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HOUSE OF REPRESENTATIVES

SELECT COMMITTEE ON THE RECENT AUSTRALIAN BUSHFIRES

Reference: The recent Australian bushfires

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SELECT COMMITTEE ON THE RECENT AUSTRALIAN BUSHFIRES

Wednesday, 30 July 2003

Members: Mr Nairn *(Chair)*, Mr Adams *(Deputy Chair)*, Mr Bartlett, Mr Causley, Ms Ellis, Mrs Gash, Mr Gibbons, Mr Hawker, Mr McArthur, Mr Mossfield, Mr Gavan O'Connor, Mr Organ, Ms Panopoulos and Mr Schultz.

Members in attendance: Mr Bartlett, Mr Gibbons, Mr Hawker, Mr McArthur, Mr Nairn, Mr Gavan O'Connor, Ms Panopoulos and Mr Schultz

Terms of reference for the inquiry:

The Select Committee on the recent Australian Bushfires seeks to identify measures that can be implemented by governments, industry and the community to minimise the incidence of, and impact of bushfires on, life, property and the environment with specific regard to the following.

(a) the extent and impact of the bushfires on the environment, private and public assets and local communities;

(b) the causes of and risk factors contributing to the impact and severity of the bushfires, including land management practices and policies in national parks, state forests, other Crown land and private property;

(c) the adequacy and economic and environmental impact of hazard reduction and other strategies for bushfire prevention, suppression and control;

(d) appropriate land management policies and practices to mitigate the damage caused by bushfires to the environment, property, community facilities and infrastructure and the potential environmental impact of such policies and practices;

(e) any alternative or developmental bushfire mitigation and prevention approaches, and the appropriate direction of research into bushfire mitigation;

(f) the appropriateness of existing planning and building codes, particularly with respect to urban design and land use planning, in protecting life and property from bushfires;

(g) the adequacy of current response arrangements for firefighting;

(h) the adequacy of deployment of firefighting resources, including an examination of the efficiency and effectiveness of resource sharing between agencies and jurisdictions;

(i) liability, insurance coverage and related matters;

(j) the roles and contributions of volunteers, including current management practices and future trends, taking into account changing social and economic factors.

WITNESSES

Committee met at 8.30 a.m.

FARMER, Mr Brian, Director, Forest Resources, ForestrySA; and Member, Forest Owners Conference

LLOYD, Mr Philip Gerard, General Manager, Auspine Tree Farms; and Member, Forest Owners Conference

TONKIN, Mr Malcolm Geoffrey, Hancock Victorian Plantations; and Member, Forest Owners Conference

WILSON, Mr Patrick Dennis, Director, Public Affairs, Victorian Association of Forest Industries

CHAIR—I declare open this public hearing of the House of Representatives Select Committee on the Recent Australian Bushfires. Today's hearing is the 11th one of the inquiry. It follows the hearings we held in Buchan yesterday and in Omeo the day before and, prior to that, in New South Wales and the ACT. On Friday the committee will be holding hearings in Hobart, and then a visit to Western Australia will bring the main part of public evidence gathering to a conclusion.

I welcome our first witnesses today. Although the committee does not require you to give evidence under oath, I advise you that these hearings are formal proceedings of the parliament. Consequently, they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as contempt of parliament. We have the submissions from the two organisations which have been authorised for publication and therefore form part of the evidence. I now invite you to make some brief opening remarks before the committee asks some questions. Mr Wilson, would you like to start on behalf of VAFI?

Mr Wilson—Thank you for the opportunity to present. I have prepared a supplementary submission, which I will leave for you, which provides a bit more detail, as it has emerged, of the impact from the fires on the industry per se. With your indulgence I would like to read briefly from the submission and then touch on the points:

"It has been many years since an extreme bush fire has occurred in Victoria on any scale and based on history Victoria is overdue for such a blow up situation ...

The exit of both industry and forest harvest management personnel has left a funding and management void that has not been filled. Coming summers will lead to a loss of old growth forest and probably the loss of life and property unless the Government moves to ensure adequate resources are provided."

That was a statement given by the VAFI Executive Director, Graeme Gooding, in August 2002 at a forestry conference. He does not have a crystal ball. He is a trained forester and he was stating what many of us regard as the bleedingly obvious. The Victoria forest industry has a very vested interest in how the forests are managed. In Victoria we technically have access to about 18 per cent of the forest. In reality it is about 10 per cent. That gives us very little room to move when

there are major bushfires, and the impacts that we are feeling from the fires last summer are fairly severe, in the short, medium and long term.

Our principal resource is the state forest, despite beliefs to the contrary, and our limit is 560,000 cubic metres. Native forest is the principal resource. The industry itself—just by way of background—directly contributes about $1.8 billion to the Victorian economy. It underpins an industry that contributes about $15 billion to the Victorian economy and employs 250,000 people. As I said, we are very susceptible to bushfires and are very concerned about forest management. Our principal concern is that the forest management is not being clearly defined and is not being properly resourced. The evidence of that, we perceive, is fairly empirical in the bushfires themselves which burnt over 1.1 million hectares—I am sure that you have the exact figures—in weather conditions that, by and large, were not extreme.

We perceive that there has been a considerable reduction in fuel reduction burning—it is at about one-third of the level it was 20 years ago—and, all things being equal, we think that when you add more fuel to a fire you get a bigger fire. We also perceive that as the industry has been withdrawn from the forest so, too, have departmental resources and infrastructure. If we are to reverse the trends and better resource forest management then we think the industry has a legitimate role to play. By way of summary, last year we provided something like $13 million for roads in state forests. With the current industry downsizing there will be 30 per cent less, so it works out at about $9 million. The sums are pretty straightforward. The issue of access to fires is obviously a fairly important one and there is $4 million for roads that needs to be found from somewhere else.

Additionally, the forest industry provides the reason and funding for a number of departmental people to be on the job. By way of example, and it is in the report, as the industry has withdrawn from north-eastern Victoria and has now virtually disappeared, the number of departmental foresters has dropped from 150 to 40. That is trained, experienced people who know their area. The news is not good since the fire. As the supplementary submission details, there are some 80 bulldozers provided by harvesting crews to fight the fires. Out of East Gippsland there were 21 crews and they provided up to 30 bulldozers—most of them have a bulldozer of lesser condition at home as a back-up for their operation. So there were an estimated 30 bulldozers provided, and of the 21 crews 11 have since left the industry as part of the downsizing. If you do your sums, the average value of the equipment provided was probably $150,000, with a replacement value of $400,000, if we are talking about bulldozers. That works out at over $4 million worth of replacement cost equipment that has exited the industry that was used to fight the fires this time, manned by people who knew the area and were readily on hand, and will not be there next time. We are of the view that to put a fire out you need to be able to get to it and you need to know what you are doing. To fight it aggressively, you need people with experience who know the location. The industry is shrinking.

I can talk with some authority about the direct impact on the industry. There was an immediate and significant reduction of supply of timber as harvesting crews were diverted to the fires—quite rightly, but nonetheless there was an immediate reduction of timber. In fact, Hallmark Oaks at Cann River were forced to close for a week at the peak of their busy season because they simply did not have enough logs. The mill nearby at Orbost which normally receives between 4,000 and 5,000 cubes a month during the harvesting season went for six weeks without receiving any; subsequently, stocks are perilously low. In fact, the stocks of the state's largest

processor of ash—NSTI at Heyfield—were 20 per cent below normal by the end of May, which is normally the end of the harvesting season.

The same ill wind that brought the fires also brought warmer weather, so harvesting has continued longer. Both Hallmark Oaks and Brodribb would have been looking at closure but they have been able to harvest a bit longer so they are scraping through, but they are having difficulty supplying their markets. That is an immediate impact. The medium-term issue is the salvage ramifications. We need, as I am sure you have heard in other fora, to move into the forest to salvage the ash as quickly as possible. Depending on its condition, it has less than 12 months before it can be harvested.

These figures are inexact, but in the forest management areas there is about 180,000 hectares of mountain ash. About 60,000 hectares of it—about a third—is accessible. About half that was burnt. That leaves about 12,000 to 15,000 hectares—it is in that order, but the figures are still very imprecise—which equates to a million cubic metres of burnt mountain ash forest that needs to be recovered very quickly. The commercial value of that, depending on how much of it is accessible and harvestable et cetera, is somewhere between $1.6 million and $4 million. Sorry, I am grossly underestimating that; please bear with me for a moment.

CHAIR—While you are looking for that figure, could I just clarify that that is within the state forest areas? You are not including the ash in national parks?

Mr Wilson—I am not including national parks. I am talking about multi-use forest. I meant to say that the value of the salvageable wood would be $160 million to $400 million. Its retail value, economic value, is probably about three times that when you have turned the milled product into furniture et cetera. Ash is fairly high quality. Allowing for your losses in processing, you are probably talking about $500 million to $1,200 million worth of finished product that is at risk.

Obviously the industry has just gone through a significant downsizing due to a recalculation of the sustainable yield. That has left the industry very little room to move. When you extract that level of resource from it and face the complexities of trying to resolve wood utilisation plans, assigning ash and coming up with an arrangement where mills that use mixed species forests move to predominantly ash and try to put that into their market, it causes considerable problems. They have to make about $100 more a cubic metre and their customers do not really see any benefit in paying that extra money. So they have a tough fight.

We are working with the government. It is a complex problem to solve to get to this ash, to schedule it, to resolve the pricing and allocation system. It is a process that state government and industry are grappling with. It was a headache we did not need, because we were already grappling with the rejigged timber resource, and it has added to the considerable uncertainty in the industry.

In the longer term, again the figures are still being resolved. It looks like there will be in the order of 30,000 to 40,000 cubic metres off the sustainable yield in that area of the forest in ash. That is obviously bad news to an industry that has just had a 30 per cent reduction across the state and does not welcome another one. So again that causes us some grief.

As I said before, 11 crews have since exited, taking with them equipment that will cost about $4.4 million to replace. We believe that the industry has a fairly significant role to play in providing infrastructure resource training opportunities for people to be experienced with fire, and we would like that acknowledged. But, first and foremost, whether it is national park—where the industry does not go—or multiple use state forest, we are extremely concerned that the resources are not being applied, that fuel reduction levels have decreased and that that places our industry and other forest values at risk.

CHAIR—Thank you. Who from the Forest Owners Conference would like to speak?

Mr Lloyd—I will give a short summary. The Forest Owners Conference is a plantation industry group that has been meeting for over 20 years in the Green Triangle Region—that being the south-east of South Australia and the south-west of Victoria. Its membership includes managers of both privately owned plantations and publicly owned plantations. In the Green Triangle Region, the area of land under the management of the membership is in the order of 300,000 hectares, and members across Victoria and South Australia manage in excess of 500,000 hectares of plantation land.

To give you a feel for the economic value of the plantation industry to the Green Triangle Region, the annual harvest from the plantations, which are two-thirds pine and one-third blue gum, is between three million and four million cubic metres per annum, which represents 15,000 to 20,000 tonnes of wood harvested per day. In the next five or 10 years that figure will double as the blue gum plantations mature—most of them are still in the less than five-year age class. The value of the industry to the region is on par with the wine industry, which is based around the Coonawarra region. The wine industry and the softwood industry in the Green Triangle are the two peak businesses that underpin the local economy.

As most of the product from the plantations is processed locally and value added locally, no other industry comes close in terms of social benefits to the region. It really underpins the socioeconomic fabric of the region. It is the major employer in the region and it generates 30 per cent of the gross regional product from less than 10 per cent of the land. It is also an industry that provides some stability, because it is essentially drought proof. We harvest the average growth over decades and we are not susceptible to short-term fluctuations in weather.

But we are vulnerable to fire and, because of that, the plantation owners in the region go to great lengths to exclude fire from their plantations, to manage ignition sources within their plantations and to protect their assets, the industry and the wider community from fire. We find that most fire sources come from outside. Most of the damage from fire is from fires that start tens of kilometres away and hit our plantations—as the fires in Canberra did. Although the Green Triangle Region was spared from the fires of last summer, we have experienced devastating fires. In the Ash Wednesday fires about 20,000 hectares of plantation in the region were lost. We are still feeling the effects of that today—some 500,000 tonnes of wood per annum is not available as a result of those fires.

The style of firefighting we practise is a little different from the style of firefighting in native forest areas. We have escalating preparedness and readiness to put out fires, depending on the fire danger. Our style is that of direct attack: whether it is a wheat crop or a plantation crop, you

do not fall back and back-burn your asset to put a fire out; you attack it directly and vigorously and you put it out before it gets going. That is the philosophy we follow.

The Forest Owners Conference membership contribute about 30 fire trucks and major fire tankers to the region. To put that in perspective, it is an equivalent resource to what the CFS has in the lower south-east and what the CFA has in the far south-west. So, essentially, we make up a third of the firefighting resource in the region. We also contribute to detection systems—both aircraft and tower networks—and we contribute to the firebombing effort by assisting with some standby payments for the firebombers in South Australia.

The essence of the Forest Owners Conference is that no-one can manage fire by themselves and that cooperation and collaboration between many stakeholders is essential. For that reason the CFS and the CFA and the Department of Sustainability and Environment are part of the Forest Owners Conference meetings, and we have very good local working relationships with the fire authorities and each other. We also have to contend with the border, and over the years we have been instrumental in overcoming some of the cross-border issues that always seem to get in the way of any business across the border. I would like to leave it at that.

CHAIR—We will proceed to questions.

Mr McARTHUR—Mr Wilson, I will ask a couple of questions in relation to why you think fire reduction burning by Parks and DSE have been reduced. You talk at some length about that in your submission.

Mr Wilson—The reality is that it has been reduced. It has dropped from an average of 224,000 hectares 20 years ago to an average of 79,000 hectares currently. They are the departmental figures. Additionally, a recent Victorian auditor's report noted that the department was not meeting its targets, so that is fairly empirical evidence that there has been a reduction. As to why there has been a reduction, you need to surmise. There are two things going on. One is that there has been an expansion of national parks and less forest industry activity. The philosophy that I am confronted with every day in the forest industry seems to be that, by putting things in national parks and not disturbing them, by that action alone you are protecting them. That is a fairly dangerous philosophy, because we have had one million hectares of forest burnt—national park and multiuse forest with no regard for buffer zones, habitats or wildlife corridors. So there seems to be a philosophy that you should not disturb the forest.

Mr McARTHUR—Do you think that is the major influence?

Mr Wilson—I think that is an influence.

Mr McARTHUR—What about the role of regulations preventing the various CFA and Parks people having a window of opportunity to do some reduction burning?

Mr Wilson—I am really not in a position to comment on that, quite honestly.

Mr McARTHUR—You mention in your submission, on the influence of green issues, that Parks back-burning trails are only allowed to be one dozer blade width, compared to two dozer blade widths. We have had a lot of witnesses talking about the trails being wrecked and made

non-operative. Do you see this factor of reducing the size of the trails being a matter of considerable danger to fire crews?

Mr Wilson—That point in the report was a result of a conversation I had with the bulldozer operator. I am not a fire expert and I asked the obvious question: if it is a fairly big fire, what is the difference between one bulldozer width and three? The answer was that the difference is (1) you cannot turn a fire truck around as easily, (2) you are still going to have the overstorey touching and the fire can move across there and (3) you cannot start a back-burning operation safely. That is the Fire Trails 101 explanation that I was given. There was no doubt in the minds of those people I spoke to there was a real concern about that, when moving towards conservation areas—and we saw the consequences of that with the public controversy over the Orbost road firebreak, which is public knowledge. There is real concern about putting bulldozers into conservation areas.

Mr McARTHUR—Your association would prefer to see a two-dozer width, where a safe track is providing assistance to firefighters, compared to a conservation approach of one width?

Mr Wilson—Our association would like to see that the decision on widths of firebreaks in the approaches is made on the basis of providing the best protection for all the forest values while recognising that in times of fire there is probably going to be a compromise: do you want bulldozer tracks around a conservation area and the destruction that goes with it or do you want a black carbon area that has no bulldozer tracks on it?

Mr SCHULTZ—On the question of bulldozer blades, what is the difference in width between a single bulldozer clearing and a double or triple bulldozer clearing?

Mr Wilson—As I said, I am not an expert in the area. The operator told me that the difference is that with a blade of one bulldozer width you still have overstorey. We all know the size of a bulldozer.

Mr SCHULTZ—I am talking about the actual width of cut.

Mr Wilson—I do not know the actual dimensions, other than from general knowledge of the size of a bulldozer used in those operations.

Mr Farmer—If I might help, a small bulldozer might have a blade that is two metres wide. A very big dozer might be 3½ or more metres wide, so it depends on the size of the dozer.

Mr McARTHUR—Can I raise a question with the Forest Owners Conference. You gave us a tour yesterday. I would be interested to know for the record your approach to handling an outbreak of fire. A number of witnesses have said to the committee that in a parks situation fires were allowed to burn for two or three days without any attack. Can you describe your philosophy on handling a fire near or in a plantation?

Mr Farmer—As Phil has alluded, we take a fairly similar approach. Under certain fire conditions, as a function of the weather bureau's ratings and the calculation of the fire danger rating, we man towers and/or put aeroplanes into the air so that we have an immediate detection system. If the fire weather reaches a certain level of severity, we actually take people off their

day-to-day tasks and put them at notional or preordained strategic points from which they can rapidly access the fire. We also have the firebombing aircraft on stand-by, ready to go at a moment's notice. In the event of a lightning strike or an arson event—someone flicking a cigarette out the window, for example—a general call comes through via pagers and/or over the radio system and all crews, regardless of what agency or company they represent, turn out for that fire.

There was an example this summer. A fire started as a function of an arson event; someone lit it on the side of the road. Within about five or 10 minutes there were crews from three different companies and ForestrySA plus an aircraft in the air hitting that fire. The fire was started on private property—I think it started in Green Triangle plantations—and it burnt into our plantation. It was quickly knocked down. We had enough crews there within about 10 minutes to do that. That was a very direct and specific attack while the fire intensity was relatively low and relatively small. The amount of energy expended was also low.

Mr Lloyd—To expand on that, that particular fire was on a total fire ban day. There was a spate of about five such days in a week. That fire had four loads of foam dropped on it from a fixed-wing aircraft within half an hour.

Mr McARTHUR—You are telling the committee that you have a fire crew on stand-by on a total fire ban day, ready to go. They have got their pumps, and they will attack the fire almost instantly after they get information about a lightning strike or an arson attack.

Mr Farmer—Yes. I think the issue is about having your systems in place beforehand. That is the beauty of this interagency or cooperative arrangement. Tasmania have a similar interagency agreement. These agreements are a response mechanism to fire issues, but they also act as a mechanism for planning and deliberating about fire management issues. It is a continuous improvement process, and that needs to be recognised. It is obviously a forum where—

Mr McARTHUR—Do you find it surprising that Parks Victoria have let fires burn for some time before undertaking an attack?

Mr Farmer—I have no information on that. We are a bit remote from what the actual activities were, so it is not my place to comment on that.

Mr McARTHUR—Your attitude is to protect the forest and put the fire out immediately it is detected, whether it was caused by lightning strike or human intervention.

Mr Farmer—Regardless of the cause.

Mr McARTHUR—Do you devote a lot of resources to training your personnel—

Mr Farmer—Absolutely.

Mr McARTHUR—and having your equipment up to date?

Mr Farmer—I think we all have a recognition that we need to address both the CFS and the CFA training arrangements, which is a bit of an issue, because of the cross-border thing. We all

do map reading and fire management training, plus we also worry about the fitness of our people as well and making sure that they are not only able but capable of participating in fire management activities.

Mr McARTHUR—So you have a proactive policy of fire suppression, that is the starting point?

Mr Farmer—Absolutely.

Mr Tonkin—Where I work is in the Ballarat area, which you saw yesterday. The same applies in this area, although we do not have other forest owners supporting us in this area because we are the only owner, but we do have the support of NRE and the CFA and the cooperation is extraordinarily good. So quite often when we get to a fire we might even be the third agency that gets there. The local CFA brigade will be there because they are very close and can move very quickly, and if it is a bad day NRE will have their guys also on standby and ready to go, so often we might be the third agency to get there—or we might be the first. The cooperation is that it is an interagency effort and whether it is on our land, adjacent to our land or within our sphere of influence—which can vary according to the day—people will respond to the fire irrespective of whose land it is on.

Mr HAWKER—Mr Wilson, in your introductory remarks you detailed the drop in the number of foresters from, I think you said, 150 to 40—is that right?

Mr Wilson—In the north-east, yes.

Mr HAWKER—Just in the north-east—and the number of bulldozer crews being almost halved?

Mr Wilson—In East Gippsland.

Mr HAWKER—Thank you. For that area, could you give us some estimate, then, of what increase the state ought to be putting in to replace those resources, to give reasonable assuredness of being able to handle the sort of contingencies that used to be able to be handled in the past? It does not have to be precise, but is it double, treble?

Mr Wilson—I can only go back to what I said in my opening remarks. There might be more efficient ways of managing things in the future—that has to be accepted, and obviously the use of aircraft is a good innovation if they are used quickly, as suggested earlier—but let us look at the infrastructure the timber industry provides which is being withdrawn. We provide equipment, in the bush, operated by people with local knowledge who are used to using that heavy equipment in rough terrain, and it is equipment which, although not unique, is certainly purpose-built for operation in the bush. As I said, in East Gippsland, for instance, the replacement value of the equipment that is left—just the bulldozers, not the excavators and other equipment and the trucks to transport that equipment—is of the order of $4.4 million today. If that equipment is not available—and bear in mind that that is an on-tap resource: government is not paying for the maintenance of that equipment or the training of the people, it is not having them hanging around, it pays for them when it needs them. It is nearby and it is a requirement that that equipment be floated. The answer is: ‘Well, you get it from somewhere else.’ Now, if it is

somewhere else then there is the delay in getting it there, and my novice understanding of what we have heard—an important thing and I am sure you have heard it a number of times—is that the sooner you get to the fire, the better the chance there is of putting it out. So there is the delay there.

There is also anecdotal evidence which supports a criticism received that because of the lack of experience there was, quite naturally, greater caution and that led to a less aggressive attack on the fire. While you can understand, and think it is appropriate, that if people have less experience they exercise greater caution, the consequence of that is a less aggressive attack on the fire. So I honestly do not know the answer to your question about what it takes to replace; what I can say is that there is a significant reduction in access roads and in equipment that is on tap that needs to be replaced.

Mr HAWKER—And local knowledge that you cannot put a figure on.

Mr Wilson—If the committee is interested, we have detailed stories from the 1983 fires of the experience of the timber industry in fighting those fires. Local knowledge et cetera comes out again and again as one of the very important contributing factors.

Mr Farmer—If there is an absence of resources in one part of the country and there is a demand for backup resources, as there was on us this summer—we were directly being requested to supply manpower and other equipment—then that becomes a limiting factor in our own capacity locally to manage fires. But also, obviously, if you are relying on something that is 100 kilometres away to resource and manage a fire, not only is your local knowledge gone but there is an issue associated with how quickly you can respond to that fire.

Mr HAWKER—In the submission that has come from the Forest Owners Conference, there is a point about liability and insurance. It says:

> The Victorian Government response to retarding the loss of rural volunteers has been to introduce legislation that not only requires rural industries to form fire brigades, but also makes company directors liable for all incidents involving their fire crews even when working under the control of the Country Fire Authority.

I was wondering what that has really meant in practice in the way you approach firefighting, fire crews and any sort of planning?

Mr Lloyd—It has meant that some companies are not engaging in firefighting because there are concerns, and these are not Forest Owner Conference member companies. But when you have to start worrying about the liability of directors when you have a fire to put out or the liability of individual workers, it is obviously an impediment to getting a job done. It is really an artefact of legislation which has not recognised the presence of a corporate volunteer as opposed to a normal individual volunteer. The solution to this is simple: the legislation needs to be amended to recognise that corporate entities may also volunteer their resources, and those corporate entities need to be afforded the same protection that individual members of the community are afforded when they volunteer their services to any public good activity.

Mr HAWKER—Would anyone else like to comment on that?

Mr Tonkin—What Phil says is right. In terms of affecting the way that we would then go and fight fires, we have to take that risk. It is unfair that we should take the risk, but we cannot not protect our plantations. So I guess we are forced into a position where we have to accept the risk that Phil is talking about—that we still have to do our job.

Mr Farmer—And by the same token the conclusion that you reach again is that, if you want to demonstrate that you are properly managing the fire and managing the risk, you have structures in place that are considered, planned and well thought out, rather than knee-jerk reactions.

Mr GAVAN O'CONNOR—You raised the issue about cooperation in the Green Triangle and the cross borders. What structures are in place to achieve that cooperation between the agencies and across the border?

Mr Lloyd—There is an organisation known as the Southern Border Fire Association that has membership of the cross-border fire agencies and the various plantation companies. That has been in existence for many years now and has jointly worked out some cross-border protocols. I think there have been big steps made particularly with the exchange of aircraft across the border. I think initially, probably five years ago, there was a reluctance to have too much cross-border traffic, but these days those sorts of issues are behind us. It is really in the hands of the local community—the local regions—to sort these things out on a local basis.

