6

Fire fighting resources and technology

6.1 The management of major bush fires involves a mix of professional and volunteer personnel; a range of vehicles, plant and aircraft and; the application of various communications and information technologies. The Committee was told of concerns with equipment and technology and with the training and management of personnel. It is not merely a matter of what resources fire managers have at their disposal. It is the question of how those resources are used that is vitally important. This matter was alluded to in the interim report of the inquiry into the Victorian fires:

> the use by the CFA of strike teams provides a powerful and safe 'weight of attack' at the fire-front, but again, inflexible operational procedures have limited the use and effectiveness of strike teams.
>
> The use of spatial information, line scanning aircraft, satellite imagery, and forward looking infrared technology was one of the successes of the fires. However, there is strong evidence to suggest that there were occasions when human intelligence from the fire area, which contradicted technical intelligence, was ignored.[1]

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1 Bruce Esplin, *Interim Report of the Inquiry into the 2002-2003, Victorian Bushfires*, August 2003, p. 10.

Forestry and national parks resources

6.2 Responsibility for the suppression of bush fires in forested areas has traditionally been in the hands of state forestry authorities – they managed a large part of the forested land and they had the expertise and the resources to carry out fire fighting operations. They had also developed a lot of corporate knowledge derived from major fire campaigns, routine forest regeneration burns and exposure to scrutiny through various inquiries following serious events. Evidence to the Committee discussed how this situation has changed and the impact that it may have had in relation to recent fires. The Committee also heard repeated allegations that agencies responsible for the management of national parks received inadequate resources to manage the land under their care.

6.3 The IFA submitted that there has been a major downsizing of the permanent workforce in Australian forestry agencies in recent years, and this has not been accompanied by equivalent replacement when forest lands are transferred to national parks. This means that there are now inadequate resources available for rapid and effective initial attack across most of the forest zones of the nation.[2]

6.4 The IFA outlined six factors which it considered were reducing the adequacy and effectiveness of Australian fire fighting resources:

1. Australia-wide, the number of permanent experienced personnel and skilled firefighters in land management agencies is steadily declining and their ages are increasing. The agencies and emergency services are becoming more and more reliant on volunteers to fight fires.
2. The massive reduction in the Australian hardwood timber industry in NSW, Victoria and WA in the last 5 years has led to a significant decline in the number and availability of earthmoving equipment used in the past for firefighting.
3. Standards of road maintenance within forests, and general levels of access to forests have declined, especially in areas transferred from multiple use forest to conservation reserves. Declining road maintenance is partly a result of policy decisions (i.e. declaration of wilderness areas) and partly a result of lack of funds.

2 Institute of Foresters of Australia, *Submission no. 295*, p. 20.

4. The Commonwealth government is currently withdrawing VHF fire ground frequencies away from fire authorities for commercial sale to other users leaving fire ground communications severely limited. Coupled with this all states are choosing communication systems with no cross-border capacity, and even no operational capacity outside the range of their respective state repeater networks.
5. The usefulness of rapid first attack strategies using a combination of aerial fire bombers and ground resources on private land is under-rated. For the last seven years, aerial fire bombers deployed in the Mount Gambier area on a risk-related basis have clearly demonstrated that fires in high value plantations and agricultural crops can be extinguished under extreme fire weather conditions. This is only possible when fires are rapidly detected and strategically located ground crews are able to respond to all fires within 20 minutes.
6. Fire risk management is most effective when a single entity is responsible for prevention, presuppression planning and suppression. Most volunteer fire authorities focus only on suppression response (often this is set out in their legislation). In this scenario, responsibility for prevention is "someone else's job", and good coordinated bushfire prevention slips through the cracks between various agencies.[3]

6.5 Beyond the loss of equipment to land managers involved in fire mitigation activities, Mr Phil Cheney of the CSIRO suggested that the decline in forestry has seen a loss of practical expertise on fire behaviour and management:

> With the decrease in production forestry, particularly in native forests, there has not been the same transfer of expertise over to the major national park land managers… meeting specific objectives requires professional planning and professional implementation.[4]

3 Institute of Foresters of Australia, *Submission no. 295,* p. 19.

4 Phil Cheney, *Transcript of Evidence*, 22 August 2003, p. 36.

6.6 The serious deficiency in the protection of the Uriarra forestry settlement in the Australian Capital Territory referred to in chapter 5 reflects the down sizing that has gone on across the board in the forest industry:

> Prior to the early 1980s when the management of Uriarra Settlement was handed over (from ACT Forests) to ACT Housing the settlement was well prepared and managed for the event of a bushfire … The past 15 years has seen a reduction in ACT Forestry workers – these men were fully trained and experienced bush fire fighters who knew the geographical area well.[5]

6.7 A resident of the Stromlo Forestry settlement in the Australian Capital Territory stated that the forced redundancy of 26 long serving forestry workers amounted to the loss of 'almost 600 years of Bushfire fighting experience within Canberra …' The diminished fire fighting capacity within the settlement where 17 of 20 houses were destroyed was evident during the January fires:

> The largest tanker within the ACT Rural Fire Service was fully loaded and sitting unmanned along with 2 light units at the ACT Forest headquarters at the Stromlo settlement …[6]

6.8 The submission from Mr Val Jeffery also contained clear evidence of how the resources available from the forestry sector had declined significantly thereby removing experienced, trained and well equipped fire fighters from the mix of assets that could have been deployed for a rapid response to the 2003 fires.

