuilding industry. The committee is due to report to the Senate on 7 December 2006. The committee's proceedings today will follow the program as circulated. These are public proceedings. The committee may also agree to a request to have evidence heard in camera or may determine that certain evidence should be heard in camera. 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 the committee. If a witness objects to answering a question, the witness should state the ground upon which the objection is to be 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, also be made at any other time.

I welcome Mr Craig Clifford from Incat. Thank you, Mr Clifford, for the hospitality extended by Incat to the Senate committee this morning. Unfortunately, I was not there but I am assured it was a very important tour of your premises. A copy of today's opening statement is before you. Do you have any questions regarding that document?

Mr Clifford—No.

ACTING CHAIR—I now invite you to make a brief opening statement, which will be followed by questions from the committee.

Mr Clifford—Thank you, and thank you for taking the time this morning to have a look at our shipyard. It was very much appreciated, and I trust those who were able to make it found it enlightening. I appear today as the managing director of Incat Australia Pty Ltd. We are a producer of large aluminium high-speed craft. We have been in the business for nearly 30 years. We are a private company, predominantly family owned, that sells vessels into the commercial market and has had some forays into the military market over recent years. I am also the Chairman of the Australian Shipbuilders Association, and wear that hat as well. Whilst I am not appearing in that capacity today, I can speak in that role to a limited extent. We covered a lot in the tour today so I am happy to take questions if that is suitable.

ACTING CHAIR—I hope senators will seek to put questions about the Jones Act and Incat's success in getting vessels into the US Navy, for the record.

Senator MARK BISHOP—Can you outline the nature of your business, how it has grown over the years and what your key markets are? Having done that, can you tell us what your competitive advantages are and what is the difference, if any, between commercial shipbuilding and commissioned building for military and naval services?

Mr Clifford—Certainly. The nature of our business is that we are predominantly a manufacturer of large aluminium high-speed craft. The company started some 30 years ago when the Tasman Bridge was knocked down and a small catamaran was built to transport people to and from one shore of Hobart to the other—from the west to the east. That catamaran was a very successful vessel and led to larger vessels being built. Initially they served the markets of the Great Barrier Reef. We experimented with aluminium superstructures on a steel hull and quickly discovered that we could build the vessels entirely of aluminium. The vessels got to a larger and larger size as they went forward.

In 1990 we secured an order from an English operator for a 74-metre vessel for an operation across the English Channel, and that vessel was to carry 80 cars and approximately 600 people. In the course of the delivery voyage of that vessel to England we challenged for the Hales Trophy for the fastest crossing of the Atlantic and were successful in that quest. Currently today we hold the record for the Hales Trophy across the Atlantic.

The vessels grew in size as the market demanded more features and more requirements. We went from 74 metres in length to 78 to 81, 86, 91 and 96. Today's current vessels in operation are 98 metres in length. Some members of the committee had a look on a 98-metre vessel today. Our next stage is a 112-metre vessel made entirely of aluminium. The vessels have been embraced by the commercial world because of their speed, their carrying capacity and the fact that they are relatively cheap in the scheme of things.

In military circles we were fortunate enough to secure an opportunity with the Royal Australian Navy in 1999 and chartered HMAS *Jervis Bay* into the Australian Navy and she operated in and out of East Timor for two years between 1999 and 2001. That vessel opened the eyes of the military world to what aluminium high-speed craft, particularly catamarans, could do and we have since chartered three vessels into the US military—a combination of army and navy special operations. Today we are building 98-metre vessels for the commercial market and 112-metre vessels for the commercial market and are pursuing additional military opportunities as they present themselves.

Senator MARK BISHOP—What are your key competitive advantages?

Mr Clifford—The vessels are very closely aligned to aircraft technology. They go quickly, they carry a lot and they are relatively cheap. To a commercial operator in, say, an English Channel environment or a Mediterranean environment where there are large groups of people and opportunities to transport from one land to another, the boats offer speed primarily. One of our vessels, for example, could do maybe five round trips in a day whereas a conventional steel ship could do, maybe, two.

Senator MARK BISHOP—Are there significant differences between the commercial trade and the demands of the military?

Mr Clifford—The demands of the military at the moment as we have experienced them are that they have been keen to pursue commercial off-the-shelf opportunities for the vessels. The three vessels that we have in US military operations at the moment are predominantly the same hull shape, they just have a different configuration in the superstructure—configurations that might accommodate a helo deck for helicopters or accommodation facilities on board. The

vessel that we built for the US Navy, which is *Swift*, is a 98-metre catamaran with our hull number 061. She was the most customised vessel that we had built to a military configuration to date. The hull shape and the machinery are all to a standard commercial configuration.

Senator MARK BISHOP—We had some discussions with one of your senior men at the factory. Are you experiencing any troubles in recruiting and retaining labour and if so in what areas and at what levels?

Mr Clifford—Shipbuilding, historically, has been an industry which requires, in some instances, a lot of people in a short period of time and in other instances, between jobs, there is not the demand for people. Our business has experienced both ends of the spectrum. Our employment numbers have been up as high as 1,100 people in previous years. Market demands and forces have dictated that that number drop over recent years and we are now operating at just over 400 people. We have a number of commercial opportunities before us at the moment which will necessitate us building the workforce back up again reasonably quickly. We have started that process and we are wary of the fact that skilled labour and personnel are not as easy to come by as perhaps it may have been in the past, particularly with other industries also experiencing good fortune. So, yes, it is an issue for us in terms of being able to build up the workforce as we require and to enhance the skills as we require.

Senator MARK BISHOP—Is there a role for government in that regard or is that something that is really best left for your own company to plan, recruit and train?

Mr Clifford—No. We think that there is a role for government and we would appreciate whatever assistance can be given in that regard. We have had good cooperation in previous years with the state government in Tasmania in relation to setting up training schools and TAFE colleges, and we intend to continue dialogue with the government locally, and perhaps federally, in relation to what opportunities there are to secure the employment numbers that we need.

Senator MARK BISHOP—We inspected the ship that is on lease to the US Army in your factory. Could you put on the record the nature of your relationship with the United States Department of Defense, and particularly address the issues of ownership, access and leasing. Could you also put on the record the nature of your relationship, if any, and the process of dialogue with the Australian Department of Defence and Navy, particularly in terms of contracts or purchasing.

Mr Clifford—Yes. The nature of our relationship with the US military has been developing since around 2000, when HMAS *Jervis Bay* in the north of Australia opened the eyes of the military world as to what an aluminium, catamaran, high-speed craft could achieve. A dialogue was opened up with various arms of US military which led to the charter of our hull No. 50, which up until that point in time had been in a commercial operation between the North and South Island of New Zealand. A combination of Navy, Army and other arms within US military chartered the vessel. It was appropriately called *Joint Venture* because it was a joint venture between a numbers of arms. They have chartered that vessel on what has turned out to be a long-term basis to operate in various field sectors that they are interested in.

Senator MARK BISHOP—What is a long-term basis?

Mr Clifford—That vessel has been on charter now for nearly five years. US Army and US Navy appreciated the cooperative approach on *Joint Venture* but also wanted to go on their own. As you may well imagine, they have different interests. Under a leasing arrangement, we chartered our hull No. 60 to US Army which is vessel *Spearhead*, which some of the committee had a look at today. In 2003, we chartered our hull No. 61 to US Navy which is known as *Swift* and is in Navy hands today.

Senator MARK BISHOP—At the site inspection, you were saying that a practice has developed of essentially rolling over leases up to a maximum period of 59 months, I think. Why has this process of leasing your ships occurred with the United States military and not outright purchase? What is the significant, if any, of this rollover in the 59 months?

Mr Clifford—I obviously cannot speak for the US military, but my understanding of the process is that the operators of the vessel, be they Army or Navy, wish to acquire the use of the vessel over a period of time. For their own reasons they elected not to go down the path of an acquisitions program, although we were happy as a supplier to sell to any customer who came along. They preferred instead to go under a lease arrangement such that, as I understand it, the moneys come out of an annual operating budget, as opposed to an acquisitions program. The rollover of leases has occurred predominantly as time periods have come up and options to extend have been exercised. The 59 months I believe is regarded in some circles as the maximum extent to which a lease into a military configuration can take place. But I am not fully informed of that; that is just what I have been told.

Senator MARK BISHOP—Leasing is the preferred model of the United States military because they are not able to purchase ships manufactured outside their own country—is that correct?

Mr Clifford—There is a very strong Buy America program. I understand that it is very difficult within their political circles to buy a foreign asset of the size and cost that we are talking about. The lease program has been operating successfully. We have explored the option of building our vessels in America and we do not discount that option of having an operation set up to build our vessels over there. Indeed, there are programs in America at the moment that are in the initial stages of having vessels constructed in America under an at-home program, if you like.

ACTING CHAIR—Are you able to tell us the monthly, quarterly or annual lease fee and then compare it to the actual purchase price of the vessel that you would expect to get? Can you talk to us about that or do you feel reluctant to do that?

Mr Clifford—I would need to check with military as to whether I could disclose those figures.

ACTING CHAIR—But you are obviously happy with the arrangement.

Mr Clifford—Yes, we are. There are healthy rates being applied such that the asset is being paid down in the normal way. We look at it as being similar to a landlord having a tenant in place and the tenant is paying down the mortgage on the vessel.

ACTING CHAIR—Would you prefer an outright purchase? Your hesitation indicates that the rate is quite a good one.

Mr Clifford—The rates have generally been good, but obviously there is a lot of risk involved. An outright purchase returns the cost of the vessel on day one and it is obviously very attractive. If you can secure financial arrangements such that the long-term lease is in place then, like a landlord who has paid off his mortgage, you retain the asset and can still earn revenue from the asset. So in the longer term we are very content with the leasing arrangement as it moves forward. Whether that is sustainable in the political and other circles that we are involved with we are not really sure.

Senator MARK BISHOP—We might switch to similar sorts of questions with the Australian Department of Defence or Australian Navy. Do you supply any ships to the Australian Navy, and what is the nature of your relationship with them? Are they a key partner or just a disinterested observer of your production process?

Senator HOGG—Very good description.

ACTING CHAIR—Or something in the middle?

Mr Clifford—I would not like to say they are a disinterested observer. As I mentioned, we are appreciative of the kick-start that the military program has got from the Royal Australian Navy approaching us with HMAS *Jervis Bay*. It was similar with the American program: they were not in a position at the time, nor did they have a desire, to purchase the vessel. They had a need on a relatively short-term basis in East Timor and we were able to make an offer that they lease the vessel for a two-year period, which they did. That lease came to an end in 2001. The minister at the time advised me that it was predominantly budgetary constraints which prevented the lease being extended, notwithstanding the satisfaction of the operator and the like. So the vessel was handed back to us in 2001. Getting back to your question, Senator: when the vessel was handed back we painted it non-grey and leased it out to an operator, and she is currently operating on the English Channel.

ACTING CHAIR—A win-win.

Mr Clifford—Yes, it was a win-win for us. Our relationship with the Royal Australian Navy and the Army, for that matter, is fine. We welcome their visits and we give them regular updates. But there is no vessel with them at the moment and there is no active dialogue on any immediate program at this stage.

Senator MARK BISHOP—Have they sought to develop any relationship or partnership with you in the medium to long term for any contributions that your expertise, knowledge and skill might bring to the manufacture of ships appropriate to their purpose?

Mr Clifford—No, not to any great extent. As I said, we welcome their visits from time to time and we are happy to show any member of the Defence community around our shipyard and what we have to offer. At the moment, as I said, we are concentrating on foreign military and commercial operators.

ACTING CHAIR—Do DMO visit very often?

Mr Clifford—We have had DMO visits. We do have contact from time to time with Dr Gumley and others. But, as I said, there is no active program at the moment. We are trying to encourage perhaps more dialogue between the Royal Australian Navy and our military operators from overseas, particularly the Americans, so that the in-field experiences that the Americans are getting under their belts can be transferred to the Australians and that base of knowledge can be broadened.

Senator TROOD—If Jervis Bay was a success, how do you explain the lack of interest that the Navy seems to be displaying?

Mr Clifford—I think that Jervis Bay filled a need at the time. My recollection is that the *Tobruk* vessel was under refit at the time. I may have the timing wrong on that. The *Manoora* and *Kanimbla* were not online at that stage and they had an urgent need. That need perhaps does not exist today or is being filled by assets that they have under their wing at the moment. We think that more thought perhaps should be given to some of the opportunities that a vessel such as an aluminium high-speed craft does have to offer, particularly when you read the news about issues in the Solomons and Northern Australia. We know that humanitarian purposes are being well served by our military vessels with the Americans. A vessel went to the tsunami affected region and performed very well. It went to the Katrina region in Louisiana and again performed very well. I think there is a lot of scope for the Royal Australian Navy and Coast Guard and other operators to get involved. We will keep singing the praises of the product and I guess that, if it resonates, it is well and good.

ACTING CHAIR—Which vessel went where? You have *Spearhead* and *Swift*. Do you recall which one went where?

Mr Clifford—*Swift*, I recall, went through—

ACTING CHAIR—Did it go through Panama and up into—

Mr Clifford—Yes.

Senator MARK BISHOP—When the Americans leased the vessels early on, what were they shipping out of the United States over to the Middle East?

Mr Clifford—Obviously, we do not know a lot of the equipment that they had on board.

Senator MARK BISHOP—No, not the detail, just generally.

Mr Clifford—I think they had everything from tanks, striker vehicles and provisioning through to troops. Basically, the vessels contained anything from, as I said, provisioning through to tanks or helicopters.

Senator MARK BISHOP—And the turnaround time was relatively quick—much quicker than the traditional transport operations?

Mr Clifford—Yes. My recollection is that, when Katrina hit, for example, *Swift* was under way within 24 hours down to the affected zone.

CHAIR—From Hawaii?

Mr Clifford—From a base in Texas, I believe.

Senator MARK BISHOP—The LHDs I think are going to cabinet next year for the second stage, aren't they? Is the LHD second stage pass next year?

Senator HOGG—No, AWD's second pass is next year.

Senator MARK BISHOP—When do the LHDs go up?

Senator HOGG—The request for tender goes out today.

Senator JOHNSTON—AWD's second pass is in November this year, I think.

Senator MARK BISHOP—That's fine. I was thinking of the LHDs.

Senator FIERRAVANTI-WELLS—I think we were told yesterday that it is about a six- or seven-month turnaround time.

Senator MARK BISHOP—But the LHDs are a bit in the future. The LHDs are essentially an amphibious transport operation, aren't they?

Mr Clifford—I believe so, Senator, but I have not studied them in great detail.

Senator MARK BISHOP—So you cannot comment on how they are better or different to the sorts of vessels you provide?

Mr Clifford—I would comment that they are from the traditional conservative military or navy backgrounds.

ACTING CHAIR—Steel navy.

Mr Clifford—Steel navy. I do not think that they are today's technology. That is my personal opinion. Because the vessels are under construction all the time we provide the most up-to-date product that the commercial world and the military world are able to absorb. I think the steel navy days have a place but it is not something that we see great merit in.

Senator HOGG—What sort of tonnage would you be able to provide, as opposed to what they are seeking in the request for tender?

Mr Clifford—Dealing with the second part first, I am not sure of the request for tender tonnage.

ACTING CHAIR—Twenty-five thousand tons.

Mr Clifford—We class our vessels more in terms of uplift. The vessel that you are on today has an uplift, a deadweight capacity, of around 750 tons—that is, 750 tons of whatever you want to put on board, whether it is fuel, helicopters, tanks or people. The vessel that you saw—

Senator HOGG—And for a 112-metre vessel?

Mr Clifford—A 112-metre vessel is in excess of 1,000 tons. It depends, really, on the configuration that you are after. Obviously, in a commercial configuration there is a lot of bars, duty-free shops, seats and the like. We have a platform that you can build upon in any way that you can.

Senator HOGG—So you have great flexibility in the sort of platform that you can present?

Mr Clifford—Very much so.

ACTING CHAIR—How many lane metres?

Mr Clifford—I would have to check on that. Several hundred, but I am not sure of the exact details.

Senator HOGG—In terms of the configuration of *Jervis Bay*, is what you have now similar or have there been major advances which have taken place in both your construction techniques and the layout which make it a substantially different craft from the *Jervis Bay*?

Mr Clifford—They are chalk and cheese. The *Jervis Bay* is a relatively small ship. We spoke about the uplift: the uplift of *Jervis Bay* is 400 tonnes. She was configured for a commercial operation, so she did have two bars and a duty-free shop on board when she went into military service.

But it was also configured as a passenger vessel. The vessel was built over 10 years ago now, I believe. For example, when you went on the site tour today you saw the vehicle deck—or, as the military call it, the ‘mission deck’—where they can have their vehicles. HMAS *Jervis Bay* had quite a small mission deck. It was not strengthened in terms of heavy vehicles and its headroom was quite small. It was not designed, for example, to take trucks or buses. It had the ability, for an English Channel operation, to take cars and four-wheel drives. Today’s vessel that we are providing to the military and the commercial world can take buses, trucks, B-doubles, tanks and the like. They are a completely different beast.