Mr Farmer—There are some exercises coming up that are held on an annual basis as well called Border Hop, which is basically a training program to familiarise people with each other's equipment and protocols before the fire season, which is obviously a good idea. But there are still some weaknesses. There are still different training requirements for the CFS and the CFA. There are still issues associated with the radio networks and frequencies that are available. Our radio frequency, for example, runs out about five or 10 kilometres over the border. There are still issues associated with a lack of suitable mobile telephone communication, which is obviously an opportunity for back-up and things like that. There is a range of those sorts of issues that we cannot address specifically.

Mr Lloyd—The training issue is that, while there are national training standards, a problem arises when different authorities across a border deem that you need a different suite of competencies. For example, in Victoria you can have all the competencies that they deem necessary for fighting rural fires, which focus on grass and forest fires, but in South Australia the policy is that you also need to have structural firefighting training—ladders, road rescue and things like that—as part of your suite of competencies.

Mr GAVAN O'CONNOR—Yes. Could you supply the committee with the protocols that exist in your organisation and across the border? I would be interested to see what documentation you have there.

Mr Lloyd—We can supply the southern border protocols.

Mr GAVAN O'CONNOR—If you would. The training issue that you alluded to is one that I intended to raise because it would seem to me that this could be a barrier to effective firefighting. Fires do not stop at the borders, and the firefighting effort does not stop at the

borders. This whole issue of interagency cooperation is very important, and cross-border cooperation is very important. Would you agree with that?

Mr Farmer—Yes, it is important. The issue is also—touching on Mr Wilson's submission—that land management philosophies need to be understood. It is not just about how to put a fire out but also about how to put it out with the least impact on the area. We do not want someone with a particular philosophy coming in, standing off and back-burning from existing roads and so forth, destroying plantations that might be worth $50,000 a hectare or something like that. Similarly, ForestrySA has particular native forest reserves where we have a slightly different attitude as to how we manage those, because we would practise fuel reduction burning, for example, which you do not do on a plantation estate. So there needs to be an understanding of that—and there needs to be an appreciation of the equipment. We want to know that we can put someone from Phil's company in our equipment who will be reasonably competent, not only to drive a truck but to drive a truck in a bushfire situation, and that they will not write off a piece of equipment worth $400,000 or $500,000.

Mr GAVAN O'CONNOR—So you are saying—and I think this is a very important point—that it is a little bit more sophisticated than blanket fuel reduction burning for the sake of it or according to some acreage determination.

Mr Farmer—Absolutely, and it is an issue that we in South Australia are dealing with at the moment. Phil and I both went to the recent Premier's bushfire summit in May, and the need for fuel reduction burning as a bushfire presuppression activity was a topical issue on the basis that, as you said, fires do not recognise land tenure or territorial boundaries, and therefore there needs to be a significant amount of cooperation between the range of landowners in a particular fire risk area so that they manage that fire risk area as a community.

Mr GAVAN O'CONNOR—You are very critical in your submission of the communications networks that exist in these situations. This is an issue that has been raised with us elsewhere. Do you have any suggestions on how we might overcome that? Where would this be addressed? Is it a fact that this issue should be addressed? You can decline to comment if you so desire, but it seems to me that it is a significant issue.

Mr Lloyd—Part of the issue is that the VHF frequencies, which can penetrate forests and terrain and have traditionally been used in fires, are being withdrawn from availability because they are being focused on other communication roles. The communication frequencies we are left with for emergency response work fantastically if you want to talk on the radio between Mount Gambier and Adelaide but are not necessarily useful to talk between here and across the street in fire ground. Part of the issue is having national, appropriate frequencies available for firefighting. The best outcome would be to have dedicated fire frequencies that were common across all states. We have the ridiculous situation where you are having four or five radios in one vehicle, and that is not safe. You do not know which radio is talking to you at any one time.

Mr GAVAN O'CONNOR—This is one final issue. You have a philosophy of initial, direct attack. You are saying that your style of firefighting is somewhat different from others'. I think Mr Wilson made a comment about 'stating the bleeding obvious' about resourcing in August 2002. Did you give input to the Australian Fire Authority Council's report that was

commissioned by the federal government and dealt specifically with aerial firefighting strategies?

Mr Wilson—No.

Mr Farmer—That was fairly recently.

Mr GAVAN O'CONNOR—Yes, in August 2002.

Mr Farmer—We would have done that through the lead agency, the CFS.

Mr GAVAN O'CONNOR—The CFS would have been the lead agency in that particular report. Are you aware of the recommendations of that report?

Mr Farmer—I am aware of some of them, not all of them.

Mr GAVAN O'CONNOR—Have you read the report?

Mr Farmer—No.

Mr GAVAN O'CONNOR—The report by Australia's fire chiefs indicated quite directly that Australia faced an horrific fire season due to climactic moisture levels in fuel loads and other issues in the forests. Would you agree with that assessment? How did you view the 2002-03 season from mid-2002?

Mr Lloyd—It depends which part of the country you were in. The Green Triangle Region did not have the same degree of drought that other regions experienced.

Mr Tonkin—We have been in five or six years of drought, so we have gone into at least the last three or four fire seasons thinking that each year might be the year we were going to lose more estate than in any other year, and in the last few years we have been fortunate. We were not so fortunate this year.

Mr GAVAN O'CONNOR—Mr Wilson, how did your industry see the season?

Mr Wilson—The reason I used the phrase 'the bleeding obvious' is that it seems, from discussion with our members who actually work in the forest, that fuel levels were extremely high and extremely dry. On a personal level, it surprises me that we did not have a major problem in the Otways. I have talked to people in the last few days to find out what their situation is and people, particularly from East Gippsland, were quick to remind me that, 'By the way, we still have those fuel levels in East Gippsland and, if we have a bushfire there, we're in real trouble.' Nobody viewed the coming season with a great deal of optimism, and we are still extremely concerned about the possibilities for the next fire season.

Mr GAVAN O'CONNOR—Are you aware that in the AFAC report the fire chiefs recommended to the federal government—not the state governments—that we needed a variety of aircraft, including helicopters, fixed-wing aircraft and other aircraft, as the existing resources were inadequate to cope with the fire season?

Mr Wilson—I have not read the report; what I have done is spoken with the people I represent who work in the bush. Their concerns are that if there are no access tracks then you cannot get to the fires quickly. Aircraft have a role to play, but they are not suitable in every case. I take your point about blanket fuel reduction burning—there needs to be more thought given to it than that, apparently—but the reality is that we do have dangerously high fuel levels and that fuel reduction burning has radically reduced. We have had a very big fire and we are concerned about the potential for future fires. Whatever fire plan and whatever mechanism people who do know think is appropriate is implemented, we are concerned that it is probably defined and resourced. That is the point of our submission.

Mr GAVAN O'CONNOR—I am not surprised that you have not read the report, because it was never released. It was delivered to the federal government in August 2002—where you drew the line, Mr Wilson. Basically it said that, in the view of the fire chiefs, the resources available were inadequate for the coming season and that the aerial firefighting resources needed to be supplemented at that point in time, because you have long lead times. Of course, that particular request was not met. In your evidence you have spoken about lightning strikes causing fires in remote localities and the importance of getting at those fires quickly as a first-strike type action—that is your philosophy. You need resources to do that—not only ground crews but aerial resources as well.

Mr Farmer—We consider that aerial resources are important both for aerial detection purposes and also for first-strike type capacity, but they do need to be appropriately mixed with other ground firefighting resources and fuel management programs.

Mr GAVAN O'CONNOR—You say in your submission:

There has been a tendency in recent years for the Government to support large major contracts for equipment such as the Erikson Skycranes.

The submission says:

The FOC are strongly of the opinion that fixed wing fire bombers and medium helicopters are vital pieces of fire fighting equipment. We cite numerous cases where the rapid deployment of fire bombers in conjunction with ground forces, in first attack has resulted in the effective suppression of the fire before it has a chance to develop into a major conflagration.

Could you expand on that?

Mr Farmer—At last count, I think there were only two Eriksons operating in the eastern part of the state. They take a fair while to deploy to a particular area and they are also quite expensive. We have found that for a very reasonable cost we can have a number of smaller planes which are appropriately equipped with our local radios and with pilots who know our local people and our local terrain. They can get to a fire in a very short time frame—we are talking 10 to 15 minutes from go to whoa. I think that is the important thing from our perspective: we cannot wait two or three hours for a larger vehicle to come. Those larger vehicles have to be supported by a major facility; they cannot be supported by a small regional airport—which the local air tractors are quite used to dealing with.

Mr GAVAN O'CONNOR—In terms of the area—

CHAIR—Can you make this your final question, please. There are still several committee members to ask questions. Could you finish with this last question?

Mr GAVAN O'CONNOR—What is the problem? I am merely teasing out a line of questioning that I think is very important.

CHAIR—I did not disagree with you; I am just reminding you that there are several more questions to come.

Mr GAVAN O'CONNOR—In view of the chair's request, I will ask you one last question. You talk about fixed-wing fire bombers. What aircraft do you use? Do you lease that aircraft or is it owned by you? Members of this committee have been lobbied heavily by international firms—for example, Bombardier—wishing to have their aircraft in service here. What sort of aircraft do you use?

Mr Lloyd—We use local fixed-wing Air Tractor or Thrush 1,500- to 2,500-litre agricultural aircraft that work in the region on agricultural pursuits. We use them in plantation management for fertilising and spraying. They are engaged by the fire authorities—we do not engage them. They are engaged through the CFS contract or the CFA-DSE contract.

Mr SCHULTZ—Just on that point, you are aware, aren't you, that the aircraft that you described—that is, the Air Tractor 802, the Dromader and the Thrush—have been significantly modified in this area, at considerable cost to the operators, to dump large volumes of water in a very brief period of time? As an example, the dropping time for up to 2,500 litres of fire retardant—Phoscheck—or water is about three seconds. Are you aware of that?

Mr Lloyd—We are aware that you need to make modifications to the planes to enable a drop pattern that is appropriate for a fire as opposed to one for releasing fertiliser or spray.

Mr SCHULTZ—When people talk about agricultural aircraft, they are thinking about agricultural aircraft with the fine mist sprays on them for dusting crops. Many people do not understand the difference between the industry today and what it was a decade ago. These aircraft and their pilots have become so experienced at firebombing that Australian pilots and their aircraft are contracted overseas to do significant aerial firebombing. I just make that point for what it is worth. The other thing I would like to ask on aircraft is: are you aware that aircraft which were capable of assisting with firebombing were stationed at different places in Victoria and were not called?

Mr Lloyd—Last summer, in January, we did make some requests through the CFA group offices—we are aligned to CFA groups—for aircraft to be placed in south-west Victoria on some total fire ban days. Initially, that request was refused. We made a phone call to a south-west aircraft operator to see if they had any planes in the area and we were told that they did.

Mr SCHULTZ—I understand that your style of firefighting is the traditional methodology of attacking the fire in its early stages, with the prime objective of putting the fire out quickly. Is that not correct?

Mr Farmer—That is correct.

Mr SCHULTZ—On the issue of the changes that have been made because of downsizing in the forest industry since 1985, which is part of your submission on page 7, you refer to the fact that, prior to 1985, there were eight forest districts in the north-east of Victoria and they were manned by some 150-plus personnel who knew their patch well—in other words, they were experienced people who were trained in fire suppression and who had an intimate knowledge of the local geography of their area and the terrain in which they lived. You go on to say that that is no longer there: today there are probably less than 40 of those personnel available throughout the north-east and, at most times, they find themselves working under the direction of Parks Victoria personnel in a campaign fire situation. You go on to say:

This shortfall in forest staff has not been made up by Parks personnel, because they do not have the understanding and knowledge of the bush generally that their predecessors in the forest service [had].

That is a compelling message that we have heard day after day while talking to local volunteer bushfire fighters. Do you believe the inadequate training of people in the topography and geography of a local area is a serious issue, as distinct from the 150-plus personnel who were employed prior to 1985 in the forestry industry?

Mr Wilson—That was in the forest industries submission. It is an issue of knowledge and understanding. Going back to some anecdotal comments that were made to me—and I am sure you have had them as well—there have been reports of people who are not familiar with the topography or familiar with where the bulldozer operator is. For instance, one bulldozer operator I was talking to said he was called back as an issue of safety. That is fair enough, but it again highlights the problem of not knowing the area. In that particular instance it resulted in something like a two-hour delay. It might or might not have been particularly important, but it was a two-hour delay.

Our concern is that with the current forestry downsizing that is occurring, with the intention to phase out of the Otways, there will be less forestry people in the Otways. There will probably be 440 kilometres of access roads that need to be funded some other way. In East Gippsland we do not know what the staff number reductions in the department will be at this stage. I think they are still working through that. But with less presence, less demand and less requirement to do studies of the areas proposed for timber harvesting there will be requirement for fewer staff. That is a statement of the obvious. One of the things that is probably not understood is that the burns that are required after harvesting, to get good regeneration, are one of the very good ways in which the departmental people have experience with high intensity fires. As that reduces, it gives them less opportunity.

Mr Tonkin—It begins to place an almost intolerable burden on those experienced firefighters who remain. It seems to be difficult to get good succession planning so that you have good, experienced people coming on. That is not just in people who know fire behaviour, getting it from high intensity burns and so on, but also dozer operators who know how to work on steep slopes, in rock and in dusty, dirty conditions. It is different from building a dam; it is quite a different skill. There needs to be succession planning to have more of those people coming through—even to the point where I think in the north-east this year there were difficulties in finding people who had really good skills in back-burning. At one time all forestry crews would have had a whole number of people who were skilled in back-burning. But those skills are not necessarily being replenished at the rate that they should be. It is a cry for help for the guys who

are there now who have those skills and who are very good at their jobs. We need to get them more support to do it properly.

Mr SCHULTZ—Leaving aside the philosophical approach by government agencies regarding the use of bulldozers, I noted in the forest industries submission that there appears to be a very real concern about the fact that there are—apart from the lack of experienced bulldozer and grader drivers—no longer bulldozers and graders in government departments. I presume that means that when a dozer is required you have to call on outside, private contractors who may not have the experience that trained operators in the former strength of the timber or forestry industry would have had. This would, therefore, create an additional situation of lack of knowledge of terrain, lack of ability to use a bulldozer in the appropriate professional way during a crisis situation at a fire et cetera. Would you agree with that?

Mr Farmer—Not all of it. We still own plenty of dozers. I think it gets back to the point that if you do not have a vibrant, growing and developing and mature forest industry sector such as we have got in the Green Triangle Region, where there is considerable investment and reinvestment in that sort of equipment, then you do run the risk of winding down the resource.

Ms PANOPOULOS—This question is to all of you. In the Victorian Association of Forest Industries written submission there are some quotes from the independent Auditor-General of Victoria's report into fire prevention and preparedness and it states that the DSE has consistently failed to achieve its own hazard reduction targets. We know from the figures published in the *Herald Sun* that they fell some hundreds of thousands of hectares short of that. There is also a table provided to show the average decrease in the area of fuel reduction burns. There is controversy about this issue. We are not talking about lighting a match and having a fuel reduction burn right across the state, as almost happened over January and February. Would you accept that the targets established as a minimum by the department, that they have failed to reach, should at least be carried out for fuel reduction burning?

Mr Tonkin—We are not dealing with a perfect system here and a lot of the work that is required to do those fuel reduction burns depends on certain windows of time. Your fuel moisture content has to be right so that you have some control over what you are doing. There is a limited window of time in the autumn particularly when you can do this sort of work. In some years you do not get the opportunity; sometimes you get two months of it.

Ms PANOPOULOS—Does your industry monitor those available days?

Mr Tonkin—No, you pick the day up and you do it if you can. I imagine the same thing would occur in the state forest. It is a fairly bold thing for someone to do. There is no fire there and you then go and put the match in. A whole a lot of things are happening and you have got to be sure of fuel moisture content, the differences in moisture content, the potential wind—

Ms PANOPOULOS—Have you been involved in any of these?

Mr Tonkin—Yes, I have. So there are a lot of risks and a lot of reasons why you might not want to do it on any particular day. You might say it is going to be too wet or too cold or too dry or the wind is going to get up—there is always a reason that it is safer perhaps not to do it. The guys who do this sort of work really require a lot of community support for doing what they are

doing. Every now and again they are going to get wrong, it is going to go haywire on them, and they need genuine support to do that so that it encourages them to do it on the days that are available.

Ms PANOPOULOS—I ask that question because we have had quite a bit of evidence from different areas in Victoria, from the ACT and from New South Wales of individuals on the ground who would have practised it, whether as mountain cattlemen in the first 50 years of the last century, or who have subsequently tried to be part of the fuel reduction process. They identified a certain number of days that would have provided a window of opportunity but only a small proportion of those days—for example, one-third—would have been taken up.

Mr Tonkin—I have no way of knowing whether that is correct or not.

Mr Lloyd—The other important thing to realise when you are planning fuel reduction burn opportunities is that, because of the variability in weather across the landscape, you probably need to plan twice as many burns as you think you will realistically do anyway. I think you need to be careful when you are talking targets whether you are talking about the expectation of what you thought you would get burnt or whether you are talking about the area that was planned. I do not know what the Auditor-General looked at, but when doing a three-year burning plan, I would have twice the area that I expected as a realistic target in the first year actually planned for because I know that not all areas across the landscape are going to be ready in any one particular season. Flexibility needs to be built into the plans.

Mr Wilson—Can I just make a comment: the figures in the table are the actual areas. While we are very concerned about fuel levels current in east Gippsland and all those areas not burnt by bushfire so far, to a degree it is encouraging that the Auditor-General has identified that problem and that it is now before the department to resolve whether those targets were fair and reasonable and why they were not achieved. I am sure there is any number of reasons, but at least the problem is on the table. We really look to them to work that through. We can take some hope from that, I guess.

CHAIR—Thank you very much, once again, for your evidence and your submissions; it is appreciated. Could I have a member move that the supplementary submission from the Victorian Association of Forest Industries be received as evidence and be authorised for publication?

Mr HAWKER—I so move.

CHAIR—It is so ordered. Thank you.

[9.41 a.m.]

BOSCHEN, Mr Rob, Member and Former Director, Aerial Agricultural Association of Australia Ltd

HURST, Mr Phil, Executive Officer, Aerial Agricultural Association of Australia Ltd

MACKAY, Mr Peter, Vice-President and Director—Victoria, Aerial Agricultural Association of Australia Ltd

PAY, Mr Ross, Director, Aerial Agricultural Association of Australia Ltd

CHAIR—Welcome. I will not repeat what I read to the earlier witnesses with respect to evidence, as you were here for that. We have received your submission, No. 57, which is authorised for publication and which forms part of the evidence. Would you like to make some opening comments before we have questions?

Mr Hurst—Yes, thank you. The opening statement for us is very simple: an aggressive aerial attack is the cornerstone that should be focused on by all fire authorities across Australia. There is ample precedent that this now forms best practice, not only internationally—in Spain, Italy and other countries, including the US and Canada—but also in a number of states in Australia, particularly Western Australia, South Australia and, to a large degree, Victoria. The basis for this is that there is plenty of evidence around. Research from the Rural Fire Service in New South Wales included having a Churchill Fellowship make very positive conclusions about both fixed wing and rotary wing—but predominantly fixed wing—aggressive initial attack. Also, CSIRO did a project on this approximately 15 years ago. It has been well known and documented in that time. In addition to that, the Western Australian Department of Conservation and Land Management have recently completed a fairly comprehensive study based on particular fires that they fought. The conclusions they drew were essentially that on a $1.4 million spend on aerial attack they identified $3.8 million worth of savings on only seven of the fires which they assessed in the case studies, out of 77 fires attended by the aerial attack aircraft.

In Western Australia there are five aircraft on contract, and I think this is an important point for the committee to understand. Having seen the demonstration of the fire attack capability yesterday, you would understand that these aircraft are large, are purpose-built for fire bombing and come at a significant investment. We have five of those aircraft on official contract in Western Australia; between two and four aircraft, depending on the requirements, in South Australia; 10 aircraft on contract in Victoria; and two in New South Wales. Queensland has none and Tasmania has none. We believe that every Australian has the right to the high level of protection that aggressive attack by aircraft provides in a fire setting. We also believe that the aircraft, the pilots and the maintenance providers that we have in the aerial agricultural industry—which flows over into this fire bombing role—put us in an absolutely perfect position to make this resource available to fire authorities.

We also have currency: where the pilots are flying locally, they understand the conditions, they understand the relationship with the fire authorities and work closely with them. We have

local knowledge and expertise and, as I said, the machines are already there and available. There is no doubt that Western Australia, South Australia and Victoria all have programs in place which are based on aggressive initial attack. This has been proven time and time again to be effective in keeping fires small and in saving taxpayers' dollars. Western Australia has gone to the extent of actually quantifying what some of those savings would be.

A couple of concerns that we have to start out with are, first, that we believe the current request for expressions of interest that has been conducted by the Australasian Fire Authorities Council has been a flawed process. We had a great deal of hope when Minister Tuckey announced the National Aerial Firefighting Strategy. We believed that that was a terrific step forward and we hoped that that would actually help to standardise and nationalise the availability of indigenous firebombing aircraft for fire authorities. It seems to have got to the point where we are not going to see an actual strategy other than the individual states being very interested in getting access to the $5½ million on offer without a great deal of thought to strategy or a commitment to aggressive initial attack. Really, what we fear most of all is that there will be cost shifting from the states to the federal government whereby the states will back down on the commitment to use fixed-wing aircraft on, in particular, aggressive initial attack. It is a great concern of ours.

The process itself that has been run has been over a very short time frame. Certainly, for any government tender process to be completed approximately within one month from the time of advertising is an extraordinary result. We were told at the briefing session that no questions would be answered unless they were in writing to the briefing officers. So we provided questions in writing, asking if the tender process was actually aimed at removing consideration of fixed-wing aerial firebombing. The clear answer was no, despite the definitions in that contract for both the medium- and the heavy-lift capacities—the medium one in particular—making it very clear that it was really looking at helicopters only. What we have seen in one state in particular is a preponderance of reliance on helicopters.

Our argument as an association—and I represent not only fixed-wing firebombers but also rotary-wing firebombers—is simply that you need the right tool for the job. In some cases that will be a helicopter; in other cases it will be a fixed-wing firebombing. But certainly the experience internationally and domestically is that fixed-wing firebombers in the aggressive initial attack role are the most effective in putting out fires, both in efficacy and cost-effectiveness, which is what we are really on about. Thank you.

CHAIR—Thank you very much. I know we will all have some questions on this. Given that he has asked the odd question over the last couple of weeks on this, I will allow Alby Shultz to go first!

Mr SCHULTZ—Thank you, Chair. I have had an indirect association with fixed-wing aerial firebombing for about 20 years now because of my association with a number of family friends. I was interested in your comments about Western Australia, Victoria and South Australia, the cooperation that you were getting there and the number of fixed-wing aircraft that were available under contract for fire suppression in those states. I want to revert back to New South Wales, because I am a New South Welshman and because I saw some things happening during the Kosciusko fire in January that disturbed me. Were you aware that there were adequate numbers of fixed-wing aircraft available which were not called upon or tasked by the New South Wales

Rule Fire Service from 7 January right up until the fire broke out of the McIntyre's Hut area in the Kosciusko and decimated Canberra?

Mr Hurst—Yes, we were, and I will go one step further: the ACT fire should never have happened. If aggressive initial attack had been the commitment by the fire authority in that state and the aircraft available had been tasked, that fire, in my view, would have been able to have been at least slowed down enough so that the ground crews could do a more controlled job.

In fact, on the Thursday before I happened to be flying in Canberra and I had direct vision of the fire seat from Canberra Airport at 1,000 feet. That is a distance of some 25 miles, which is very good visibility when you are talking about firefighting. The fire had just crested the Brindabellas and was burning downhill, which slowed it up. It was burning into an easterly, which was pushing all of the ash back onto the already burnt out area. It was a good opportunity to get stuck in. My understanding is that at that stage there were approximately three aircraft at Tumut that were not tasked and, in addition to that, there were approximately another 10, or perhaps more, aircraft around the state that could have been tasked but were not.

Mr SCHULTZ—Were some of those within 20 and 30 minutes flying time of the fire?

Mr Hurst—That is my understanding, yes.

Mr SCHULTZ—Can you advise the committee as to whether the conditions in that period that I mentioned—7 January right up until 19 January—were, in the majority, suitable for firefighting with fixed-wing aircraft?

Mr Hurst—You would have to look at the individual cases of where the fire was burning and have those met records in front of you, but I believe there were quite common opportunities to utilise the aggressive attack role more. Something that came out of the Western Australian report that we have seen is that the aircraft are good not only in an aggressive initial attack but also, if you miss that window of opportunity, in the knockdown role where ground crews simply cannot get to the head of the fire and are trying to contract the fire on the flank. The aircraft can come in and simply snuff, or at least retard, that main head of fire. I think there was ample opportunity for those aircraft to be used and certainly it was frustrating for us to see aircraft not being tasked.

Mr SCHULTZ—Is it also true to say, given that there were 14 aircraft—in your words—available in New South Wales for those fires, that a number of the pilots of those aircraft became so frustrated with sitting on the ground and not being tasked to fires to use their considerable experience and expertise that they flew their aircraft, after talking to Victoria, down to assist the Victorians in their firefighting and suppression activities?