6.9 The NAFI detailed the loss of fire fighting capacity within the forestry industry in north east Victoria since the mid 1980s. Prior to that there were over 150 foresters, overseers and forest workers. The number has declined to less than 40 and the Association notes that the staff and experience deficit has not been made up within national parks personnel.[7] There has also been a loss of equipment with all of the larger bulldozers having been sold off.

6.10 The VAFI also referred to concerns about the reduction in the availability of skilled and experienced fire fighters and incident controllers and suggested that:

> This drain of experienced fire fighting personnel and equipment cannot simply be replaced with numbers of casual

5 Uriarra Community Association, *Submission no. 392*, p. 1.

6 David Ferry, *Submission no. 505*, pp. 2-3.

7 National Association of Forest Industries, *Submission no. 420,* p. 15.

> summer fire fighters and hired machines to achieve the same fire fighting capacity, as the critical bush and fire fighting experience components are missing.[8]

6.11 In comparing the 2003 fires with those of 1984/85, Mr Athol Hodgson noted that one of the reasons the initial attack was faster and more effective in 1985 was that there was a larger more experienced work force available in forest management and the forest industries.[9]

6.12 The VAFI commented particularly on the contribution that is made by the private sector in the forest industries in supplying its bulldozers, transport machinery and operating personnel to fight the fires. It was reported that during the fires in January some 83 bulldozers and crews supported the fire fighting effort but that almost half may exit the industry as a part of the industry downsizing following from the review and subsequent reduction of the sustainable yield.[10]

6.13 It is the view of the VAFI that:

> With the increased use of aircraft for fire control, and other improved technology, the number of forest fires that develop into major fires that require significant manual input has decreased, e.g. there have been no major forest fires in the North East between 1985 and 2003; hence the opportunity for personnel to gain experience in fire control has decreased.
>
> As a consequence the main opportunity for fire fighters to gain experience with high intensity fires is by use of prescribed fires for slash burning following logging operations or broad area fuel reduction burns. But the curtailment of hardwood logging in the North East and the reluctance in recent years to carry out fuel reduction bums has resulted in these opportunities disappearing.[11]

6.14 The cost of transferring land tenure from a productive capacity, such as state forest or private land, to national park was indicated by the acting Executive Director of CALM Mr Keiran McNamara. Mr McNamara referred to additional levels of funding required to manage 30 new national parks that added 400,000 hectares to the estate in the south-west of the state:

> It is fair to say that that area of the state would previously have been managed utilising the funding that accrued to the

8 Victorian Association of Forest Industries, *Submission no. 212,* p. 8.

9 Athol Hodgson, *Submission no. 450,* p. 10.

10 Victorian Association of Forest Industries, *Submission no. 212,* p. 8.

11 Victorian Association of Forest Industries, *Submission no. 212,* p. 8.

> agency through the timber harvesting activity. That revenue is clearly no longer on the table. The government recognised that and, in its first year in 2001, allocated an additional $25 million to the department over that financial year, the first financial year, and the out years of the budget process – $25 million over four years: $16 million recurrent and $9 million capital. That allows the department to meet its responsibilities to manage those areas, including for fire management.[12]

6.15 A senior experienced fire control officer from Western Australia told the Committee that in that state also 'There is a serious reduction in the availability of "backup resources" from the timber industry, particularly heavy machinery and trained / experienced operators.[13]

6.16 A submission from Tasmania went to the same concerns. The TCA Tasmanian State Office submitted that the forest industry is a ready source of equipment and trained personnel drawn from communities likely to be threatened by fires. It was said that this work force has faced severe pressure in the last 20 years as the timber industry has been cut back and national parks established.[14]

6.17 This downturn in the availability of forestry based fire fighting resources across the country and the non replacement of this loss from national parks services makes more urgent the need to properly train and use volunteer bush fire fighters.