Senator HOGG—So your current vessel could take the new Abrams tank?

Mr Clifford—Yes, and in full battle ready. I mentioned on the tour that we closely monitor the airline industry, particularly military transportation. A C-17 aircraft obviously has a lot of capacity in terms of what it can do but it is quite limited when compared to a ship. Our vessels can take many—up to 10—tanks in full battle ready whereas a C-17, for example, can take one tank in a stripped down mode.

ACTING CHAIR—What sort of speed would you get from one of your 110-, 119- or 120-metre vessels fully laden?

Mr Clifford—Fully laden, we are looking at a surface speed of 40 knots. Obviously it depends what the requirement is. In a commercial operation, the customer wants 40 knots, fully loaded, from point A to point B.

ACTING CHAIR—Can you approximate the range at that speed?

Mr Clifford—Several thousand miles—

ACTING CHAIR—Nautical miles.

Mr Clifford—Yes but, again, it depends on load and it depends on operating parameters.

ACTING CHAIR—Headwinds, tailwinds, all sorts.

Mr Clifford—*Jervis Bay*, for example, had quite a limited range because she was designed for the English Channel, and we encourage our operators not to carry big reserves of fuel back and forth because it just costs money. We actually put additional tankage into *Jervis Bay* before she went to East Timor but it was relatively small. Our current vessels obviously have trans-Atlantic capabilities.

Senator HOGG—How good an appreciation do you believe DMO have of the capability of your current craft in terms of the modern theatre of war and also the rescue packages that might take place in places like the Solomons or for tsunamis and those sorts of things?

Mr Clifford—I think their level of knowledge could and should be improved.

Senator HOGG—I just want to find out: is there is a prejudice against aluminium ships in the conventional military because of what happened in the Falklands and other experiences?

Mr Clifford—I think there is a myth that the aluminium ships are not the way to go, that they burn and ridiculous things like that. Aluminium cannot burn. The fact is that it is the way forward in terms of manufacturing capacity. Again, I will get back to the aircraft industry, which we follow very closely—in fact, we align ourselves more with aircraft manufacture than we do with steel ships. A steel aircraft will not fly; a steel high-speed craft will not be high speed. The fact is that aluminium works in a military environment in aircraft and it works in a military environment in a high-speed craft. You have just got to get on board and ask the Americans.

ACTING CHAIR—For a bit of background from Incat, are you able to tell us what your current order book now stands at, approximately? If you are reluctant, that is fine.

Mr Clifford—It is in the hundreds of millions.

ACTING CHAIR—You have two vessels with the United States military, *Swift* and *Spearhead*. Can you briefly go through the specifications of those two vehicles, just off the top of your head? Size, dimension, range, size, capacity, speed.

Mr Clifford—We have actually got three at the moment: *Joint Venture*, *Spearhead* and *Swift*. *Joint Venture* is a 96-metre vessel, and *Spearhead* and *Swift* are 98-metre vessels. In terms of speed, light ship, they are around 48 knots; laden, they are around 40 knots, depending upon the range you would like to employ at the time. The range is in the thousands of miles. As I say, the uplift is around 750 tonnes for those vessels.

ACTING CHAIR—What sorts of power plants are in these sorts of vessels?

Mr Clifford—They are medium-speed diesel engines which drive a water jet through a gearbox. They are all water jet propelled.

Senator PAYNE—Mr Clifford, I think in your introduction you said you also chair of the Australian Shipbuilders Association—

Mr Clifford—Yes.

Senator PAYNE—which obviously encompasses a diverse range of shipbuilding industry in Australia. What is the nature of the association's engagement with Defence, specifically, and DMO more broadly?

Mr Clifford—The association is a collection of members, obviously. We have members from the spectrum of shipbuilders and suppliers to the shipbuilding industry within Australia. We have members such as my company, Incat, which specialises in aluminium high-speed craft, and we have other member companies which specialise in large Navy steel ships. As I say, the association really is a collection of people with a common interest in shipbuilding. It is not strictly limited to shipbuilders; there are suppliers to shipbuilders, such as lifesaving equipment and other supplies. The association from time to time presents to Defence in relation to what members are up to and has Defence update the association in our various meetings throughout the year.

Senator PAYNE—Do you think that relationship could be enhanced? Do you think that even from both directions there could be better communications established and more interaction with the people in naval shipbuilding who are running what is built in Australia?

Mr Clifford—It is always fair to say that more interaction is a good thing. While each company that is a member of the Australian Shipbuilders Association—the ASA—has their own commercial interests to push and do that under their own banner, as a collective we do enjoy the opportunity to present to politicians and the defence community as a united body. It is fair to say that we are a very broad body in the sense that our company does a lot of things differently to what other companies do.

Senator PAYNE—If, for example, that organisation, the Australian Shipbuilders Association, were to make a submission to an inquiry such as this, what do you think it might identify as some of the biggest challenges for Australian companies in participating in naval shipbuilding in Australia?

Mr Clifford—I know that various members have already put forward submissions and that the Australian Shipbuilders Association is intending to put forward a submission to your

committee. But it will note some divergence of views among our members, which any association is bound to have.

Senator PAYNE—Like most political parties.

Mr Clifford—Yes. The biggest issue for all of us that is being flagged is labour, skills and resources. From Incat's point of view, we have a healthy order book at the moment and we anticipate being in a position where we are going to struggle to meet the requirements that are being sought by the commercial marketplace and perhaps the military marketplace. We are going to be competing for labour. At the moment we are seeking to ramp up our labour numbers, and that will be an issue for us. I think that is a fair assessment of where it comes in. There are a lot of other issues that the members of our association, the individual companies, can put forward to you, but from where I sit that is the one concerning us all.

Senator GEORGE CAMPBELL—I wish to question you on that issue before I go to a couple of other issues. The government was providing a fund for training apprentices in the shipbuilding industry which has now terminated. I am not asking you to answer this question off the top of your head but if you are putting in a submission perhaps you would address that and tell us what happened in terms of the increase in apprenticeship training in the industry when that fund was established and what has happened with training apprentices in the industry subsequent to the grant being terminated.

Mr Clifford—I will have to do some research into the exact effects of that.

Senator GEORGE CAMPBELL—I understand that, so take it on notice.

Mr Clifford—I can say that we had many apprentices at one stage. When our numbers in the commercial environment dropped, obviously the numbers of corresponding apprentices dropped. We are now seeking to increase those, and we are putting on many apprentices each week as we speak.

Senator GEORGE CAMPBELL—I am particularly interested in what the impact of the grant termination has been. Perhaps the submission from the ASA may address that issue.

Mr Clifford—It will.

Senator GEORGE CAMPBELL—From your submission it appears that all the success that you have had in penetrating the US military market with these leasing arrangements—and I must say there appears to be a similar set of circumstances for Austal in terms of their success there—has been built upon a strategic alliance being formed between you and Bollinger, which is a huge defence contractor to the US Navy. Can you tell us in a bit more detail the nature of that alliance and how that alliance works for you in opening doors in the military market in the United States?

Mr Clifford—We do have a joint venture alliance with the Bollinger shipyard in Louisiana. They are a shipyard that have had long and extensive dealings with the US military. When the US military identified a desire to obtain our product, it became obvious to us that it would be much easier to do that through an American facilitator as opposed to a small shipyard in Hobart, Australia. So on two fronts our alliance with Bollinger has worked successfully. One is that they

have been a middleman, to some extent, and a facilitator. Also, they share our view that long-term success in US military circles is going to require US home-grown product. We have identified Bollinger as a good partner to move forward with that process should the opportunities arise.

Senator GEORGE CAMPBELL—Are you able to enlighten us as to the commercial arrangement that exists between Incat and Bollinger?

Mr Clifford—Most of that is commercial-in-confidence, of course, but it is basically a 50-50 joint venture.

Senator GEORGE CAMPBELL—So it is a genuine joint venture between the two of you?

Mr Clifford—Yes.

Senator GEORGE CAMPBELL—And you see that as being the most effective avenue into that marketplace—probably the only effective avenue into that marketplace?

Mr Clifford—We are not in a position, from a manpower point of view or a financial point of view, to set up shop with a large commercial facility in America at this point in time. We see that as distracting us from our core business, which is shipbuilding in Australia. That is a business that we are very proud of and want to maintain. We do see it as appropriate that if we are to have further success in America the product will need to be built there. We do not foresee a stage where the American shipbuilding lobby will readily allow Australian built ships to be sold into America. Leaving free trade agreements and the like aside, it is just not going to happen, in our view.

Senator GEORGE CAMPBELL—But you have had a long experience in your company, particularly in the early days, of building under licence—in fact, licensing other builders to build your product. You essentially built prototypes down here and licensed them out to NQEA and others. So that experience would stand you in good stead to enter into an arrangement with Bollinger to have the construction of your vessels done there to enable you to access that market.

Mr Clifford—It could do, although the licence arrangements that you refer to were 20 years ago for us, so it is not really in our minds at the moment. There will be more of a joint venture approach as opposed to a strict licensing agreement.

Senator GEORGE CAMPBELL—Were you aware of the recent orders being placed by the New Zealand government for offshore patrol vessels and inshore patrol vessels? I forget the name of the utility vessel.

ACTING CHAIR—Project Protector.

Mr Clifford—I am aware of it in a general sense but not the detail.

Senator GEORGE CAMPBELL—Were you asked to tender on that?

Mr Clifford—I do not believe so.

Senator GEORGE CAMPBELL—They did not particularly look favourably on aluminium vessels for that.

Mr Clifford—They may have been in touch with some of our marketing guys, but, no, it was not a project we pursued with vigour.

Senator GEORGE CAMPBELL—The role that your vessels play—the ones we have seen this morning—seem to me to be primarily transporters or movers of government personnel. Given the nature of the military these days, that is a pretty ad hoc type of activity. It is not something that is happening day in, day out. Isn't this leasing type arrangement a more sensible arrangement for the military and the navy to enter into than actually purchasing these vessels and having them sitting inactive along the wharf for long periods of time? Simply, when there is a need to lease them off your company or wherever they can get them from, they can use them for that period of time and then put them back into commercial operation. It is essentially mixing commercial and military needs.

Mr Clifford—It may be. The fact that we have had vessels available to lease to military programs in the past has been more good fortune than management. Basically they are large assets that we need to have employed all the time and move on.

Senator JOHNSTON—You have to bear the risk.

Mr Clifford—We have to bear the risk. There have been scenarios put forward such that a commercial operator operates the boat and it can be seconded into a military operation. That is one that I guess would make some sense. There have been other arrangements where a vessel has been shared between, say, a New Zealand and Australian military or even an American, UK and Australian military. That is another scenario.

To answer your point, predominantly our vessels have been transporters. We do not put them forward as combatant vessels at this point in time; maybe they will develop into that. But, again getting back to an aircraft analogy, a C17 aircraft is not a combatant, it is a transporter. On the point that you raise, I assume that most of the C17s are actually owned within a military circle as opposed to leased from a private operator, notwithstanding that they may only be used at various levels and intensities.

Senator GEORGE CAMPBELL—This is an experience that the military has had which obviously from their point of view has worked well for them. They have used *Jervis Bay* when they needed it and been able to get rid of it when they do not have a need for it.

Mr Clifford—It is sustainable; we have had experiences, and the US program is evidence of that. Without putting on a sales pitch, we are more than happy to offer a vessel to the Royal Australian Navy or Army under a lease arrangement, if that is what suits their purpose.

Senator TROOD—On this matter of technology, it is clearly a challenge to convince various people, primarily the navies, of the value of this kind of technology that you have. Do you see that able to continually evolve, or have you reached a platform in relation to the kinds of ships that you are building now that means that there is going to be a lull for a period of time before you can evolve into something even more sophisticated?

Mr Clifford—I think it will continue to evolve. As I mentioned before, our vessels since 1990 have evolved basically threefold, from a small, 74-metre, vessel which could take a few cars through to the large vessels that we are building today. Notwithstanding that it is 16 years, that is a relatively short period of time for a new technology to come forward. Large high-speed craft were not around prior to 1990, when we built the first one. There was hovercraft technology, which was very small, but in the last 16 years we have really advanced the cause considerably.

On the question of the education of defence and militaries, I guess we might be battling 300 or 400 years of history in terms of tradition and conventionalism, but we are happy to continue that process. As I said, it is a very fast-moving transportation sector. The way that we look at it is: if you study ships, aircraft, trains, cars—any form of transport, which is what we offer—over the years they get faster and faster, and over the years, if there is a choice between fast or slow, people will go fast. That is where we see the process moving forward.

Senator TROOD—On the technology, the aluminium in particular, maybe this is overstating it but is it equivalent to the 19th century change to steel in ships? Is it something of that historical significance or is it something rather more modest?

Mr Clifford—I think it is more so.

Senator JOHNSTON—Bigger than that?

Mr Clifford—We think it is bigger than that. We think it is the transformation between a transatlantic liner and a transatlantic jet aircraft. You do not see too many transatlantic liners nowadays, apart from cruise ships.

Senator TROOD—So you do not see any inherent limitations in the technology? You do not see that you cannot build longer or bigger ships?

Mr Clifford—No. We have actually got drawings of much better ships. Being a catamaran, beam is important, and we will take the beam out to the size of the Suez and Panama canals. In length, we have drawings for 150-metre vessels at the moment.

Senator TROOD—I have a couple of questions about navies. You have given some evidence in relation to the United States Navy. Are there any other navies that have shown interest in your vessels?

Mr Clifford—Yes, we have continuing dialogue with the UK Ministry of Defence, the Norwegian and quite a number of other European navies and North American interests as well.

Senator TROOD—Do you have any serious or encouraging prospects in relation to those navies?

Mr Clifford—We have a dialogue going forward, but the way that it is working at the moment is that the American military are really doing the selling for us at the moment. They are having dialogue and liaison between the militaries themselves.

Senator FIERRAVANTI-WELLS—Just on the issue of the aluminium: the Navy, of course, have built the Armidales in aluminium. You did not tender for that. I think this morning we heard that you are simply going to concentrate on the two hulls. So that was not something that you would have tendered for?

Mr Clifford—Basically, we have limited resources in terms of management and manpower. We want to be the most expert at what we do, which is producing large aluminium, high-speed catamarans. We are focused on that to the extent that we can be. We produce vessels of varying lengths and configurations, but we do not claim to be a jack-of-all-trades. We do not claim to be someone who is expert in a whole lot of areas. We will stick to what we know at the moment, unless it makes good commercial sense to explore further avenues.

Senator FIERRAVANTI-WELLS—When was your company founded? It is a family company?

Mr Clifford—Yes, it is. It has been operation since the early seventies.

Senator FIERRAVANTI-WELLS—Have you felt that your family owned status has at any time, particularly with the Australian Navy, worked against you?

Mr Clifford—I do not think it is the family owned status. I think it is the fact that we are a relatively small company with limited financial resources. We do not have a public shareholding that we are beholden to. That has its negative impacts, but it has its benefits as well.

Senator FIERRAVANTI-WELLS—But it has not worked against you in your dealings with large navies like that in the US?

Mr Clifford—No. I think they quite like it, actually.

Senator FIERRAVANTI-WELLS—I want take you to this. I do not know if you are aware of the publications that Navy have put out, particularly a DMO paper of 2002 that suggested that the government should assist industry to rationalise, reflecting a one-purchaser, one-supplier model. Is that something that you would have a comment on? Do you think the concentration now of naval shipbuilding in South Australia and the push by the South Australian government that way is going to affect you and what you do or make it harder for you to be involved in that industry?

Mr Clifford—We are not scared of competition from anyone, be it an individual competitor or a conglomerate within a state. I think the effect that we are concerned about is on labour and resources. We have ambitious plans. We see ourselves as being the Boeing of the industry and Hobart, Tasmania, could well be to high-speed craft what Seattle is to the aircraft industry. That is very ambitious, but that is why we are in business. To do that we are going to need a lot of resources, a lot of people and a lot of support from local, state and federal politicians, but the opportunity is there. Australia leads the way in high-speed craft and the opportunity is really there to grab hold of this industry in the same way that Boeing and Airbus have grabbed hold of theirs.

Senator FIERRAVANTI-WELLS—You mentioned that you were approached by the defence department. Who approached you? Was it the military side or the DMO? I mean in relation to your dealings, which subsequently went on to the lease of Jervis Bay to the Navy?

Mr Clifford—From recollection it was officers in the Navy itself, but it is some years ago now.

Senator FIERRAVANTI-WELLS—You were previously asked about visits by DMO and the particular interest or otherwise that they take in your activities. Inferred in your answer was that the DMO basically has a predetermined view on how things should be. Do you get the impression in your dealings with them that they are not really open to being a bit more flexible in their outlook?