Mr Hurst—I understand one operator did that. I cannot guess his motives but, yes, my understanding is that that did happen.

Mr SCHULTZ—Getting back to the aviation control within New South Wales, can you tell this committee who, other than CASA, is responsible for the control of all aviation activities during bushfires in New South Wales? Can you also advise the committee whether, in your view, that agency has the appropriate aviation experience that would allow them to have control of those aircraft outside the normal government agency commonly referred to as CASA?

Mr Hurst—I believe there is currently an exemption available for flight and duty time restrictions to pilots, that would give them some more flexibility—up to 150 hours flying a month during a fire period. My understanding is that CASA has indicated to the NSW Rural Fire Service that only those companies nominated or approved by the NSW Rural Fire Service would have the ability to access that exemption. Certainly that exemption was not written with fixed wing fire bombing in mind. In fact, our argument all along has been that, when fixed wing fire bombing, we should be operating to the same flight and duty time restrictions as we normally do when we are in the aerial application role. But that is not the case and that is an ongoing discussion that we are having with CASA.

Mr McARTHUR—Would you tell us the difference between the aerial operation and the fire bomb operation?

Mr Hurst—Basically, CAO 48.2 now gives us up to 170 hours of flying time a month. That is based on a safety case that we put forward. Almost every operator had been operating on exemptions from CASA for a 10-year period, during which the safety record indicated that this was a safe practice—and we would put other measures in to manage fatigue. Under the various options available to you for fire bombing, you are restricted to either 120 hours a month or 150 hours a month if you avail yourself of what essentially is not helicopter time.

Mr SCHULTZ—That is not actually flying time, is it?

Mr Hurst—In the agricultural time it is flying time, but in the fire bombing case it includes some elements of duty time as well.

Mr SCHULTZ—Up to how many of those 150 hours could the duty time include sitting on the ground or laying in a motel?

Mr Hurst—It depends on the individual roster, but I think commonsense has to apply in that case, where you would say, 'I may be on call, but am I on duty?' It is a very grey area for us and something we have found it very difficult to get clarification on from CASA. It seems very peculiar to us that you can have a very safe system when, for example, you are flying on average at between 10 and 14 feet at 140 knots doing spraying type activities—it is fine to fly 170 hours a month doing that, including doing night spraying—but as soon as you go firebombing everything seems to change, even though it is the same aircraft, same pilot and, ostensibly, a fairly similar type of operation.

Mr SCHULTZ—Are you aware of any pilots in your association in New South Wales or from interstate who have expressed concerns to the Rural Fire Service of New South Wales about their lack of motivation to get them into the air or around the methodology which they use? Can you tell the committee whether that has resulted in some punitive action being taken against those pilots or their businesses as far as the Rural Fire Service is concerned?

Mr Hurst—I would not go so far as to talk about punitive action, but very much in the mind of any contractor is not biting the hand that feeds them. That is certainly an issue in any job we do, particularly for any government agency. It is very difficult to go outside and be critical. That is why the association, rather than individual operators, have been making comments on this issue now for about three years.

We made a submission to the New South Wales parliamentary inquiry into bushfires and included in that a range of information that we felt would be useful for improving the way things could be done. It included a range of issues, including the need for better support equipment, better mixing equipment and so on. It is no good having a you-beaut aeroplane there ready to go if you have not got the appropriate mixing equipment or, as is usually the case, the mixing equipment that is provided breaks down. In that situation, New South Wales volunteers have to stand up to their knees in Phoscheck shovelling it. I have seen that myself and I cannot understand why WorkSafe have not got an issue with it.

Mr SCHULTZ—You mentioned the New South Wales upper house inquiry—I think that was the one you were talking about.

Mr Hurst—Yes.

Mr SCHULTZ—Are you aware that the Rural Fire Service Commissioner, Mr Koperberg, made comment while giving evidence in that inquiry that he had 600 fixed-wing aircraft at his disposal in New South Wales? Would you like to comment on that?

Mr Hurst—I do not know where Mr Koperberg got those figures from. There are only 300 agricultural aircraft in Australia. There are 60 operators in New South Wales who fly a range of aircraft, not all them suitable for firebombing. So I am not quite sure what Commissioner Koperberg based that comment on.

Mr BARTLETT—On page 2 of your submission—this is following on from Mr Schultz's question—it says that there has been an in-principle decision made by authorities in Victoria, South Australia and Western Australia. Do I take it from that that no in-principle decision has been made in New South Wales regarding the commitment of aggressive initial aerial attack using fixed-wing aircraft?

Mr Hurst—New South Wales has some very particular structural difficulties, and I mean particularly section 44 of the New South Wales bushfire act, or whatever it is called. That section basically makes it very difficult for local controllers to call in aircraft. Ostensibly what happens is that a fire has to be at a certain prescribed size before the funding for that fire shifts from the local controller's budget into the state RFS budget and then, under the natural disaster relief arrangements, to federal funding. So there is a tendency, because of that section 44—and I know because I have experienced it myself—for fires to be managed upwards. This happens to a point where, rather than concentrating on aggressive initial attack and putting the fire out—which is what most of the volunteers want to do, and certainly what we want to do—the fire gets managed to a certain level to attract a different level of funding.

We have had assurances from New South Wales RFS—who have been far more interactive with us over the last 12 months than they have in previous years, and I think that is a very positive sign—but at the end of the day, we did not have much confidence that aircraft were being tasked and used. We feel that one of the main impediments to that is this section 44. Even if it is being changed as policy by RFS, that message has not actually sunk down to the troops who might want to call in an aircraft to, for example, particularly difficult terrain or whatever to get onto it early enough to make a difference. The classic scenario is a lightning strike in inaccessible terrain. Our aircraft are purpose-built for that sort of task.

Mr BARTLETT—So it is not a problem of inadequate resources; it is a problem of structure, policy and communication?

Mr Hurst—I think it is not only structure; it is also adequate resources. As I mentioned to you, there are only two aircraft on formal contract in New South Wales. It is very difficult to expect an aircraft owner to go out and have online an aircraft that could be worth up to $1.8 million, such as the 802, and then to subsequently fit another computerised fire door, which could be worth another $US180,000. It is very difficult to expect people to have that sort of equipment available on the off-chance they might pick up a call-when-required contract once every few years.

Mr BARTLETT—So if the structure and policy approaches were different there would probably be more resources coming online anyway?

Mr Hurst—You have to look at the results in Western Australia, South Australia and, to an extent, Victoria, and where the aircraft are used as they are in South Australia. If you were going to draw the line anywhere and say, 'What do we need to do,' have a look at how it works in South Australia. As a requirement of the contract in the Adelaide Hills, from the time of call the aircraft there have 15 minutes maximum to be over the fire with a load of retardant or surfactant. There are some very simple structural matters that could be addressed by offering longer term contracts and more contracts. On the basis of Victoria having 10 aircraft available, you would have to ask: how many does New South Wales need, given the increased land mass and the different sort of scenario with rugged country?

Mr BARTLETT—Finally, could you briefly outline for us how you would change the organisational approach regarding section 44 and so on. What would you suggest would be the appropriate communication and management structure to enable us to most beneficially use the aircraft available?

Mr Hurst—It is very difficult to give a silver bullet solution to this. The best thing that could happen in New South Wales is for the operators and the RFS to get together and work out the best approach, but that has to be underpinned by strategic commitment by all governments to say that they are going to use fixed-wing aircraft in aggressive initial attack because it has been proven to work in every state that has used it and around the world.

Mr BARTLETT—Are there any indications that that may be happening in New South Wales?

Mr Hurst—I think New South Wales is slowly coming to that conclusion but, again, when you look at New South Wales the use of the skycrane, where it has essentially been thrown into the fray when all else is lost, has created a PR difficulty and an expectation within the community that there will be a skycrane there to put out the fire when the fire, for whatever reason, ends up on the boundaries of major cities or towns. Certainly the experience in every other state is that, if you are fighting the fire on the basis of close-in asset protection, you have really missed the point.

Mr BARTLETT—So if we got to it earlier with fixed-wing aircraft we would not need to depend as much on the skycranes?

Mr Hurst—All the evidence points to that, yes.

CHAIR—What is the relative cost of operating one of those huge skycranes per hour compared with a fixed-wing purpose-modified bomber?

Mr Hurst—I will defer to my colleague, who is much more in touch with those issues.

Mr Mackay—Just as an estimate, typically the likes of an Air Tractor 802, which is carrying about 3,200 litres, would operate for around about $2,500 per hour now. My understanding—and it is only an understanding; I am not accurate—is that the operational costs on a skycrane are around $15,000 an hour, but it is a standby fee. Ross would be more familiar with those figures.

Mr Pay—With the skycrane, there is not only a daily standing charge, which I think is in the region of about $25,000 a day, but also a fee of about $4,000 or $5,000 to actually start the aircraft, which also takes at least half an hour because it is a very complicated aircraft. On top of that, it is $15,000 an hour to operate it. So it is a very expensive bit of machinery.

CHAIR—And the figures given by Mr Mackay for fixed-wing are in that order—correct?

Mr Pay—It depends whether they are on a stand-by or on an hourly rate but contract aircraft might be somewhere in the region of $2,500 dollars a day stand-by and then perhaps $1,500 an hour. If it were just an hourly rate, it would be somewhere between $2,000 and $2,500 an hour.

Mr Hurst—An important point to make with this, clearly, is that you are going to get more bang for your buck using fixed wing firebombers and that is why they are used in Italy, Spain, Canada, the US, WA, South Australia and all those other exotic places.

Mr McARTHUR—Do you have the relativity of the amount of retardant fuel that is dispensed by fixed wing aircraft versus helicopters?

Mr Hurst—If you bring it back to dollars per litre delivered to the fire, the longer the ferry time the more effective the fixed wing becomes. If you then couple that with a strategic approach so that you have the right equipment in the right place and you have done some analysis, planning and mapping of where the strips might be and so on, you get a very cost-effective tool to use. It is certainly more cost effective than the large helicopters being thrown into the fray at the last minute. It is all about strategy.

Mr McARTHUR—Can you give us the relativity? Is it two, three or four times more effective?

Mr Hurst—In cost-effectiveness terms, again, it is a matter of the right tool for the right job. For close-in support, where the water is close to the fire, then the helicopter clearly has a role—no doubt. Once you involve a ferry time, which most of this rugged country work does, the fixed wing aircraft would be in the order of four to five times more cost effective or cheaper, whichever way you want to look at it, than utilising a Skycrane. The other beauty of it is that whatever the cost is you get one Skycrane. For the same cost, you would be able to get two, three, possibly four or five fixed wing firebombers, which strategically improves your operational capacity. For example, if the helicopter, which is quite a complicated piece of

machinery, breaks down—which I understand was the case a number of times during the recent fires—and is not available, you do not have a resource. If there were more than one fire, you can only cover one with your one resource. For the same amount of money, you are getting five or six fixed wing aircraft—whatever the figure is—so you have a capacity where you have built-in redundancy. If one aircraft goes unserviceable you still have an aircraft and if you have more than one fire, you can dispatch them because the Air Tractors and the Thrush will travel at about 140 knots or 300 kilometres an hour. That is a big difference from the helicopter, which does not have that sort of speed.

Mr McARTHUR—How long does it take to fill up a fixed wing aircraft?

Mr Mackay—You can do a turnaround on the ground within five minutes with a fixed wing aircraft and often less, between 3 and 5 minutes.

Mr McARTHUR—If you have three fixed wing aircraft you could have them turned around in five minutes?

Mr Mackay—Yes.

Mr GAVAN O'CONNOR—You referred to the WA study: could you just clarify what that was?

Mr Hurst—I am not sure if it is a public document but we have access to a copy of the report on Operation Firebird. Firebird was actually the code name they gave to the aircraft which were based in Perth. It is a report or an assessment that was done by the Department of Conservation and Land Management and the Fire and Emergency Services Authority of Western Australia.

Mr GAVAN O'CONNOR—Are you aware of the federal minister's commitment to a national aerial firefighting strategy early in 2002, following the bushfires that we had in 2001-02?

Mr Hurst—Yes.

Mr GAVAN O'CONNOR—Do you consider that we have a national aerial firefighting strategy in place now?

Mr Hurst—Unfortunately I do not think that we do. I think that the $50,000 grant made to the Australian Fire Authorities Council was intended to assist that process but, certainly from our point of view, there has been no consultation by the Fire Authorities Council with our industry. That makes it very difficult to see how you can have a national firefighting strategy when you have not talked to ostensibly the major player, because we do represent most of the fixed wing firebombing operators and a number of the rotary wing firebombing operators as well.

Mr GAVAN O'CONNOR—You said that you regard the current AFAC process for the tenders that were put out on this equipment as a flawed process. Can you explain what you meant by that?

Mr Hurst—There are two components to it. Firstly, we had hoped, when the announcement was made for a national aerial firefighting strategy, that it would actually go into basically an in principle commitment to aggressive initial attack using at least fixed wing firebombers and, as appropriate, large helicopters. That does not seem to have eventuated. We have not, as I said, been consulted on that in any way.

The next step was that AFAC decided to go with this process of calling for expressions of interest. Basically, the operators were given very little time—I think it was two weeks—to get ready for that tender. They were given a briefing two weeks after the initial ad. At the briefing, as I mentioned before, questions would only be answered if they were in writing. At that briefing we were assured, without any doubt, that what was written in the tender document was advisory only and did not really count and that fixed-wing aircraft would be considered. Since that time a number of the people with fixed-wing aircraft who have been put in tenders have been advised that they are not going to be consulted any further in the process because AFAC are already talking to their preferred tenderers. My concern is that some of those preferred tenderers may be international operators with no local expertise. Some of them will be operating aircraft that have never been tried in Australia and have been phased out in other parts of the world. So we have a big question mark over the whole process. Our initial take on the process, when we read the tender documents, was that this was a set-up to ensure that only helicopters would share in the $5½ million strategy.

Mr GAVAN O'CONNOR—So you regard an emphasis on helicopters as a misplaced strategy in the long term?

Mr Hurst—Yes, we do, because evidence around the world and in the states that have used it in Australia clearly indicates that the use of fixed-wing aircraft is a more cost-effective method, particularly when coupled with the aggressive initial attack. That is not to say that there is not a role for rotary wing aircraft. Clearly there is—particularly around a fire scene that involves moving people, doing sling loads, bucketing and firefighting. Some of the helicopters are too small; they are simply ineffective in a practical sense. The sky cranes are so large and so complex that for the same amount of money—as I have just elucidated—you could have a number of fixed-wing bombers doing exactly the same job in either asset protection or aggressive initial attack.

Mr GAVAN O'CONNOR—Have you read the AFAC report that was delivered to Minister Tuckey in August 2002?

Mr Hurst—No, I was unaware of that report.

Mr GAVAN O'CONNOR—As I understand it, that report indicated that a variety of aircraft—fixed-wing aircraft and spotter aircraft et cetera in addition to helicopters—would be required in the 2003 season to combat the menace as they saw it emerging. Obviously the philosophy that you are expounding here, of direct initial attack, relies heavily on the aircraft being available and being well coordinated.

Mr Hurst—That is quite correct. The proof of the pudding will be in what comes out of the current process of requesting expressions of interest. To this date I do not believe it has been a particularly open or transparent process. In terms of a normal government tender, operators have

not been allowed the usual time to gather their thoughts, put them down on paper, do good pencil sharpening and all the rest of it. I think that has been a bit of an issue. Similarly, the way the tender documents were written caused me enough alarm to write to the briefing authorities—which are essentially the state fire authorities because they are the ones who are running this—to ask them to look at the documents. We went back to them with a clear question: are you trying to eliminate fixed-wing firebombers from this process? At the briefing they gave us an undertaking: 'No, no, that is not the case, we want to keep it open.'

Mr GAVAN O'CONNOR—But you are saying that in the mechanics of the tendering process that is what might happen?

Mr Hurst—We fear that the tender or the process will lead to only helicopters being recommended and—in my view, worse still—international operators being allowed to come in. We fear that they will totally ignore the indigenous resource that is right on our doorstep ready to go, which has had significant investment.

Mr GAVAN O'CONNOR—How are the assets from your association coordinated with the fire agencies across Australia? Do you have a set of protocols with each state fire authority? Is there a national coordinating mechanism? How does it occur?

Mr Hurst—No, there is no such thing, despite my offers during the 2001 fires to New South Wales RFS to play exactly that role—letting them know where the aircraft were, who was available and so on. They were basically ignored. I have had difficulties getting in contact with the Fire Authorities Council in that they have not returned a number of phone calls I have made over the previous 12 months to the CEO, the research officers and so on. The shutters have gone down, and we have been left out. Hence my concern when the tender document came out, giving a clear delineation that helicopters were preferred. That was in the definitions of the tender process.

Mr GAVAN O'CONNOR—I am interested in that view you expressed about AFAC, because as I understand it, in the report that they submitted to the federal minister, they recommended that an interagency structure be set up to coordinate the deployment of aircraft around Australia as the need arose. As you know, the fires' pattern is that they tend to start in Queensland in October and come through New South Wales, Victoria and Tassie and then end up, some time in April the following year, in WA. The question I am asking here is: how would you coordinate these assets for the task? I think we are all in agreement that we get in there and bang the fires quickly. These fires are being lit in remote localities either by human hand or by lighting. We have increased fuel loads; there were terrible moisture conditions in that 2003 season that presumably would have prevented a lot of the back-burning that people have been arguing should have taken place. So this notion of initial attack is fairly critical—the notion of containment of the fire within a three- or five-kilometre radius. How would you coordinate the assets that you have nationally? That is what I want to know.

Mr Hurst—The answer is that, at the moment, there is no national coordination. Each state is responsible for ensuring it has its own tools. We have seen in Western Australia, South Australia, Victoria and to a degree in New South Wales that those contracts actually have been on offer that have enabled people to invest and have the right equipment in the right place. We do not have any problem with that, where there is an overlying commitment to initial aggressive attack.

National coordination, I think, can play a stronger role because, obviously, the aircraft that we have can reposition very quickly at 300 kilometres an hour. You can be out there doing the fire but, at the end of the day, aggressive initial attack is based on the aircraft being right there—available right now.

What we have seen in South Australia is the 15-minute principle in the contract. In Western Australia I think the response time is 10 or 15 minutes as well, and that is recorded as being their performance level. I think that is the issue that we need to focus on: the aircraft being where they are needed at the time. If we rely on the long ferry—in other words, if we have all the aircraft concentrated here when the fire is over there—we are really going to miss the boat, because you cannot launch an aggressive initial attack unless you are Johnny-on-the-spot.

Mr GAVAN O'CONNOR—Thank you very much.

Mr Hurst—My pleasure.

Ms PANOPOULOS—Mr Hurst, we have all spoken, and it is encouraging to hear my colleague Mr O'Connor support aggressive initial attack. You say in your written submission that there is a 'firm commitment to aggressive aerial attack' and you include Victoria among the states that purportedly have this commitment. My electorate is in the north-east of Victoria. Forgive me for not appreciating that statement, but I have not seen or heard any evidence—over the seven weeks of travelling around the bushfire sites in my electorate—of a single instance of aggressive initial aerial attack, particularly early on after the lightning strikes. Do you have any examples to support that statement that there was aggressive initial aerial attack on the fires, particularly in the north-east of Victoria in my electorate?

Mr Hurst—I do not have any particular experience in that area, but my understanding is—from the advice of my members—that Victoria, generally speaking, does have a pretty good commitment to aggressive initial attack.

Ms PANOPOULOS—I am not talking about their commitment. The commitment to aggressive initial aerial attack is as commendable as a commitment every morning to do a good deed a day; it does not mean it is going to happen. What I am trying to get from you are clear examples that show that that commitment to aggressive initial aerial attack translated into something real.

Mr Hurst—With your indulgence, Mr Chairman, could I ask one of my other supporting witnesses to come forward? Mr Rob Boschen is a director of AG Airwork, which is one of the Victorian contractors for aerial firefighting.

Mr Boschen—Could you just run through the question again, please?

Ms PANOPOULOS—Can you provide the committee with any examples of aggressive initial aerial attack, particularly in the recent bushfires in north-east Victoria? I certainly did not hear of any.

Mr Boschen—We operate aircraft on a 15-minute commitment contract. We are regularly the first ones at the scene with our aircraft. I think it would be fair to say that that is a regular occurrence.

CHAIR—I think what Ms Panopoulos is asking is: in those most recent fires in January, was there immediate attack by some of your aircraft after the first lightning strikes took place?

Ms PANOPOULOS—Specifically, there was a series of lightning strikes across the alps in north-east Victoria on 8 January. How long after any of those lightning attacks took place was it before any aerial attack?

Mr Hurst—I think one of the difficulties we are going to be confronted with here is that individual contractors must consider the issue of being critical of fire authorities in whatever state. We are not trying to be evasive, but I think that is an issue.

CHAIR—I do not think my colleague is asking for somebody to be critical; I think she is asking for facts.

Ms PANOPOULOS—Response time.

CHAIR—When was the response done?

Mr Boschen—With particular reference to the event that you are speaking of, it is my understanding that the lightning storm went through that region during the evening and that the fires were detected during that evening and the following morning. Our aircraft were tasked to that region within a couple of hours of daylight following the lightning storm.

Ms PANOPOULOS—What does 'tasked' mean? Does it mean you were there waiting?

Mr Boschen—Relocated to that region.

Ms PANOPOULOS—You were relocated within the first couple of hours of daylight. After being tasked and being there, when were the aircraft first used?

Mr Boschen—I was not actually there, so I cannot specifically say at what point the aircraft were used in operations.

Ms PANOPOULOS—I do not want to keep going on and keep the committee, but it would assist us and be of particular interest to me if you would be kind enough to go back and get information on not just when you were tasked up there in the north-east but how long it was before the aircraft were actually employed in aggressive fire suppression.

Mr Boschen—Yes.

Mr Mackay—Could I mention an instance which might help to point out the immediacy, the availability and the coordination that does go on behind the scenes. A lot of the operation of fire aircraft is weather dependent. As Rob was pointing out, those aircraft were tasked—put on the job—early in the morning, as soon as the fires came on. Significant for you to understand is that

many of our industry's aircraft work right up to the edge in climatic conditions, as a requirement or duty of their tasking. As an industry, we have every faith that the fire authorities are trying their very best to use our equipment as a tool in situations, as I say, right up to the edge where they can. We actually lost an aircraft this year in the mountain country. That aircraft was working in extreme climatic conditions on a bushfire and the pilot was obviously doing his very best to combat it. I do not think you need to have any concerns that—

Ms PANOPOULOS—It is not a concern, it is an interest. I would just like the facts. As I said, if you could go back to the people who were involved and get the basic facts of when the aircraft were tasked and when they actually went up in the air, it would assist me to get a better and more complete understanding of the fires that ravaged my electorate. Thank you.

Mr Hurst—I understand. We are happy to take that on notice.

Mr GAVAN O'CONNOR—Mr Mackay, are you saying it is not just the fact of getting an aircraft into an area but there are also safety considerations in deploying that aircraft against the fire, and that responsibility resides with those who manage the fighting of the fire? Is that what you are telling us?

Mr Mackay—Partly so. The ultimate decision for the safety of the operation of the aircraft comes down to the pilot because he can be, and often is, in a life-threatening situation in fire operations, particularly in mountainous areas. There is a lot of coordination and discussion constructively done that arrives at the decision of aerial attack.

Mr GAVAN O'CONNOR—Between whom? Between the pilot and the incident controller—is that who decides it?

Mr Mackay—Yes, those people; that is correct.

Mr GAVAN O'CONNOR—So an aircraft might be called to an area but might stay on the ground because of a negotiated agreement between the incident controller and the pilot that it is too dangerous to fly?

Mr Mackay—Yes, because of unsatisfactory conditions.

Ms PANOPOULOS—Or for other reasons.

Mr SCHULTZ—Was the weather, in this instance, conducive to flying at the time that it was tasked on the ground and after?

Mr Mackay—It turned around very quickly. The weather in those mountains can snap on you.

Mr SCHULTZ—I am not asking that. I am asking: was the weather conducive to safe firebombing at the time?

Mr Mackay—We are only making assumptions, but I would assume that the pilot and the coordinators made a decision that it was conducive to take a risk to go and work on that fire.

Mr SCHULTZ—That was the answer I was trying to get to.

Mr GIBBONS—What would be the minimum take-off and landing distance required for the fixed-wing aircraft—the ones you have access to—to be utilised with a full load? Do we have the appropriate infrastructure in place to be able to safely use them as a first-attack capability on fires, given the siting of the various landing fields and aerodromes around the densely populated states like New South Wales, Victoria and Queensland?

Mr Hurst—The answer to that—not trying to be evasive—is it simply depends. Where you have operations off a well-established strip—and I am thinking, for example, of the Adelaide Hills in South Australia, or in Perth or Bunbury—and where there is a strategic commitment, there is absolutely no problem with strip length or condition or anything else because you are operating off established airports.

Mr GIBBONS—What about at Omeo where we had some bad fires? Where it is the nearest landing ground?

Mr Hurst—The nearest landing ground, to be honest, can be as simple as a paddock that has had a grader through it. I have seen operations like that at Lithgow.