6.18 The VAFI argued that ensuring the ongoing presence of the timber industry in the state forests, and preferably an expansion of that presence, is a legitimate and cost effective means of significantly supplementing vital forest management and emergency fire fighting resources.[15]

6.19 The lack of resources generally to manage national parks was raised by the Captain of the Kurrajong Heights Brigade who estimated that 'there are about two National parks staff for about every 7,000 hectares of the state…they simply do not have the resources…'[16]

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12 Keiran McNamara, *Transcript of Evidence*, 6 August 2003, p. 82 and Rick Sneeuwjagt, *Correspondence*, 19 September 2003, p. 1.

13 John Evans, *Submission no. 96*, p. 3.

14 Timber Communities Australia Tasmania State Office, *Submission no. 454*, p. 4.

15 Victorian Association of Forest Industries, *Submission no. 212*, p. 2.

16 Brian Williams, *Transcript of Evidence*, 9 July 2003 (Richmond), p. 26.

6.20 The Chair of the Snowy River District Bushfire Management Committee stated that the:

> Snowy River Fire Service has not had any funding for fire trail maintenance for three years … Fire trails in the KNP are poorly planned, constructed and maintained. This was evident in the fires where some 35 bulldozers and graders were needed to allow access to the fires …[17]

6.21 He continued that the Kosciuszko National Park is:

> under staffed and this makes it impossible for any quantity of work to be done.[18]

6.22 A Group Captain from the Snowy River Fire District placed the absence of funding in context stating that the district has 1200 kilometres of fire trails.[19] Besides the direct cost of opening, upgrading, closing and 'rehabilitating' fire trails as bushfire threats emerge and pass; the Committee was informed of an indirect cost to brigades that arises from poor trail maintenance. The Chair of one of the RFSA conferences stated that 'in one district alone in a period of 12 or 13 months … $200,000 panel damage [had been done] to trucks.'[20]

6.23 A property owner with land adjoining the Brindabella National Park indicated that inadequate resources precluded managers of public lands from taking the most basic precautions against bushfires:

> I contacted the National Parks in December last year and asked why we did not have signs up advising the public that there were total fire bans … the ranger said that it was because there were insufficient staff to put the signs up.[21]

6.24 A doctoral student, Mr Peter Curtis, provided an even more disturbing account of the consequences of inadequate land management resources in the Warby Range State Park where he conducted field work for his thesis on fire ecology and the grass tree (*Xanthorrhoeas*):

> If they are short staffed and only have a certain amount of allocated money to cover burning – and I have seen this … where they have had to cover a large area – it comes to knock-

17 David Glasson, *Submission no. 359*, p. 2.

18 David Glasson, *Submission no. 359*, p. 2.

19 Peter Bottom, *Transcript of Evidence*, 10 July 2003, p. 6.

20 Brian McKinlay, *Transcript of Evidence*, 9 July 2003 (Richmond), p. 30.

21 Wayne West, *Transcript of Evidence*, 14 July 2003, p. 38.

> off time, they have not got the funding to keep personnel patrolling.[22]

The role of volunteers

6.25 The Committee received many submissions indicating that the volunteers who may be asked to fill the gap created by the reduction in the number of experienced and trained professional fire fighters retained by public land managers are feeling marginalised by those managers. The delays in responding to fires, difficulties with access, problems with incident control and inappropriate asset protection, as outlined above, have all contributed to a sense of frustration and have left many senior brigade members with a feeling that their experience and knowledge have been brushed aside. This was best summed up by a comment that was reported to the Committee on several occasions and attributed to one fire controller, as was repeated at a public hearing in Wodonga:

> I think one of the famous statements was that a departmental person said to a volunteer, 'I didn't go to university for four years to be told how to do things by a volunteer.' This just is one of the keys to the whole thing: local knowledge and experience were completely ignored.[23]

6.26 There is also a view that with the increase in emphasis on safety and liability that the increased formal training and certification of volunteers is leaving many experienced fire fighters behind.

6.27 The Committee received some evidence to suggest that the situation in New South Wales was not as it should be. A submission from Access for All suggested that:

> there is strong evidence that, in NSW at least, there is increasing disenchantment among volunteers that is discouraging their participation and likely to result in the demise of the volunteer as a force. However, it is patently obvious that substitution of a professional, even a part-time professional, service of the required scale is economically unaffordable. States and Territories need to encourage volunteers by giving them a voice in the development of

22 Peter Curtis, *Transcript of Evidence*, 25 July 2003, p. 25.

23 Brian Fraser, *Transcript of Evidence*, 25 July 2003 p. 54.

> policies, procedures and operations commensurate with their contribution.[24]

6.28 This view was supported by evidence presented in Cooma where it was put to the Committee that:

> Blokes in the bushfire brigades are now starting to feel isolated. That is where all the experience of the country is, and yet it is often ignored. You have some bloke who has a degree in fire management who has fought one or two fires in his life, if you are lucky, and who may have done a few hazard reductions, put in charge to run the whole show. These blokes try to have an input and they are pushed aside with comments like, 'We're running the show. You just sit back and take notice.'[25]