Mr Clifford—I think there are a lot better lobbyists around than we are. We probably do not put enough time and effort into getting our message through to some of the defence circles that we should, but we really are so busy on so many other opportunities that we can only do so much. But I do not close the door on that. As I say, we have good relations with everyone in Defence and DMO and military circles. We are happy to have our product speak for itself and if there is an opportunity there we will pursue it as quickly and as vigorously as we can.

Senator TROOD—If you have these ambitions in relation to your future business, it would seem to me that it almost certainly requires that you be a public company at some juncture down the track. Have you given thought to that possibility in the short term or not?

Mr Clifford—We have considered it from time to time, but it has not been something that we have embraced. Really, the opportunity has got to be there. We see all of the hindrances that the shackles of a public company can put on you. Our business has survived and flourished by being flexible, by the fact that risk can be taken, where perhaps in a public company it cannot be taken. We had a ship available for the Royal Australian Navy sitting there when they needed one and that risk was on our shoulders and our financier's shoulders. Perhaps it would not have been the case if a public company's conservatism had been in the equation. Having said that, we realise that there is only so much you can do as the small entity that we are at the moment. It may be in our future, but it is not in our immediate future.

Senator HOGG—I have one last question with respect to your relationship with the United States military. Do you have US military personnel embedded in your organisation to develop what the US military necessarily want? In other words, are they physically on your staff?

Mr Clifford—No, we do not. We obviously have military presence in the yard from time to time involved in the commissioning and operation of our vessels, but we do not have US military on the payroll. To a large extent our friends At Bollingers are much better placed to deal with some of the personnel issues, from an American to American point of view.

Senator PAYNE—They speak the same language.

Mr Clifford—It is a different language to the one we speak!

CHAIR—We have come to the end of our questioning. Mr Clifford, thank you very much for coming along and giving evidence this morning.

Mr Clifford—It was a pleasure. Thank you for your time.

Proceedings suspended from 12.13 pm to 12.49 pm

EDWARDS, Mr Christopher Wentworth, Managing Director, Moonraker Australia; Chairman, Tasmanian Maritime Network

EDMUNDS, Mr Steven, Managing Director, Haywards Steel Fabrication and Construction

ACTING CHAIR—I hereby reconvene the Senate Foreign Affairs, Defence and Trade References Committee inquiry into naval shipbuilding in Australia. I welcome our next witnesses, who represent the Tasmanian maritime network. You have read the chair's advisory comments on the giving of evidence. Do have any questions regarding that document?

Mr C Edwards—No.

Mr Edmunds—No.

ACTING CHAIR—I invite you to make an opening statement—and I believe you intend to make a PowerPoint presentation—after which we will move to questions. We ask that you provide the committee with a printed copy of your presentation as it will be made an appendix to our written report.

Mr C Edwards—Our plan is to give you a presentation of Tasmania's maritime network, which is a culmination of the maritime industries in this state, and a brief overview of its capabilities. Also, Mr Edmunds will discuss our steel fabrication capabilities, particularly in relation to the amphibious vessels.

A PowerPoint presentation was then given—

Mr C Edwards—These days, navies around the world want the very best—the most advanced technology and the finest quality. That is what they need if they are to get the job done quickly, efficiently and economically. Lives depend upon it. Increasingly over the past decade they have been coming to Tasmania to see our state-of-the-art maritime industry, and more and more it is here that they are finding just what they are looking for. Running at a sustained 48.7 knots down the coast of Qatar in the Iraq war, the US commander of the Incat built vessel, *Spearhead*, could only describe her performance as 'awesome'. This is the performance they are coming back for.

There are vessels like the US Navy's HSV2 *Swift* with its helideck and stern vehicle ramp, which can take battle tanks of up to 63 metric tonnes and is capable of being submerged for launch and recovery of amphibious assault vehicles. *Swift* can maintain an average speed of 35 knots and more while loaded with 350 personnel and military equipment of up to 500 short tonnes. With its high-speed low draft and automated docking system that enables docking without tugs in winds of up to 50 knots, it is truly the boat of the future, making it possible to undertake a wide variety of missions anytime, anywhere, whether they be tactical operations or high-speed transportation of cargo from deep water to shore or even river operations. And the response is still the same: 'Awesome'—awesome speed, awesome automation and awesome response.

But these vessels represent more than just the success of one company; everything on board the big cats is state-of-the-art and contributes in no small way to the accolade ‘awesome’. What is more, when speaking of the maritime industry in Tasmania, they only represent the tip of the iceberg. Today we are exporting a comprehensive range of products and services that can be classed as the world’s best, from self-inflating lifejackets you can actually enjoy wearing to vocational training in a wide range of maritime studies to unique lightweight structural fire protection systems with removable panels for maintenance.

Then there is design. The industry specialises in high-technology design that takes in that of the ships themselves and all of the revolutionary components that come together to provide the awesome experience—leading-edge design like that provided by Revolution Design, which has so impressed the US military, and design that can transform a commercial vessel into a versatile military craft, encompassing the whole process right down to performance analysis of the various shipboard systems that are to be incorporated with risk and failure mode analysis for fast craft.

State-of-the-art, environmentally sensitive in-house designs and technological skills have taken North West Bay Ships from high-performance, high-technology aluminium catamaran and trimaran fast passenger ferries supplied to countries in Europe, Asia and the Caribbean to the largest by volume multimillion dollar 61-metre trimaran super yacht, *The White Rabbit*, a leader in its field, delivered to Asia in July 2005 and now to landing barges for the Australian military. When it comes to lightweight, high-performance aluminium catamarans and monohulls between 15 and 40 metres, Richardson Devine’s design team is well versed in working hand in hand with naval architects to produce custom vessels that are in demand both at home and overseas. Their special skills drawn from first-hand experience of both Australian and overseas techniques result in passenger vessels that can be relied on for performance and quality.

Taylor Bros have developed a diversified business catering for today’s growing demand for specialised purpose-built marine vessels and equipment and also for refurbishing, service support and maintenance catering for the US, Australian and New Zealand navies as well as Australian Antarctic and overseas commercial vessels. The latest in modular design featured in their mobile accommodation units permits ship interiors to be designed and built-in at home, delivered by a container and fitted on vessels in remote locations around the world. The growing number of local and visiting ships has encouraged the growth of quality provedoring. Rising to these needs, Tasmanian Shipping Supplies has developed an expertise in supply and resupply catering to a wide variety of specialist needs from bulk carriers and general cargo and fishing trawlers to Australian and foreign Antarctic stations and vessels. The company also specialises in the resupply of international naval vessels in these waters such as the US coastguard *Polar Sea* and the many cruise ships that visit during the summer months.

Tasmania’s marine engineering workshops provide an impressive array of quality goods. Innovation and skill are qualities in which we have a high investment. Custom design casting and machining services in both ferrous and nonferrous metals by APCO result in high-quality products as diverse as hydraulic cylinders, water jets, deck hatches, bulkhead seals and piping system fittings, cast in aluminium and stainless steel. APCO hydraulic cylinders are in use in many countries, including Europe and the UK, interceptor kits, motion control hydraulic cylinders and two-square metre T-foil sets are supplied to the USA military.

Riley Industrial and Marine Sales specialise in the design and manufacture of hydraulic and pneumatic systems, special lightweight deck machinery, rescue boat davits and marine cranes for high-speed light craft vessels supplied to a growing world market as well as domestically and to the Australian Navy. Hydraulic products are as diverse as ride control cylinders, manifolds and hydraulics for Ro-Ro ramps and ship steering and reversing, high-quality fuel pumping and filtration equipment, large anchor winches. Capstan and pneumatic systems for fire dampers are also within their expertise.

Moonraker Australia has a long history of designing and manufacturing systems that offer the best in performance and is a preferred supplier to the Australian Department of Defence with antenna specified equipment on naval vessels. The company has pioneered the development of unique corona shielding for continuous high powered transmission and an HF simulator for the Anzac Navy ships. It has developed a moored buoy for supporting underwater equipment for the detection of mines in harbours. The latest design antenna the unique Link-16 tactical antenna system capable of combining six or more existing antennas in one has just completed a six-month trial on HMAS *Anzac*. The company has a history of working with defence contractors around the world, having supplied military systems to many countries, including China, Malaysia, Singapore, Indonesia, Russia, Thailand, the United Kingdom and the USA.

Colbeck and Gunton, world leaders in the design, manufacture and installation of marine structural fire protection, has successfully completed testing their new international-standard structural fire protection system for the fast ferry industry, featuring high corrosion resistance and removable panels to provide easy access for maintenance. The company has developed a strong relationship with testing and survey authorities and work is progressing towards US Coast Guard approval.

Liferaft Systems, Australia's marine evacuation systems, are proven to be the safest and most reliable available. Not only are they compact, lightweight and efficient; they feature the only slide system that delivers passengers directly into the life raft without the use of a boarding platform. The company has representatives worldwide in 18 countries and a fully operational office in the UK to service a world market. Recently the company has taken up the challenge to design and supply the Cormorant lift bag, which makes it possible to retrieve mines with ships at a safe distance. This has now been joined by a brand-new, soon-to-be released inflatable rescue platform, primarily for air rescue services but also with many other possibilities.

In Stormy Australia's NATA tested personal flotation clothing you can work all day long without it getting in the way or making you feel uncomfortable—clothing that is rugged, windproof and waterproof that in an emergency transforms into a life-saving flotation device either via an automatic CO₂ system or by inflating orally. A wide range of PFD clothing has been designed, from jackets with unzippable sleeves and slimline yokes and vests to high-waist and bib-and-brace pants to matching safety harness and tethers. Research and development is ongoing to maintain pace with ever-changing needs in the marketplace and to take advantage of the latest technological advantages.

Muir Windlasses have been taking their precision anchoring and docking systems overseas for many years now with considerable success in both the recreational and mega-yacht markets, earning them the title of Tasmanian exporter of the year and Australian small to medium export manufacturer of the year for 2004. At home Muir supply approximately 85 per cent of

production boatbuilders in the recreational and pleasure craft sectors, and they are now expanding into military areas with systems supplied to fast ferries and high-speed recovery craft, patrol boat and police vessels in the Middle East, India, Asia and the Pacific.

With sales to the Royal Australian Navy, the US Navy and the Republic of Singapore Navy, Fiomarine are now celebrating the success of their new acoustic submersible marine marker buoy and retrieval system with sales to the Japanese Navy. The Fiobuoy system ensures safe and secure deployment of research and monitoring equipment and can be used in environmentally sensitive zones where surface buoys would be visually unsuited. The submerged buoy remains hidden until programmed to surface. With the new acoustic system, the buoy can be remotely triggered to surface on demand. Recently Fiomarine have had input into the development of Cormorant lift bag and life raft systems.

With equipment and infrastructure valued at \$100 million and a concentration of specialist technical expertise, AMC, or the Australian Maritime College, is well placed to offer consultancy and research services through its commercial arm AMC Search, which provides competitive, experimental and theoretical hydrodynamic research for industry, defence and research organisations. Facilities like their cavitation tunnel, towing tank, model test basin, flume tank, marine simulation centre and high-performance computer cluster all make it possible to design with state-of-the-art accuracy in addition to providing excellent simulation and training.

When it comes to shipbuilding techniques, TAFE Tasmania's metal trades is a world leader. The specialist skills that they teach form the foundation of Tasmania's highly successful, high-technology shipbuilding industry. So it is not surprising that their graduates are a well-sought-after commodity by shipbuilders. Over the years, they have attracted visits from various international ship engineers to see first hand the precision training they provide.

While the college is famous for its state-of-the-art aluminium welding and fabrication techniques, expert training is also available in metal machining, hydraulics, pneumatics and mechanical fitting skills, encompassing all aspects of metal trades. In a project with the Australian Maritime College for the Australian College of Kuwait, negotiations are under way to establish a training program for Bollinger-Incat in the USA.

Pivot Maritime specialise in bringing training to you, and can tailor training to suit your operation. A wide range of vessels can be simulated, up to full mission, multipurpose bridges on large vessels, with training including automatic radar plotting, GPS and DGPS positioning, and VTS, or vessel traffic systems, as well as the use of ECDIS, electronic navigation information charts, ship status displays and a full range of ship controls. They also provide consultancy services to the maritime industry and work closely with national, regional and international organisations to solve problems and improve issues affecting the maritime industry.

That Tasmania's leading edge marine industry makes a considerable and growing contribution to the Tasmanian economy is very much in evidence today. What is not so generally known is the increasing impact it is having on world markets. Tasmania's marine industry relies on quality and technological innovation, and this is becoming more and more important as the years go by. If Tasmania is small in size, we in the marine industry are not slow to take up new challenges.

What is more, we are more than ready to use our combined strengths to the advantage of all, as is evidenced by the success of the Tasmanian maritime network—taking the world by sea.

I would now like to introduce Mr Steve Edmunds, the MD of Haywards, which, as a major steel engineering fabrication company, is leading Tasmania's bid for the amphibious ship modules.

Mr Edmunds—Thanks for the opportunity. I will give a brief background regarding Hayward steel fabrication. We are not members of the TMN at the moment, but possibly will soon be so, if our involvement in this area of shipbuilding continues. Our background is in construction engineering work. So we are involved in all sorts of fabrication work, from simple structural steelwork through to wind towers, ship loaders and those types of things.

Over the years we have developed a workforce in northern Tasmania which has also spread to the north-west coast and into the Hobart area. We have primarily been involved in work in the state, but have found that, with our workforce continuing to expand, we have needed to open up new markets. Especially over the last one to two years, we have been involved in projects such as the Spencer Street station in Melbourne and the MCG. We are building thickeners in Queensland, conveyor systems in New South Wales, and also at least one ship loader in Koolan Island and possibly another one for the Geraldton development.

We have a quite experienced and skilful workforce which we are trying to develop. We are looking at longer term projects such as naval shipbuilding in order to keep some consistency and stabilisation in our workforce. We have found, being project orientated, that we are certainly up and down in the economic cycle. We have expanded our workforce and are pushing towards 150. In a short space of time we have been able to develop and increase our apprenticeship levels and traineeships.

We have been fortunate in that northern Tasmania has been identified as a location for a technical college. Metal trades is certainly an area that has been identified. We are looking to hook onto the back of that to provide additional training so that we can be involved in a wider range of projects, thus increasing our work force, which will be of benefit to Tasmanian industry and to the state as a whole. So we are certainly in favour of trying to push ahead with some of these things.

To sum up, I am here today to provide some answers and additional feedback on some of the key areas, and address any concerns that you may have.

Senator PAYNE—Mr Edmunds, you say you are not a member of the TMN but you might be about to become one. How does one become a member of the TMN? How is it formed and who runs it?

Mr C Edwards—I should have started off by explaining the way it got started. Moonraker is an exporter and I spend a lot of time overseas. You go into to your customers' premises and you do your business and at the end they often used to ask if I knew where I could get this or that in the marine industry. I would say, 'Yes, we have someone at home who makes those things,' and I would be floundering around trying to find the name and address. So I thought: why don't we have a simple brochure we can carry in our briefcase and we can flick this to them to tell them

all about the Tasmanian maritime industry. When I came back I discussed this with a number of colleagues who had experienced similar situations. So we formed a group amongst ourselves. We now participate in overseas marketing and trade exhibitions, like in Sydney and Singapore. We are doing Posidonia in Greece later this year. It is funded by ourselves as manufacturers. The government has come on board with secretarial support—

Senator PAYNE—Is there any financial assistance from the government?

Mr C Edwards—No, we fund it ourselves completely. It is all funded by the members.

Senator PAYNE—What percentage of your effort, if you like, goes to engaging in defence relationships—we are here to talk about naval shipbuilding, so that side of things?

Mr C Edwards—The Pacific exhibition, which is an international exhibition held in Sydney, is a defence exhibition. Our group has participated in all of those to date. Almost all our members are involved in defence in one way or another. It forms about 25 per cent of Moonraker's overall business. Lifteraft Systems, who make, for instance, evacuation systems, currently have contracts with the French and the Canadian navies, I think, to supply evacuation systems. The contenders for the amphibious ships and the air warfare destroyers have virtually told them, 'Yes, we are going to have your system on our ships.' It is that situation. There is also a lot of interest in the fire protection systems that one of our group makes, because it is quite high-tech and very light weight.

Senator PAYNE—Finally, to Mr Edmunds, you mentioned in your brief remarks that Haywards was particularly interested in naval shipbuilding to help consistency in your workforce—in terms of training, skills development and things like that, I assume?

Mr Edmunds—Yes, Certainly, being project oriented, our cycles are up and down. This to us is a longer term project and we consider that it is a good fit in our business. We have shipbuilding people from previous establishments based in the Launceston area and we have also had some involvement in shipbuilding with Peninsular Searoad charters with their Sorrento to Queenscliff vessel and various other projects throughout that time. We certainly have the background to be able to provide expertise in this area. It is one area we have identified for the longer term.