Mr GIBBONS—So they are short take-off and landing capability aircraft even when fully loaded with fuel and retardant?

Mr Hurst—Essentially, yes. The aircraft are built for agricultural operations. They are very strong, robust and very safe aircraft, purpose built for that task. Yes, they can lift those heavy loads from comparatively unprepared strips.

Mr GIBBONS—But will the water or the retardant be at those sites where they choose to land because they are close to the fire? How you get the retardant there?

Mr Hurst—A key issue for us—as we mentioned in our submission and I touched on today—is that you really do need very good support for when the aircraft is there. One of the key issues that we have raised in our submissions to both this committee and to the upper house committee in New South Wales is that, particularly in those states that have a smaller capability at the moment to use fixed wing, if you take a strategic approach it is not difficult to map the state, see where the inaccessible terrain is, where the fuel load is and where the aircraft are most likely to do good and then simply identify the strips available. Because the fixed-wing firebombers are also ag operators they are exactly the people who know where all the strips are. Although you might think of strips in terms of bitumen and lights and what have you, an ag pilot has a very different view of what a strip is. A lot of the strips that we use have specific rules written for us by CASA about what we can and cannot use. Certainly the capability of these aircraft is to work from essentially unprepared strips or strips that have had minimal preparation.

If you take a strategic approach, it is not too hard to identify where the holes might be or, for that matter, to operate very safely off roads or other infrastructure that is nearby. But certainly there is a capacity, particularly in New South Wales, to make greater use of the aircraft. We have situations where aircraft pilots have been told to operate off a particular airstrip and on their comparatively lengthy ferry to the fire have been overflying at least one other very usable

airstrip that they know about because they are ag pilots and they have flown off it hundreds of times.

Mr SCHULTZ—You might tell Mr Gibbons about the capability of mixing foam on board your aircraft and also about how many of the pilots have their own mixing facilities which they take with them into the field.

Mr Hurst—A number of operators provide their own mixing equipment. In some cases it is because they know of the difficulty in getting to a place without mixing equipment. Pays Pty Ltd, whose representative is sitting next to me, have their own mixing equipment that they will take with them. It is a very effective piece of equipment which can mix two loads for aircraft in a matter of three or four minutes, and it is very reliable. So we do have that capacity.

Mr HAWKER—Mr Hurst, you made some fairly interesting and quite serious comments with regard to section 44. You said fire is managed upwards because of section 44, in order to trigger new systems of paying for the cost of that fire. You also made the comment that, in your opinion, the ACT fires should never have occurred. We have had similar comments in Victoria, when we were in Omeo, about the way the fires were being managed from a metropolitan perspective, rather than in necessarily the most effective way of fighting them. Do you see a growing problem here in that there is a conflict between those who want this aggressive approach of getting the fire out first as quickly as possible and those in a more professional role who do not see quite the same degree of urgency?

Mr Hurst—I think that is an issue. I am not sure it is a growing issue. I think it is actually going the other way, so that with increased interaction—for example, between our industry, our association and the fire authorities—I think you will actually see, particularly in a couple of states, a more enlightened approach to aggressive initial attack and so on. I think that is a process that will take a couple of years to get across what is a fairly ingrained culture. But, in terms of the structural issue, I think section 44 in New South Wales still remains an issue that needs to be addressed. RFS are aware of this and have told us, at our recent convention in Adelaide, that they are addressing this issue and are making the call-in of aircraft more available to local controllers—and that is an excellent thing—without reference to section 44, if that is happening. But I think that, despite that commitment from RFS, there is still a cultural feeling amongst local fire control officers, and indeed captains, that 'we can't call aircraft in because it is not our call'. Yet they are exactly the people in the position to make that decision: 'We need an aircraft because the fire is in inaccessible terrain.' So I think that is always a balance that the fire authorities are going to have to have: because of budget considerations you cannot have every man and his dog calling in aircraft but, by the same token, you need to have people close to the action being able to call them in as appropriate.

Mr HAWKER—Could I talk about the Victorian situation. One of the comments that have come through in successive hearings is that the volunteers in the CFA, in particular, were discouraged from getting involved in the initial stages of the fires if they were within the control of DSE or ParksVictoria.

Mr Hurst—I cannot comment on the relationship between the individual fire authorities and whoever has control of that particular area, but certainly what we have seen from the lack of tasking—and even quite blatantly so with the lack of contracts in New South Wales, for

example—is that you are just not going to have the aircraft there to do the job. If Victoria, for example, feels that they need 10 aircraft, South Australia has between four and six aircraft available this year and Western Australia has five, how many should New South Wales, on a strategic approach, have on contract to do the job? It is an issue of training, to encourage the local people to understand what the process is for calling in an aircraft, but certainly our priority in all of this is to work in with the volunteers and to work in with the people on the ground. We do not see ourselves as a silver bullet solution to fires, but we are probably one of the most useful tools. That has been highlighted by that Western Australian report and others. We are an integral tool that should be used by all fire authorities to put fires out as early as possible.

Mr Mackay—I hope the point has not been missed that the successful use of aircraft, whether they be fixed-wing aircraft or rotary aircraft, in our belief as an association does require a contract system. There is a major expense, as you saw yesterday, in the equipping of these aircraft. The fire gate technology that sits on the bottom of those aircraft is specific to firebombing. It is not, in a general sense, usable in agriculture; it does require time to fit, so it is not that you can necessarily go and grab an agricultural aircraft and find that it is suitable within a matter of hours to work on the fires. There is expense and time in the fitting of that equipment and the radios, so the underlying point that I want to make is that you require a contracting system to allow operators of any type of aircraft to be prepared for fire seasons.

CHAIR—I want to finish on that point and ask one other question as well. You said that in Victoria there are 10 aircraft on contract on that basis—so that investment has been put in, because people have the contract—and there are five in South Australia, but only two in New South Wales. Mr O'Connor alluded to an unreleased report and made assumptions about what might be in that report with respect to the need for resources. If New South Wales tomorrow said that it was going to increase that contract, instead of having only two aircraft, to 10 or 15 aircraft, are those resources around to fulfil that contract?

Mr Mackay—Absolutely.

CHAIR—My last point is to ask whether any of you have the expertise to comment on the downdraft which is created by the aircraft such as the Skycrane: does it have effect on the actual water drop?

Mr Hurst—The short answer to that, we believe, is no.

CHAIR—When compared to a fixed-wing aircraft?

Mr Hurst—When compared to a fixed-wing aircraft the short answer to that, we believe, is no. We have done some pattern testing and certainly there has been a lot of work done in the United States, particularly on the Air Tractor fire gate, which clearly demonstrates that the speed of fixed-wing aircraft basically has a positive effect on the displacement of the load. As I have said, it is a matter of the right tool for the right job. We have used fixed-wing aircraft in a lot of asset protection of houses, sheds and so on very successfully. There is not a problem with them actually fulfilling that role. For example, if you are in a particular situation where you have a chimney fire running up a tree then the helicopter's ability to just splot the load is not bad. But we can do the same job.

CHAIR—You are saying that there is an effect from downdraft on the water.

Mr Hurst—No, it is the ability to hover. It has nothing to do with the downdraft. Once you are out of ground effect, which is essentially once you are—

CHAIR—I am not talking about the fixed-wing, I am talking about the helicopter.

Mr Hurst—Once you are out of hover effect, in terms of being above the ground a certain distance, which obviously they are when they are doing most of this work, it is the equivalent of a fixed-wing aeroplane. There is no difference to the wake turbulence or anything else once it has forward movement. If it is in hover within a certain distance of the ground, there may be some effect. Some of that effect may actually be to bounce back off the ground. We see this with spraying sometimes and we are aware of it.

Mr SCHULTZ—It would have to depend on height, wouldn't it? I am conscious of the fact that there is enormous rotor movement in a large helicopter which would, under normal circumstances, send an enormous amount of air downward. Is that correct?

Mr Mackay—The aerodynamic answer is that all aircraft have a downdraft effect. Certainly with the helicopter the rotors do that, but also the wings on a fixed-wing aircraft—although not to the same degree—would have a downdraft effect.

Mr SCHULTZ—So it would depend on the height of the aircraft as to how much the water is dissipated by the air turbulence created by a rotor, as an example?

Mr Hurst—That would be one of the factors, yes.

CHAIR—Thank you very much for your comprehensive evidence this morning and for your submission. It is clearly of great interest to the committee from the questions we have asked you and we thank you. On behalf of the committee, I also thank you for yesterday's demonstration of two aircraft. It was very useful. You can read about these things but there is nothing like seeing it working in real life. That was of great advantage to the committee. Thank you.

Proceedings suspended from 10.40 a.m. to 10.54 a.m.

BLACKBURNE, Mr Burt Mackenzie, Assistant Secretary, Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia

CHAIR—Welcome. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament and consequently warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that giving false or misleading evidence is a serious matter and may be regarded as a contempt of parliament. We have your submission and we thank you for that. It has been authorised for publication, so it forms part of the evidence. Please make some opening remarks and then we will have some questions.

Mr Blackburne—As a bit of background, the CEPU has around 120,000 members nationally across all divisions, and we are the major trade union in Telstra and in SingTel Optus. We are also the major union in Australia Post and a range of smaller telecommunications companies. We put in a submission not because we are experts on bushfires but to highlight the critical nature of communications, in particular telecommunications, at these times. Our officials—including me—come from a background within the telecommunications industry. In my case, this was a career of some 30 years as a technical operative involved with various aspects of the telecommunications network. In that time you get to pick up a few ideas about how telecommunications equipment should be installed and maintained.

We are concerned that there are shortcomings with the telecommunications network, particularly in rural and remote areas, where unfortunately many of the bushfires occur. We find it regrettable that serious failures occur in the network at all, but obviously it is much more serious if it is at a time of crisis such as during a bushfire. In recent times there have been serious failures, or outages as they say in the telecommunications area, in telephone exchanges such as the Pakenham telephone exchange, the Kyneton telephone exchange and, at the height of the bushfires earlier this year, the Morwell telephone exchange. These are the failures that we know happened. Obviously, unless our members let us know, we only find out through complaints by the community.

In the submission I dealt with what happened on Saturday, 25 January, when telecommunications services to the isolated township of Omeo in Victoria were suddenly cut off. As we understand it, this town is serviced via two main rural switching areas: Wangaratta and Morwell, via Bairnsdale. Under this arrangement, telecommunications are maintained to Omeo if one or the other link fails. At the time of the serious bushfires burning around Omeo and surrounding areas a transmission failure occurred between Bright and Hotham Heights. This was caused by the underground optical fibre cable between Bright and Mount Hotham being damaged, apparently by fire and emergency services crews constructing a firebreak for the bushfires in that area.

This outage had no effect on telephone services in Omeo at the time. The Mount Hotham area was in fact declared unsafe and hazardous, and Telstra staff were delayed for several days in entering the area to repair the damage to the optical fibre cable. Omeo still had service via the telephone switch at Morwell and via Bairnsdale. But on the same day a grassfire at Morwell caused a general mains power failure which resulted in loss of mains power to the Morwell

telephone exchange. The Morwell exchange emergency power generator would normally have started to operate.

I will explain what that means. In telephone exchanges there is generally a diesel or some other type of power driven generator which senses mains failure, starts up, runs up to speed and then cuts in to take over the mains power. The capacity of the generator varies, but certainly its load is spread across central power, which might be the running of the exchange equipment, emergency lighting, some airconditioning and so on. In this case, the Morwell telephone exchange emergency power generator would normally have started to operate. In the meantime, much of the telephone exchange equipment is running off batteries which are normally charged via rectifier units. What happened at Morwell was that the generator failed due to overload when apparently both the exchange rectifiers in the airconditioning unit attempted to start up at the same time. The loss of transmission to Omeo was caused by this failure at Morwell. If not for the day's earlier fire damage and the compounding effects of the Morwell failure, service would have remained uninterrupted to Omeo because traffic would have been able to travel on one of the two routes.

This matter was raised in parliament by the federal member for Isaacs, Ms Anne Corcoran, on 3 March 2003—I have distributed question No. 1536 and the reply is attached. It was responded to by Mr McGauran, representing the Minister for Communications, Information Technology and the Arts. Most of what I have raised is confirmed in the response from Mr McGauran. However, we would like to take issue with two points in that question, in particular paragraph (7) of the answer, which says:

The Telstra Global Operations Centre continuously monitors Telstra's network, immediately following up any network and/or power alarms.

I mentioned earlier that what happened was that the Pakenham exchange went off the air. It was not related to this particular incident, but there was no monitoring that happened at the global operations centre. Quite often, alarms are not forwarded through to this national centre. It is the main centre, in Clayton Victoria, which monitors the alarms for all telephone exchanges, not only in Victoria but also across Australia. We are a bit cautious about that response. The other aspect of Mr McGauran's response that we want to touch upon was the statement that:

... routine maintenance programs and load testing are undertaken on all mains power back-up systems.

I must be honest: it has been some years since I have been in a telephone exchange. The way that it operates is that, at least once a month, you start up the diesel, run it up to speed and manually switch it over by switching off the mains and switching on the diesel which runs a generator to take over the mains. What we take issue with is that you cannot just switch a diesel on and then disconnect it; it has to run for at least an hour. Otherwise you damage it. Our suggestion is that, if the routine maintenance had been carried out, they would have been aware that there was a problem and that the thing would have been overloaded. So we are a bit concerned about that.

The extreme weather conditions, which are touched on in there, are a factor, but, in our view, this would have been taken into account and, based on my 30 years on the job, the inadequacy of the back-up system should have been known prior to the failure. Thus, the township of Omeo and the surrounding communities were suddenly isolated at a critical time.

The other aspect that is touched on in Mr McGauran's response is the adequacy of the mobile telephone network, which supposedly allowed mobile communications to the Omeo area to continue during the outage. Last Thursday, on 24 July, a Special Broadcasting Services program, *Insight*, dealt with the shortcomings of the mobile network and, in particular, the mobile network at Omeo. I have brought a transcript along, if the committee wishes to observe it at some time. The comments made on that SBS program tend to reinforce the view of our members who work in and around Omeo, and confirm the views of our members working for Telstra—that is, mobile coverage is, in fact, inadequate. The footage shows an interview with the owner of the BP garage in Omeo. He outlines how he can talk on the telephone at one part of the garage, but when he goes up the other end he is disconnected. Another resident, a winemaker, explains how Telstra provided a mobile phone during the bushfires. He was very grateful to receive that, but unfortunately it did not work.

In closing, can I say that we are concerned about the state of the network, not only in rural and remote areas but also in the metropolitan area. We think that unless sufficient staffing and resources are made available then failures will continue to occur. It is even more important that failures do not occur during bushfires. The township of Omeo used to have two technical people permanently allocated in the exchange, who have long gone under staff rationalisation. Now this area is serviced from Bairnsdale. The recent round of some 2,800 staff cuts impacted on Bairnsdale and they lost staff. So there are even fewer staff to do the job. We think it is fine to cut staff but there can be a downside to that. We are concerned that staff cuts will lead to an even further reduction in services in rural and remote areas and could occur when bushfires are happening, as was the case here.

CHAIR—Thanks very much for those introductory comments. We have a copy of that question and answer. Mr Blackburne, are you the assistant secretary of the CEPU nationally or just Victoria?

Mr Blackburne—Just for the state.

CHAIR—So you would not have any particular information about other telecommunications problems during the bushfires in New South Wales?

Mr Blackburne—No, I do not. We could follow it up if we felt it was important, Chair.

CHAIR—Given your 30 years in the industry, maybe you could answer some questions in a general sense. Thredbo, in the Snowy Mountains, also lost telecommunications during the bushfire. The reason was that part of that line was above the ground; it was an aerial line. Is it your view that those sorts of circumstances ought to be rectified promptly—that is, the location of above-ground telecommunications, particularly in fire-prone areas?

Mr Blackburne—Absolutely. To illustrate the point, documentation has been provided in the Senate over the last couple of years highlighting exactly the sorts of problems that you have raised, where there have been above-ground temporary arrangements that have been temporary for years. Apart from bushfires, rabbits have been chewing cables because the temporary cables have been run along on top of the ground. I could not agree more that it is absolutely vital, particularly in the fire-prone areas that you mentioned, like Thredbo. I am not aware of the circumstances, I must say, but we think it is absolutely critical under those circumstances.

CHAIR—Would it concern your members if Telstra was prevented immediately after the bushfires from putting that cable permanently underground?

Mr Blackburne—It would certainly concern us, absolutely. Obviously we would be concerned about the communities up there. I imagine that for a certain period the land will be cleared, but next year, next summer, you will face the same problem if the cable is running along the top of the ground.

CHAIR—Would it be of further concern to members that, because Telstra was not able to do that, another temporary cable had to be put in above the ground because winter came on and it was not possible once winter had arrived? A temporary cable has now been replaced with another temporary cable because of them not being given permission to put it underground.

Mr Blackburne—Obviously, we would be very unhappy about that. As I say, I am not aware of those particular circumstances.

CHAIR—What about the principles?

Mr Blackburne—The principle is not good. There is some degree of protection underground. Notwithstanding what I touched on before, where the cable was cut in clearing a firebreak, if it is below ground there is more protection there. It is pretty clear cut.

Mr GIBBONS—Given your 30 years experience, would this problem have arisen 10 years ago in that particular exchange? I note that, in the answer to the question, the airconditioning unit faulted in the building where the generator was housed, which then caused the generator to fault because of the hot environment. How often was the airconditioning unit serviced? That is an integral part of the equipment if it causes the generator to fault. Would that have happened 10 years ago or has that happened as a result of the major rationalisation that Telstra has undergone?

Mr Blackburne—I guess I would express an opinion. I believe that in previous years—I know the Morwell exchange; I used to work there for some of the time—a lot more staff were located in the Morwell telephone exchange. If you look at the total staffing of Telstra, it peaked at around 93,000. It is now just over 40,000. When you remove that number of staff you can see there will be an obvious impact on the maintenance routines, whether that be airconditioning, stand-by generation equipment or whatever. I do not know the specifics of it but, if you are asking for an opinion, I believe that if you have more people on the ground you can check these things.

Mr GIBBONS—I accept that, but I take it that Telstra employees are not skilled airconditioning maintenance people. That would have to be contracted out.

Mr Blackburne—Yes.

Mr GIBBONS—Has there been a decline in the ability of Telstra to bring in other agencies to do their respective servicing tasks? Obviously your members would not have serviced the airconditioner.

Mr Blackburne—No.

Mr GIBBONS—So it is not just the manpower downsizing that Telstra has undertaken; it is also the scaling back of the maintenance.

Mr Blackburne—Absolutely. I can illustrate the point in another area of Telstra where they did use contractors. There is a thing called a personal alarm system for people who might be elderly or housebound. If they feel a heart attack coming on or they start feeling ill, they can press a button and an alarm goes through to a central location. On the issue of contractors, the centre that looked after the eastern part of Victoria was put off the air by contractors. I guess I am raising the fact that there are some concerns about the skill levels there, but not in all cases. If you have people on sites such as Morwell who regularly monitor that, you do have the ability to ride shotgun over these sorts of things and you can make sure that they are serviced correctly.

Mr GIBBONS—Once the fault was recognised, how long did it take to get the equipment running again? Has there been any change in the time it takes to fix equipment if that sort of thing happens now, compared with what was happening 10 years ago?

Mr Blackburne—It was certainly off for over an hour, and certainly the problems with the mobiles are still there. I think it is responded to in the answer to the question, and I think they do indicate that it has been rectified since that time. It arose from the publicity given to this particular incident.

Mr GIBBONS—Is the damage done to Telstra's infrastructure by the fires in those areas being repaired to a satisfactory level, in your opinion? Are there enough people on the ground to actually repair the above-ground lines, the buildings and the phone system that were damaged? Are there enough people on the ground to repair and get those services back online? Are they back now or is work still underway?

Mr Blackburne—Again, I have to say that the only way I can respond is with an opinion. I think they are still short staffed in that general Gippsland area. I think a lot of good work has been done, but I do not think it has been totally rectified yet.

Mr BARTLETT—Following on from that, and again I am asking your opinion, would it still be accurate to say that, given improved technology, greater access to mobile coverage and so on, communications are better in that area than they were 10 years ago?

Mr Blackburne—Certainly there are lot more mobiles around, you are absolutely correct.

Mr BARTLETT—The network coverage would be more extensive, too, would it not?

Mr Blackburne—It is getting better. I guess the issue is whether it is good enough, and that is part of the debate taking part in the parliament at the moment. Our view of the world is that it is not adequate yet.

Mr BARTLETT—Not as good as it could be, but better than it used to be? It is getting better.

Mr Blackburne—Certainly there were much fewer mobile phones. There has been an explosion in mobile phones, if I can put it that way. There are certainly more mobile phones

around, but I want to claw the issue back to the fact that the mobile phones were there but they failed. That is not good.

CHAIR—You asked about the SBS program. I neglected to mention the committee can get access to that via the Parliamentary Library. We will make that available to members if they want to have a look at it.

Ms PANOPOULOS—Thank you, Mr Blackburne. I am interested in telecommunications issues, particularly during crises and natural disasters. What guidelines, if any, exist regarding the movement and the ability of Telstra staff to enter particular bushfire affected areas?

Mr Blackburne—The overriding thing is what we call the Occupational Health and Safety (Commonwealth Employment) Act. Obviously if it is a situation where it is potentially still unsafe—I think that was touched on in the response from Mr McGauran—then those people should not go into that area. That is probably the overriding guideline, the Commonwealth Occupational Health and Safety Act.

Ms PANOPOULOS—Are you aware of the classification of certain areas as red zones for fires?

Mr Blackburne—No, I am not; I am sorry.

Ms PANOPOULOS—I want to briefly relate something to you and perhaps you can fill me in. During the fires in my electorate, down through Eskdale and the Mitta valley, there was a period where public phones did not work. The CFA, the Red Cross and the SES were all working out of one building with access to one phone. They asked me and the state member, Mr Plowman, to try and help them. We called Telstra to get satellite phones to them. We were told that it was a red zone, it was a danger zone and it was too dangerous for staff to drive down the valley to Mitta, which I thought was really strange because I had done the drive twice that day as had the reasonably elderly Red Cross ladies from Tallangatta delivering cakes to Mitta to go into the lunchboxes for the volunteer firefighters. I thought it was a bit strange that the ladies could go and I could go but the tough Telstra blokes in their big vans could not drive down. We offered—actually, we insisted—to drive to Albury, pick up a satellite phone and take it to Mitta. What I think happened then was there was some concern about the negative publicity, so one or two days later there were five Telstra vans in the area and satellite phones all over the place. Did that occur, in your opinion, because of inflexible bureaucratic guidelines about what is safe and what is not safe about a danger zone and a red zone? That would seriously hamper the ability of any telecommunications company to be effective and to respond to problems on the ground.

Mr Blackburne—I am not aware of the particular incident that you raised and I am not aware of the terminology, 'red zone'. Every employer has a duty of care in respect of their employees, and that is the only way I could respond. I do not know about the circumstances that you raised. I do know that in a number of places—and it is touched on in the SBS footage—temporary arrangements were made available for the Omeo people by Telstra. Presumably someone drove and put up temporary equipment to improve the mobile arrangements there during the fire period and provided a temporary mobile phone for one of the residents there, which I think I said before did not work. I am sorry; I cannot be specific in my response. Apart from the Occupational Health and Safety Act, I am not aware of this red zone stuff.

Ms PANOPOULOS—Would you be kind enough to go back, and if there are any guidelines could they be provided to the committee? Thank you.

Mr Blackburne—Sure, I am more than happy to do that.

Mr SCHULTZ—Mr Blackburne, you mentioned two Telstra employees who were originally in Omeo and who were then removed, or their jobs made redundant. How long ago did that occur?

Mr Blackburne—I could not be specific, but it is quite a few years ago now.

Mr SCHULTZ—Was it prior to 1996?

Mr Blackburne—I am not sure. I think so, but I could not be sure.

Mr SCHULTZ—To your knowledge, is there a CDMA tower adjacent to or in the township perimeter of Omeo?

Mr Blackburne—I am not aware whether there is. I can find out for you; I can take that on notice and come back.

Mr SCHULTZ—To be honest with you, the reason I asked the question was that I am aware that, in a lot of places that are isolated and have very hilly terrain—in communities such as Omeo—there is a tendency for the CDMA signal to drop out unless you get up onto a higher level. That is the only reason I asked the question. I just wanted to know whether there was a tower there and, if so, where it was situated.

Mr Blackburne—I am sorry that I cannot answer that. I understand that that is a difficulty in Omeo, but I am not sure where the tower is geographically located.

CHAIR—Thank you very much for your evidence today, and also for your submission and that additional information that Ms Panopoulos has asked for. If there is something that could be provided to the committee, that would be useful as well.

[11.21 a.m.]

ATTIWILL, Dr Peter Muecke, Member, Research Advisory Committee, Institute of Public Affairs

CHAIR—Welcome. I will not re-read the formal introduction; you were here earlier when I did that. We have the Institute of Public Affairs submission, which we thank you for. That has been authorised for publication and forms part of the evidence for this committee. Would you like to make some introductory remarks? I will then give the committee an opportunity to ask some questions.