6.29 A Group Captain with the Snowy River Shire expanded on the apparent double standard in the attitude of the NPWS to volunteer fire fighters in national parks:

> If any of our blokes had been caught in the park the day before the fire started, they would have been fined. The fires then get going and suddenly Parks say: 'Please come in. Help us. Bring your own vehicles – bash the shit out of them.' That is the sort of mentality … one minute we are criminals and the next minute they are asking us to go in there and give them a hand **...**
>
> The day before they will fine you; the day after they are asking you in there.[26]

6.30 The former Captain of the Nimmitabel Rural Fire Brigade told the Committee that concerns about safety when out of area volunteers are tasked to use poorly maintained fire trails in national parks. Loss of income and lack of insurance compared to paid parks personnel, and poor incident control are also issues of concern. These concerns lead brigade members to baulk at attending fires on public land. He explained that:

> Nimmitabel brigade were at the stage where, if it happens again, we will think very hard about not even turning up. We are only volunteers; we can make that decision.

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24 Access for All, *Submission no. 104*, p. 10.

25 Angel Gallard, *Transcript of Evidence*, 10 July 2003, pp. 120–21.

26 Darvall Dixon, *Transcript of Evidence*, 10 July 2003, pp. 11-12.

> The only reason we did attend was for our friends in the Snowy River shire, the Yaouk Valley and Bredbo Valley.
>
> We have written to Phil Koperberg to say that we will give due consideration in future and we will probably not attend. We feel that in an S44 period our volunteers should be paid the same amount as government employees.[27]

6.31 Similar sentiments were expressed in Victoria, but it was also acknowledged that volunteers would continue to turn out to protect their communities. Two senior volunteer fire fighters explained:

> Mr Box – The initial impact was that they would not bother going if they were asked again, but we have been through this sort of thing before. The reality is that, if there is a fire, we will all still attend.
>
> Mr Reeves – The other snag with that, of course, is the same people will not go to training. They will be there and they will do their utmost best when the smoke goes up. But until then, they are not interested. I cannot blame them. The frustrations some of those fellows were feeling was right up there.[28]

6.32 In the Australian Capital Territory the Committee was also told that:

> I think there is also a tremendous crisis of morale in the local volunteer bushfire brigade … The problem for us as land-holders is: why should we bother anymore? Our opinions are not taken into account and our availability is not taken into account. What are we going to do? On the one hand we see these bright machines flashing up and down the road that seem able to protect us in most situations but are clearly inadequate in catastrophic situations.[29]

6.33 An obvious potential outcome is that the number of volunteers actively involved in rural areas may decline. More seriously, the Committee heard suggestions that the formal structure may break down and that landholders will take independent action to protect their own properties and those of their neighbours. To some extent this is already happening. The VFF submitted that:

> the CFA finds itself unable to use a large number of long serving local volunteers because they have not completed their required minimum skills training. This is despite the

27 Richard Blyton, *Transcript of Evidence*, 10 July 2003, p. 9.

28 Robin Box and David Reeves, *Transcript of Evidence*, 24 July 2003, p. 69.

29 Geoffrey Hyles, *Transcript of Evidence*, 15 July 2003, p. 90.

> fact that many of these volunteers have extensive experience and knowledge of fire fighting which now is not officially recognised …
>
> Groups of efficient private vehicles' equipped with good equipment and UHF radios, that are highly motivated to protect their own and neighbours property have formed effective fire fighting units. Increasingly, these units are driving past the CFA shed and tanker to fight fires in the brigade area when manpower is low. Increasing regulation of equipment and onerous training requirements threatens to force these units outside the control of the CFA.[30]

6.34 A landholder and former volunteer group officer from north east Victoria gave evidence supporting this view, indicating that it was not a theoretical prospect:

> We now have a situation in which we have fire trucks parked, and people in their own private units are actually setting up their own little firefighting organisations. They have very efficient radios. All farmers have UHF radios and 400- to 600-litre tanks. This has been forced on them, because they want to go and help their neighbours. I feel that the indemnity part might be covered by the fact that if you go and help your neighbour and you have public risk policies there does not seem to be a problem. But it is a reality and it has occurred.[31]

6.35 The concerns of the volunteers and the possibility of the development of unofficial fire fighting units were enunciated in a comment made by a brigade Captain at a public hearing in Wodonga:

> We are keener and stronger than ever, and unless we get some pretty straight directions from the state and federal governments after this we will probably be starting to run our own ships by the time the next lot of fires go up. So we are going to have to pull the whole show together and get some really good guidelines to get us working as a main fire suppression agency. Otherwise you will see us out there putting the fires out – but other people might not quite know what we are doing.[32]

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30 Victorian Farmers Federation, *Submission no. 423*, pp. 8–9.