Senator PAYNE—Is your suggestion that you know that the workforce is there because you have used them before in project capacities and you know you can draw on them for a defence role if you won one or is it something that you think needs to be developed?

Mr Edmunds—It is certainly a bit of both. In shipbuilding in the past we have provided a base crew and then we have provided people without the shipbuilding expertise—but certainly tradespeople in other areas—to work with them to form a team. We started off with a crew of 10 guys and built that up to 70 guys to build this ferry, because we had our other work as well. It is bringing all those people together—both people who have to travel to the mainland for project type work for longer term things as well as growing the business within the state. Our involvement with the amphibious ships would be in fabrication modules.

ACTING CHAIR—Do you do steel or aluminium preferably?

Mr Edmunds—We do all types of steel fabrication work as well as aluminium.

Senator MARK BISHOP—So the Maritime Network is essentially a privately funded industry association that assists members to gain work and contracts. Is that correct?

Mr C Edwards—Yes. It is sort of like a mutual beneficial society, if you like, from that point of view.

Senator MARK BISHOP—Do you have a training arm or training role?

Mr C Edwards—No, we do not. Individual companies do that themselves. As you can see, a couple of our members in particular are involved in training—the AMC and the TAFE.

Senator MARK BISHOP—But your organisation does not?

Mr C Edwards—Our organisation as such does not involve itself in that, no.

Senator TROOD—How many members are there in the network?

Mr C Edwards—Currently I think 15 companies are members.

Senator TROOD—I understood you to say that almost all of them are involved in export in some way?

Mr C Edwards—Yes. Our basic rule of thumb is that you have to be an exporter and a manufacturer.

Senator TROOD—How many employees would the network have?

Mr C Edwards—Currently the total group turn over about \$250 million to \$300 million a year. Employee wise at the moment it would be around 1,200 to 1,500, depending on what ship builds are going on, of course, because, as you know, shipbuilding is a cyclic industry. At the moment Incat are increasing their workforce and North West Bay are downsizing a bit. Our other shipbuilders are also increasing.

Senator TROOD—Do you seek to have a lobbying role in relation to policy issues with regard to shipbuilding or is it just export oriented?

Mr C Edwards—That is a role that has been thrust upon us; it is not one that we actually sought. The government in Tasmania in particular looks to us for advice on these issues and sees us as the lead maritime group and if you like one of the key capability areas of our state. We have a long history and tradition of shipbuilding in Tasmania. That is where a lot of the expertise comes from. A lot of our forefathers have been in the business before us. My father started my business, for instance. That is how it has come about.

Senator TROOD—You are mainly lobbying the Tasmanian government rather than the Commonwealth government?

Mr C Edwards—Yes, that is correct. We have not felt we have needed to do that yet. I guess the closest we have come to that is nominating some of our members for membership of federal bodies—standards and those sorts of things.

Senator TROOD—Do you arrive at a collective view about the overall state of the nation's shipbuilding or naval shipbuilding or do not seek to have a view on that specifically?

Mr C Edwards—Yes, we do. There are two ways we tend to look at it. One is that we are all fairly high technology oriented in what we do, even from our ship provedoring to, in our case, antenna manufacturing. We tend to all be at the leading edge. Unfortunately, in Australia, we do not use any of that leading-edge stuff very much. We tend to buy overseas. That is a real shame, I think, but that is the way of things. We often find with our antennas that we will be selling them to the Malaysians or the US before Australia even looks at them. It is not always the case, but it often is the case.

ACTING CHAIR—Why is that? Is it your fault or their fault?

Mr C Edwards—I hesitate to use the word 'fault' but I suspect it is really because we still have this mindset that if it is made in Australia there must be something better overseas.

Senator TROOD—I understood you to say in your presentation that a lot of the members are actually subcontractors in some way to the various shipbuilding projects—they were subcontractors to Anzac, in relation to Collins perhaps, in relation to the air warfare destroyers and the LHT program et cetera?

Mr C Edwards—Yes, that is correct. I am not saying that we get excluded; I do not mean it in those terms. But quite often the things that we develop become incorporated in other countries before we ever see it incorporated in anything in Australia.

Senator TROOD—Would it be correct to say that you sense a greater degree of resistance to the use of your technology in Australia and overseas?

Mr C Edwards—Yes, that has been the case. It is changing. The Australian Defence Materiel Organisation these days tends to have better practices as far as demonstration facilities go; in other words, demonstration of new technologies. They seem to be more open with that.

ACTING CHAIR—Can you tell us the last time you attended a demonstration type presentation where you got a chance to strut your stuff, so to speak?

Mr C Edwards—To individual officers I guess we have, but not to a group of them. We do present to RIMS, ADI, Tenix and that sort of thing. That is fairly important to us. Most of us, apart from our actual shipbuilder membership, are not going to win the major contracts on our own. So we have to be in that situation.

Senator TROOD—There is a submission from the Tasmanian government, I think it is, and there is an annexe to it. Your own company has a lot of overseas exports to foreign navies.

Mr C Edwards—Yes.

Senator TROOD—Is that the largest part of your business?

Mr C Edwards—No. The defence part of our business is about 25 per cent of our company's business, but probably 20 per cent of that 25 per cent goes overseas in military terms.

Senator TROOD—It is quite diverse, that range of clients, or customers.

Mr C Edwards—They are, yes.

Senator TROOD—Are they markets you have secured by the individual effort of a company, or have you used Australian trade representation around the world to achieve that?

Mr C Edwards—Mostly our own individual efforts. But again, a lot of it also comes from such things as this group presenting in overseas venues at exhibitions. For instance, with the business we do in China, because China tends to limit its communications for business to government organisations—they do not allow private individuals to have communications equipment, basically—we tend to deal with the military and their departments of agriculture and fisheries and those sorts of things. But a lot of our equipment has gone to the Chinese navy. A couple of years ago we did 180 base stations for the Chinese navy. The head of the Chinese navy communications division came out to visit us to see what we were up to. Just as an aside, it was interesting. We took him over to look at one of the Incat vessels. They just could not believe their eyes—their eyes were popping out of their heads—at the technology that was on board that vessel. But that is a side issue.

Senator TROOD—Have these just been single contracts, or have there been follow-on contracts?

Mr C Edwards—They are follow-on, generally. A lot of departments of defence will buy a sample. Not very often today are you able to give samples. For instance, if the US are interested in your product, they buy it from you because that way they don't feel beholden to you. They do their own tests and that is not just for our products—that is virtually for everyone's products. In other words, that way they can do whatever they like with it. They can either buy it or not later and make their own decisions. So they tend to be at arm's length. The countries in Asia—even Vietnam, where we are starting to sell a few products—are very much the same way.

Senator TROOD—It is not a matter of price. The currency fluctuation between these countries that you are talking about would mean that our export capability would be inhibited, given the value of our dollar. So it is a product that is obviously sought after and of high performance in terms of its capacity.

Mr C Edwards—That is correct. I think I can speak for most members of our network, and they are in a similar situation to us. In South East Asia and China price tends to be a bit of a prime, up-front thing before the product—less with the more sophisticated military people like Singapore and so on. China is very price dependent. That makes it a bit hard for us. I keep telling them that they have to release their own currency, let that float and that will sort a lot of that out. They are not too keen to do that at the moment. But in Europe they think we are cheap, so it is quite the opposite there.

ACTING CHAIR—The European navies are your customers?

Mr C Edwards—Yes. Recently we have sold to the Spanish, and the Brits. The Russians have got our products.

ACTING CHAIR—How many of your antennas are on an Anzac class frigate, for example?

Mr C Edwards—Unfortunately, on the Anzac class frigates we do not have that many of our antennas. There are a number on them—probably about four or five. Of course, there is a myriad of them. The main reason we do not have some of our major antennas on them is that they were still being developed at the time that the contracts were being let, although the ships were nowhere near built or anything like that.

ACTING CHAIR—In the early nineties?

Mr C Edwards—Of course, if you are not in at that stage, as you know, you do not get in. That is fair enough. But, as the ships are being refitted, we are now getting our products onto them. The rest of the Australian Navy ships have a wide range of our antennas.

ACTING CHAIR—So it is just a matter of volume? The reason you do not have great penetration in the Navy is because we do not have that many ships?

Mr C Edwards—That is part of it, yes. That is true.

Senator FIERRAVANTI-WELLS—Mr Edmunds, the Tasmanian government submission notes that your group has agreed in principle to become the lead contractor working to a prime for the LHD project. Can you tell me a little bit more about that? What sort of work are you going to be looking for? Can you outline the sorts of products that you want to see on that vessel? Also, will you be aligning with one bid or both of them?

Mr Edmunds—At this stage it is a bit difficult to give too much information away, because ADI, which we have had some discussions with, asked us to keep some of the information confidential. It is really dependent upon their whole case. But we are looking at providing completed module sections which provide the steel fabrication as well as the fit-out of mechanical, electrical and other componentry. So we are able to provide not only the fabrication skills but also many other trades and get as much work into that as we possibly can.

Senator FIERRAVANTI-WELLS—You will be doing the smaller of the modules?

Mr Edmunds—Not necessarily.

Senator FIERRAVANTI-WELLS—What is the size?

Mr Edmunds—We probably do not talk in terms of size so much. It is probably in terms of capacity. When we talk about fabrication work it is really the capacity and ultimately the number of people who we have been able to provide and the amount of work and the output they can achieve over a 12-month period. For instance, in these vessels we are talking about 10,000 tonnes of steelwork. We produce 10,000 tonnes of steelwork a year. Shipbuilding is much more

labour intensive, so we are talking about the higher end of the range. Certainly, we would be looking at being able to provide something in the order of 150 people to provide fabrication skills on this. We would expect that there would be at least that number to gain in other trades to put into each of these models. So it will be looking at what modules best suit the skills that we have and ultimately area and transportation facilities and those kinds of things as well.

Senator FIERRAVANTI-WELLS—So you are looking to the whole component? If we talk about the bottom end and the top end, you are really looking at the steel fabrication?

Mr Edmunds—Yes.

Senator FIERRAVANTI-WELLS—That is basically all. What about some of the systems stuff? Would you be looking at that?

Mr Edmunds—That would be a bit separate because they would be looking at bidding direct to ADI perhaps in this case for their components that they would purchase directly. It would be a separate—

Mr C Edwards—But it is likely that they would be fitted up on the ships here.

Mr Edmunds—Yes.

Mr C Edwards—In the modules here, I should say, before the modules are shipped.

Senator FIERRAVANTI-WELLS—And then the modules are transported?

Mr Edmunds—Yes, that is right.

Senator FIERRAVANTI-WELLS—Obviously, with the award of the AWD contract to South Australia, certainly we have had submissions from the South Australian government about the concentration of work in that state. What has been the effect on the industry in Tasmania? Do you see that concentration as working adversely for your industry in Tasmania?

Mr Edmunds—It certainly would not be an adverse effect. I think it can only be of benefit to the industry to increase the workforce and skills in that area. We are finding that, to a certain degree, there is a flow-on effect from other states because of the concentration in South Australia.

Senator FIERRAVANTI-WELLS—So it does not really matter to you whether—

Mr Edmunds—I do not believe so.

Senator FIERRAVANTI-WELLS—You do the work on a subcontracting basis, so it does not really affect you.

Mr Edmunds—No, not at all.

Senator FIERRAVANTI-WELLS—Mr Edwards, the Tasmanian government submission states that you have the skills and capacity to fabricate for AWDs and LHDs concurrently. Do you think that you have those skills?

Mr C Edwards—Yes, we do. As I mentioned in my earlier evidence, we have a very long tradition of shipbuilding in the state, and that is retained here. One of our big advantages in Tasmania has always been that we have a very stable workforce. If there is a bit of a downturn, for instance, in the shipbuilding industry, they are quite happy to move to the building industry, and then come back again. In the case of Steve's company, similar things tend to happen, but they tend to stay in the state. We have a very stable workforce from that point of view. We estimate that we currently have about 1,800 workers who could be employed on a ship, building modules for the amphib ships, for example.

Senator FIERRAVANTI-WELLS—A comment was made to us this morning about the surrounding enterprises that have built up as a consequence, as far as Incat is concerned. Have you been able to put some economic figures on that?

Mr C Edwards—As I mentioned, our maritime network currently turns over around \$250 million to \$300 million a year. That is almost discounting the Incat situation, because their ships can sway that one way or the other because you are easily talking about a \$100 million ship. It is basically discounting them. At the moment, although they are building up to build a couple of ships, those figures do not include those ships.

One of the things that has happened, as you may be aware, is that about three or four years back Incat were under receiver management. That was a great wake-up call for some of their suppliers and subcontractors—the people who did the outfitting of the ships and so forth, like some of the companies in our network. About 50 per cent of the companies in our network were already exporters in a big way and were not too dependent on Incat, but some of them still hung a lot of their dependence on Incat. That receiver management situation was, as I mentioned, a great wake-up call for them and made them much less dependent on Incat's situation. Therefore, it made them look at the global market.

Senator HOGG—Do you use the services of Austrade at all?

Mr C Edwards—I am sorry—you asked that question before and I did not answer it. Yes, we do, and I know that a number of our members do. We tend to use them for doing new market surveys for us to see whether it is worth while us looking at new areas, such as Vietnam or wherever. We recently had them do a survey on the shipbuilding industry there to see whether that might be of interest to our members.

Senator HOGG—Given the niche market that your members seem to be dealing in, are Austrade equipped with the skills and the capacity to be able to help you effectively in penetrating these markets, or is there a gap to be filled?

Mr C Edwards—As a general rule, they are equipped. Once you get to know how they operate, you can tailor what you are asking them to do so you get the right answers. Austrade have basically two ways of going about this. If you do not understand what it is you are trying to do, they will go out into the marketplace and ask a certain set of questions, but they are not

necessarily related to the answers that you are looking for. So, generally—and I know that a number of our members do this as well—we will draw up the questions for Austrade. But, as a general rule, they are good. Our company have had experiences where we have not been happy with what they have done and we have refused to pay them on the basis of that, and they have agreed that they have not given us what we asked for and have accepted that.

ACTING CHAIR—Thank you, Mr Edwards and Mr Edmunds, for coming along. Your observations have been of value to the committee and quite different.

Mr C Edwards—Thank you very much.

[1.35 pm]

BRANDNER, Dr Paul Anthony, Research Leader, Cavitation and Fluid Dynamics, Australian Maritime College

McSHANE, Professor Paul Edward, Vice President, International and Development, Australian Maritime College

ACTING CHAIR—Welcome. Do you have any comments to make on the capacity in which you appear?

Prof. McShane—I am presenting on behalf of the Australian Maritime College in its capacity as a national provider of maritime education, research and training.

ACTING CHAIR—Thank you. A copy of today's opening statement is before you. Please tell me if you have any questions regarding that document. The committee have before us submission No. 32, from the Australian Maritime College. Do you wish to make any amendments to your submission?

Prof. McShane—No, thank you.

ACTING CHAIR—I now invite you to make a brief opening statement and then we will proceed to questions.

Prof. McShane—Thank you, first of all, Senators, for the opportunity to present to your inquiry. We see an opportunity to build an internationally competitive industry to support and sustain defence assets, and we assert that that capability is strongly underpinned by developing and sustaining a knowledge base reinforced by research and development. Our brief presentation will be focusing particularly on research and development as it applies to naval shipbuilding capacity.

A PowerPoint presentation was then given—

Prof. McShane—The Australian Maritime College, with its main campus based in Launceston, is a Commonwealth institution. It was established some 25 years ago to support, first of all, Australia's shipping industry, but it has necessarily broadened its scope as that industry has changed. In particular we have developed a research and development capacity, which has been utilised by the Australian Department of Defence and its ancillary services. We have recently developed a suite of hydrodynamic test facilities, with support from the Commonwealth government as part of its Major National Research Facilities Program. We believe that Australia's capability is underpinned by cost-effective utilisation of Australian research infrastructure as opposed to outsourcing research capability, as has been the practice in the past.

I will now talk about the track record of the Australian Maritime College. As I have already said, we are a specialist provider to maritime industry. The Australian Maritime College, as is

noted there, has the only suite of hydrodynamic facilities in Australia, many of them unique to the Southern Hemisphere. We have a track record of successful integration with the Department of Defence, most notably a training program that we have with the Pacific patrol boats. Importantly, we have existing and forceful collaborations with organisations, including the Defence Science and Technology Organisation. As noted there, we also have national and international collaborations, which reflect our niche provider status.

The suite of hydrodynamic facilities are used for, in plain language, examination of bodies moving through water or water moving over bodies. You will see in the picture that the facilities comprise a cavitation tunnel, a model test basin, a towing tank, a flume tank and an integrated marine simulator. They are integrated by a sophisticated data acquisition network computer that can acquire data from all of those facilities.