Dr Attiwill—Thank you for the invitation to appear before this hearing. I just want to give my background very briefly. I started as a forester in the old Forests Commission of Victoria. Then, after completing a bachelor's degree and a PhD, I went to the States to Cornell University, where I eventually started my academic career. I then returned to the University of Melbourne and the School of Botany, where I stayed for too many years, I guess, until I retired a couple of years ago. I am appearing here today because I wrote the submission for the Institute of Public Affairs, so I am presenting it on its behalf. Virtually all my professional career has been in forest ecology. I have published a large number of papers on forest ecology—some 80 papers in the scientific journals—and a number of books.

The submission that I prepared for the institute was based on a conference we had in early March, entitled 'Bushfire prevention: are we doing enough?' I chaired the scientific component of that conference, and we have used much of that in the submission. I think that the basis of our submission is straightforward: in the biology, evolution and ecology of Australia's fauna and flora, fire has always been a major influence—a fundamental influence—in the development of what we see today. Just to emphasise this: an animal ecologist and I have just published a new textbook on ecology—it is published by Oxford University Press—and virtually in every chapter on Australia's ecosystems fire is mentioned as a driving force in ecology and evolution. It strikes me as very curious that, while we recognise that scientific basis, we seem totally unable to manage and control fire in the present day.

In our submission I have used an example from David Bowman, one of my colleagues from the Northern Territory and an expert in fire ecology. Over hundreds of millions of years, as Australia became drier and drier and moved into more northern latitudes, large fires were started by lightning strikes. The coming of the Aborigines, perhaps 40,000 or 50,000 years ago, was as major an influence on our vegetation and fauna as anything we have had. The Aborigines were firestick people, and they created a fine-scale mosaic of burning across the landscape. Since European settlement, and with the increasing amount of emphasis on fire detection and suppression, all this has changed. We now get fires of much greater intensity than we have had over tens of thousands of years. David Bowman calls these 'feral fires'—fires that are out of control mainly because of the fuel loads that we have allowed to build up. We have the idea that locking something up—creating a national park—is all that we have to do and that we do not have to manage fire. Our submission is against that. We are managers of the land. We have to manage a fire regime and we have to decide what sort of vegetation it is that we want.

With the regional forest agreements, it seems odd to me that, while we devoted a large amount of time to defining what sort of area of every ecosystem we had pre 1750, before European settlement—and then aimed to reserve at least 15 per cent of each of these vegetation types—nobody ever asked about the sorts of communities they were, what they looked like and how different they were from today's community. It seems very odd to me that we should use today's forests, which have been protected from fire, as yardsticks. Whenever I review an ecological paper and they have used the unburnt forest as a control, I ask why. Why on earth would you do that? It is simply a reference, because it might not be a control in the sort of vegetation that we want.

I think two views have dominated the social arena, despite our scientific knowledge. The first is that fire is always bad—it is never even neutral, let alone good. In a scientific sense and in an ecological sense fire is often good, but in a social sense fire is always bad. Because of this view, we have an emphasis on total fire suppression. The second view, which I think has come increasingly through the green groups, has been that of the old-age forest as the yardstick of the tranquil, eternal, perpetual, everlasting sort of thing that we have to cherish. This is taken even to extremes, with some green groups saying that old-age forests are fireproof—they will not burn. We have just seen the absurdity of that. These two groups are very strongly developed in the social arena. We will not be able to eliminate bushfires in national parks, state forests or whatever land tenure, but we have to manage them. We are managers of the land, and we have to decide what it is that we want to aim for—what sorts of ecosystems we want.

The need for prescribed burning, or fuel reduction, and the management of lightning strikes is absolutely essential. The evidence for this is overwhelming. Why do we put out all lightning strikes? In the early 1990s in the high country that was just burnt 71 lightning strikes were put out in one week. Why shouldn't we have let some lightning strikes run? Why shouldn't we try to create a mosaic of burning, so that when the fires come, instead of being feral fires over huge areas of high intensity, they meet boundaries that have been established by the proper fire regime, aimed at an ecosystem that we want?

We maintain that the technology is now available and well developed—we have seen this particularly in Western Australia—to manage fire in a way that maintains biodiversity and markedly reduces hazards to life and property. But we have to have some changes. Firstly, we have to turn around the ideological opposition to prescribed burning. We have to have adequate funding for fire management and the implementation of fire regimes, and we have to have proper legal structures to protect both the manager of the land and the land owners.

CHAIR—Thank you for that. You did actually look specifically at the 2003 fires in south-east Australia—is that correct?

Dr Attiwill—Yes.

CHAIR—What did you see with respect to the weather during that period of time that the fires ran? Can you give a view of the weather then compared to previous times? Was there anything particularly extraordinary about it?

Dr Attiwill—Yes, certainly. Climatically, it was very bad weather for fires, equivalent to that in 1983 and perhaps in 1939 with extremes of temperature. But mainly it was very dry, and it is

the dryness of fuel that really sparks the intensity of the fire, given also that we have got wind and all the other conditions for it.

CHAIR—Was it your view that those high temperatures and high winds were prevalent right through the period of time that the fires were burning—or just at certain times?

Dr Attiwill—I cannot answer that—

CHAIR—You did not look at it that closely?

Dr Attiwill—Yes.

Mr McARTHUR—You mentioned the Yellowstone National Park experience where there was a major reversal of the previous policy by both Clinton and Bush in terms of fire ecology, fire control and the opening up of national parks to timber reduction. Could you just help the committee with what you learned from that American experience, both in terms of the technical change of the policy and also the public attitudinal change that took place after those massive fires?

Dr Attiwill—Before the fires the ecological evidence, I believe, was overwhelmingly with a policy of total fire suppression, including putting out all lightning strikes. Ecologists in the States—and this is published data, not hearsay; it is in the ecological journals—had established that there were two things happening in reconstructing the fire history. Firstly, the evenness of the vegetation was increasing, and that is a major part of diversity. Part of diversity is the difference between that patch of bush and this patch of bush. With total fire suppression the evenness of the vegetation was increasing and diversity was decreasing.

The Yellowstone fires in 1988 were enormous. It was very old vegetation, which many people, including some of the ecologists, have believed was in a state of stagnation. In the journal *BioScience* one of the popular views following the fires was that the national park had been rejuvenated from being large areas simply of old growth in a state of biological deterioration. Now large areas of the park were regenerated. Following the Yellowstone National Park experience the policy was adopted of letting lightning strikes run their course. This has to be modified a bit. Most lightning strikes can run their course but on extreme days you might have to take some action. But there is no need to put out every lightning strike.

Following the fires, there was a change of attitude to the harvesting of timber in some of the national parks. Where the trees have been damaged by fire it makes some sense to harvest some of the trees—not all of them—in a managed plan so that regeneration is encouraged and the whole cycle of nature begins again.

Mr McARTHUR—Overwhelmingly, witnesses have been suggesting that fuel reduction burning is important. Could you suggest a reason for the 'ideological' unhappiness—to use your word—about fuel reduction burn, among some elements of the community and some political parties?

Dr Attiwill—There are many points of opposition. For example, city people do not like the smell of smoke. Those who are suffering from asthma find the air polluted, and this is a real

concern, I suppose. It seems that we have to get an ideological position on this. We live in a country which is perhaps the most fire prone in the world. If we are going to live in a country which is very fire prone, then clearly we have to accept these sorts of consequences.

But I think the main opposition comes from the idea, which is gaining ground, of the mystical nature of the old-age forest. It is not just fire, but I think the idea is developing that we do not like people interfering with forests: we do not like people going into them and we certainly do not like them setting fires in forests. It is very curious because in the north of the country the firing of the native vegetation is part of the whole process. If you go to Kakadu, for example, there is an active program of controlled burning. The Aboriginal groups are involved in managing this program. If we come south, we are all of a sudden overwhelmed by this mystic quality of the old-age forest which has to be allowed to be its tranquil, eternal, perpetual self, which—

Mr McARTHUR—You have spent a lifetime in fire ecology. Why don't you think you are winning with the point of view that you have spent your scientific and practical life advocating: the use of fire as a mechanism for improving the forest? Why aren't you winning that argument in the public domain?

Dr Attiwill—I think that is because we are such poor communicators. Scientists are not very political sorts of people. We do not want to get involved in this. It is a real concern. Many scientists believe that in publishing a paper somewhere they go through a process that I call 'publish with hope'. They hope that somebody will see it, see its relevance, and do something about it. But society does not work like that. We have to get out and sell these things and sell them effectively. I do not think we have sold them effectively, any more than the foresters have been able effectively to sell their ideas about sustainable management of forests. We are poor communicators.

Mr McARTHUR—The truth of your position remains unaltered?

Dr Attiwill—I believe that absolutely. If I did not teach students about the role of fire in evolution and ecology, it would be a disaster. Somehow, when we get to the practical management of fire, we are unable to do that.

Mr BARTLETT—Thank you, Dr Attiwill, for a very interesting submission. I am also interested in these comments about the ideological opposition to prescribed burning. In your reading of the material of the people who have put forward views opposing prescribed burning, has that 'ideological opposition'—to use your term—also applied to Aboriginal burning regimes? Have they been a target of that criticism and of that ideological opposition.

Dr Attiwill—Could I just clarify that?

Mr BARTLETT—Has there been as much criticism of Aboriginal burning regimes?

Dr Attiwill—No.

Mr BARTLETT—So there has been an implicit view that in pre-Aboriginal Australia there was a greater degree of purity than in post-Aboriginal Australia?

Dr Attiwill—Yes. I think also that there is an attitude that Aboriginal people were carers of the land.

Mr BARTLETT—Does it not strike you as rather curious then that this ideological opposition would see the development of our ecosystem and our ecology under a fire regime that included Indigenous people, as was acceptable under the pre-Aboriginal regime?

Dr Attiwill—No, because we are western masochists. The Aborigines were knowledgeable and caring people, whereas as we are exploiters.

Mr BARTLETT—So the current thinking as part of that ideological opposition seems to be that what was important as a fire regime in developing our ecology for those 40,000 or 50,000 years of Indigenous development is no longer acceptable—no regime of prescribed burning is acceptable now?

Dr Attiwill—Yes, but also it is hard to get back to. I think over 40,000 years the Aboriginals really farmed the land with fire. It is now far more difficult to get back to that position, because of fuel loads.

Mr BARTLETT—And the ecosystem that we have got came out of that farming of the land with fire?

Dr Attiwill—Yes.

Mr BARTLETT—In pursuing that issue, can I just ask you about the National Parks areas, particularly where the issue of hazard reduction seems to be most contentious. Would it be fair to say that substantial parts of those were also farmed with fire or were part of the Aboriginal fire regime as well?

Dr Attiwill—Yes.

Mr BARTLETT—Do you have any ballpark idea of what per cent of those areas would have been excluded from that fire regime?

Dr Attiwill—I do not think we have got good reconstructions of Aboriginal burning for a number of the higher altitude areas such as were burnt in Victoria. For the lowlands, the fire frequency was undoubtedly of the order of three years and less than 10 years. The fires would not have gone so far through the higher country, because in many years it was wet—and still is—and would not burn. So it is a bit hard to reconstruct.

Mr BARTLETT—So it is fair to say that in many of the National Parks areas now where—for reasons of ideological purity or whatever—hazard reduction is prevented, it was frequent and it was commonplace under the Aboriginal communities?

Dr Attiwill—Yes. For example, the few old-age forests that we have in Victoria are about 300 years old now. So they must have regenerated from a massive burn in 1700.

Mr BARTLETT—So the ecosystems that we have through much of our National Parks actually developed under a pattern of prescribed burning by the Aboriginal communities?

Dr Attiwill—That is right.

Mr BARTLETT—You have summarised the views here of Dr Cheney, Professor Shea and Dr Tolhurst. I was interested particularly in a comment from Dr Tolhurst that 'a systematic study across Victoria found that fire frequency was near an ecologically sustainable level in only one vegetation type out of 19'. Presumably the conclusion from those articles is that the prevention of low intensity periodic burns and their replacement by high intensity, less frequent fires is more damaging to biodiversity in our ecosystem?

Dr Attiwill—Yes.

Mr BARTLETT—I think the views of Dr Cheney, Dr Tolhurst and Professor Shea are very explicit and quite convincing. In academia in general and the debate about this whole issue of the impact of low intensity-high frequency, high intensity-low frequency burns on biodiversity, what would be the breakdown of opinion within academia generally? Would it be roughly 50-50; would these esteemed gentlemen be in the majority? What is your understanding of the general prevailing views?

Dr Attiwill—It is a difficult question. If we are talking about the management of low heath lands like those we have at Wilson's Promontory, I think every ecologist would agree that they have to be burnt every 10 years. I think the Shea-Tolhurst group would be 90 per cent in favour and maybe 10 per cent against. When it comes to forests, again there is ideological opposition to burning—even among ecologists. But I would think that they would represent—I would have to guess—about a 75 per cent view.

Mr BARTLETT—These people would?

Dr Attiwill—Yes—maybe 80 per cent.

Mr BARTLETT—It is subjective, obviously.

Dr Attiwill—Absolutely.

Mr HAWKER—Thank you very much for that presentation. I have a couple of questions. You touched on logging. Where do you see logging fitting into the ecological management of these forests—and, as part of that, the fact that you then have a much greater degree of local knowledge and resources for managing the forest, managing cool burning and fighting a serious fire? Where do you see the role of logging in these areas?

Dr Attiwill—Again this is my view of it; this is not a scientific view. I do not think you can have a scientific view of it.

Mr HAWKER—You have been a forester, so you must know it as well as anyone.

Dr Attiwill—In my view, the forests were better managed in the past than they are now. Even in my own research, when you go out to some of the forest areas—the Britannia range near Warburton, for example—the condition of the roads is poorer. The roads are not maintained; the tracks are not maintained. There are not so many people on the ground to do these jobs. I think they were maintained in the past because of timber harvesting—because of the need for access tracks and maintaining roads of reasonably high quality. So I think timber harvesting—in a proper way; I am not suggesting we manage all our forests for timber—within an integrated overall plan for sustained management of our forests was important. There were foresters on the ground who knew the bush, who knew the tracks, who could plan fire breaks and who could manage prescribed burning, knowing the country intimately like they did and knowing where the ridges were and where the breaks were.

That does not mean we have to have timber harvesting: we can still have the same degree of knowledge if we have more people on the ground and if we recognise that management of our forests demands people with local knowledge and experience and with some tradition of knowledge. We hear very often quoted today that the time frame for prescribed burning is so short because of the weather. It seems an odd argument to me: 'We can't burn because we have this small window of opportunity; instead we will have a fire over a million hectares in summer.' It just seems to contradict things. But to be able to do a proper prescribed burn means that people have to have experience. They have to build up experience through some sort of organisation that itself has a degree of sustainability.

Mr HAWKER—That leads to my second question. You ask why you would put out lightning strikes, because they are the most natural—or one of the more natural—things that occur. There has been a suggestion to the committee that in the management of this 2003 bushfire there may have been a deliberate decision to not try to put out some of those lightning strikes initially and to allow them to continue to burn. Do you think that could be the case?

Dr Attiwill—This is all part of the fire regime that we have to manage. If I were in charge of that land and if there were a lightning strike at that time of the year, given the summer that we had, I would attempt to put it out straight away. So I am not suggesting that we let all lightning strikes run but that we have some management regime in place and we give authority to the managers of the land. I cannot see any point in necessarily putting out all lightning strikes in November when the weather is cool but, when the weather is dangerous, lightning strikes have to be extinguished immediately.

Mr HAWKER—With regard to Dr Tolhurst's contribution to your seminar, in part he said:

> In the long-term, more prescribed burning, primarily aimed at achieving ecological objectives, will help reduce the occurrence and impact of large and intense bushfires. This will simultaneously reduce the cost of emergency operations and disaster relief and achieve better land management outcomes.

Has anyone looked at any sort of methodology that might be able to show the offset in those costs? In other words, if you were to do more prescribed burning—which clearly you need the resources to do, as we talked about earlier—there may be a saving in the cost of having to suppress or put out major bushfires. Has anyone done any work on that to try to get some sort of a handle on the trade-off?

Dr Attiwill—I am afraid I cannot answer that. I would have to ask somebody like Phil Cheney in CSIRO in Canberra or Syd Shea in Western Australia. I would imagine that that sort of assessment has been done in Western Australia, which has a very detailed program of prescribed burning.

Ms PANOPOULOS—We have had the argument put to us that there is a greater destruction of biodiversity values through regular cool burns, as opposed to a feral fire. I am but a lay person in this regard; I am not a scientist. I can only trust my eyes, and I have seen some pretty devastating landscapes. In your professional opinion and with your extensive experience, what would be your response to that statement?

Dr Attiwill—Professor Shea gave some good evidence for Western Australia. Again, this word 'biodiversity' is always used as though some amount of biodiversity is god given. I have to rely on some anecdotal evidence from the early surveyors and their records, but the nature of many of the communities in the early days was different from what we have now. Biodiversity might have been less than it is now under a regime of controlled burning, but is that necessarily a bad thing? I do not see that it is. Perhaps instead of using the forest now that has not been burned for 100 years as our yardstick, shouldn't we try to assess the forest that was under a regime of Aboriginal burning and compare that with prescribed burning outcomes?

There are difficulties in this assessment of just what we want in biodiversity. Is the forest or any ecosystem with a large accumulated understorey necessarily better ecologically than that with a lesser amount of understorey but perhaps with lower diversity? I do not think a comparison of diversity alone really is very meaningful. I can give another example: there is an area called the Holey Plains in Victoria, which is north of a bit of good forest. That was regularly burned both by the Aborigines and during the days of forest management, not ecologically so but really to protect the forest that was to the south. The Holey Plains is now one of our treasured national parks, despite those years of burning. I do not think the evidence is strong that regular burning will necessarily destroy diversity.

Ms PANOPOULOS—Do you believe, from reading what some amateur burgeoning scientists or city based environmental groups have had to say or by speaking with them, that they actually understand what the concept 'biodiversity' means?

Dr Attiwill—That is a marvellous question. That is the worst part of being an ecologist: ecology is not rocket science. I would much rather be a physicist and talk in terms of 'megatrons' or something; nobody would understand. But everybody can pick up the words 'diversity' and 'ecosystem' and use them as they wish. No, I do not believe that they know what they mean or how they would go about measuring diversity.

Ms PANOPOULOS—It strikes me sometimes that it is one of those untouchable words; that as soon as someone mentions biodiversity, you cannot contradict them in any sense, because they have attached themselves to a concept. You get howled down.

Dr Attiwill—Yes. It would be much easier for me to say, 'Prescribed burning trashes biodiversity'; it would be a good paper headline. But it is a much harder case to show that it does not, because scientists deal with probabilities, not with absolutes. I think that this is another

reason that scientists are a bit loath to get into the public arena: we are dealing with probabilities and uncertainties rather than certainties.

Ms PANOPOULOS—The other issue that concerns me is that, as you said, what exists today in many areas is very different from what existed when white man arrived. I have been shown copies of original maps drawn by the settlers who came over the Murray into north-east Victoria and I was astounded to see that the area was described as 'thinly wooded'. What can we do to get the real story of the development of our natural environment and how it has changed out there in the open? I feel that, if we cannot get the true story out there of how it has changed, we do not have a reasonable opportunity to try to manage it adequately. What do you think we can do to get that particular story out about the original condition of the environment?

Dr Attiwill—My answer is a bit simplistic, but I suppose that we have to encourage studies which aim at reconstructing fire histories and floras and faunas of the past.

Ms PANOPOULOS—Would that be a recommendation you would make to the committee?

Dr Attiwill—It certainly would be, yes. I would hope that that might be something that is included in the CRC for bushfire research, for example. I think that it is very important. These are not easy studies to do at all, but I think that we have to accumulate more evidence of that sort. We can only do that by proper research and proper peer review publication.

Mr GAVAN O'CONNOR—Like my colleagues, I have had to grapple with the complexities of the scientific argument. I suppose that you get into debates on this issue—prescribed burning and biodiversity—with colleagues who hold differing views.

Dr Attiwill—Yes.

Mr GAVAN O'CONNOR—So there is an alternative view, is there? For example, could you envisage a situation where a prescribed burn might impact adversely on biodiversity? Is there a circumstance where a prescribed burn, under a set of conditions, might adversely impact biodiversity?

Dr Attiwill—Yes. When you go into the high country and see large bare patches within a forested area, that is undoubtedly where there has been a second fire after a previous one and the second fire has come too early for the community to have set seed. But that is a component of biodiversity itself. The idea that we should have all of this area entirely covered with 10 points of biodiversity is wrong because a major component of biodiversity is the difference between this bit of land on this ridge, that bit of land on the northern ridge and the other bit of land in the gully. So we have to protect biodiversity overall.

Mr GAVAN O'CONNOR—Are you saying a lot more research needs to be done on the biota of Australia and on particular areas so that we can make informed judgments about where we ought to do prescribed burning under certain conditions?

Dr Attiwill—Yes, I think there is no doubt that we should prescribe burn under most conditions—the situation is the same the world over, not just in Australia—otherwise organic matter builds up. This organic matter eventually locks up nutrients, and ecosystems become less

productive. This was the experience in Yellowstone. The fire rejuvenated not just the plants and animals but the ecological processes on which sustainability depends.

Mr GAVAN O'CONNOR—I was glad that you clarified that in response to my colleague the member for Wannon, because in reading your submission I got the impression that you would be prepared to let fires burn in particular areas if they were natural occurrences—lightning and such.

Dr Attiwill—I do not mean that at all. We have to have a managed fire regime and a plan. I do not see the idea of putting out all lightning strikes as necessarily having a plan for managing fire and biodiversity.

Mr GAVAN O'CONNOR—So your idea is to have a managed plan?

Dr Attiwill—Yes.

Mr GIBBONS—You have partly answered my question. You keep referring to old-age forests as opposed to old-growth forests. You have used the term '300 years'. Would around 300 years be the normal age of an old-age forest?

Dr Attiwill—No.

Mr GIBBONS—Most of the forests around this part of Victoria have probably been logged two or three times, so there is none of the old-growth forest that we once had here 300 or 400 years ago.

Dr Attiwill—I was really referring to my favourite old-age forest, which is Mount Ash, up in the hills. But many of the foothill forests would not get to that sort of age naturally.

Mr GIBBONS—There is no particular group of ages for the term 'old-age forests'?

Dr Attiwill—No. It is species dependent.

CHAIR—In finishing, we received some evidence and we are going to be provided with some so-called scientific research with respect to the effect of grazing and fire hazard intensity. The evidence that was put to the committee was that in fact grazing can increase the propensity for fire to burn in high country areas, whereas the practical evidence given to us by cattlemen and others who have been grazing that area for generations was the complete opposite. Would you like to comment on the effect of cattle grazing in some of that high country?

Dr Attiwill—I would rather not comment without doing the necessary research on what has been written about it. I do not know of that work that you say will be presented, so I would rather not comment on it.

CHAIR—Thank you, Dr Attiwill. We appreciate your evidence today and your submission.

Dr Attiwill—Thank you for the invitation.

[12.05 p.m.]

BENTLEY, Mr Peter Thomas (Private capacity)

TOLHURST, Dr Kevin Gerard, Senior Lecturer, Fire Ecology and Management, University of Melbourne

CHAIR—Welcome. Although the committee does not require you to give evidence under oath, I should advise you that these hearings are formal proceedings of the parliament. Consequently they warrant the same respect as proceedings of the House itself. It is customary to remind witnesses that the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. Do you have any comments to make on the capacity in which you appear?

Mr Bentley—I am a self-employed consultant in natural resources.

CHAIR—We have received both of your submissions, which we thank you for. They have both been authorised for publication and therefore automatically become part of the evidence that the committee will use in its deliberations. Would you like to make some opening remarks and then we will move to questions.

Mr Bentley—I have been conducting fire research: one project in conjunction with Kevin Tolhurst and several others in the last 18 months to two years. My interest in this parliamentary inquiry relates firstly to some work undertaken in the year 2001-02 during the summer period in the high country of Victoria where those fires occurred and, more lately, to some extensive work conducted in the South Australian foothills—the Mount Lofty Ranges. That and my last 23 years of experience in natural resource management—parks and forest management and fire management—brings me forward to make my submission, which you have received, and to make a few points here, if I may.

The first point that comes across—and it relates to conversations with a previous witness—is that the importance of establishing historical fire regimes, so that we can get a formal ongoing fire management program across the biota of south-eastern Australia, is fairly underestimated. It came from some work done in 2001-02 and relates to there being a lot of areas in Victoria and New South Wales where no formal fire history has been established. In other words, we often do not know when the last fire was. The second point that comes across is that for the introduction of prescription burning for managing fuel loads and for biodiversity purposes, the historical data is just not there. Sometimes it is a bit of by guess and by God. We are in uncharted waters there.

Another point that comes from that is the extrapolation of the risks of fire. The hazard, which is the fuel loads, and the threat assessments then become a little bit skewed. It becomes quite difficult to get some numbers around it. The other thing that is not understood particularly well by the committee, I do not think—and this is coming out of this inquiry—is that the potential for damage to major infrastructure, agriculture and tourism and all those other values has previously been fairly badly underestimated. We really have not looked at things on the landscape scale.

That relates even to things like water reticulation, water quality and all those other things that we build as infrastructure around a unit of bushland.