31 Brian Fraser, *Transcript of Evidence*, 25 July 2003, p. 44.

32 Jack Hicks, *Transcript of Evidence*, 24 July 2003, p. 77.

6.36 The Kojonup Shire in Western Australia already has a successful privately based fire fighting response:

> Kojonup is unique in that it relies on volunteers alone and does not have any organisations helping it. It has developed its own fire protection system over many years and generations, based on volunteers and experience. Kojonup was one of the first shires in WA to pioneer and embrace a radio-controlled network to support its volunteer firefighters. It now has some 580 members over 12 brigades. Today's volunteers own and maintain 128 medium-heavy firefighting units and a further 120 to 130 light-fast attack units. This means that around 250 privately owned units are capable of attending any fire in the district at any given time. The firefighting forces are controlled by four senior fire control officers, 12 brigade fire control officers and other deputies. A fire advisory committee has been set up to oversee and advise this organisation as it sees fit regarding firebreak orders and fire management.[33]

6.37 The Kojonup Bushfire Advisory Committee Deputy Chief Fire Control Officer explained that that state government did not interfere in their activities but this situation is changing:

> The state government keeps telling us that they will not interfere with our system but unfortunately, since the fire and emergency services levy has been introduced, a whole new level of bureaucracy has come in over the top of us which volunteers are meant to cope with. … For example, if a wildfire starts in Kojonup and someone close by on a farm sees the smoke go up, they do not wait for me or one of the fire control officers to tell them to go; they go. If it ends up being a false alarm, they turn around and go home again. Under some of the arrangements we are now seeing come out for FESA, for example, we are meant to log people into fires—log the time they go in and come back out—so they do not work more than eight hours and do not get too worn out. The end result of that is you have to tell someone like a farmer in Kojonup who has spent 15 hours the previous day driving a harvester doing his harvesting operations that he can only work eight hours when he is at a fire and then maybe have to come back for the next three or four days to sort the mess out

33 Gregory Marsh, *Transcript of Evidence*, 5 August 2003, p. 16.

> rather than get the job done and go home. That is the sort of bureaucracy that is starting to infiltrate to us and it makes … (it) … very hard to sell the volunteer organisation to someone when you have that level of bureaucracy on top of you. People do not have to be volunteer firefighters, they can go and do other things.[34]

6.38 The motivation of local land holders to become involved in the volunteer brigades is an important factor in making those brigades effective. Ms Christine Finlay studied the internal dynamics of various brigades and described the differences between those that perform more efficiently and those that are less effective. One of the differences related to the relationship between participation in a brigade and protecting their own property. The more functional brigade was one where the members were involved in protecting their own property (among others). In more dysfunctional brigades this relationship was not so evident. [35] This connection with property can however be a two edged sword which may, in the future, reduce volunteer commitment to fires away from their properties. This is particularly likely to be the case when the effort and risks taken by volunteers is not reciprocated by public land managers:

> Most C.F.A. Captains are farmers. The C.F.A. really needs to re-examine its philosophies if it is to retain members in the future. Your commitment to the C.F.A. is considerably reduced when you fight a State Fire for 3 weeks, only to find out that your own farm is not on the priority.[36]

6.39 Whether or not there is an actual decline in brigade numbers or capability is not clear. Whilst there was evidence of disenchantment and some brigade members indicated that they had stood aside, there was also a suggestion that applications for membership increased after the recent fires. The Committee was told that:

> in Victoria CFA volunteer numbers have fallen from about 120,000 in the early 1980's to about 68,000 currently. Of more concern are the rapidly rising age classes of the remaining volunteers particularly in some rural areas. Over the next ten years many firefighters with high levels of experience, skill and knowledge will retire. To some extent there have been attempts to redress the ageing process through the Project

34 Timothy Johnston, *Transcript of Evidence*, 5 August 2003, p. 20.

35 Christine Finlay, *Submission no. 315*, p. 6.

36 Robyn and John Scales, *Submission no. 161*, p. 3.

> Fire Fighter program and through the recruitment of skilled people into the CFA in Victoria. The picture in South Australia and New South Wales is not so proactive.[37]

6.40 The demographic problems outlined in the eastern states also appear to be a problem in Western Australia, where the Manjimup Shire Council outlined the problems with maintaining brigade numbers;

> The Shire of Manjimup has twenty nine (29) Volunteer Bushfire Brigades comprising of approximately 400 active and non active members. There are several identified issues in recruiting and also retaining Volunteer Bushfire Brigade members which are most likely not just limited to the Shire of Manjimup. Recruiting new Volunteer Bushfire Brigade members and retaining Volunteer Bushfire Brigade members is becoming increasingly difficult for the following reasons;
>
> - Ageing populations and unsustainable populations in rural areas due to economic, educational and social reasons.
> - Frustrations at the perceived lack of equipment resources.
> - Limited recognition for volunteer work completed.
> - Volunteer work is unpaid and often incurs a financial loss to the volunteer if completed during ordinary working hours.
> - An increasing need to undertake training in their own time.
> - Concern for their own safety during fire suppression and control especially since the recent deaths of Volunteer Bushfire Brigade members in the Eastern States of Australia.[38]