The cavitation tunnel—we are particularly proud of this instrument. Dr Paul Brandner has been responsible for developing the technology underpinning it. Cavitation is the transition from liquid to gas which occurs under difference in pressure gradients. It is an issue for surfaces, appendages of submarines and propellers or propulsion systems generally. In the case of submarines, there is an issue with noise creation; in the case of propulsion systems, there is the issue of efficiency and also noise. So there are certainly important aspects of the cavitation tunnel through testing of the appendages of submarines, propellers and so on to provide a contribution to naval shipbuilding assets in this country.

In particular, as is noted in our submission, we have worked closely with the former Australian Submarine Corporation in developing our testing systems for their submarines, in terms of both the appendages and propellers, and you will see existing international and national collaboration with a number of organisations. The little animation which I showed you is work in progress. The cavitation tunnel is currently being upgraded, hopefully to be completed later this year. When completed, at the risk of appearing immodest, it will be if not the most sophisticated instrument of its type in the world then certainly among the best in terms of its experimental capacity. Of course, there are larger cavitation tunnels in the US and Europe. This one is solely dedicated to experimental research and development—to basic research but also, clearly, applied research in the context of defence applications.

The model test basin is, in simple terms, a large swimming pool which has a wave generator which can be used to look at sea keeping capabilities of not only ships but also offshore oil and gas platforms. At the bottom of the slide it is noted that whilst we are concentrating on hydrodynamic research facilities we also note that the Australian Maritime College offers a range of other courses in logistics and management which would be of peripheral or indirect interest to the naval shipbuilding capacity.

We have a towing tank which is, again, another static pool. It allows you to tow, generally, models of various vessels. They might be submarines or surface vessels. This allows you to design or at least test various hull configurations—geometry and so on—and improve the design. On the slide, you can see a Customs vessel that we have tested in our tank; of course, there have been a number of applications that the towing tank has been put to. That is noted in our submission in the context of naval shipbuilding capacity.

The integrated marine simulator allows us to replicate real-world situations—conditions of wind, tide, wave, swell, bank effect and so on—to provide a realistic environment for those that are going to be managing or operating ships. In the context of the inquiry today, you would have heard from Incat. I note in the slide that we have recently trained US defence personnel in the operation of one of the Incat vessels that was acquired for applications in the US.

The flume tank is the hydrodynamic equivalent of a wind tunnel. It involves water flowing across a tank where you can visualise performance of towed vessels. Typically, they are used to evaluate fish nets and the effectiveness of the design of fishing gear. But there are also important applications with towed bodies, particularly remote operated vehicles or autonomous underwater vehicles. It was recently used to test the prototype underwater vehicle the *Wyamba*, which DSTO has been trialling.

So we believe that the integrated suite of hydrodynamic test facilities brings some capacity, particularly as recently augmented with the major national research facility grant. We believe that it can contribute forcefully to the development and sustaining of knowledge underpinned by applied research and development. And we believe that increasingly through our collaborations we provide the opportunity for Defence and the Royal Australian Navy to reinforce that knowledge base and contribute more forcefully to building a viable naval shipbuilding industry in Australia.

That is where I will conclude my brief presentation. I hope it has given you some insights into AMC's capacity. My colleague Dr Brandner and I will be happy to answer any questions you have in relation to my presentation or to the submission.

Senator MARK BISHOP—I have a couple of questions about your college. You referred in your submission to the number of students and to funding. Do you have any sponsorship by corporate entities or endowments as yet?

Prof. McShane—The Macquarie Bank has recently sponsored a foundation chair of marine and coastal conservation for the campus that we have recently established in Victoria. That is the National Centre for Marine and Coastal Conservation. We believe there are further opportunities to engage corporations in supporting education and, through education, research and development. That is one recent example. Paul, do you recall any others?

Dr Brandner—No.

Senator MARK BISHOP—You teach a course in naval architecture. How many students do you have enrolled in that side of the business?

Prof. McShane—At any one time it would be about 100 full-time students, both domestic and overseas.

Senator MARK BISHOP—Do you have links with Gibbs and Cox, the United States based naval architecture firm?

Prof. McShane—I cannot recall. That name is not familiar.

Senator MARK BISHOP—The Harley Birk designer?

Prof. McShane—No.

Senator MARK BISHOP—You do not have any relationship with them. You said you had PhD students. How many do you have enrolled?

Prof. McShane—In naval architecture?

Senator MARK BISHOP—No, generally.

Prof. McShane—Generally, about 20.

Senator MARK BISHOP—And in naval architecture?

Prof. McShane—About six. We have recently graduated a couple of naval architecture PhD students.

Senator MARK BISHOP—Where do they tend to get employment—in the Navy or with private interests?

Prof. McShane—There is a range of opportunities. Because we enrol students from so many different nations, they generally go back to their own nations. The most recent PhD graduate Jonathon Binns has gone to—

Dr Brandner—Oracle-BMW's America's Cup team—Larry Ellison of Oracle fame. I am afraid we could not offer him a good enough deal!

Prof. McShane—We are hoping to offer opportunities in postdoctoral research as well, because we see that recruiting and retaining youthful, enthusiastic researchers is the key to our emerging research strengths, particularly through our collaborations.

Senator MARK BISHOP—Do you gain much grant money from Australian companies in the naval shipbuilding industry in terms of particular jobs, projects or tasks on the research side?

Prof. McShane—We do a lot of work with companies, including Austal Ships. Paul would probably be better placed to comment on that.

Senator MARK BISHOP—Could you outline your work there?

Dr Brandner—It is a spectrum of funding. We compete for the funding on a nationally competitive basis for Australian Research Council grants, but that is not always easy because a lot of the work we do is of a basic engineering nature and, even though it is at a very high level, it is not new and exciting compared to, for example, stem cell research. So that is tough. But we do also get occasional grants from DSTO and from industry. Certainly, we probably see, given the importance of R&D to naval shipbuilding, that basically consolidated, I guess, or more formalised rather than just competing in the open market with whatever would be the latest attractive—

Senator MARK BISHOP—With the large amount of work that is going to come on stream in the next few years, particularly the AWDs and the amphibs, what role do you see for your college in getting access to some of that work? What service do you see yourselves providing, particularly as so many of the companies have made it clear to us that a lot of the high-end, high-value work is going to be sourced from within Australia.

Prof. McShane—I will make a couple of points and then hand over to my colleague. It is in Australia's interests to be an informed buyer because, at least in the most recent past, the technology has been imported from other nations. We see our capabilities as being able to contribute to improved platforms, improved designs and improved applications, particularly in submarines and in surface vessels in relation to their sea-keeping abilities and perhaps in the case of the new generation of submarine after the Collins class, although we have done quite a bit of work with the Collins class. It is reinforcing Australia's position as an innovator through research and development and testing of naval designs.

Our work is necessarily peripheral. We want to see a greater integration with Australian industry. Yes, we work with Austal Ships, ADI and Tenix—we work with a number of companies and corporations which build ships. But increasingly we want those shipbuilders to look to Australian based technology rather than overseas based technology. We think we can play a role there. We do not necessarily have the capability in terms of the technology at the moment. But we believe that through research and development, through education and through getting the next generation of researchers and engineers through the Australian Maritime College we are going to contribute more forcefully to Australia's shipbuilding capacity.

Senator MARK BISHOP—Would you anticipate that when the contracts in both of those projects are awarded to the primes and then, down the chain, to the major subcontractors, a significant amount of work would be passed down to your college, particularly at professorial and PhD-student levels?

Prof. McShane—We would hope so. We would hope that we would be the first port of call. We would hope that the first response would not be to go to the US or Europe; that it would be: 'Yes, we know that this capability exists in Australia.' We would urge that through this inquiry you would recognise that we are currently developing our facilities, particularly the cavitation tunnel, which offers some potency in particular with submarine design and application, and that that would provide an opportunity to develop some major research and development projects that would be visible on an international scale. I do not know whether that answers your question; it was somewhat rhetorical.

Senator MARK BISHOP—It was; an expression of intent and goodwill.

Prof. McShane—I suppose the issue is that historically the technology has been imported so the Australian Maritime College has only had a peripheral role—in the case of the Collins class, looking at improved propulsion systems and noise reduction on some of the exposed surfaces of the submarine. But we would like to be able to play a more forceful role in the actual design of the next generation of the submarine.

Senator MARK BISHOP—The question I am really asking you is: how do you get to play a more forceful role in attracting that work?

Dr Brandner—You mentioned professorial and postdoctoral research. That research needs to be done well ahead of the development of the platform; it should not be after a contract has been left, it should be much earlier. They are strategic studies, concept studies, where decisions should be made well ahead of the final bid. Then we are more informed as a buyer, because there is more debate and more discussion before the design is approaching the tender stage, and we are better able to deal with overseas allies, if you like, or collaborators such as the US if we have more of a knowledge base. So it is about investment in the future, I would argue. If the platform is being built, it is too late.

Prof. McShane—We need to promote our capacity more forcefully.

Dr Brandner—Even though we are doing a lot of work—we have got a very formal alliance now with ASC—with the submarines and we have got a lot of basic research going on of long term interest to them, we would have liked to have done a lot of that a lot earlier and probably had more funding. I do not think there is any doubt it would have saved a lot of money in the long term.

Senator PAYNE—Senator Bishop has talked a little about your student profile, your enrolled profile. I would like to get a better handle on your relationship with Defence, on what proportion of your student profile comes out of either the services—Navy specifically—or the department and whether there is any engagement at that level, and then what other relationships you would describe as useful AMC-Defence relationships.

Prof. McShane—I will allow Paul to address the question of Defence, because I know he works closely with DSTO and related agencies.

Dr Brandner—I am not so involved with the undergraduate population. A lot of Navy people go through the undergraduate program. It is not a huge percentage, but they are there. In terms of our relationship with Defence, they provide 80 per cent of our funding. We have grants through collaborative relationships. That is ongoing funding; it is not one-off based grant funding.

ACTING CHAIR—Is that Navy funding?

Dr Brandner—Yes. It comes from DSTO. Some of it is DMO; some of it is ASC.

ACTING CHAIR—So Defence generally provides about 80 per cent?

Dr Brandner—That is Defence funding; that is running funding. We get occasional grants like those from the Australian Search Council ourselves.

Senator HOGG—Those are straight-out recurrent costs—staff costs, infrastructure costs?

Dr Brandner—We are just getting to a point where we can support some staff. To date it has been instrumentation and infrastructure development. When you are starting from nothing, it is a long road. We have worked on it for 10 years.

Senator PAYNE—Can I just clarify this: the submission says on the top of page 2 that the AMC receives approximately \$10 million annually in Commonwealth funding. It attracts a

similar amount each year from fee-paying students, consultancy and research activity. I am not sure whether you are talking about a component of the college—

Dr Brandner—Different things. This is for my group. It is not the annual funding.

Senator PAYNE—Broadly speaking, your group receives 80 per cent Navy funding. Let us operate on that basis.

ACTING CHAIR—What is your group?

Dr Brandner—We mainly study cavitation—

Prof. McShane—Hydrodynamics research.

ACTING CHAIR—Submarines.

Dr Brandner—More basic research, yes.

Prof. McShane—The component of the additional \$10 million of annual income that we would receive would be through grants from agencies such as DSTO. The hydrodynamic research that we do is supported mainly by DSTO.

Senator PAYNE—Do you make an effort to attract students into your student profile who are serving in the Navy or who are public servants in Defence?

Prof. McShane—Not specifically for defence applications. We find that they are more attracted to our maritime business programs because it provides opportunities for shore based employment either in the forces or increasingly in civilian life. We have a lot of Navy people who complete our MBA, which is a maritime business degree.

Senator PAYNE—At the beginning of the submission, you make a passing reference to the committee's term of reference about the comparative economic costs of maintaining, repairing and refitting large naval vessels throughout their useful lives when constructed in Australia versus overseas. I wonder whether you want to add any observations on that point?

Prof. McShane—I will take the case of the Collins class submarines in relation to our cavitation tunnel capacity. I think \$30 million was spent in the US on cavitation studies to improve the noise signature profile of the Collins class submarine. That work could have been done in Australia with the present facilities that we have here. That is really what our submission is focusing on: rather than looking to overseas technology and overseas research and development we should be increasingly looking to Australia and ways in which we can better provide that research and development.

Of course, there is going to be a need for additional funding. There is going to be a need for reinforcing the collaborations that we have nationally and internationally. The point that I would like to make is that Australia needs to cost-effectively utilise the resources that it already has. The resources that we have are unique. We encourage and promote collaboration. We need to do

more of that. But it is going to take a collective commitment from the government and from the other research agencies to make that happen.

Senator PAYNE—How would you describe your relationships leading to that end point for you? What sort of status do you accord those?

Prof. McShane—I believe that we have a very healthy and constructive relationship with the Department of Defence. Many of our employees have Department of Defence clearance. Our commercial arm, AMC Search, was recently awarded recognition for excellence in contracting by the Department of Defence. I think that is very rarely awarded, certainly to Australian agencies.

So we want to see that intersection between industry, government, and research and development—including us—provided and say, ‘How can we work better to create a viable and competitive defence industry?’ Quite clearly, the nation’s focus is on security applications. It is a very high priority in terms of the national research priorities. We believe we can make a contribution, but we are a small organisation obviously. We just happen to have a suite of unique facilities that we believe could add value to Australian industries. We hope that you collectively, through this inquiry, can identify ways in which we can best intersect with those industries and with government needs.

Senator TROOD—When you say ‘unique facilities’, do you mean they are unique in Australia or do you mean they are unique globally?

Prof. McShane—The cavitation tunnel is probably unique globally in terms of its capabilities. At risk of coining a cliché, it is state-of-the-art.

Senator TROOD—What makes it state-of-the-art?

Dr Brandner—We identified this in 2000, with our MNRF bid where R&D requirements were in this area and may have related to subway work and signatures.

ACTING CHAIR—So was there a bid for this?

Dr Brandner—Yes, for a major national research facility. This was one part of it at the AMC, but the important thing to note is that we looked at what was done in the US and Europe. Germany, France and the US were the model. They have built large facilities to develop their submarine fleets. The most sophisticated of those was the French one. With their engineering development with nuclear programs and their nuclear submarines, we feel they had the most sophisticated facility. We hired the head of the technical group who developed that and we have improved that technology. So we have a facility that is more advanced than theirs but smaller. They had \$US100 million in the 1980s to develop theirs. We did ours for \$5 million.

Senator TROOD—How limiting is the size in relation to the kind of work you do?

Dr Brandner—It depends on how big the boats are. Our boats are not as big as nuclear submarines. We do not need quite as big a facility, but certainly we could always do with more

size. It is a trade-off against cost and what is commensurate with the size of our Navy compared with the sort of funding that is available in the US and Europe.

Senator TROOD—With regard to the range of facilities you have, where are the comparative centres around the world with that range of tanks, cavitation centres and things of that kind? Is there anything quite the same as that anywhere?

Prof. McShane—You would have to look at the US for a cluster of facilities that are integrated in the way that we are integrating our facilities so that you can utilise data and—and I use this in the submission—you can test a vessel in a towing tank and a model test basin. You can then use the outputs from that testing to drive your integrated marine simulators so that you have some realistic situations that you can replicate. That brings some particular potency. They are not unique facilities individually, but they are unique facilities collectively.

Senator TROOD—You have been focusing on the Australian market, haven't you?

Prof. McShane—Yes.

Senator TROOD—That seems to be the thrust of your evidence. Is their potential for you to leverage some of these facilities overseas?

Prof. McShane—Paul and his colleagues have existing collaborations with Cambridge and other international institutions. Paul, do you want to give a brief summary of those?

Dr Brandner—We can improve on that, particularly with the American response. We are getting up and going. We have just commissioned a facility this year. As I said, we could always do with more funding and bigger facilities. That makes life easier all the time. In relation to the sorts of figures that we are talking about, that sort of money has not been invested in the past. It might be worth doing so in the future because it is not just a matter of supporting these platform developments and perhaps saving money; it is also the spin-offs for research generally.

Senator TROOD—Are you saying that you need to expand these facilities before you have an internationally valuable facility, or are you capable of doing certain things at the moment but it would be a whole lot better if you had more money and you could spend more?

Dr Brandner—That is it. We are capable of doing some things, but we could do with more.

Prof. McShane—You should never ask a scientist whether they need more money!

Senator TROOD—Or any academic, I would have thought.