Land use planning at the local government and state government levels has lagged. We really have not looked at land use planning as being one of the keys to the avoidance and management of fire. From that, in my view there is a need to accelerate prescription burning programs in Victoria and New South Wales. Recently in Victoria, DSE and Parks Victoria have started to ramp-up their prescription burning program. However, the problem is that that ramping up process may take eight to 10 years. You cannot burn it all in one go, and it will take a few years to really make an impact.

The last point is that there is a very strong potential for marrying together fuel reduction burning programs and burning programs for ecological prescriptions. In one sense that is quite a new step and it builds on some work Dr Tolhurst and Dr Malcolm Gill and others have done. That is just starting to come into application. So there is room to marry the two objectives together.

The other points that I would make relating to previous questions by some of the members of the committee is that research into fire management issues is, in my opinion, actually going backwards not forwards at the moment. If you really looked at the suppression dollars spent by government agencies around Australia and then looked at the research dollars that are being spent, it is pennies and pounds. It is a long way apart. The other problem that comes out of that is that the research agendas that I have seen at some universities and other tourist institutions appear to be driven by idiosyncratic desires of academia rather than the needs of the community. That is an issue that I am fairly strong about.

Dr Tolhurst—The reason I made the submission to this particular inquiry is that I hope there will be some changes and improvements in our government policy in the way in which we do our fire management business. That is the reason I am here. There are two major points that I would like to make. One follows on from what Mr Bentley has just mentioned, that we need to take a long-term view of fire management in Australia generally, but particularly in south-eastern Australia. Professor Attiwill has already outlined some of that. We actually have means by which we can use current information out there in the ecology that allows us to apply sustainable fire regimes. A lot of the argument about prescribed burning largely melts away if we were actually being more ecologically sustainable in our approach to fire management. That is a long-term issue that I would like to have an opportunity to elaborate on.

The second point that I would like to deal with is the suppression activity—the suppression effort. For a couple of months over the summer I was involved in the activity and there are certain things that I think could be done a lot better to improve the efficiency. There were some things that were done fantastically well this summer as well that we ought to continue. If we want to look historically at fire in Victoria or south-eastern Australia, the 1939 fires basically saw a massive improvement in the way we dealt with fire suppression and the protection of human life and property. If we look at the 1982-83 bushfires—the Ash Wednesday fires—we saw a big improvement in the communication system and the way in which different organisations—the police, emergency services like SES, the Country Fire Authority and the land management agencies—worked together. That came out of the 1982-83 bushfires, but I think we still have a long way to go in terms of the way in which we manage fires across the landscape.

Even in the way we deal with fires when the fire is actually going, we still have got a fair way to go.

Part of that management process has to include the community. One of the big pluses out of the fires that we saw this year was really the relative minimal impact that fires had on life and property in Victoria—it was not the same case in New South Wales, particularly Canberra. I think there are some lessons to be learnt from there to actually involving the whole community. I do not think it is the government's job to control the fire regime. The community has to be involved. A lot of what I have been hearing from this inquiry—and others—is a general feeling from the community that they have been disenfranchised from the decision making process and from involvement in the operation of fire suppression and yet, the biggest successes have come where community involvement has been high up on the list.

We need to treat it not just as an enemy, an army type exercise, but as a community participation thing. I agree with Professor Attiwill's earlier comment that we have to make sure the community comes along with us and appreciates that fire is certainly part of our environment that we live in. We need to come to some arrangement as to how we can live in that fire environment if we are going to maintain fire in a livable way across our landscape. It has to be a fire managed landscape; it cannot be a fire eliminated landscape. That is not an option for us. If we are going to go forward, the community has to be involved and it has to based on sustainable economic and environmental principles. I will leave it fairly open at that stage because I believe you got the submission, and I will be happy to answer questions.

CHAIR—Thank you for that. Mr Bentley mentioned the potential environmental flow-on aspect of these fires. Have you had a look at what that is likely to be from the most recent fires? Considering the intensity of the fires—in those areas where the fires clearly burnt extremely hot—what will the likely flow-on effect be and for what period of time?

Mr Bentley—Initially, fire is a disturbance mechanism. It is one of four or five that occur in Australia—flood, earthquake and drought are other disturbance factors. You are really starting, more or less, in some areas at ground zero. Some of those plant associations, EVCs, will probably start to recover within one to three years. For some of the older classes—for instance, Eucalyptus delegatensis—you are looking at recovery time frames of 15 to 25 years. For some of the snow gum country you are probably looking at in excess of 50 to 75 years before you will see full recruitment and composition of those communities that existed before. You are also seeing effects where you will get excessive nutrient sediment run-off. You will see changes in hydrology: certainly the streams will take one to five years to recover, particularly after flash flooding events. There are myriad effects that come to the community downstream. You have basically extinguished a large part of the 1939 ash regrowth in those areas that were burnt, so those ash timber resources are not there, unless they are salvaged. There are a myriad effects that will go on for many years. Part of this paper that I wrote is that people do not understand that fire is a very large landscape style event and has effects a long way from the boundary of the fire.

CHAIR—Do you see the salvaging of the mountain ash in the National Parks area as something that would be beneficial to those regions in the longer term?

Mr Bentley—In economic terms for the sawmills and those associated with the timber industry, yes, I think you could see an argument for it. On the other hand, from the park's point of view, they would see that the removal of that timber takes away that nutrient from the ecosystem and, to some lesser extent, pauperises that particular plant community.

CHAIR—Is there a balance or is it one or the other?

Mr Bentley—My thoughts are that, if you properly went ahead with the salvage program over those areas that were accessible—and remember that some of these areas are not accessible so they would require large amounts of road to get to them—you would probably see a timber resource available for 12 months to two years after that spoilage of the timber starts to happen. So you are looking at a very rapid salvage program if you are going to get any value out of it, remembering that there is a downside in putting in far more road, probably, than there is now.

CHAIR—That is why I ask if there is a balance. You may leave some parts; but with other parts, without having a huge effect nutrient wise, you could also gain some economic advantage.

Mr Bentley—With some careful management you would probably get a reasonable amount of timber, remembering that the recoverable ash species in many areas in the high country only constitute five to 15 per cent of the land surface. They are not huge areas. A lot of those areas are only pockets of ash.

Mr SCHULTZ—Mr Bentley, one of the things that you have alluded to has constantly been put to this inquiry over the weeks that we have been hearing evidence in New South Wales, the ACT and Victoria, and that is the concern of people at the local level about what one person described to me as the administrative monoliths which are far removed from the fire site and which have systematically ignored local advice and local knowledge about the fires at the coalface and how to fight them. Do you think that particular concern in the community is contributing to the fall in volunteer numbers? As an example, on page 5 in the submission, you refer to the fact that the CFA volunteer numbers in Victoria have gone from 120,000 in the early 1980s to about 68,000 currently. That is an alarming drop in what I and many people refer to as the people who do most of the work in terms of the suppression of fires at the coalface. Do you think that the monoliths are driving those sorts of community minded people away from the volunteer organisation, as far as fires are concerned?

Mr Bentley—I have a two-part answer to your question. Firstly, I am ex-CFA and I am also ex-NRE, so I know both sides of the fence. The issue that you are alluding to there is in fact worse. The latest figures from the CFA are 59,000, down from 120,000. The issues with the CFA are in three parts. The first factor is one of social demographics—there is an ageing farming-rural community. The second factor is, because of that ageing population and declining rural community numbers—some shires in Victoria have lost up to 30 per cent of their population in the last 10 years—fewer people are available to go to the CFA and participate. The third factor is the introduction of competency based training and a new ethos of fire management. Rightly as you say, it is partially coming from the monolithic environment of Melbourne-Sydney-Canberra, and it is all having an effect. It is a tripartite effect—there is not one single issue. The other problem is that young people are leaving the country to go to the cities to find work.

Mr SCHULTZ—Would you be surprised, and indeed alarmed, to know that yesterday we heard a very emotional submission from a family in one of the small rural communities? They described the circumstances of a young man in that family being left to his own devices because nobody could listen to him or assist him in his efforts to do something constructive about stopping a particular fire at a particular area. His evidence to the committee was quite dramatic and stark inasmuch as he was a young man who now, because of his experience, had second thoughts about volunteering himself to fight fires again in the future.

Mr Bentley—I am not surprised at that at all.

Mr SCHULTZ—Do you think that sort of illustrated, very serious issue would flow on to other volunteers, most of whom are the remaining young people who have seen their fathers—indeed, their father's father—through generations being placed in situations where they went in and quickly suppressed fires, and who are now being pushed aside for a philosophical direction which they believe is putting their lives at risk? Do you think that those remaining people will think very seriously about continuing their voluntary contributions?

Mr Bentley—As late as last night we were discussing that very issue with a young man from Skipton, just south-west of Ballarat, and he is not joining the CFA for the reasons you put forward.

Mr HAWKER—Dr Tolhurst, in your submission you make the comment:

It seems that both in the case of the Canberra fires and in the Victorian fires, fire suppression resources were not engaged in sufficient numbers quickly enough to control the fires in their early stages ...

and so on. I do not know whether you are aware, but a couple of days ago the inquiry was told that there is a belief that quite a deliberate decision may have been taken in the case of Victoria to allow those fires to continue in their early stages as a means of trying to catch up with the controlled burning that had not been done for the last few years. Do you have any reason to believe that is a reasonable observation?

Dr Tolhurst—No, I find it difficult to countenance, given my experience within the fire agencies in terms of taking direct action—particularly under those severe fire weather conditions—that it would be let burn to achieve broader management objectives under those conditions. If it was the end of March or April then I could easily understand that. I understand that at the time there was a major fire down in the Yarram area that was consuming a lot of resources, as well as about 90 other lightning fires that were being worked on. My comment in the submission—regardless of the fact of the number of fires that were burning—was partly based on, I think, the almost reluctance to actually call in outside help earlier to deal with the overload. I do not think there were any fires actually left just to burn in Victoria.

Mr HAWKER—But we did hear evidence that the Razorback burnt for six days before anything was done.

Dr Tolhurst—When you say there was nothing done, there may not have been anything done on the ground but there was certainly some monitoring going on of what the fire was doing, and there would have been an active decision made that there was a higher priority elsewhere. So in

terms of there being, perhaps, no active suppression on certain fires, that is true, but that is a different proposition to what you put to me earlier, saying that it was being left to achieve fuel management objectives. I do not believe that is the reason it was left. I believe that the reason it was left was that it was considered a lower priority in the suppression line of things. I was a bit surprised after week one, I guess, that we still had all those fires going, and when I made some inquiries as to why that might be the case I was told, 'We haven't got the resources to do it.' My immediate response was: 'Have we asked for additional resources?' I know New South Wales was busy, but we have learned over recent years how effective the interstate and even international arrangements can be. It seemed to me that that was cranked up too late in the whole episode to be as effective as it might have been if it had been cranked up in the first two or three days, rather than after two or three weeks. So that is where my comment comes from.

There is also an additional operational consideration to be made there, where the constraints on being able to camp people—and that includes incident management teams—out closer to the fire line, so that we have large travel times, reduce the amount of work that is actually done on the fire. I think there have been some significant advances made in fatigue management and occupational health and safety, but that has not been balanced yet with effectiveness in terms of operation. I think where we were expecting people to spend perhaps two or three hours travelling to a fire and then two or three hours to come back to wherever they were camping, it wasted a lot of valuable time. In some cases we could have achieved a lot more if there had been another four hours in the day spent actually on the fire suppression effort. It would have meant we would have been able to get to some of those other fires earlier. I guess that is an operational thing, but it has a big impact, in the end, on the total outcome.

Mr SCHULTZ—What about the regular, repetitive criticisms about the '9-to-5 professionals', where groups would come in and work a shift and then move out, the scenario you have just painted being compounded by the fact that the replacement shift took so long to get back to the coalface to participate in the actual suppression exercise?

Dr Tolhurst—I think '5-to-9' might be closer to the mark. I think '9-to-5' is a bit of a flippant comment, but again I believe there is room for significant improvement in the changeover between control and the changeover at the operational level. There are significant areas of improvement that can be made there. It does not matter whether we are talking about the incident management team or the operational people actually out on the fire line; I think there is significant room for improvement there. There was a lot of slippage, if you like, in the information exchange, both on the fire line and in incident management teams, where people were being turned over too quickly. You had changes in strategy; you had important information that was missed, even though it may have been in a written document somewhere. It is my experience that a lot of people on a fire line are not that keen on perhaps reading a 40-page document.

Mr SCHULTZ—Getting back to the issue of the declining number of volunteers, is the scenario of paid government people boasting in some instances of earning up to $3,700 per week in overtime also having a negative effect on unpaid volunteers who are there giving their all for the community?

Mr Bentley—That is an age-old problem that goes way back to Ash Wednesday and beyond. It has always been a bone of contention with volunteers who have given up their jobs and

livelihoods and have travelled far from home to fight fires to come and see people on regular overtime doing exactly the same job. It is a problem that has gone a bit further now, particularly as many of the PFF—the project firefighters—are much younger and are recruited for that reason. The other aspect of that is that the average age of the CFA volunteer work force is increasing rapidly.

Mr HAWKER—I have a follow-up question for Dr Tolhurst. In your submission you said:

> The prospect of litigation and the need for information and accountability has blown the size of Incident Management Teams out of proportion. The need for large office space and high-tech facilities such as online computers, faxes, photocopiers, GIS printers, telephones, radio communications, etc. has lead to Incident Management Teams being located a long way from the firefighting crews and the fire.

You say that it is out of proportion. Has it gone even further than that—that the ability to actually fight the fire with someone so far removed from the face of the fire has been another reason why this fire got so far out of control?

Dr Tolhurst—I am not trying to be a Luddite: a lot of the technology is really useful and has to be seen as a useful tool. But I am suggesting is that is a bit like the tail wagging the dog rather than the other way around in that we are becoming slaves to the technology to some extent. Good intelligence and communication is vital to any firefighting effort. What I am suggesting is that we are spending so much time with some of the technology that it actually starts to break down the communication and effectiveness.

Your point is a good one in that there does need to be a review of how we use that technology. The level of expertise required to run it is also an issue. I came across some people, for example, working on GIS maps where the simple solution was to photocopy an existing topographical map and draw a few lines on it. That is not very high-tech—but it is effective. Instead, we had people working on GIS producing maps which were very difficult to read out in the field. They looked nice until you actually tried to get the detail off them. We really need to be questioning how and how much we use this information.

The point I make is that we need to readdress this balance. The intelligence from the fire line and how we are dealing with the fire needs to be much closer than it is at the moment. It is almost becoming an office exercise—a bit like a board game rather than really dealing with issues online. At the same time, in such a big fire, we need to have a good overview of the fire, and that is where the technology can be very useful, but it has got to be balanced.

Mr Bentley—I have been an incident team controller and also a specialist planning officer and intelligence officer over the last 20 years both for search and rescue and for fire. In my last trip to South Australia I acted and worked on the fire over there as both a planning officer and as a controller. I always insist on being as close to the fire front as is practicable and possible and visiting the fire line at least once a day.

Mr HAWKER—Thank you, that reinforced what I thought. Dr Tolhurst, I asked Professor Attiwill this question earlier and he referred it on. In his report of your address to a seminar, I think in March, he put your position as follows:

In the long-term, more prescribed burning, primarily aimed at achieving ecological objectives, will help reduce the occurrence and impact of large and intense bushfires. This will simultaneously reduce the cost of emergency operations and disaster relief and achieve better land management outcomes.

Has any work been done? Is there some way of actually quantifying what you have said to demonstrate that the cost of firefighting could be reduced if controlled burning were increased?

Dr Tolhurst—I have been involved in some research, and I will just start off by saying that the Bushfire CRC, one of the major programs which I am heading up, is looking at risk management. I consider that all we are talking about here is actually about risk management. We hope to set up a decision support system that will incorporate how we trade-off the economic, ecological and social consequences of different management options given the fire environment that we have. We have not got a comprehensive system at the moment.

In Victoria we did a study a couple of years ago where we looked at the effectiveness of broadscale fuel reduction burning. The result of that work basically showed that the burning in the fuel management's zone 1s—the areas closest to private property or high value assets—was good value for money in that the fires were running into those zones and were actively helping fire suppression efforts more than would have been expected just on the basis of chance. Zone 1s represent somewhere between three per cent and five per cent of the parks and forests, a pretty small and very localised area—up against people's back fences, effectively. So that is good value for money. We did not address whether enough of that was being done but what was being done was effective.

Similarly, in fuel management zone 2s, which are strategic corridors, it was good value for money in the sense that it was assisting in the suppression effort. Fuel management zone 2 might represent up to 20 per cent of the estate, so that leaves us with about 80 per cent of the public land. But the issue for protection is less clear there. We found that there is an even chance as to whether a fire would run into a prescribed fire across that other 80 per cent of the landscape. We were getting benefits from those fires in the landscape but only in proportion to the number that had been done.

It was mentioned earlier that we have also done a study from an ecological point of view looking at how much fire has been applied to the landscape. We found that there was only one of the broad vegetation types that got anywhere near an ideal age/class distribution at a landscape level. What that is telling us is that we need to be spreading fire across the landscape more in a deliberate fashion, either through prescribed fire or managed wildfires, to achieve a better balanced biodiversity and an ecologically sustainable objective. If we do that we will get some benefits from a protection point of view as well.

There was a fire up in the Big Desert before Christmas, you may have remembered—this satellite image is not a very good picture of the Big Desert—and you can actually see a whole sequence of fires. Those light areas are recently burnt areas where a whole sequence of lightning strikes started fires. You can see islands there internal to those fires, which are now protected by wildfires. The chance of a wildfire running in and burning this unburnt patch is very low perhaps for the next 10 years. So in this case fire has actually protected other areas from fire. If we want to maintain old-growth forests or long unburnt forests the best way is with fire.

Here is another modus satellite image taken during the fires in December up in the Mallee. There are a number of unburnt patches in the middle of this area—an area measuring 50 by 75 kilometres. Why were there unburnt patches? If you overlay the image of the more recent fires you can see there is a strong correlation between where the recent fires were and those unburnt patches. Those unburnt patches provide important habitat for animals to survive the fire and then recolonise the area. Seventy-five kilometres is a long way for a little skink to walk from an unburnt area back there. The time of recolonisation is related very much to those unburnt patches.

The fire that we had this summer did not, in a lot of areas including the Big Desert and eastern Victoria, leave these unburnt patches. The time of recovery in some of those areas is going to be enormous. Up on some of the high plains it is not too bad, but down in some of the foothill country it has been quite comprehensive in the way it has burnt those areas. What I am suggesting is that if we have more prescribed fires across the landscape, not only does it provide opportunities to suppress fires, it provides refuge for plants and animals during the fire event and provides boundaries from which you can actually help suppress fires. There have been quite a few examples over the summer of where prescribed burns were quite useful in the suppression operation. I am in the process of documenting that but that work is not completed yet.

Mr McARTHUR—On the matter of fuel reduction burns, a number of witnesses have said that their targets by the government have not been met. The Auditor-General confirms that. Do you think the problem of not reaching these targets is one of resources and money or one of very complex statutes and regulations put out by state governments?

Dr Tolhurst—You did not give me enough options. I think resources, in terms of both the number of dollars and people and in terms of expertise, are a critical issue. It is also an issue of the increasing amount of pressure to take less and less risks, such as the smoke entering a particular airshed or the fire getting away. All those pressures are actually reducing the amount of area that is being prescription burnt. I see conducting fuel reduction burnings, from a protective or ecological point of view, as a risk management process. The reason that we light those fires is to reduce the risk of loss of particular species and to reduce the impact that a wildfire may have on a particular asset. We have to accept a certain level of risk that some prescribed fires are going to get away. We then have to take some steps to make sure that those risks are minimised and there is an ability to mitigate any adverse impact that those escapes may have.

In Victoria, the statistics show that about three per cent of prescribed fires become wildfires. We have to decide whether that is an acceptable level of risk. Three out of 100, or 30 out of 1,000, fires have escaped. Some of those escapes might be relatively minor and some might be more major. Very few of them become major fires but some do. But we have to support the organisation that is carrying out those prescribed burns and say, 'This is a risky operation.' If we wind back that risk level and say, 'We are not prepared to accept any escapes,' immediately we have probably reduced by half the number of days and situations in which we can actually—

Mr McARTHUR—What do you think, Mr Bentley?

Mr Bentley—I am fairly much in agreement with what Kevin is saying. There is a degree and element of risk. Development of prescriptions in Victoria for lighting prescribed fires is quite

good. In my fire suppression management experience, I have only seen two examples where substantial damage has occurred outside the bounds of prescription burning. One of those was related to the loss of houses on the west coast. But generally, most prescription burning I have seen has been effective and has been completed with very good results and very few escapes.

Mr McARTHUR—Can I get a comment on the 2003 fires compared to the 1939 fires? A number of witnesses have told us that the 2003 fires in the north-east ran for 50 days and there were only two bad fire days. There was some public commentary suggesting it was a very bad fire situation. Could you give us your professional assessment of 1939 versus 2003, or how bad 2003 was in reality?

Dr Tolhurst—I would say there were three bad fire days, rather than two, out of 50. That was part of a weather cycle pattern. I guess the worst fire weather we had in 2003 was not as bad as the worst fire weather on Black Friday in 1939. One of the major differences between the 1939 fires and the 2003 fires is that there were a lot more fires on the landscape in 1939—uncontrolled fires that coalesced to create the damage that they did—whereas in 2003, we basically had eight fires that eventually linked up. There were actually fewer fires in the end that caused the movement across the landscape. The other thing was that the population was much greater in 2003 compared to what it was in 1939, and yet the impact on dwellings and on life was actually much less in 2003. I would still say that it was probably a one in 50-year event we have seen. I do not think the weather conditions were as bad, although the preceding drought was probably worse in the underlying dryness of the conditions. It is a bit hard to compare apples with oranges.

Mr McARTHUR—Some other witnesses have contested that argument. What do you say, Mr Bentley?

Mr Bentley—I was not in the high country during the 2002-03 fires. I was in South Australia and then back here in Ballarat, writing reports. My view of it is similar to Kevin's: there were a lot less people in the landscape and a lot less built assets in 1939. The 1939 fires were under worse environmental climatic conditions and burnt a much larger area. There was much more fire across the landscape in 1939 than in 2003. The other interesting thing I would like to put into the mix relates to some of the dendrochronological work I have done in the high country analysing fire scars. It shows that 1926 was also quite bad in the high country. One of the things we do not have is a really good handle on the spatial extent of those fire histories that go back a long time, because there is no documentation. I tend to get a little bit nervous when looking at what people say was the impact of fire when we have not got any paperwork or living memory to back it up with. You have to go looking for the clues in the landscape.

Mr GAVAN O'CONNOR—Can I ask you to comment on the local land use planning. Is local government up to the task? You seem to be suggesting that the urban lifestyles that we now enjoy are, in fact, placing life and property at greater risk and there is not the planning that is required.

Mr Bentley—There are three parts to that. The first part is no, I do not believe we are up to the task. The second part is that the potential for loss of life, property and other built assets is probably at its highest on the urban-rural interface. The third part is that the tools that people are using to define what fire risk hazard assessment is, what the danger from fire to a particular

development is—whether built or proposed—are not up to scratch. Some of the work that I have done is aimed at quantifying some of those risk factors, and I believe that Kevin's SCRC work will carry that further. The blame cannot be thrown at local government, I just do not believe the expertise was there; nor has the research been done.

Mr GAVAN O'CONNOR—I found interesting your comment that research agendas are driven by academia rather than the needs of the community. What would you like to see on the research agenda? How would you prioritise the limited resources that are being brought to bear?

Mr Bentley—We really have to come to grips with the issues of fire management, fire risk, fire hazard and the threat posed by the fuel hazard. That is where I see the pointy end of the research has to go, so that we can make valid land use planning decisions based on fact, not on fantasy.

Mr GAVAN O'CONNOR—Dr Tolhurst, how did we get out of it—across Australia—so lightly, given the conditions that existed, the extent of the fuel loads in the forests, the climatic conditions and the prolonged drought? Is it just good luck or was there some good management in there? One of the difficulties with inquiries such as this is that they tend to act as a lightning rod for elements that have an axe to grind, a particular position to put or a long-running agenda that has never been satisfied in any debate. Any hoary old theory tends to surface in inquiries like this and is trotted out as an expert view, based either on local knowledge or on some obscure paper somewhere. The point I am making is that, somewhere in all of this, there must have been a degree of effectiveness in containing the damage to property and life that we saw in Victoria and in New South Wales. It did not occur in the Australian Capital Territory, where 600 houses went up. What is your view?

Dr Tolhurst—As I mentioned at the beginning, one of the things I think we have become much better at is fire suppression, particularly in the early stages of fire. During the time the fires were occurring Victoria, 159 other fires started at the same time. They were basically all contained without much damage being done. Ninety-nine per cent of all the fires we have in forested areas—on public land and in parks and forests—are contained to a relatively small size. It is only about one per cent of fires that burn those large areas, that burn 99 per cent of the area.