6.41 This problem was put quite clearly to the Committee at the public hearing in Cooma where a very large gallery of mostly landholders and volunteer fire fighters turned out to give evidence and listen to the proceedings. The General Manager of the Snowy River Shire Council, Mr Ross McKinney said that:

> I think there needs to be a serious look at incentives that could be put in place for people. We require volunteers to have a higher level of training … and all this takes a lot more time than it used to. Therefore they are spending more and more time as a volunteer in learning these things and in many instances some of these local people would have better

37 Peter Bentley, *Submission no. 143,* p. 5.

38 Manjimup Shire Council, *Submission no. 200,* pp. 3-4.

> expertise than some of the people that they are alongside. This is a serious issue because you are losing volunteers. In fact, if you take a look at the interest in this inquiry and at the people who have addressed it and look around now … the average age of the people in this room is not young. That reflects what is happening particularly in the rural communities. There is very little incentive for young people to get into these organisations.[39]

6.42 The evidence on this matter does not necessarily indicate that brigades in all areas will decline, at least in the short term:

> I do not believe you lose volunteers after these fires, because in our area I saw lots and lots of orange overalls and I saw a lot of minimum skilled and well-trained firies out on the ground. And since the fires, as a captain, I have had many requests from members of our very strong brigade to further their experience. They want to have more minimum skills. The minimum skills trainers are loaded up so much now that they cannot keep up with it.[40]

6.43 The Committee is concerned, however, that unless some steps are taken there will be a decline in the capacity of the volunteer brigades, particularly in the rural area where there is a direct connection between brigade membership and property ownership. There may be a move towards withdrawal from brigade membership and an increasing reliance of locally organised informal privately based responses to bush fires. To prevent this happening will require attention to some of the factors that act as a disincentive to participation. Improving the prevention and management of fires as discussed above is relevant to this question. It will also require attention to some measures that will encourage and keep volunteers motivated. A good start would be an acknowledgement of volunteers' expertise by involving them in decision making.

39 Ross McKinney, *Transcript of Evidence*, 10 July 2003, pp. 49–50.

40 Jack Hicks, *Transcript of Evidence*, 24 July 2003, p. 77.

Decline of volunteers in land management

6.44 The majority of evidence received by the Committee on the role of volunteers related to fire suppression activities. However, there was significant reference to the role of volunteers in implementing land practices that mitigated the treat of severe bushfire.

6.45 Mr Peter Webb contended that there is a significant disparity between the responsibilities of the NPWS and the resources made available to it. This has resulted in a situation where:

> the National Parks and Wildlife Service are in fact poorly resourced for fire control, yet they manage and have jurisdiction over a very, very large area of land. Put simply, they rely on the Rural Fire Service in New South Wales to help them control fires and they are calling on them to help them do hazard reduction work. That would work all right if the Rural Fire Service personnel were in fact given the authority and were tasked and if the fire control operation were set up with the Rural Fire Service in control.[41]

6.46 However, evidence from volunteer fire brigades suggested that under-resourced land management agencies are now limiting the involvement of volunteers in land management activities designed to mitigate the severity of bushfire such as prescribed burning.

6.47 The Colo Heights Rural Fire Brigade stated that:

> Over recent times, the National Parks and Wildlife Service have greatly reduced hazard reduction within the parks situated in the Colo Heights area and have actively discouraged hazard reduction by local Rural Fire Brigades.[42]

6.48 The Rushworth Fire Brigade described the development and decline of a working relationship between a volunteer fire brigade and the DSE in Victoria in fuel reduction activities:

> For some 20 years the brigade had burnt private land, shire land and crown land, to reduce the fuel load and clean up tracts of land so that they would become lineal breaks should a significant fire threaten the town.
>
> Years ago a fire protection plan was instigated … for a coordinated fuel reduction in the forest surrounding the town and with the [Department of Natural Resources and Environment] coordinating this jointly.