Prof. McShane—I think applied marine technology is an area where Australia can make a forceful contribution. Right here in Tasmania we have a unique concentration of marine science capabilities, with CSIRO Marine and Atmospheric Research, Antarctic Division; the university; and us in an island nation of 500,000 people. We want to be able to develop that capacity. I made an observation that our top four exports are coal, iron ore, tourism and higher education. We would like to see some innovative industries up in that top four. I think applied marine technology is a good fit for Australia, an island nation. We have some capacity. We are doing

some smart things. We have a good track record in hydrodynamic research. A lot of it gets exported and goes unheralded, but we have a track record nonetheless. Naval shipbuilding might just provide that stimulus to reinforce that hydrodynamic research and development capacity in other applications too, not just in naval shipbuilding.

Senator GEORGE CAMPBELL—I have just a couple of questions. What proportion of your institution's work is teaching as opposed to research and development?

Prof. McShane—Most of it is teaching. We need to develop more visible research activity. Because historically we have been involved in vocational training, mainly training of seafarers, necessarily our emphasis has been on teaching and learning. Increasingly we see an opportunity to be more forceful in higher education, and to be more forceful in higher education you need to have that research capability. Our research output is modest. It is improving. It will certainly be improved with completion of this integrated suite of hydrodynamic facilities. Mainly teaching is what we do.

Senator GEORGE CAMPBELL—The major naval shipbuilders in this country tell us that they already carry significant design staff. Tenix told us yesterday they have a significant number of employees engaged in the area of design and design work. ASC is the same. Austal have a significant number of people involved in design work activity. Given also that the tendency in this country seems to be to buy off-the-shelf solutions and then customise them for Australian needs—and that is certainly what has been happening in recent times—how do you see the resources you have at the college being integrated into the model that currently exists within Australia in our naval shipbuilding industry? For example, what do you bring—apart from those testing facilities—in knowledge of design capability that those companies do not already have?

Prof. McShane—Those companies that you mentioned—that is, Austal and Tenix, and I think there were some others—employ our graduates. They employ our naval architects, our marine engineers and our deck officers. We believe that, unlike a traditional university where there is not necessarily that direct link to industry, the Australian Maritime College if it does not have should have a direct link to industry. In other words, we see our services meeting the human resource capacity for those industries.

Senator GEORGE CAMPBELL—I understand the human resource side of it. That is the bulk of your work. But I thought you were talking earlier about trying to get a place in the sun in involvement in research, development and design capability.

Dr Brander—Strategic studies, not design studies?

Senator GEORGE CAMPBELL—Yes.

Dr Brander—We do concept studies, design studies—that is, the early stage of design—but certainly not the final design, no. That is not research; that is design.

Senator GEORGE CAMPBELL—Can you enlighten us as to what specifically it is you are looking at targeting?

Dr Brander—Niche projects. We recently did some work—

Senator GEORGE CAMPBELL—It is a great word that, ‘niche’. It covers a lot.

Prof. McShane—We do some studies of a very basic nature in the research continuum. We are referring to things you would do at the beginning when looking at concepts. On modifications to the submarines—

Senator GEORGE CAMPBELL—I suppose what I am asking is this. Have you identified areas of deficiencies in the design capability of our naval shipbuilders that you are able to fill? Is that what you are saying? What are those areas of deficiencies?

Prof. McShane—We do not have the capacity at the moment, in terms of our human resources, to design the next generation of submarine from scratch, but increasingly we could bring in personnel that would play a much more significant operational role in the design. Our undergraduates that go into the industries that you have talked about are not necessarily bringing in the high-end design capacity. We are talking about the researchers that are coming out of our postgraduate programs and utilising these facilities. Through the collaborations and the use of those facilities they are going to come up with new innovations, new ideas, that will position Australia more as a leader rather than a follower in terms of the technology. Rather than buying off-the-shelf solutions through the experience that we have with, say, the Collins class submarine, let us look at whether or not it makes more sense economically to contribute to the design and build of that in Australia rather than buying off-the-shelf solutions. We are not there yet, but we need to start somewhere. That is why I started by saying, right from the word go, in this presentation that we need to build the knowledge base, underpinned by research and development. The application of that knowledge base builds up Australia’s capacity, rather than just buying stuff off the shelf and binding it together.

Senator GEORGE CAMPBELL—Who do you say should fund that?

Prof. McShane—It is a combination. As I said, there is the intersection between Australian government, industry and the research and development agencies that best work together. I think that Australian government and Australian industry have a role. Collectively, it is in all of our interests to utilise our capacity in this country if Australia is to develop a sustainable naval shipbuilding capability. I note from the other submissions to this inquiry that there is an argument that the generation time for building a ship should be reduced to provide for that continuity. I think that if that generation time is reduced and you do have that continuity it is going to be a potent stimulus to ensure that the capabilities, in terms of knowledge of personnel, are around and that there are no bottlenecks through the process.

Senator GEORGE CAMPBELL—I must say I would not be holding my breath for that position to be adopted.

Prof. McShane—I just noted it from the submission. You are the ones that are making the decisions. We are the humble servants!

Senator FIERRAVANTI-WELLS—You state at page 2 of your submission that you had 1,500 students and approximately half were higher education students. So they were doing their HSC?

Prof. McShane—No, higher education would be degree programs.

Senator FIERRAVANTI-WELLS—And you say that students from approximately 50 countries were enrolled.

Prof. McShane—Yes.

Senator FIERRAVANTI-WELLS—So about half of those were from overseas?

Prof. McShane—Yes.

Senator FIERRAVANTI-WELLS—And the other 750 students?

Prof. McShane—The other 750 students were in vocational education and training. We are a dual sector institution. We offer programs from certificate 1 up to doctoral level. Theoretically, you can come in from school as a year 10 leaver and go out with a doctorate. That does not happen, but theoretically it could.

Senator FIERRAVANTI-WELLS—Where do your students go? Do the ones who come from all over Australia go back their respective areas? Do the people who come from overseas go back overseas?

Prof. McShane—They go back to their home states or home countries, typically. About 20 per cent, at the most, would be Tasmania based at the time of their enrolment. So 80 per cent of students come from other places. I think we are unique for our size in having that diversity of students from different nations. We should make more use of our alumni. In fact, I think Australia more generally should make more use of its alumni. We are doing projects in Malaysia and Indonesia. When I was a student in the 1970s I shared lectures with many Malaysian students and many of them would now be in quite powerful positions, I am assuming in Malaysia. That would bring opportunities. Getting back to the subject of naval shipbuilding capacity, we have done some work with the Malaysian navy and with a number of other navies around the world.

Senator FIERRAVANTI-WELLS—With enrolment, are the trends up or down?

Prof. McShane—The enrolments with higher education are slightly up.

Senator FIERRAVANTI-WELLS—What about in naval shipbuilding?

Prof. McShane—Naval shipbuilding is up. Naval architecture is certainly up. That is one of our most popular courses, and it is not surprising because we are only one of a few universities which offer naval architecture. We believe we offer it better than anyone else.

Senator PAYNE—Do you mean in Australia?

Prof. McShane—Yes, in Australia. The University of New South Wales has a naval architecture program.

Senator PAYNE—That is a very good university.

Prof. McShane—I am sure it is. I am sure it has many distinguished alumni.

Senator STOTT DESPOJA—He is not going to argue with you, Senator Payne.

ACTING CHAIR—Who else has a naval architecture course?

Prof. McShane—The University of New South Wales.

ACTING CHAIR—Is that all?

Prof. McShane—RMIT used to have a naval architecture course. Curtin does—

Dr Brandner—It was a science stream.

Prof. McShane—Yes. Naval architecture, necessarily, is very specialised. It requires the infrastructure that I summarised before, and it has specialist opportunities for its graduates.

Senator FIERRAVANTI-WELLS—With the awarding of the AWD contract to South Australia and the concentration of activity that we are now seeing there, how do you think that will impact on your college, particularly in regard to some of the information we were given about the education sector and how South Australian enterprises—education, training and otherwise—are seeking to concentrate in that area? What do you think the impact is going to be?

Prof. McShane—I think it is going to have a positive impact, hopefully, as far as the AMC is concerned. We have already had, on the basis of ASC, a healthy and ongoing collaboration. I noted in the submission that our industry representative is currently working with ASC, so we have that point of intersection. It is terrific for South Australia. I am a South Australian. I was partly trained in Adelaide.

Senator FIERRAVANTI-WELLS—Another one.

Prof. McShane—I know the enthusiasm with which the town greeted the news of the awarding of that shipbuilding contract. I think it is fantastic. Australia really should celebrate that.

Senator FIERRAVANTI-WELLS—If you are a South Australian, you would, not if you were from anywhere else.

Prof. McShane—I note also the collaboration with Western Australia in the support of the amphibious support vessels. Increasingly, there are some exciting opportunities and through those exciting opportunities I think we can focus on what AMC can offer and how it can best contribute to the success of those exciting projects.

Senator FIERRAVANTI-WELLS—You were talking about your collaboration with Defence. Is that mainly with DSTO?

Prof. McShane—DSTO, DMO and the Department of Defence more generally because it also spills over into the Pacific patrol boat program, which is a vocational training program. That has been very successful. We train the crews of those Pacific patrol boats, and it has a spill-over effect in terms of the relationships that we develop with the host nations. The Department of Defence relationship goes from the aspects that we are talking about here, which is research and development and its application in naval shipbuilding capacity, through to training of their crews as well.

Senator FIERRAVANTI-WELLS—There is talk in Defence that the LHDs will be built overseas. What do you think the impact of that will be on your organisation if that were to happen?

Prof. McShane—Any industry that is based overseas produces less opportunities immediately for our graduates, although, because we are a national institution, we operate both nationally and internationally. It would clearly be better, we think, if the industry was established in Australia because then that industry would seek to draw on Australian capacity, whether it be in trades or, as we would argue, in the knowledge development.

Senator HOGG—What is the strategic imperative for us to have a naval shipbuilding industry situated in Australia? Do you see a security imperative?

Prof. McShane—I think it is important to have a viable Australian shipbuilding industry or to have at least a ship industry in Australia because Australia is so dependent on the sea.

Senator HOGG—The question is specifically about a naval industry. One of the complaints we hear is that it is sporadic and that it is feast or famine because we are limited in the size of our Navy. It may be the case that the powers-that-be might look at a much larger Navy and that that will overcome that problem, but I do not think that is going to come about. So given the restricted size of our Navy and given that obsolescence takes a long time to come around in some cases—we will not say ‘in all cases’—there is not a great deal of work being generated. From your perspective, is there a security imperative as to why we should have a naval shipbuilding industry as opposed to a commercial shipbuilding industry here?

Prof. McShane—I do not think I can make an informed comment on the security implications of whether or not Australia has a naval shipbuilding capacity. I merely make the observation that we do have a proud track record of creativity and innovation in this country.

Senator HOGG—I accept all of that.

Prof. McShane—I think that it is in Australia’s interests to maintain some industry which supports its naval capacity, because clearly Australia is so dependent on the sea for transport and because the recent security implications of a changed environment mean that Australia is going to have to have some naval capacity. It is not just about big boats; it is about the smaller high-speed craft that are used in surveillance. This spills over into the work that I am involved in with the seafood industry in terms of surveillance or the Australian Fisheries Management Authority’s

interest in illegal fishing and so on. Naval shipbuilding might be about anything from a five- or six-metre vessel up to an air warfare destroyer or a submarine. We have heard from Incat. They are clearly innovative in high-speed craft that have both commercial and naval applications. If you are developing industries where there are spin-off opportunities for naval shipbuilding capacity, that is clearly in Australia's interests—but I do take your point.

Senator HOGG—Following on from the questions by Senator Fierravanti-Wells, maybe we do not have the capacity to actually built the platform from go to whoa. I am not talking just about the hull; I am talking about the whole thing. We as a nation may well be better off buying it from overseas and then concentrating on the repair and maintenance side and through-life support of the platform. Where does that leave an organisation such as yours?

Dr Brandner—We have those skills. They are already here. It is a bit like ASC's role as a builder. It has now moved into support and potentially it could move back into building. It puts us in a position where at least we can deal with our allies on some level ground as far as our knowledge base goes.

Senator HOGG—But our capacity to deliver is the difficulty. The AWDs and the LHDs are virtually coming together in terms of projects. However, before the next projects come on stream it may well be that the skills that were developed in putting those projects forward will have been lost. So how do we get consistency?

Prof. McShane—That's really the tension, isn't it?

Senator HOGG—That is why I am talking about the security imperative.

Dr Brandner—To maintain a fleet you have to have some commitment to a knowledge base that is ongoing and is employed in the constant rollover of projects. As I said, one fleet is being maintained and one fleet is being decommissioned.

Prof. McShane—But at least for the foreseeable future presumably we are going to have a vibrant naval shipbuilding capability at least with the AWDs and possibly with the amphibious supports ships in Western Australia.

Senator HOGG—That is the point: there is no certainty that the amphibs will be built in Australia.

Prof. McShane—That is right.

Senator HOGG—That was the issue raised by Senator Fierravanti-Wells. They may well go overseas. How will that affect your organisation then?

Prof. McShane—A lot of the work that we do is peripheral to the design. We might look at the sea-keeping aspects of the vessels operating in Australian waters or we might use our integrated marine simulator to say that this is a better design configuration for a port or terminal or naval base in managing ships entering Australian waters. We have already done some work on the amphibious support ships. We looked at containment systems and how they operate within those containment systems. There were some fairly small scale tests involved. We have already

done some tests on the Spanish and French designs to provide information back to the RAN about some of those vessels' sea-keeping abilities. So even if the vessels were built offshore we would still retain some interest in terms of managing those vessels once they get into Australian ports.

Senator HOGG—Are there specific requirements for the operation of naval vessels in the southern hemisphere, as opposed to vessels that might be designed in the northern hemisphere, where they might operate in conditions not struck in the southern hemisphere?

Dr Brandner—I think that is the obvious case with the submarines. The Gotland class that the Swedish navy had, which our boats were developed from, had a much different role in their deployment. Australia is a large country with a large coastline. That is not the case in Sweden. You could make an argument that that was a key issue in the outcomes. You cannot just transform a platform entirely. It needs a lot more work. We probably should have had that input here indigenously in this country.

ACTING CHAIR—Just following on from that, looking at your organisation—and Dr Brandner, I think this is a question for you—whilst the \$5 million for our cavitation tunnel is not a lot in the scheme of the overall context of submarines in Australia, is it only about submarines? Is it only about hydrodynamics, metallurgy and noise on six vessels? Or is there something that Australia can take from your cavitation tunnel that relates to commercial viability and improvement of performance, those sorts of things?

Dr Brandner—A trans-sonic wind tunnel has been developed, as well, for aeronautical research. That is up to \$18 million; so it is very cheap. It is equally, or more, sophisticated. So it is a very good deal.

ACTING CHAIR—That is aerodynamics?

Dr Brandner—Yes. It is not just about the submarines. Certainly some of our applications are for surface platforms as well. But certainly other facilities are probably necessary to have a rigorous studies, although submarines are the most technologically advanced platform we probably have. Certainly other larger facilities may be required to take other boats with as much scientific rigour. It should have been deemed necessary. As I said, we are not just targeting applied work. We do basic studies that have turnaround in the long term—five to 10 years. I am sure you are aware of the arguments. We do not do fundamental research though.

ACTING CHAIR—All that I am worried about is that, whilst we talk about a broader picture, as you use the word, we have become very niche in our outlook. Whilst that is very good, it seems to me that we focus on the DSTO type requirement, which is good. They are an obvious funding agency for you, and you are leveraging off what they are spending to expand into what is a good area, but it worries me that we are overly focussed on the small things, which we need. Submarines perform magnificently—RIMPAC, etcetera—as you probably know. But the cost that spins off that is very isolated, very narrowly focused. I want you to tell me as a part of that submarine build and the risk and the boldness of the government of the day in going forward with a highly technical project like that, is it simply about a cavitation tunnel worth \$5 million that does not generate anything other than a quiet submarine?

Dr Brandner—No—we do a lot more than that.

ACTING CHAIR—Tell me what more you do.

Dr Brandner—We do studies in field mechanics and turbulence generally. We even worked on some surfboard fins for a company that has 80 per cent of the global market. We do novel projects—that's for sure.

ACTING CHAIR—So surfboard fins, and I take it whole design in drag and hydrodynamics.

Dr Brandner—Absolutely—propulsion systems, water jet motors. We have worked on Incat.

ACTING CHAIR—So Incat is one of your principal beneficiaries?

Dr Brandner—We have worked for the Dutch supplier in that regard.

ACTING CHAIR—So you are exporting the technology back into Europe?

Dr Brandner—Yes, that is right. That was a Dutch customer.

ACTING CHAIR—The leverage off these things is what I think the committee is interested in.

Dr Brandner—Yes. It is valuable for our postgraduates and for our undergraduates. The spin-offs here are across the board and diverse. As I said, we are working in fluid mechanics generally. I should not say that—we in my group are not even naval architects. We are just plain mechanical engineers who do research in fluid flow, but it is obviously highly related to naval architecture. But we do not design boats.