I think we have become good at that—too good at it, I would suggest. This paper has statistics from 1920 onwards and, if we look at the fire statistics for forested areas in Victoria, we can see that over the last 20 years there are no blips. We have not had any big fire seasons. Part of that is the effectiveness of the suppression. What we have here is an accumulation that would spread out nicely over that period of time. We have tried to bottle up the problem. We have been very effective at that suppression, and that is part of the reason why there were no fires elsewhere in the state. We kept the standard of cover in other parts of the state. To cover ourselves, we did not put all the resources into the one fire we had; we also looked after the fires we did not have, but eventually got.

The other side of the coin is the impact it has had on human life and property issues in particular. The CFA in Victoria have been particularly good at getting across the message to the community about what sorts of preparations you need to undertake and how you deal with things when the fire comes. I think one of the reasons there was a relatively small impact on the rural communities, compared with what it could have been, is the preparedness of those local

communities. I know there has been a lot of angst and that they did not feel they got enough support and all the rest of it, but I do not think we can actually guarantee that everyone is going to get a fire agency supporting them in that crisis. They probably do not appreciate how much support they did in fact get from the information and the warnings they got.

During the fire I was involved in providing some fire behaviour prediction information, up to seven days in advance of the fires. That was being used to go out and make sure that people had plans in place, that there were preparations for when the fire arrived. That did not happen in Canberra. I visited a colleague of mine, Dr Malcolm Gill—whom I guess you will be well aware of—recently in Canberra. It is interesting to note that, when you look at a map of Duffy, there are seven houses around Dr Gill's house that survived, and the rest of Duffy looks pretty ordinary. Why did those seven houses survive? Because he alerted his neighbour a number of hours before the fire got there. He said, 'Hey, the fire's coming we need to do something about that.' He went and told them in a few minutes what they needed to do, and that was quite sufficient to save a number of houses. As you might imagine, those people were very thankful afterwards for that bit of input.

It was not the fire agency; the fire agencies were not there for over 24 hours after the fire had passed. It was that bit of information and the empowerment of the local community that made a difference. They were right in the line of that fire. So I think the difference between Canberra and Victoria in that sense is the amount of preparation that the community had. It was partly pre-warning, but it was also a bit of education over a longer term. I think we need to take that even further and have a greater empowerment. The CFA is a fantastic vehicle for doing that. It is a primary community group in a lot of areas now. Local government has become more centralised, schools have closed down and a lot of churches have closed, and what is left? The CFA. It is such an important community group. In some of the rural urban areas we have the community fireguard groups. They are not necessarily involved in the CFA, but they are empowered themselves to understand what fire means in their environment and how to deal with it. To answer your question, the reason is partly that there has not been as great an impact as there might have been, firstly, with regard to first-attack effectiveness and, secondly, with regard to community involvement.

Mr GAVAN O'CONNOR—You obviously observed the fires first-hand. Could you comment on the cooperation between the agencies—the DSE, the CFA, the police and those sorts of agencies involved? I ask this question because there is difficulty in the one that you just explained where a person's property or livelihood is threatened. An agency has been called and it has not arrived or the support is not there. We have heard evidence here that resources were available that were not deployed for some reason, so there is a lot of difficult evidence to sift through here. Could you give an overall comment on the level of cooperation between the agencies?

Dr Tolhurst—I thought the level of cooperation was pretty good. There was a lot of interchange between organisations depending on who had the particular skills. In some cases I saw CFA strike teams effectively under the guidance of a DSE person, for example, where that DSE person had particular local knowledge or abilities. I saw CFA people—more particularly the career CFA people—actually have oversight over some DSE people's operations. I think the interchange worked quite well. It would be easy to go to individual examples of where there was

some antagonism or jibing but that happens in a footy match and that is part of life. Generally speaking, the two organisations worked fairly well together.

You have to appreciate there are different skills in the two organisations and quite often they were working in different environments. The CFA tended to be working more in the rural area, which I think is appropriate, and the DSE, Parks Victoria and Hancock's people were working more in the forest environment. In the field there tends to be a greater separation than there is higher in the organisation in the management team, for example. I am not sure whether that answers your question—

Mr GAVAN O'CONNOR—Yes, thank you.

CHAIR—What is your view of the evidence that we got—as I mentioned to Dr Attiwill before—of grazing in the high country increasing the fire risk?

Dr Tolhurst—I do not think there is any definitive answer to that. A few months ago I saw some of Maisie Carr's plots up on the Bogong High Plains. You can go to one plot which has been a grazing exclusion plot—for those were not familiar with that, I think they were established in about 1944 so they have been ungrazed a long period of time—and see that inside the fence area has been burnt and it has not been not burnt outside. You go to the next plot and you can see the reverse: it has burnt up to the fence and gone out.

I guess for a bigger contrast you can compare the fire that burnt in Caledonia in the 1997 which burnt through an area that had been under grazing and which burnt very intensely. Looking at the area that was grazed this year, it was quite patchy. It was more about how the fire got to those areas and how it burnt. In the Caledonia fire it ran up from a low valley up and across the high country and out. Whereas the fires that started this year basically started in the high country and burnt down. I think you can show either argument. I guess there was some evidence in that in a lot of that grazed country it was shrubs that burnt and not so much grass. If it was patchy, it was the shrubs that had burnt in preference to the grass. I do not think that grazing can clearly be defined as being massively helpful or massively unhelpful from a fire suppression point of view.

CHAIR—You mentioned earlier that in your view there were three bad weather days out of the 59. So presumably you would not agree with the Premier yesterday when he described the period of the fires. He said:

These were appalling conditions; high temperature, low humidity, high wind velocity.

Or did that just apply for those three days?

Dr Tolhurst—Those three days were the days that we had major runs of the fire. In between times it was very dry. That was one of the main reasons that there was difficulty suppressing the fires—because it was so easy for the spotting to take. The dryness was extreme for the whole period of time, but I call it bad fire weather when the fire can spread at a rapid rate and I consider there were only three days when that occurred. I am not sure that we are talking about the same thing here. The underlying dryness was quite extreme and when the fire ran it burnt quite comprehensively.

CHAIR—As you said, that applied just to three days out of those 59 days that the fire was burning.

Dr Tolhurst—A lot of the other days the fire was moving two or three kilometres or less in a day. It was really not moving very far in the scheme of things but still quite a bit. It was just the perimeter of the fire that made it really difficult. I calculated at one stage that the fire perimeter was 7,000 kilometres in Victoria. That is from here to Perth and back; it is an enormous area to try and control the edge of. It was the size of the fire as much as the severity of the fire that was a major issue from a suppression point of view.

CHAIR—Thank you very much for your evidence and your submission.

Proceedings suspended from 1.02 p.m. to 1.44 p.m.

HARRINGTON, Mr Patrick David, Director, Barricade Fire Protection Pty Ltd

PEEK, Mr Leo Kenneth, Director, Barricade Fire Protection Pty Ltd

CHAIR—Welcome. I know you were here earlier so I will not re-read the official part about evidence. We have your submission, No. 86, which has been authorised for publication and, as such, forms part of the evidence for our inquiry. We have before us some additional information which we will to take as an exhibit for the inquiry. To start off, if you would like to make some opening statements, and we will then proceed with questions.

Mr Harrington—Over the last 12 months or so we have been introducing a fire suppression chemical technology into Australia. In many ways it is capable of mitigating the loss of life and property from the hazards of fire, and from the situations that we have heard about earlier today and in the last few submissions. Our submission is there, and we thought that the committee should be aware that there is a technology available that can help alleviate a lot of the loss of life and property. I have summarised the submission here; would you like me to go through that briefly?

CHAIR—It is up to you. It is probably a good idea to go through that briefly.

Mr Harrington—The technology consists of a super-absorbent polymer. It is a polymer that is not unlike the polymers used in baby nappies and as desiccant type gels. It has the capacity to absorb up to 800 times its weight in water. What it does is to solidify or gel the water. That is then subsequently coated onto surfaces. It has great adhesion properties, and what needs to happen is that the water needs to boil off before the substrate behind it can combust. It has been proven to be up to 30 times more effective than water alone.

In the case of a bushfire, when the bushfire front moves through an area, the amount of time that a structure is at risk is two to three minutes. This product is capable of providing 10 to 15 minutes of protection in those sorts of temperatures and firestorms. The technology is non-toxic, environmentally and ecologically safe and non bio-accumulative. It is fully biodegradable and easily washed off surfaces at the end of its application. It also protects against radiant heat. If a structure is coated with the gel, it is capable of withstanding many minutes, up to a half-hour or so—depending on the temperature, of course—of radiant heat from a fire which is approaching. It is also capable of protecting against the flashover of the flames touching the surface, and it continues to extinguish burning embers for a long period of time, for 24 to 36 hours after the bushfire has passed over the structure. In many situations the houses and property burn after the bushfires pass. They survive the flashover and the radiant heat as the bushfire approaches, only to burn later when an ember is blown back and settles on the eaves of the house.

It could also be used as a firebreak. We tested it with the National Parks and Wildlife Service in New South Wales last winter when they were doing a back-burn. We coated an area with the product and the back-burn went successfully; the area that we coated was still green and untouched. It can be used to protect firefighters in situations where they are trapped in their trucks. It reduces the overall water requirements to suppress a fire because it keeps water from running away. Instead of spraying water onto a surface and watching it drop to the ground, you

spray it onto a surface and it stays on the surface. So we use less water in the suppression of bushfires. It reduces overall environmental damage because there is less water run-off and fewer products of combustion and other chemicals are washed into the streams.

The technology has been tested by the National Institute of Standards and Technology, which is attached to the United States Standards Association. That is where we are able to say that it is up to 30 times more effective than water alone, because of the comparison that was done against water and standard firefighting foams that fire brigades use regularly today.

Over the last three years there have been innumerable instances of properties and assets that have been saved with the application of the technology. It is easily applied and easily used by home owners, fire brigades and national parks people, and from helicopters. It can be used to protect utilities and assets. For example, it has been used by the Florida Light and Power Company in the United States to protect their power poles from burning during bushfires, and they have saved thousands of poles and millions of dollars in replacement costs. Not only that, they have kept the supply available through the course of a bushfire. We see it as being able to protect community assets and private assets in Australia, reduce the loss of life and save overall community expense.

Our recommendations are such that there be incentives for use, maybe some sort of subsidy or insurance rebate. There is currently an import tariff which could be addressed to reduce the overall cost to the community of the purchase of the technology. We would like to see some encouragement and use by the fire services and utilities, because of its diversity of use, and some funding for further testing and development.

This photograph shows the basic home owner application package as it is presented today. As you can see from this version, it connects directly to a garden hose and you can then spray anything very easily.

Mr BARTLETT—What quantity of Barricade compared with water goes through if you connect that to a garden hose?

Mr Harrington—This induces at six per cent, so it uses six per cent of concentrate to 94 per cent water.

Mr Peek—There is five litres of Barricade in here.

Mr Harrington—Depending on the thickness of the application, it will do about 60 square metres from one drum. It is just a modified hose nozzle with a pick-up tube—a standard venturi type arrangement. There are large capacity nozzles for the larger property owners so you can apply more in a shorter time if you have a larger water supply. You can see here a photograph of it being applied easily through a garden hose. Typically, that is what it looks like—a coating of vaseline. That is coated onto glass and, as you can see, it is easily wiped off and washed away, but it does adhere and will stay there for up to 24 to 36 hours, depending on the ambient temperatures.

There is a test in one of our demonstrations of the technology where, typically, we coat half a piece of board and leave the other half uncoated. We then subject it to a flame of about 1,600

degrees Celsius for upwards of 10 minutes. The uncoated board disappears because it is burnt and the coated side stays there. It is able to provide complete protection to glass, which is a major point of ingress of fires, as well as the underside of eaves. This photo here shows that you can easily coat the underside of eaves and that it sticks upside down.

Finally, the technology was developed by firefighters in the United States. What we have here is a standard piece of equipment used by ordinary fire brigades all over Australia and, in fact, all over the world. This existing equipment can be used with the technology. That is a very quick summary.

Mr Peek—This technology was developed by a fire chief in the United States. It has been in the United States for about six years and has been used over there with growing success every year. They are saving now between 300 and 500 homes a year over there. It was used in the Montana fires and other fires there. Apparently they are using it in the new crop of fires they are having over there now.

Fire services like the LA county brigade carry the Barricade, this gel technology—there are several different varieties but, from a commercial perspective, we are interested in this one—on every truck that goes out of their station. I am a member of the Currumbin Valley Rural Fire Service, and our fire chief was keen to test this for use in case a truck got caught in a back-burn situation instead of just spraying water over the truck, which has proven to be pretty unsuccessful.

We did some demonstrations there recently where we burnt two cars, one coated with Barricade and one not. We made up two corrals out of dry camphor laurel trees and then we had some thermocouples inside to measure the temperature inside and outside the vehicles. We put some balloons inside to see if they would burst to see what the temperature inside the vehicle was, and also some beeswax was inside, which melts at 27 degrees or some such temperature. We then lit it—and Margaret May, the member for McPherson, was witness to this test—and the car that was not coated with the gel was totally devastated, but the other one we actually drove out of the situation. The temperature outside the vehicles was recorded at in excess of 900 degrees; yet, inside the car with the gel coating on it, it never got above 21 degrees. In the same sort of test we had some mock-up dog kennels, if you like, some large wooden structures. We coated one and did not coat the other. The coated structure is still there today, but the other was totally destroyed.

What we have been trying to do over the last 12 months is to talk to some fire services to get them to investigate this new technology. We have approached several fire services. The Queensland Fire and Rescue Service have got some of the product there. They have had it for a year or so now but have not tested it. To our mind and from our experiences in the United States, we know that this product works. It is designed more for the home owner for self-help rather than having to rely on fire brigades and other agencies to come to their defence. It was proven in Canberra that you could have had a thousand fire engines there and they still would not have saved the devastation that happened because of the burnability of the houses. The houses were not designed for that sort of bushfire condition. However, if a product like Barricade had been used in that situation, I am quite confident we could have saved 30, 40 or 50 per cent of those houses. I say that purely because they are doing that today in America; they are saving these

homes in situations where they are described as being unsaveable when the fire front is coming through, and people are coming back to houses that are still fully intact.

Mr HAWKER—I will ask the first and obvious question: how much is it?

Mr Peek—To do a standard home in Australia today is $750, including GST. So if you take the GST off, which we would like to see happen but probably will not, that would bring it down to $650.

CHAIR—Apply a sales tax instead?

Mr Peek—One way or the other, it is currently $750. Base that on the volume of sales we are doing today, which is pretty much near negligible—if the sales go up, the price comes down because we can import the product in larger quantities or, as we intend to do, can manufacture it locally.

Mr GIBBONS—What quantities of the gel would be required to do, say, a 15-square home?

Mr Harrington—At the moment we package it with the applicator kit, which is that hose kit—which is the arrangement shown in this picture—and three containers—

Mr Peek—That is what we call the home defence kit, and it is $750.

Mr Harrington—That is enough to do a 20-square home.

Mr HAWKER—You talked about trialling it for 12 months. Has anyone in Australia actually started to use it, other than in your trials?

Mr Harrington—Yes.

Mr HAWKER—You said that it is okay on glass. That has always been one of the weaknesses of glass.

Mr Peek—Yes, it is one of the points of impingement on most houses. One of the demonstrations we do is to get picture-frame glass, coat one side of it, put our hand on the back of it and put a bunsen burner on the front. It will not break.

Mr HAWKER—A window like that—

Mr Peek—I have done tests with the Baulkham Hills Bush Fire Brigade with glass such as that on window frames and doors—this was done with Chris Anderson several years ago—to demonstrate the fact that it will hold. It does not come through.

Mr BARTLETT—It does not run off the glass?

Mr Peek—It does not, no.

Mr Harrington—You coat it to about a quarter of an inch thickness and it stays there.

Mr BARTLETT—The one question I have is in regard to your claims that it is non-toxic and environmentally safe. Could you outline for us the tests that were done in that regard?

Mr Harrington—Sure. The product at the moment is originated in France, and so the tests are done in accordance with European standards.

Mr Peek—EEC standards.

Mr Harrington——We have some test documents here. This test was on the acute toxicity in freshwater fish, and it has passed the European standard; this document shows an inhibition test in freshwater unicellular algae; and another shows a test for single dose oral toxicity in rats. These are some of the tests that have been done.

Mr BARTLETT—What about people?

Mr Harrington—These are all used to extrapolate from that, but the acute human toxicity is also available from similar tests which were all carried out in Europe.

Mr BARTLETT—Could you make those and the other ones available to the committee?

Mr Harrington—Absolutely.

CHAIR—Thank you for that. Assuming that that is all okay, what about the other issue, then, of residues? You say it can be removed just by hosing the surface with a garden hose.

Mr Harrington—The concentrate itself is a fairly viscous white liquid. When we induce it at six per cent, it absorbs 94 per cent water to six per cent of concentrate. Because it is water, over a period of time it does evaporate, which is why we say 'up to 24 to 36 hours'. Once you spray it on the surface, over a period of time that water content evaporates and the layer gets thinner and thinner. Take that to its nth degree and you come back down to the base chemical which is on the surface. That base chemical is easily hosed off. In fact, while it is a gel it is easily hosed off with a jet of water, and that base chemical is fully biodegradable. Its biodegradability is 40 per cent in 28 days, so in the best part of three months it is fully biodegradable.

Mr BARTLETT—If it is used on a timber surface, does any of the residue infiltrate the timber?

Mr Harrington—No, it does not.

Mr BARTLETT—Does a test show that as well?

Mr Harrington—No, it does not. But in the submissions that we have given you today there is an MPEG file at the back which shows a success story in Oregon of a fully timbered home, a log cabin, which was saved by the use of Barricade. The owners of the house were talking about how good it was because it left no residue.

Mr BARTLETT—No testing has been done in Australia, then, it has all been European testing?

Mr Harrington—In terms of?

Mr BARTLETT—Toxicity.

Mr Harrington—No testing has been done in Australia.

Mr SCHULTZ—I thought I heard you say that you had the Rural Fire Service in New South Wales test your product; is that correct?

Mr Harrington—No.

Mr Peek—Baulkham Hills.

Mr SCHULTZ—Did they just look at it or did they actually test it?

Mr Peek—We did demonstrations up there, and we tested it.

Mr SCHULTZ—What did you demonstrate on?

Mr Peek—We demonstrated on some wooden doors and glass windows. It was done on wooden surfaces, mainly, and glass.

Mr SCHULTZ—When did you do that?

Mr Peek—That was several years ago.

Mr SCHULTZ—What was the feedback from them?

Mr Peek—The local people were very impressed with what happened. They took it back to command headquarters and it fell into a great big black hole there somewhere and was buried.

Mr SCHULTZ—Can you mix this product with water in, say, an aircraft's bomb bay without any problems?

Mr Harrington—Absolutely.

Mr Peek—If you want to do that, we could add some food dye to it, a bit like the traditional fire retardants they have now, purely so that you could see the path where you were laying down the stuff.

Mr SCHULTZ—How does it form in terms of release from the bomb bay?

Mr Harrington—For that application, there has been some work done on that in the United States. They use a concentration lower than the six per cent. It does not need to stick to vertical

surfaces, it has just got to stay on the ground as gel. They use about a 1½ per cent concentration, which is less concentrate but it still falls like water. It is like thick water.

Mr Peek—Like large droplets.

Mr SCHULTZ—So what you are saying is that, when you mix it to that concentration you get a drop of water in the case of, say, an Air Tractor 802 fixed wing agricultural aircraft—which carries about 2½ thousand litres—with a far better penetration and holding of the water.

Mr Harrington—You do because what happens with water is that the water seeps through into the water table through the surface. The gelling nature of this gels it and keeps it from going through the surface of the ground, so it keeps it on the surface.

Mr SCHULTZ—What happens to the residue after the water has evaporated? I presume it will envelop and smother the flame, but what happens with the residue? How long does that take to break down?

Mr Harrington—Its biodegradability rate is 40 per cent in 28 days. So after 28 days 40 per cent of it is gone, after another 28 days 60 per cent is gone, after another 28 days 80 per cent has gone, and so on. So after about 3½ to four months it is pretty much gone.

Mr SCHULTZ—Have you spoken to the people involved in aviation about using it as a solid test on a blaze somewhere to see what the impact is in practical terms from the drop of an aircraft?

Mr Harrington—No, we have not.

Mr Peek—No, we have not here. We can only draw on the experience of what they have done in the United States.

Mr Harrington—One of the other advantages of this gel versus traditional waters or foams is that, when foam drops it is spinning on the way down and aerating and doing what foam has got to do, which is to form into a bubble, but that bubble is still filled with air whereas ours is filled with water. So what you find is that, if you have a large heat source, you get the up draughts coming, the foam takes longer to get through, or in some cases evaporates before it hits the ground, and the bubble bursts at, I think, about 170 degrees Celsius or thereabouts; whereas the Barricade gel being heavier forms what they call the bubblets, another American word, which actually fall through the fire plume and get to the surface you are trying to protect.

There have been numerous tests done on vegetation. When it is sprayed over your prize roses or your rhododendron, if you cover the tree enough, it will certainly stop any flaming of the tree. It will cause the photosynthesis process to cease for a while and may cause foliage drop, but the bushes will still be alive. There is certainly less trauma than a bushfire going through.

Mr McARTHUR—Have you been accredited by any firefighting agency in Australia?

Mr Harrington—Accredited for?

Mr McARTHUR—As an aid to firefighting reduction, such as firefighting equipment hanging on a wall that has got to be accredited.

Mr Peek—In that case, yes. I am from Queensland and I am accredited with the design and installation of special hazards and equipment, fire alarm systems, fire sprinkler systems, fire pumps, fire hose reels, foam generated systems and foam systems. I am also a volunteer firefighter and trainer with the Currumbin Valley Rural Fire Service.

Mr McARTHUR—What I am really asking is whether this product has been accredited.

Mr Harrington—No, it has not.

Mr Peek—No, and this is our stumbling block.

Mr McARTHUR—Have you made approaches to any authorities to get it accredited?

Mr Harrington—We certainly have. We have made approaches to the major rural fire services, being the New South Wales Rural Fire Service, the Country Fire Authority, National Parks and Wildlife, the South Australian Rural Fire Service and the Queensland Rural Fire Service.

Mr Peek—And in Western Australia.

Mr Harrington—We have been ignored by four of them. We have had one response from the New South Wales Rural Fire Service which asks us to comply with standards that are not relevant to this new technology. The New South Wales Rural Fire Service asked us to comply with a standard of foam. It is not a foam. It cannot pass those tests because it is not a foam. It is just irrelevant.

Mr Peek—The other test they want us to pass is the US forestry—

Mr Harrington—The other test is the US forestry test for gels which, for whatever reason, our suppliers in the United States, Barricade International, have opted not to do. The reason they want accreditation to that standard is to verify its toxicology, biodegradability, environmental safety and occupational health and safety long term, which we can do from a European perspective but cannot do from the American perspective because the American company has not put it through those tests. We have got similar tests, but not the same tests, out of Europe. That is where we are. We have been ignored by four and one has asked us to comply with something that we cannot comply with.

CHAIR—What is the shelf life of your product?

Mr Harrington—The product has been around for six years. We can extrapolate that to 10 with absolute confidence. It is probably closer to 15.

CHAIR—So it has a 15-year shelf life. So if somebody buys it at $750, sits it in the garage waiting for the—

Mr Peek—Because it is a liquid, it will settle, so you need to shake it up before you use it.

Mr Harrington—There is some stratification of the concentrates in the chemicals, which is easily rectified by giving it a shake.

Mr BARTLETT—What is its main ingredient?

Mr Harrington—Sodium polyacrylamide.

Mr BARTLETT—I am a bit puzzled as to why, if this is such a great product, it has not been adopted more?

Mr Harrington—We can only guess at that. Our feeling is that because bush firefighting is largely community based, largely volunteer, the people who are the candidates for the use of this know their local fire station and they know their fire chief and so on. We get lots of inquiries for the product and we send off a lot of information and what we think happens is that they go to third-party verification, to their local fire station, and ask what their opinion is of this product and they get an answer which is, 'Well, we do not know. We have not been told anything about it,' because there is nothing from the chain of command to say that (a) it is okay, (b) it is not okay, or (c) whatever. There is no direction; that is our feeling.

Mr Peek—That is right. One of the other uses for this product, as we talked about before, is cabin crew protection for firefighters caught on a bridge in a burn-back situation. AFAC New South Wales, the CFA and CSIRO are conducting very expensive tests in Jervis Bay somewhere on a cabin crew protection system for vehicles.

CHAIR—Batemans Bay.

Mr Peek—Batemans Bay, is it? We have been talking to the CSIRO now for two or three years. We have given them product to test but we just cannot seem to get anybody interested enough to further those tests, which prompted us to do our tests at Currumbin Valley. My fire chief was very interested to see if it would actually work and it was proved pretty conclusively; albeit that the scientific data could be argued from all sorts of angles because, one again, firefighters are not scientists.

One of our aims in coming to this submission, I suppose, was to try to encourage the government to ask the CSIRO to assist us with this testing, to take some product. We are pleased to give them the product free of charge and assist them with any design criteria on the applications of it, but to get them to do an in-house test for CSIRO or the Scientific Services Laboratory or WorkCover at Londonderry—somebody that is equipped with fire research testing facilities—we are quite prepared to go along with them and help them—

CHAIR—Are you aware of the establishment of the Cooperative Research Centre for bushfires?