41 Peter Webb, *Transcript of Evidence*, 14 July 2003, p. 4.

42 Colo Heights Rural Fire Brigade, *Submission no. 154*, p. 1.

> Two years ago we were told that we could no longer carry out any fuel reduction on crown land and that it was the Department of Natural Resources and Environment's responsibility …[43]

6.49 A senior member of the Carboor Rural Fire Brigade stated that:

> Our brigade has very little input on control burns at the moment. It is not because we do not want to; we are not encouraged. There is no active involvement from DSE to have local brigades involved in that sort of thing.[44]

6.50 As well as having a negative impact on the resources available to public land managers, the exclusion of volunteers from land management strategies such as prescribed burns represents a missed opportunity in volunteer training. Mr Box continued:

> The other very important aspect of the controlled burns … is as a training aid for fire control. With respect to most of our fire brigades, all of our training facilities and props tend to relate to fires in buildings and car fires. There is very little, if any, training done in a bushfire situation, as it is difficult to do this. A controlled burn, or any of the fuel reduction burns, can facilitate training, the fuel reduction aspect, the environmental aspect and also the interdepartmental working relationships – the relationships between the CFAs, the DSE and local government.[45]

6.51 The IFA argued that:

> prescribed burning programs help to familiarise staff with the use of fire and to train them in fire behaviour and bushfire survival. Personnel with long experience in undertaking well planned burns, generally make better and safer firefighters.[46]

6.52 While the Institute was referring to professional foresters, the principle of using prescribed fuel reduction burns as training for volunteers holds. In addition to and perhaps even more importantly, the inclusion of volunteers in the land management of national parks may engender a spirit of cooperation rather than exclusion between neighbours, which in some communities is evidently not present. At a

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43 Rushworth Fire Brigade, *Submission no. 153,* p. 1.

44 Robin Box, *Transcript of Evidence,* 24 July 2003, p. 64.

45 Robin Box, *Transcript of Evidence,* 24 July 2003, p. 64.

46 Institute of Foresters of Australia, *Submission no. 295,* p. 13.

public hearing in Cooma Mr McKinney summed up the benefits of cooperation:

> I think you would need to try to take the community on board with you. In other words, you should allow commercial and non-commercial activity groups such as horse riding or mountain bike riding groups et cetera who will actually be on these trails to report things to park managers, state forest managers or whoever it is. Use the people to help, and do not keep them out. Keeping them out increases illegal incidents, quite frankly. There needs to be far greater interaction there.[47]

6.53 The Committee concludes that one strategy in which the unsatisfactory level of resources currently available to managers of national parks and other public lands could be redressed is through placing greater emphasis on the involvement of volunteers in the maintenance of fuel loads and fire trails. The Committee is aware that the implementation of effective and safe fuel reduction burns requires a high level of planning and experience. However, it can see no reason why training opportunities are not extended to volunteers in this area.

Incentives, support and recognition for volunteer fire fighters

6.54 The commitment to protect their communities, their property and the properties of their neighbours may provide the basis for retaining and recruiting volunteer fire fighters in rural areas, but it seems likely that more will need to be done. Some of the measures have been suggested that would help with this problem seek to offset the tension between volunteers and the paid staff of land management agencies, as encapsulated by a former brigade Captain:

> My volunteers are fed up with fighting fires in national parks when no mitigation work is carried out our resources are mainly funded by our insurance levy. I doubt that our National Parks have insurance on our natural resources. My volunteers were subjected to up to 20 hour shifts because National Park employees went home after 12 hours.[48]

47 Ross McKinney, *Transcript of Evidence,* 10 July 2003, p. 49.

48 Richard Blyton, *Submission no. 30,* p. 1.

6.55 The issues associated with non-payment of volunteers was summarised by Mr McKinney:

> Pay versus non-pay is obviously becoming a bigger issue, and it was certainly voiced in our community. People were working alongside Rural Fire Service people in the fire control centres – unpaid people against Rural Fire Service officers, who are highly paid. National Parks, state forests, local government or other agency officers were also there being paid while you were working alongside them as a volunteer. That has raised some very important issues and divided some people in our community.[49]

6.56 The contribution of volunteers is considerable. The Volunteer Fire Brigades Victoria (VFBV) submission stated that the CFA volunteers' time valued at more than $480 million per annum and that the national volunteer fire fighting contribution could be in excess of $2 billion per annum. Quite clearly, governments could not replace the contribution with paid staff nor could it live with the level of damage to private and public assets that would follow a collapse of the volunteer system.

6.57 The VFBV pointed out that volunteers incur out of pocket expenses in:

- Purchase and maintenance of uniforms and equipment.
- Travel to and from fire calls, training and meetings.
- Communication expenses such as telephone and mobile phone costs directly and necessarily incurred in fire fighting.[50]

6.58 The Committee heard some examples of the direct out of pocket expenses that volunteers incur, in addition to lost work time. The cost of using vehicles was mentioned in Cooma where it was said that some volunteer Group Captains travelled over 5000 kilometres in their own vehicles during the 2003 fires in the Snowy Mountains.[51]

6.59 The Committee did not hear an overwhelming call for volunteers to be paid some form of wages. If anything there was strong support from the volunteers for retaining their volunteer status – as one volunteer put it 'when you join as a volunteer, you know that you will be putting your time in. We are not worrying about any of that; that is