ACTING CHAIR—And fluid flow is a very important component of Australia's maritime industry. You mentioned you get some grants to do various things. What can you tell us about those grants? I do not want to go through any commercial-in-confidence type research, but just give us a snapshot of what your organisation can achieve.

Dr Brandner—As you would be aware, the funding paradigm has never been tougher. You have to be very entrepreneurial as well as being interested and you have to attack a number of sources. We get funding from AusIndustry. We have had R&D Start and other industry related opportunities. That is a challenge, you might say.

ACTING CHAIR—Tell us some of the things that you have actually spent those grants moneys on. What have they been for and what have we got to show for them, shall I say, in a mercenary sense?

Senator HOGG—Better surfboards!

Dr Brandner—Better surfboards. That company is doing exceptionally well. It is an international company.

ACTING CHAIR—So there are export dollars and benefits there.

Dr Brandner—Yes, export dollars. As I said, it is always a balancing act between publishing for future leveraging of income and national competitive income. That is the toughest, because we can go and make money but we are not supposed to be just a business. We are supposed to be researching and being a higher education and training provider. But of late we have been developing much stronger ties with defence organisations, private and public, because that is where the money is. You cannot run these large facilities on basic research grants. It just is not good enough.

Prof. McShane—Paul is being a little bit modest, but he has certainly developed some very sophisticated instruments that can measure the different forces which act on these bodies that are subject to these different pressure flows which cause the cavitation. Those instruments have uses in a number of other applications, so just coincidentally, whilst the machine has been used to study the flow dynamics around a fin of a submarine, a surfboard or a propeller, there have been a whole suite of instruments which have improved the capability of that piece of equipment, which then adds value to the next project being studied. As I said, this is a work in progress. The next cavitation tunnel is going to provide vastly improved capabilities over and above the work that Paul has already done with the surfboard fins, the jet engines, propellers, other fins and the sonar domes of submarines. Cavitation and general fluid dynamics are arcane to me, I must admit—I do not come from that background—but I can see their application.

Dr Brandner—Our objective now is to be able to attract researchers from, for example, the US Navy or their affiliated laboratories. Our objective is to be internationally competitive. As I said, we are working with the University of Cambridge. That is where we are pitching our work.

ACTING CHAIR—There being no further questions, thank you very much, Professor and Doctor, for attending today. It was very interesting. Good luck.

Dr Brandner—Thank you for the opportunity.

Prof. McShane—We do appreciate it.

Proceedings suspended from 2.34 pm to 2.43 pm

EDWARDS, Mr Rhys David Michael, Deputy Secretary, Industry Development Division, Department of Economic Development, Tasmania

HILL, Ms Debra Louise, General Manager, Food, Manufacturing and ICT, Industry Development Division, Department of Economic Development, Tasmania

ACTING CHAIR—Welcome. A copy of today's opening statement is before you. Do you have any questions regarding that document?

Mr R Edwards—No.

ACTING CHAIR—We have submission No. 30 from the Tasmanian government. Do you want to make any amendments or additions to your submission?

Mr R Edwards—No, I am happy for the submission to stand.

ACTING CHAIR—I invite you, Mr Edwards, to make an opening statement, should you wish to do so. Thereafter, senators will ask questions.

Mr R Edwards—Thank you. I will take the opportunity to make a short opening statement. Before I start, I would also like to apologise on behalf of the Deputy Premier and Minister for Economic Development and Resources, Bryan Green. He would have liked to be here to address the committee in person but, due to diary management, he is in another part of the state today—as is always the case!

ACTING CHAIR—I think we can all understand and relate to that!

Mr R Edwards—I know from seeing the speaker list that you have had a range of presentations that have given you a flavour of the Tasmanian industry capability. Tasmania obviously has a fantastic maritime history. Of course, that is not unique; Australia has plenty of coastal areas and plenty of coastal settlements. You might be interested to know that in 1827, when Hobart was a thriving port with 5,000 people, we had ships from Europe, China, Batavia, Singapore and the US using this port. By the 1850s, because of our hardwoods—which some of you will be familiar with as well—we were building more ships than any other Australian port.

Unfortunately, the march of technology saw ship design move to steam and steel and a lot of our industry went into decline. It was in great decline by the end of the 19th century. But, for those of us in the economic development agency, certainly the last 30 years have seen a resurgence of our shipbuilding capacity.

Having read a number of the submissions from the other states, looking at the Tasmanian submission you will see that we come from a slightly different perspective in that we are not trying to argue for the state to become a centre for naval construction. So we can in some way extract ourselves from arguments about whether it should all be done at one facility and, if so, where that facility should be. There are three fairly simple messages that I want to raise today that might promote a bit of discussion. These, I guess, go to a couple of your terms of reference,

the first and the last: one about the capacity of the Australian industrial base to be able to construct these large vessels over the period required and one about the broader economic development and associated benefits from doing it.

We do not have much to add to, and we did not address in our submission, the debate on the comparative economic productivity of the Australian shipbuilding base compared to other nations; nor did we comment on the issue of comparative economic costs. To do justice to that issue you need international data that we do not have, and we feel we are not expert enough to make comment. A number of the submissions do, and you would have received a great deal of evidence in that regard.

The issue of capacity and competitiveness are strongly linked. When we talk about capacity, it has to be capacity available to contribute to a construction task at a cost that meets the objectives, in this case, of the prime contractors and, ultimately, the customer. It is not particularly useful to talk about capacity that is not able to deal with the issue in a competitive way. So I will raise very briefly issues about capacity and competitiveness. A third thing I want to raise is the issue about the broader benefits of maintaining a core of economic activity around shipbuilding—the Tasmanian example I use is obviously not naval shipbuilding but commercial shipbuilding—and the associated spin-off benefits that that brings. So, from an economic development policy point of view, I think we are able to make some comment about that issue.

In terms of the specific capacity of Tasmanian industry, you have seen and heard a lot today and our submission is largely focused around that issue, so I will let that evidence speak for itself. Importantly, I would add that Tasmania has been very good at fostering the close linkages between firms. The industry here is characterised by a very high level of cooperation, and I hope that you got a bit of the flavour of that through some of the discussion with the Tasmanian Maritime Network. This is something that is highly necessary in a small economy because we do not always have the capacity to undertake the very large and complex construction tasks in all sorts of sectors.

The ability to partner properly and work out models of engagement can form a vital part of being able to do that. You also get the flavour of that in the issue of what the best practice way is to put together a very large and complex construction project, like a large naval vessel. Indeed, in order to meet the peak demands of an amount of naval construction over what is a relatively short period these models of a distributed production base have to be explored, perhaps in more detail than first imagined. And certainly coordination of project management then becomes a key task. In Tasmania we have found a way of developing a geographic-base model, if you like. Some of that coordination has already been undertaken. The firms are used to working together but they can provide a consolidated front through maybe one or two major firms. This model might help mitigate risks and, obviously, in the issue of naval construction it has to be explored more fully.

I am not sure how much other evidence you have taken on this, but it is an interesting point and important to realise that there is capacity out there in regional Australia. Sometimes that capacity is quite surprising. We have undertaken a program of work with prime contractors over recent years to try to educate them about what is actually out there. Tasmania does suffer from time to time by being off the radar; it is partly having a stretch of water disconnecting us from the mainland, I think. People are often quite surprised about our levels of technical skills, know-

how and capacity. The flipside is that firms are often smaller on average, with smaller asset bases and, often, a non-traditional contracting bedfellow. You have to find ways around exploring those commercial relationships.

My second issue is competitiveness. It is sometimes surprising that we are internationally competitive in some of these sectors, usually because of the dual challenges of a lack of scale here and the remoteness from markets. We do have examples, such as Incat, where we have been able to construct highly complex vessels at the bottom end of the world for delivery to geographically very remote markets and to provide the support services to these vessels.

The explanation to me—from a number of years working in the developing field—is very Darwinian. Because conditions are so tough down here, in order to survive, you need to be very competitive. You only see the firms that are here because they are lean, the skill levels are high and they have had to be very innovative in order to be able to compete. This is true of many sectors, but the Tasmanian maritime sector is a particularly good example of this.

I think it also partly rests with the ability of developing a supply chain around a core activity. This is the last issue that I want to raise in this short address. I have in the other submissions a lot of discussion about the importance of maintaining a core of activity over a reasonable period to enable industry—particularly the SME part of industry—to form around this core activity. There was a little bit of discussion with the previous speaker about the need to perhaps shorten the life of the turnover and those sorts of things. People are exploring ways of doing this.

We have found, certainly in the commercial construction, that assisting that core activity to continue and trying to help smooth out the variability are very important activities, because it gives the SME sector enough time to grow in skill and capability so that, in the long run, these companies develop IP products and services that are themselves competitive in a global marketplace. They then become less reliant on the single customer and they develop some of the resilience that is needed to grow a very outward looking sector that contributes to growth, employment and export sales. However, in our experience, this takes a long time.

We have seen Tasmanian governments of all persuasions over the past two decades support and develop the core industry around some of the larger shipbuilders here. That support has included investment in training and skills development, investment in training facilities, support for market access and promotion and, from time, direct financial support. The payoffs are evident in the sort of capabilities that we are now able to demonstrate. We can put a document on the table that shows you the firms that have built up around this activity. While this is not a naval example, it is an example of this model and the importance of providing stability and continuity.

ACTING CHAIR—Ms Hill, did you want to make any opening remarks?

Ms Hill—No, thank you.

Mr R Edwards—Ms Hill is here to answer the tricky questions.

Senator PAYNE—Thanks very much for your presentation. I found it very interesting. It provided a good foundation for some of the discussions we have had today with the players in the industry in Tasmania. In your submission you talk about your objective to gain more defence

related work for the state, but in your introductory remarks you spoke more in the broad than about the defence related stuff and more specifically about our inquiry on naval shipbuilding. You referred to strategies to assist in that process. Can you give us more of an idea about those strategies?

Mr R Edwards—I can, and I will also invite Debra to make some remarks on that.

Senator PAYNE—It must qualify as a tricky question.

Mr R Edwards—Some time ago we looked at the percentage of defence work that we were getting, particularly from Australian defence expenditure—and we found it was very low. We looked at the fact that we had the capability to do more and also that we were doing defence related work for other national services and we thought that—in our scanning for an opportunity—there was an opportunity here for us to try to get a bigger percentage of that work. Sometimes that suffers from a kind of China fallacy—that is, you only need one per cent of this great marketplace and we will all be in clover. We all realise—indeed, we have a senior person in our department who is an ex-defence industry person—how difficult it is to crack sections of that market, particularly if you are a small firm, because of the contractual risks associated with trying to be a provider. Nonetheless, we thought this was a journey well worth getting on board, so we put in place a range of programs—and I will get Debra to elaborate on them—largely around getting the DMO and the prime contractors more familiar with what is actually down here and with the sort of evidence we have provided today.

Ms Hill—The sort of strategies that we have applied are the normal promotional type strategies that you would expect a state government to do together with its industry. One of the things that we have noticed, I am sure it has not escaped your attention, is that there are no defence applications or anything here. We have a small barracks and that is it. We lost the HMAS *Huon*, that has been sent away. So we did not have any presence here. Our ministers and our senior managers in the department were not active in the defence arena in terms of the various defence fora that are held around Australia. So we have made a concerted attempt to make ourselves a presence there and to display our capability. We have put together our industry now. Our industry capability is displayed and promoted at all of the key events that they have, particularly all of the ones in Canberra. We have had meetings now with a number of the prime contractors in particular. We have had prime contractors come down here and address our industry. So we have gone to those sorts of lengths to ensure that our industry capability is exposed to those that are aware of what our ability is.

Senator PAYNE—Essentially, as a department of economic development broadly speaking, you are working with organisations such as the witnesses we heard from before, the Tasmanian Maritime Network in the things that they are doing. Is it a partnership approach?

Ms Hill—Yes, we adopt very much a partnership approach with our industry. In fact, it has been a key plank of the Tasmanian government—from when the Bacon government first came into being—of how we operate with our industry and indeed with our community. The partnership approach is very much embraced and encouraged.

Mr R Edwards—One of the things we have done, going back seven or eight years, is to form industry councils. In a lot of industry sectors, there are traditional lobby groups and traditional industry representatives to work with.

Senator PAYNE—I am familiar with those.

Mr R Edwards—Yes, you would have seen a lot of that. But in some areas, there were not—the maritime industry was a good one—and they needed some assistance to become a network if you like. We have found a lot of benefit in trying to get these people to operate as a network. So we have spent a lot of time forming and building these creatures. The balance of that project has been very successful. Occasionally you create these creatures which come back and give you a lot of grief but, by and large, they are very useful. They are very useful for exactly this sort of exercise because two or three people can come and talk to you about the industry and they are very representative of a whole range of firms behind them.

Senator PAYNE—I think you said, Mr Edwards, in response to my first set of questions that you had had a look at the percentage of defence related work that came to Tasmania and decided it was low. What change have you seen in that percentage since you have implemented these strategies?

Mr R Edwards—I think you would have to say that the change would be very modest. I do not have the figures in front of me but I am happy to go and look. My impression would be that there has been very little change, mainly because we are still in that phase of the project which is about getting better recognition for our capabilities. Of course, the timing of some of the larger projects, the phase of when work would be awarded, is yet to happen. There is always a debate. Our biggest numbers would come from the things that we are most able to supply such as very large, fast aluminium naval vessels. Really, the decision rests with the RAN and others about whether that forms part of their strategic capability or not. There has been an ongoing debate for many years about that.

Ms Hill—It is probably also fair to say, and I think some of the witnesses earlier on today alluded to it, that in fact Tasmanian industry supplies more to outside naval areas than to Australia, which I think is a message in itself.

Senator PAYNE—Have your efforts in advancing your interests to the Australian defence industry paid dividends internationally for you as well?

Ms Hill—I think that would be something best asked of the industry because they would probably be able to answer that better than we would. What we done is to let Defence, DMO and the other players know that Tasmania does have capability, we are here and we want to be noticed.

When I looked at your transcripts, I did not see the word ‘Tasmania’ mentioned anywhere when you were talking about the ability of regional Australia or the eastern seaboard or anywhere else to do anything. Nowhere did the word ‘Tasmania’ appear. I think the word ‘Incat’ appeared. If you could see how we see that, that is how Defence probably sees Tasmanian industry capability, except for the bit that it used. We would like to encourage that more.

Mr R Edwards—I think the other thing for us to say is that this project about capturing a larger percentage of defence expenditure is a very long-term one. We recognise this is not going to be easy. Often this work becomes intense lobbying as that is the focal point for getting the expenditure: ‘If only we can squeak louder, then someone will throw money at us.’ That is not the appropriate way for the growth of our industry. It has to be based on the ability to be the best fit for the job required. So we are happy just working away at capability. There are plenty of other market opportunities. Defence is a great one, but there are lots of others. We just see this as part of the suite of things that we are trying to do.

ACTING CHAIR—There is one thing that strikes me about Tasmania, and I say this coming from Western Australia, where we have a fairly small population base relative to Queensland, New South Wales and Victoria. South Australia and Western Australia have committed very large sums of money to try and kick-start their shipbuilding capacity—they have provided common-user facilities, ship lifts and these sorts of things. Where do you see Tasmania fitting into this sort of heavy industry picture? I would have thought that modularisation, which we have heard about from Hayward industries, is a logical sort of approach. I would have thought the Maritime College aspect is very important and relevant, and there are aluminium ships, of course, with Incat. Where do you see yourself in five years, 10 years or even further out? If the industry is to go forward, where is Tasmania going to be and how much commitment is there in government revenue to getting your side of the thing going to a level of what you expect to achieve?

Mr R Edwards—That is a really interesting set of issues. The government has invested in underlying infrastructure, but a lot of it, particularly in the shipbuilding area, has been in skills and training development. A classic example of that is the formation of an aluminium welding training college here. When Incat, in particular, and some of the other firms had very full order books, we had a real shortage of aluminium welding skills. This has been a very good facility. It has trained lots of aluminium welders and indeed has made us a centre of excellence for aluminium welding in Australia. Unfortunately a lot of people get trained up and then go and work in Western Australia.

ACTING CHAIR—I wondered where we were getting them from!

Mr R Edwards—The Western Australian government has forgotten to send us a cheque for the training costs, but that is okay. I think the Tasmanian government has not been, and probably is unlikely to be, in a position to invest tens of millions of dollars in common-user heavy infrastructure such as you have seen in some of the other states. Indeed, as I mentioned, our ambition does not lie in being a centre for naval construction in that way, in being the shipyard where it all gets put together. But I think the modularised methodology of modern shipbuilding means we are ideally placed, with some of our firms, to be providing substantial components. We do have, as you have heard from Haywards and others, a big heavy engineering sector.