Mr Harrington—Yes, we are. In fact, we have spoken to one of the engineers looking after that and given them an application system with the product, but it is yet to be used. We gave them that in March-April last year.

CHAIR—The CRC for bushfires was only being established this month.

Mr Peek—Okay; we thought it was CSIRO.

CHAIR—CSIRO are contributors to the CRC.

Mr Peek—We are not aware of that.

CHAIR—That is something you might take on board, to approach that CRC when it is fully established, which I think is imminent—it is this month. Various states, I think, are involved and Dr Tolhurst, who gave evidence here earlier, is involved in that CRC as well. Thank you very much for your evidence and additional information.

Mr Harrington—If I may make one additional offer: we would be very happy to have a live demonstration at a location of your choice—Canberra would be okay, it does not really matter—at any time. As long as we have a week or two notice, we are happy to put on a demonstration similar to what you have seen. There is an interactive CD in the back of the information we have given you today. There is an incredible amount of information and third party testimony for it, but nothing beats a live demonstration like a live demonstration. So we would be more than happy to attend at a location of your choice and demonstrate it.

Mr Peek—Or, conversely, talk to Margaret May, who has witnessed one of the tests up there.

CHAIR—She sent me an email yesterday to tell me about the demonstration that she saw.

Mr Peek—That is the Currumbin Valley demonstration.

Mr Harrington—That is the one that was done at Currumbin Valley, which was two vehicles—one coated, one uncoated—two fires, one car driven away and the other one utterly destroyed.

Mr BARTLETT—How readily available is it?

Mr Harrington—We have stock.

Mr Peek—A warehouse full, unfortunately.

CHAIR—Thank you very much again for your evidence.

[2.18 p.m.]

HODGSON, Mr Athol (Private capacity)

CHAIR—Welcome. I know you were here earlier when I read the aspect of evidence. We have your submission, which has been authorised for publication, so it is part of the evidence. Would you like to start by making some brief opening remarks and then we will have some questions.

Mr Hodgson—Thank you. First of all, I would like to make an apology for a gross error in the submission. On the first page, the last paragraph should read, 'When the Premier of Victoria announced an inquiry into the Victoria bushfires.' I apologise and mean no disrespect to this inquiry, but you would not have to be Einstein to realise that this really is a submission that was made to another review and in the time that I had available I did a pretty poor job of editing it correctly. If you accept that—

CHAIR—That is okay. I worked that out, given the comments from the Premier yesterday about our inquiry.

Mr Hodgson—I also omitted to give you in detail two references that I refer to. I think you probably know them. There is the Auditor General's report into, firstly, fire prevention and preparedness. I heard that referred to here this morning. You may or may not know that one, which is the Auditor General's Special Report No. 16 into Fire Protection, April 1992. In any pursuit of a couple of themes that have been spoken about today and that I will speak to, you will need both of them, not just the one.

CHAIR—Certainly the first one you mentioned we are aware of, and thank you for drawing our attention to the other one, which we will follow up.

Mr Hodgson—In my credentials I indicated that I have had experience in fire matters in other states and am currently engaged in an exercise in another state. I have been a member of the board of the Country Fire Authority in my time. I know a good deal about fire bombing. I would not be upset if someone described me as the father of it in this state. I spent a good deal of my career studying fire effects and fire ecology, so I know a little bit about that also. I was in the fire area, particularly in the Corryong and Khancoban area, when the fires started and during the first week. I visited the area before the fires finished and also visited places like Bright, Benambra, Hotham, Omeo and Swifts Creek. So I know something about the firefight and some of the work practices, and I would be quite happy to take questions on those.

Those things are not addressed in my submission. My submission was specific to the matter of hazard reduction and I wrote it because I feel probably angry about the way in which community and political attitudes have changed over the years to the point where I state without any hesitation at all that in this year Victoria was less well prepared than at any time in the last probably 30 years to fight fires in the mountain areas. Yet other people say differently. They say we were better prepared.

I am probably one of the few witnesses you will meet who actually fought fires in 1939. I was nearly nine years old and I did not have any shoes, but our farm in the Nariel Valley south of Corryong was impacted by the 1939 fires and my father, sisters—I had a bunch of sisters—and I fought the fire and we stopped it at almost the identical place where it was stopped this year. I have no hesitation in saying that the drought conditions in 1939 were far worse than they were this year and anyone who says that the drought in the Alpine area preceding the fires of this year were the worst ever or the worst in a lifetime is in cuckoo land. They really are—they do not know what they are talking about. I heard Dr Tolhurst say today that in the Alpine area it was about a one in 50-year drought. I disagree with that also. I think it was about a one in 25- or one in 20-year occurrence. There was no severe drought in the Alpine area this year. I have got photographs with me which show my old family farm where there are cows grazing in lush pasture, not irrigated, at the same place where in 1939 I had to climb willow trees to lop the leaves to keep the cows alive.

I drove north of Benambra during the fire area and it was interesting to see bailed hay being brought from King Island and the Western District to Benambra to relieve some of the stressed cattle, yet within five kilometres there was bailed hay lying in the non-irrigated lands. There was plenty of grassland this year as compared with 1939. I do not want to labour that point too much. I just want to make the point that we have experienced in Victoria conditions very similar to this year and we have handled the situation better.

I go back now to my submission where I start with Judge Stretton. Stretton was a trained lawyer, he had an incisive mind, a flair as a writer and a poet, and he produced a literary masterpiece. It is that. It should be compulsory reading for anyone interested in managing forest and public land. It ought to be compulsory reading for every politician, because what he said then is true today. He said—and I did not quote this in my submission:

> There is one fundamental policy of fire prevention and of protection against fire. There is only one basis upon which that policy can safely rest, namely, the full recognition by each person or department who has dominion over the right to enter the forest of the paramount duty to safeguard the property and rights of others ... No person or department can be allowed to use the forest in such a way as to create a state of danger to others. If conformity with this rule cannot be brought about, the offender must be put out of the forest, or, in the case of a public department, its authority curtailed or enlarged ...

The government of the day did not respond with any alacrity to Judge Stretton. It was a Country Party government and the interests of the volunteers and rural brigades were such that they did not really want a fire authority telling them what to do, so it took another disaster in 1944, I think it was, before the government was forced to act. It amended the Forests Act to state—and this is worth quoting:

> Notwithstanding anything to the contrary in any other Act or law it shall be the duty of the Commission to carry out proper and sufficient work for the prevention and suppression of fire in every State forest and national park and on all protected public land ...

Then, in my opinion, the government went wrong. It carried on by saying:

> ... but in any national park or protected public land proper and sufficient work for the prevention of fire shall be undertaken only by agreement with the person or body having the management and control thereof ...

That was quite contrary to what Stretton recommended. Incidentally, that law still exists today. The only change to it is, instead of saying 'the commission,' it says 'the secretary'—the secretary of the department who has got a name. That law does give one authority the right of veto over an authority that has the legal responsibility to do something, and it is nonsense. It did not matter in my day when I was involved with national parks in an area in Victoria that is quite small—we got along pretty well with the director and patted him on the back. The biggest national park in the state at that time was Wilson's Promontory and it had a pretty good firebreak right around it except across the northern end. So that power of veto was never exercised and never used. But it has been used now very effectively to stymie effective fire prevention work which is the statutory responsibility of a department.

The Forests Commission charged with that responsibility in 1944 did its job remarkably well. I have mentioned the Sir Esler Hamilton Barber report, on page 6 of my submission, where Sir Esler said, amongst other things:

The Forests Commission was criticised somewhat severely in the report of His Honour Judge Stretton in 1939. Whatever may have been the faults and failings of the commission before that date, there can be no doubt that the stimulating criticism by the learned Royal Commissioner had a marked effect. No organization with responsibility for fire prevention work received less criticism, or more commendation in this Inquiry than the Forests Commission. It has clearly learned its lesson and set its house in order—a task which has been very successfully undertaken.

Further evidence of the success of the Forests Commission's response to its responsibility comes in a report which the department gave to the Australian Association of Rural Fire Authorities in 1985. That report is hard to find. I wonder why. I have heard it described as a smoking gun. Some interests are hoping the smoke does not escape. I have a copy of it. I have quoted it in some detail, but it refers specifically to the fire occurrences in 1985.

Firstly, let me say they were uncannily similar to what happened this year—the similar number of lightening strikes in the same general area and a severe drought, I believe as severe as in this year. There were 2,500 personnel fighting the fires from the department and the Country Fire Authority, 449 armed services, 120 sawmill employees, 50 from the State Electricity Commission, 75 bulldozers, 400 tankers, 20 helicopters and 16 fixed-wing aircraft. I do not have the precise figures for the resources involved in 2002, but they are somewhat similar. I have a *Weekly Times* report that says there was about 3,000 people, 80 dozers and 25 aircraft, but it was very similar. But there the similarity ends. The fires in the Alpine area in 1985—initially there was over a hundred of them—were caused by lightening. They were controlled to an area of about 30,000 hectares within two weeks of them starting and without the aid of rain. But no-one wants to know about it. I wonder why. I am saying that we have done better in the past than Victoria did this year, but the local politicians will not have it. They reckon we were better prepared this year and seemed to be proud of the fact that the number of houses burnt was fewer than in 1939 and 1983, the Ash Wednesday year, and there were fewer deaths. It is irrelevant, quite frankly. The comparisons are not valid when trying to evaluate where we are today in Victoria in our ability to fight fires.

My submission traces the history of hazard reduction, and I am indebted to Kevin Tolhurst for the use of his graph which illustrates it fairly well. It went up in terms of area treated and then it fell dramatically but, worse than that, the fall in area treated has been accompanied by a fall in the quality of fuel reduction burning. The evidence for that comes from Phil Cheney who

investigated one particular fire in the Moggs Creek area in the Otways and, following that investigation, I was hired back into the department to have a look at their prescriptions for burning. I saw evidence that many fuel reduction burns which had been chalked up as a success did not in fact reduce enough fuel to be very effective at all. They were a success because they did not get anyone into trouble. It is as simple as that. Staff were intimidated by the pressure that they were put under and the lack of political and departmental support if something went wrong. They did not want them individually to hit the headlines, and hit the headlines they did if someone got upset. Someone was quite often someone not concerned with good forest management. We still have a TV presenter in Melbourne who took the opportunity in presenting weather details to draw attention to those nasty forestry people who were putting smoke into the air and causing people asthma and all sorts of distress.

We even had people who were upset if they interfered with the autumn festival at Bright. It is ironic, isn't it, that those same people probably have appeared before you saying, 'Why didn't we do more burning?' or something like that? But at that time those good people, with the best intention in the world, were leading and joining in opposition to any sort of burning. There were others who were highlighting incidents of burning when they were not really interested in that; they had another agenda. They did not like woodchipping, grazing, or this, that or the other thing, so they attacked fuel reduction burning because it suited their different agenda.

I would have to say this: as politicians, not individually but collectively, I think you joined the general movement that got behind what appeared to be popular.

CHAIR—Some.

Mr Hodgson—I am not talking individually, but I do know politicians. They were not leaders any more; they were followers. They were followers of what the public perceived was good for them. That is still going on today, and it is most unfortunate.

CHAIR—I am reluctant to cut in, but I know there will be some questions and, unfortunately, we are on a fairly tight schedule this afternoon.

Mr Hodgson—Yes.

Mr McARTHUR—Mr Hodgson, could I note your remarkable experience in the whole area of bushfires, forestry and this issue we are now discussing. You make some pretty strong comments about fallacies and you direct them towards the Chief Executive of Parks Victoria that the public statements by senior officials from Parks, I guess you were saying, as reported in the *Weekly Times*, were totally erroneous. Could you just add to those comments to say that that created a totally wrong impression from your point of view or from the truth of the matter?

Mr Hodgson—There is no question at all that those statements are absolutely wrong. It grieves me to find that somewhere along the line people have got into a position of influence in the Public Service where they make statements on things they know nothing about. I could have instanced very similar statements made by the Director-General of National Parks in New South Wales, and I am appalled that people can get into that sort of a position without any knowledge—

Mr McARTHUR—Why do you think they are making statements that knowingly could be wrong with their knowledge and with people like yourself who really know—

Mr Hodgson—I do not think they know they are wrong; I think they are ignorant. The other day I looked at an advertisement in the national newspapers for a job. It was for the Director-General of the National Parks and Wildlife Service, New South Wales. I looked at all the words. If they can find a person who fits all those words, that person, he or she, will be able to solve the AIDS problem in Africa, the troubles in Northern Ireland and terrorism in the Philippines and, on the seventh day, will walk on water. But there is not one word in there that says that you have got to know anything about land management and you have to know something about fire—nothing.

Mr McARTHUR—Can we just go back. You make fairly strong comments that the Chief Executive of Parks is fundamentally and in matters of fact wrong.

Mr Hodgson—Correct.

Mr McARTHUR—Can I move to the interesting problem of ember attacks. We have had a lot of witnesses talking about ember attacks and their impact on the expansion of these fires in the north-east, Kosciusko and south-east New South Wales as being different and as being a big factor on the movement of the fire in these dry conditions. Could you just help us a bit with your assessment of that?

Mr Hodgson—Ember attack is simply a word for what I used to call spotting. Ember attack is a pretty good term: it is burning embers coming over and attacking and you stand there and you try to pick them up. It is nothing new in that; it is just the term that is new. There were many instances of ember attack in these fires, and I would have to say that the emergency services, by and large, did an excellent job in combating them, with one exception. The real issue is: why did it happen? Because it does not happen if the fuel loads are low or in situations where there is no wind. In the first 14 days I think of these fires in the north-east, the fires stood up vertically. There was no wind. Each fire stood up vertically with a mushroom cloud on top as it got bigger. There was no ember attack, yet no-one put them out.

Mr McARTHUR—Just going to that, are you confirming the evidence of other witnesses that there was a tardiness and a lack of will to positively attack the fire in the north-east and in Canberra, as has been suggested, and that people did not proactively put the fire out in the first few hours?

Mr Hodgson—I would say to anyone that the fires in the north-east of Victoria in the mountain areas this year, despite the lack of fuel management, could and should have been put out in the first two weeks. I have no doubt about that. I do not know about Canberra.

Mr McARTHUR—So you use as evidence of that what happened in 1985—

Mr Hodgson—Yes.

Mr McARTHUR—and you use 40 years of experience to make that statement.

Mr Hodgson—Eighty-five and also in 1963 when a very similar circumstance occurred.

Mr McARTHUR—So these public statements by others that this was the worst year for drought et cetera do not stand up to analysis by somebody like yourself?

Mr Hodgson—No, it is nonsense.

Mr HAWKER—Following on from Mr McArthur's points: you stated:

In 1992 the Auditor General found that the Department of Conservation and Environment had failed to achieve its planned fuel-reduction targets in three consecutive seasons and that those areas the Department identified as warranting the highest level of protection to human life, property and public assets received the lowest level of protection. In 2003 the Auditor General found that since 1994, the FRB has never met the Department's planning and operational target.

In the light of those two damning findings, I wonder what your response is to the evidence that we heard a couple of days ago in Omeo that suggests that the DSE was trying to massage the media to create the feeling that the fires were somewhat out of control in a way that they probably were not at the time, and that there was a feeling that DSE was therefore trying to allow the fires to continue, as you have just alluded to a minute ago, as a way of trying to catch up for their failure to do the fuel reduction burns in the past decade or so?

Mr Hodgson—Does the question refer to evidence given by Charles Slade?

CHAIR—Yes.

Mr Hodgson—I do not doubt that Mr Slade heard statements to that effect. There were a lot of statements being made that were demonstrably wrong. I am surprised that he swallowed it because it is nonsense.

Mr HAWKER—Which part of it, sorry?

Mr Hodgson— I am surprised that he swallowed those statements and seems to believe them.

CHAIR—That they let it burn to catch up on hazard reduction.

Mr Hodgson— It is not right.

Mr HAWKER—You are saying they were trying to put it out?

Mr Hodgson—They were trying to put it out.

Mr HAWKER—But you said it could have been put out within two weeks.

Mr Hodgson—I think Mr Slade was talking about what happened in the latter part of the fires.

Mr HAWKER—No, you started from the beginning, which is really the quotes that you have got from the *Weekly Times*. It is the same sort of style.

Mr Hodgson—Then I take back what I said. I misunderstood what Mr Slade was on about. I did not hear him give the evidence. I stand by what I said: the fires could and should have been put out within the first two weeks. After that, it is a different ball game altogether.

Mr HAWKER—The evidence that was put to the committee was that, contrary to what the public pronouncements were, there was possibly a deliberate decision taken to allow the fires to burn—to do that fuel reduction burn that had not been done for years.

Mr Hodgson—I understand better now what you are on about. I am disillusioned and disheartened by a lot of things that happened in this fire. If that in fact happened, I would be shattered. I just cannot believe it.

Mr HAWKER—That was the thrust of what he said. I am just wondering whether you feel that was a reasonable observation.

Mr Hodgson—I find it hard to agree with because I just cannot believe that professional, responsible people would ever take that attitude.

Mr SCHULTZ—Why didn't they put the fire out in the first place?

Mr Hodgson—They did not put it out in the first place because, unlike in 1985, the experienced resources were not on-site. We did not have forest workers, timber industry workers or SEC workers this year. We did not have the access that existed in those days. So initial attack did not work.

Mr HAWKER—And you had not had the fuel reduction burns of the previous—

Mr Hodgson—Yes, we had not had the fuel reduction burning. I have personal knowledge of one particular fire south of Corryong which, in one of my sorties up the trout stream fishing, I thought I had better go and have a look at because I knew it was just over the ridge. That was five days after it started and I think I was the first human to go near that fire. There was certainly no-one fighting it. That would not have happened in 1985.

Mr HAWKER—We were given evidence in Wodonga that one fire had been burning for six days before anyone went to look at it.

Mr Hodgson—That does not surprise me. I think they have lost the plot.

Mr HAWKER—Putting that together with those statements you have quoted that were taken from the *Weekly Times*, do you feel there might have been some effort to try to cover up?

Mr Hodgson—The statements that appeared in the *Weekly Times* were a pretty crude effort to cover up—crude in the sense that anyone with a modicum of common sense would never have made the statement.

Mr HAWKER—But that was the thrust of Mr Slade's statements. These were press releases being issued in Melbourne.

Mr Hodgson—These were not press releases; they were letters to the *Weekly Times*—a senior officer signing his name out in the public arena.

Mr HAWKER—What was the difference?

Mr Hodgson—Probably not much.

Mr SCHULTZ—Mr Hodgson, on the first page of your submission under the heading 'Preamble,' you make the statement:

> The drought in the alpine area preceding the fires was not the "worst ever" or even "the worst in a lifetime" that some people suggest. The winds during the first two weeks the fires burned were mostly from the east and south and the fire weather in that time was benign compared to some notable fire events in the past. Land and fire management agencies faced almost identical circumstances in the 1984/85 fire season and achieved a better outcome.

The question I want to ask you is: keeping that statement in your submission in mind and taking on board the comments that we have had given to us in this inquiry, as recently as today—that there were three bad fire days out of 59 days in the 2003 fires—can you compare that particular point about three bad fire days out of 59 and compare it to the conditions that applied in 1984-85? Were they similar in terms of weather et cetera?

Mr McARTHUR—That is a good question.

Mr Hodgson—In the first two weeks of both events the weather was very similar. The three bad fire days that Dr Tolhurst told you about today occurred after the first two weeks.

Mr SCHULTZ—Using that particular analogy, in your considered experience and professional opinion, and based on your background, you are saying to the committee—and correct me if I am wrong— that, given those weather conditions, those fires should have been put out in the first two weeks.

Mr Hodgson—That is what I am saying, sir.

CHAIR—Mr Hodgson, the Premier said yesterday that the conditions were appalling. Do you put that statement in the same category as the statements from the *Weekly Times*?

Mr Hodgson—The conditions were appalling on the three days which old foresters call 'blow-up' days. They were. Crikey!

CHAIR—Not in the first two weeks?

Mr Hodgson—No. They were ideal firefighting conditions, because there was no wind.

Mr BARTLETT—Just following on from that: why was the firefighting not done in those first two weeks?

Mr Hodgson—You are talking about this year?

Mr BARTLETT—Yes.

Mr Hodgson—I do not think I have the answer to that. I know it was not done, but why is—

Mr BARTLETT—Who knows?

Mr Hodgson—I was not there.

Mr BARTLETT—On page 4 of your submission you say—we were talking about the possibility of a crown or canopy fire:

In the absence of an intense ground fire, crown fires do not occur.

Is that right under any circumstances? If there is no ground fuel under storey, no matter how bad the weather, you are saying you cannot get a crown fire that runs ahead of the ground fire.

Mr Hodgson—Not any appreciable distance. The structure of the eucalypt forest crowns is so open that it cannot, on its own, sustain a fire.

Mr BARTLETT—Even if they are interlocking?

Mr Hodgson—Even if they are interlocking.

Mr BARTLETT—So, presumably, that is the rationale behind reduction of fuel on the ground—

Mr Hodgson—Exactly.

Mr BARTLETT—to reduce the intensity of the heat.

Mr Hodgson—The distance to which a crown fire will advance ahead of the ground fire can increase if it is going uphill, because the convection column and the heat is going up there, and the crowns are up here instead of vertically above. But it is still a matter of, I do not know, a few hundred metres—it is not a long way.

Mr BARTLETT—On, say, level land, in your experience what would be the furthest that you have seen a crown fire run ahead of the understorey fire?

Mr Hodgson—Perhaps 1½ times tree height.

Mr BARTLETT—That is all?

Mr Hodgson—Yes. That is different to the ember attack, the spotting, which is a different phenomenon altogether.

Mr BARTLETT—Yes, I understand that.

CHAIR—Thank you, Mr Hodgson, we really appreciate your expertise and your submission and the evidence that you have given us today.

Mr Hodgson—Thank you.

CHAIR—We were supposed to finish now but Mr Paul Buchler, who had provided a letter to the committee, has asked if there is time for him to give evidence. We literally have about three minutes.

[2.56 p.m.]

BUCHLER, Mr Paul (Private capacity)

CHAIR—Mr Buchler, do you have any comments on the capacity in which you appear?

Mr Buchler—I am an aerospace engineer and, until recently, I was in the Department of Defence looking after armament development, testing and evaluation. Currently I am a director in a consulting firm of engineers.

CHAIR—I have a copy of a letter that you have sent to the Country Fire Authority with respect to fuel air explosive devices. In the few minutes that we have got, would you like to tell the committee your story about that?

Mr Buchler—I will address specifically subparagraph (e) of your terms of reference. My only interest in all of this is firefighting, which has got nothing to do with weapons systems development obviously, arose from the tragic Sydney bushfires of the mid to late nineties. It occurred to me that there has to be a better way of fighting fires than throwing labour at them, water and a whole bunch of other things. Certainly technologies must exist, particularly defence technologies, that could be utilised in this area, and ones that would operate irrespective of the terrain or the location of the fires.

We did some research into this and came up with very interesting information. In one of the papers that we read, some authority quoted that the energy contained in a bushfire is equivalent to a small nuclear device. Therefore, the idea would be that you fight fire with fire, so you fight nuclear device with something equivalent. The smallest device that we could think of which could be utilised is a thing called a fuel air explosive. A fuel air explosive essentially is fuel which is dispensed in the air, is ignited and uses up all the oxygen, sucks out the oxygen, and has the potential of snuffing out a fire at its location. It can also generate a pressure wave, depending on how you design the device, which could also get rid of any fire path by removing the possibility of leaves and so forth passing fire from tree to tree.

We tried to get fire authorities in Australia to take up this proposal because clearly, in my position at the time, I was not in a situation where I could follow through with this. We could not get anyone to take up the cudgel. We were just directed from one organisation to another; no-one seemed to have responsibility for it. So then we gave up the ghost.

The bushfires this year again prompted us to try to get someone to take an interest in this kind of research, so I wrote to the Country Fire Authority, which is the letter that the chairman has in front of him. Eventually I got a reply, essentially saying that the Country Fire Authority does not utilise explosive devices and that is not compatible with its current policy for suppression. I thought that perhaps this committee, which has a national flavour to it, would have the potential of at least opening debate or focusing on issues of fighting fires differently to what we have done in the past. If you have about 30 seconds available, I can show you an unclassified film which shows you how these fuel air devices work, if you are interested.

CHAIR—What we might do, because we cannot record that into *Hansard*, is conclude the hearing and then you can demonstrate that to us.

Mr Buchler—No problem.

CHAIR—I might just mention to you the formation this month of the cooperative research centre for bushfires, which might be an opportunity for you to raise such a technology for them to perhaps have a look as part of their research. It is certainly a major research centre that is being established with respect to bushfires, so I would think that that could be one avenue for you to have this theory looked at more closely.

Mr Buchler—If the secretariat could give me information on that, I would be grateful.

CHAIR—I am sure we can organise that. Thank you again. Thank you to the people in the public gallery for their interest in today's hearing. I thank Hansard as well. The committee will continue its hearings in Hobart on Friday.

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

That this committee authorises publication of the evidence given before it at public hearing this day.

Committee adjourned at 3.02 p.m.