I think the future lies in developing those firms to be able to be part of that. That is about getting to the level where they are comfortable as the tier 2 and tier 3 contractors in a relationship with a prime contractor and are seen as being able to provide quality work on time, at a good price—all the things that come out of the requirements of Defence and other customers. I think the government will continue to provide a lot of effort in that coordination of

industry and also in developing companies to a level where they can cross those often very demanding hurdles.

We have got a good example in Haywards—I do not know if they mentioned it today—with the wind industry. When the wind industry took off in Australia—and Tasmania had some particular opportunities around that—we did a lot of work with firms about the requirements for being a subcontractor in this industry. We had a major international constructor, Vestas, locate in the state, and we spent a lot of time saying, ‘If you are going to build’—in Hayward’s case—‘towers for these farms, what is it that you do not have?’

But what they did not have when they started the journey were the systems, processes, QA, management and those things. It was not just about the physical fabric of the factories and the sorts of infrastructure that sometimes get invested in. As a department we tend to take a fairly holistic look at our clients and say, ‘There are a lot of things needed in here and infrastructure is only one of them.’ So, casting ahead five years, as you said, I do not think the investment we will make will be in the big infrastructure kinds of things—although you do get calls for building that sort of stuff from time to time—but for helping industry get to the level where they are comfortably able to be part of that subsupply chain.

Senator TROOD—Are you essentially talking about the further development of existing enterprises or is part of the strategy to attract more enterprises to Tasmania as a foundation for growth in the whole industry?

Mr R Edwards—Yes, but a fair amount of our work is with the industry attraction side. It has to have some sort of core to it. The other thing we have found, as a small state quite removed, is that the general bargaining game of attracting industry is very difficult for a small government with a small cheque book, and we tend not to do it. If you cannot find the right reason for being here, then you probably should not be here. So overwhelmingly the firms that are here and that are attracted here have found a competitive advantage in being here. In some industry sectors that competitive advantage is the labour force—the skills base, the low turnover. Sometimes it is our cost structures. Rarely, it is our access to markets because we are usually pretty distant from places. So, yes, companies continue to be interested, but in the maritime sector a lot of it is in indigenous growth of companies in Tasmania. They have grown up here, they were small companies 50 or 20 years ago and they are much bigger now. We helped them to get that export focus for becoming global companies.

Senator TROOD—I think Maritime Network said there were about 15 members.

Ms Hill—Yes.

Senator TROOD—Has it always been about that size? Has it been larger and contracted or is the trajectory forward?

Ms Hill—I do not think we should mistake the number of members of the Maritime Network as strictly just the marine sector. There are other players that are not in the same space in the export market as perhaps that group is. The Maritime Network is very much an export focused group. Incidentally, they do get quite significant support from the state government with their

marketing effort—if you do not mind me adding that. It was a bit of an oversight on Chris Edwards's part. He is terrific, by the way. We have a good relationship with him.

Senator JOHNSTON—It is always important to get those things on the record.

Ms Hill—So there are other strings to the bow. For example, in the marine manufacturing arena, you have your key players but certainly in the commercial areas you have a whole lot of electricians, electronic specialists and all those other people who will do a bit of the marine fit out and that sort of thing. So there are others. They are a key. That core group is the one that does most of the interaction, the export interaction particularly.

Senator TROOD—What do you think the value is, in dollar terms, of the support you are providing to the Maritime Network? Can you quantify that?

Ms Hill—It is really difficult to put a figure on it because a lot of the support we provide is very much facilitation and in kind. For example, secretariat support sounds all well and good, but it is actually a lot more than secretariat support. It is doing promotional stands with them, making introductions and organising. There is a lot more to it than that. There are discreet assistant packages for discreet needs at certain times—grants or loans—which any development agency does for business. We could probably go away and have a look at it.

Mr R Edwards—For example, we fund a range of these companies to go to Pacific 2006 and those sorts of things. We provide support for marketing. We provide the same support for overseas trade shows and things. We do a lot of work at an enterprise level with companies—if they want us to work with them. We provide a range of services around business planning and all of those sorts of things. They have a monetary value in some sense. We provide various grants programs, which people access, although over time we do less of the giving money away and more of the other sorts of assistance that is typical in a lot of development areas.

As Debra mentioned, we also retain a loans portfolio and have used that strategically with companies to aid growth or for other assistance. You may be familiar with a period of Incat as it went into administration and came out. We were there as part of the package along with the banks to manage that work out. If we had not done that—once a shipyard loses its employees you do not have anything except a large shed—Incat would not have been in a position to pick up again and take orders even if they had wanted to. From time to time various governments have intervened at that level and that sort of assistance can be quite substantial. In the end it does not turn out to be as long as it works well.

Senator TROOD—Is the state government satisfied that Incat is now on a firm financial footing?

Mr R Edwards—I have had a look at shipyards around the world. They are as solid as their forward order books. The environment can change surprisingly quickly. I have done a reasonable amount of work with the fast ferry industry and that industry itself is more fragile than the traditional boat construction industry. They are at the pointy end of a fragile industry, in a very competitive area. The main thing that has happened in the last 10 years is that there has been a real shakeout. Everyone thought they could get into fast ferries and fast aluminium construction. It is actually quite difficult and it is not surprising that the two Australian companies are really

the last men standing, basically. A lot of the other traditional steel shipyards that have gone into it have realised how difficult it is and no longer do that work.

Senator TROOD—How does the Tasmanian network link in with the Australian Industry Defence Network? Is that an important relationship for the state?

Mr R Edwards—It is.

Ms Hill—It certainly is. In fact, the Tasmanian representative is the national president of the Australian Industry Defence Network. He is a former defence industry person and quite active in the arena. He is the director of a number of small niche highly specialised companies, which Senator Johnston seems to know about. Yes, we are very active in that arena. That is another one of our strategies. We had a defence network so called but it was inactive and there was very little government support and facilitation so we have absolutely ramped that up and we use that network quite a bit. SMEs are an important part of Tasmania's economy, indeed they are the bulk of our economy and we have some really talented SMEs. Focusing them in a group or a network, whether it be a maritime network, as the industry formed itself with our facilitation, or something else, makes sense.

Senator TROOD—It is obviously valuable for Tasmania but do you think it works effectively as a defence industry network nationally?

Ms Hill—I think that question would be better put to Mr Mike Turner, who is the national president and a key player in the network. In Tasmania, certainly, it is better for us being in and part of that network and better for our industries to be part of it than what it was without it.

Senator TROOD—They, of course, come to us and tell us they are doing good things.

Ms Hill—Yes, they are very good.

Senator TROOD—It is interesting to know whether that view is shared by its members.

Ms Hill—They do good things. Their communication is very good, very high level and very all-encompassing. Consultation: they have an ability to read and see things. Remember, they are small businesses—they are nose down, bum up, focusing on their business—so having that network and those personnel keeping an eye on the bigger picture for them is absolutely crucial. I have quite a regard for the role of the Industry Defence Network.

Senator GEORGE CAMPBELL—The evidence we were given by the Melbourne Institute was that there were something like 600 firms associated with the Australian Industry Defence Network. Yet, when we talked to Tenix yesterday afternoon they had on their book about 3,000 different firms that they use—they use a wide range. Why the significant discrepancy? Why are not all of these people in the group?

Ms Hill—I would hazard a guess at this. The smaller the SME, the smaller the enterprise, the more likely they are to have a great need of the Industry Defence Network because of the very things we were talking about a moment ago. I suspect some of the larger companies, perhaps the more medium-sized companies, probably do not have that need for that facility of the network—

that extra resource that the network might provide. I do not really have the answer but I suspect it may have something to do with that—unless they have not been as aggressive in those particular states and territories. Sometimes industry need to be jollied along and encouraged to form the network. That may have something to do with it.

Senator HOGG—I have a couple of questions. Do you have any ex Defence employees working in your department to assist you with the development of policy in dealing with Defence?

Mr R Edwards—Not specifically but, as I mentioned, another senior person in the department—the other deputy secretary—Greg Johannes, is an ex Department of Defence employee who was in the industry area. He has a great deal of background and experience in this. We may have other staff members that have defence type backgrounds.

Senator HOGG—Some of the others—Western Australia and South Australia—have got people from that area. Are you at a disadvantage?

Mr R Edwards—We got them to employ an ex Tasmanian Stephen Gumley as the head of the DMO and he is in there driving it!

Ms Hill—Well, it has not helped! South Australia is leading us.

ACTING CHAIR—You are obviously manufacturing a lot of the AWDs.

Mr R Edwards—No, we have not employed someone specifically for that. As I have explained, this is partly because of the journey we have embarked on—we are growing in this. In our assessment, as a very small department with very limited resources, our ability to attract a major share of this work will be based largely on the expertise of our companies and the capacities that we have here and are able to build. We cannot change, and we do not seek to change, to a differing view at a policy level in Canberra about what should and should not happen. We would perhaps like, for example, the acquisition of fast aluminium warships and support vessels but these things are very difficult to change.

We help other companies like Incat get a change in US thinking about vessels, but it is an extremely difficult task. At the moment we are devoting our limited resources to helping build the capacity of the companies to be able to get their foot in the door. This might change. Success for us will be capturing a percentage of work in the upcoming projects, particularly, say, some of the heavy engineering work you saw with Haywards and others. If we do that and generate revenues and profits for firms because of that activity, then we would say: how do we take it to the next level? How do we expand our reach?

Senator HOGG—I would like some clarification on your interaction with Austrade. I have formed a view—it might be incorrect—that you seem to be involved in assisting many of your SMEs in their marketing overseas as well. Is that in conflict with what Austrade might do or do you complement Austrade, and how do you complement what Austrade does?

Mr R Edwards—It is a very complementary relationship. We probably do it more than anyone because we do not have a network of overseas presence ourselves. We have to work very

collaboratively with the federal government and Austrade but also Invest Australia and others in order to provide that reach. My characterising of the relationship is that it is one with a high degree of complementarity and a lot of cooperation. Generally we try to work out spheres where we contribute to each other's expertise.

Senator HOGG—But you do not get in each other's way?

Mr R Edwards—I would not have thought so. I do not see a lot of examples of that.

Ms Hill—We work very well with the Austrade people. We have a good relationship, as we do with AusIndustry. We do need them very much because we are quite small. In fairness, our industry needs us to have that relationship with Austrade as well, so we do try to encourage that.

Mr R Edwards—We actually work out of the same office in Launceston. We have come to an agreement to co-brand an office and work together.

Senator FIERRAVANTI-WELLS—We have heard from other state governments their plans to capture a certain proportion of construction and through-life support in the next 10 to 15 years. Have you as a government done any economic modelling or made any economic consideration as to how much work you would need to capture to continue to sustain your shipbuilding industry here in Tasmania?

Mr R Edwards—I think that that industry is sustainable with its commercial activities. The issue is that we are always looking for growth opportunities, so this would in fact be the icing on the cake. It would be a great growth opportunity. However, it can be very difficult. These contracts may or may not have high margins, you may or may not be able to deliver them profitably and the company's experience with them may or may not be positive. In any new venture you have to confront those sorts of issues. But I think we are continually looking for that next set of opportunities. We have not modelled what we need to sustain an industry. I am not aware of it, but we may have done some work on how much we think is feasible to capture the last round of upcoming projects. I suspect it is more likely that that work is being undertaken now. You need the specifications, the tender packages and those sorts of things. You need to work quite closely with the prime contractors to get a feel for how much of it you are able to get and what the value of that work is.

Senator FIERRAVANTI-WELLS—You may be aware that in 2002 the DMO released a paper entitled the *Australian naval shipbuilding and repair sector strategic plan*. It was suggested in that that industry should rationalise, reflecting basically a one-purchaser, one-supplier model. Are you aware of that? Would you like to comment? Do you see in your dealings, particularly with the DMO, any reluctance—if I can put it like that—or perhaps a predetermined view of where they see things happening as far as Tasmania is concerned and where Tasmania fits into that equation, if at all?

Mr R Edwards—At the time of the release of that paper, it probably was not an issue that we would have been highly engaged in. Obviously, you can see through a range of the submissions that have come to this inquiry that debate is a pretty important part of this total debate. I guess, as I mentioned in my introductory remarks, we are a little bit abstracted from that because, if the activity occurs in Australia, our opportunity is to have firms contribute as part of that—not as

prime contractors and not as the naval shipyard but as the next range of firms to be in the supply chain. Whether there is one or there are many is an interesting issue. It is an interesting issue for the policy makers in Canberra; also, the various state governments are all promoting their own capabilities.

As an economist, you can see the advantage of a long run of competition in this industry, but how do you balance that off against the feast and famine nature—as I think I heard mentioned earlier—of this type of activity? It is interesting that the range of submissions to this inquiry talk about whether there is a way of smoothing that profile of work. Can we get it longer? Can we get the ship life shorter? How can we manage this? Can we build more vessels? I think those are the things that will drive the economics of the underlying shipyard infrastructure around Australia, but it is not unique to see state governments overinvest in this sort of stuff because of not being able to get to a cooperative arrangement. You see it in a lot of industry sectors, particularly when people are trying to get a bit of an advantage. In the long run that may lead to national overinvestment in a range of these things, particularly when our local market is not big enough to support that continuity of work. That comes back to one of my submission issues, which is that we have found great importance in working with a core activity to provide that continuity because that is what drives the work of the rest of the firms.

Senator FIERRAVANTI-WELLS—We saw this morning at Incat what has grown around this, if I can put it that way. Have you done some work on determining what the value has been to Tasmania? Also, have you done work on the nature and the number of enterprises that have built up as a consequence of Incat being a major operator there?

Mr R Edwards—We do have that information. I do not have the numbers off the top of my head, but we can certainly provide some of that information.

Senator FIERRAVANTI-WELLS—That would be really useful to see what have been the spin-offs of one enterprise and the sort of work that it has done. In effect, from your perspective, shipbuilding being concentrated in one part or in more than one part of Australia does not affect you because most of the people who are competing for work in Tasmania are competing at those second- and third-tier levels.

Mr R Edwards—That would be the way I would characterise it, yes.

Senator FIERRAVANTI-WELLS—How much work do you envisage might come to Tasmania as a consequence of the AWD contract? Do you see much work coming to Tasmania as a consequence of that? Do you have a view about that?

Mr R Edwards—Not at the moment.

Ms Hill—No, we do not have a view on that.

Mr R Edwards—We are in the stage of working with the prime contractors about what their requirements are. It is very hard at this stage to get a feel for that.

Ms Hill—But we are a one-stop shop, if you like, in terms of modularised fabrication. We can do that and do it very well. I think it would be good to ask Mr Edmunds to actually furnish a

little more information through your Richard to let you know what that capability is. I think that would be very useful for you.

Senator MARK BISHOP—The submission from the government appears to be a request for work in fabrication or heavy engineering industries per se, and you identify a range of firms who have expertise with their labour skill levels and their sites and all of that sort of thing. Almost 80 per cent of the build of the AWD is in the insides—the programs of communications—not in the hull. There is still serious suggestion that the LHD hull work in particular might be sent overseas and there is serious competition, in any event, from at least four states for the fabrication and engineering work. Do you have any hard data that suggests that your yards, either on their own or in that cooperative model you have down here, have some economic cost advantage over the yards that will be competing for some or all of the modular work?

Mr R Edwards—That sort of comparative data is very hard, because obviously other firms are not particularly keen to give you those cost structures.

Senator MARK BISHOP—Your industry policy appears to be directed at the lower end of the value of the work in terms of the fabrication and the engineering, not the higher end. I wonder why that is the case. What is your competitive advantage that sends you down that path of industry development when there are clearly significant players in other states, who I would have presumed would have cost advantages over you.

Mr R Edwards—The focus on that heavy engineering side is because we do have very good capacity in that sector. As I mentioned about this issue of competitiveness, surprisingly, to other players sometimes, though not surprisingly to us, we are competitive in that type of activity despite being remote to markets. So, in fact, probably the barrier for us to fully exploit the opportunity for work is actually the transport of the finished module back to where it has to be put together, not only because of the cost of that which adds to a disadvantage which we usually can factor in because of our other price advantages but also because of the logistics of moving these very large pieces around, the subassembly and getting them transported.

The reason we are competitive, I think, again, is that our firms are very lean already. They are fairly innovative because they have had to be to stay competitive, but also we have a lower cost base in terms of real estate and we have very low turnover in a number of industries—people are fairly sticky to their employer. Those things contribute directly to bottom-line costs and do give us that cost advantage. We are reasonably confident that we will be competitive in those large, heavy engineering areas and that is where we do have some good capacity. In some of the more complex systems engineering, software systems and communications and things, we just do not have those types of companies here, by and large. Indeed, when you look at the amount of off-the-shelf systems that are purchased overseas and then integrated in a vessel, you will see that there is quite a high proportion of that as well. So the Australian capability is not necessarily there either.

Senator MARK BISHOP—Thanks.

ACTING CHAIR—Mr Edwards and Ms Hill, thank you very much.

Committee adjourned at 3.29 pm