49 Ross McKinney, *Transcript of Evidence*, 10 July 2003, p. 49.

50 Volunteer Fire Brigades Victoria, *Submission no. 380*, p. 7.

51 Richard Blyton, *Transcript of Evidence*, 10 July 2003, p. 10.

why we are volunteers'.[52] The VFBV suggested that the majority of volunteers meet their own travel and communications costs for the privilege of serving their communities. Some volunteers would argue that this is their contribution to their community yet the majority would value initiatives from the federal government that would offset these costs.[53]

6.60 The VFBV made it clear that volunteers do not want to be paid for their services because it undermines the volunteer ethos but on the other hand, volunteers do not want to be out of pocket.[54] It was noted that this view emerged also at a Volunteer Summit in 2001 convened by Emergency Management Australia (EMA). The cost that volunteers incur in terms both of direct expenditure and lost income becomes somewhat demoralising when issues of payments to departmental staff arise.

6.61 The Committee was told how volunteers developed the perception that some employees of land management agencies made it known that they were being well paid and receiving considerable overtime payments:

> The frustration of local volunteer firefighters was exacerbated when at meal breaks the paid DSE / CFA firefighters talked about the earnings 'I've earned $3,600 this week' whilst others complained about the tax they would be paying. In fact the penalties and overtime being paid to non-volunteer firefighters was considered responsible for reducing the urgency of the firefighting effort on many occasions. This imposed a substantial deterioration on the morale of the volunteers who had left their own jobs to fight the fires, losing wages and leaving their own assets unprotected.[55]

6.62 There were other suggestions that containment was not such a pressing issue for some of the paid fire fighters:

> We continually saw these spot-overs and they [DSE and national parks employees] just kept saying, 'There's another new house!' or 'Another new boat!' or 'Another new car!' It was just a wrong mentality… [this meant] …More money. You got paid firies there working on the line, and if we take in another 6,000 hectares we are going to be there for another

52 Ian Johnson, *Transcript of Evidence*, 24 July 2003, p. 76.

53 Volunteer Fire Brigades Victoria, *Submission no. 380*, p. 7.

54 Volunteer Fire Brigades Victoria, *Submission no. 380*, p. 7.

55 Eureka Foundation, *Submission no. 128*, p. 16.

> week. I suppose it was only said in jest, but a lot of our brigade members took it to heart pretty bad because quite a few of them were paying people to milk their cows or do their work at home ...[56]

6.63 The Committee was also told about paid fire fighters getting better food, better accommodation and spending less time on the fire line as they made crew change overs at some distance from the fire ground. These things all contribute to volunteers feeling that their contributions are not valued and were disruptive to the fire fighting effort. In New South Wales for example it was said that:

> One of the big issues for our area was the feeding of the volunteers and the professional people … based on the impact report that we got back, the level of food that the paid employees were getting was considerably above what the volunteers were getting. A small thing like that caused a huge amount of discontent out on the field, to the extent that the group captains and deputy captains called a meeting at the incident control centre to raise their concerns. For example, the volunteers who were working a 12-hour stint would have to feed themselves or were expected to feed themselves before they came along. They got a very small lunch pack and were expected to feed themselves when they went home, as opposed to the situation of most of the professional people. They would be in accommodation or brought into the area, so their meals before and after were basically prepared for them. Issues like that blew up very quickly.[57]

6.64 Similar comparisons between the lot of volunteers and that of paid employees were mentioned in Victoria:

> The change-over period in our experience is that DSE, National Parks and all those paid firies were changing over on the breakfast-dinner mentality – they would have their meals and then they would come out. The meal times were included in the work times, which I disagreed with. I thought their time should start when they turned up to get on the tanker or get on the fire line. Having their breakfast and what they did first thing in the morning – cleaning their teeth – was really in their own time, but that was all included. That was all right, but the CFA was trying to change their crews at the

56 Jack Hicks, *Transcript of Evidence*, 24 July 2003, pp. 71–71.

57 David Rawlings, *Transcript of Evidence*, 10 July 2003, pp. 55–56.

> same time. After a few days, we came to realise that it was just no good us heading back to the control grounds with the change-over. We just had to stop there and guard the lines.[58]

Wages, expenses and employment

6.65 The solution was not necessarily seen to include direct payment, however some consideration of financial costs were proposed. The Committee believes that it is appropriate to consider some compensation for out of pocket expenses and some financial measures to support volunteer fire fighting duties.

6.66 The Ferntree Gully Brigade proposed a range of measures broadly defined as economic support and community recognition. The economic proposals included:

- Support and assistance programs for education costs extending to the volunteer fire fighter and his or her dependants – at higher secondary level and tertiary level, and provision of subsidised accommodation for isolated students having to attend institutions in centres remote from home.
- Discounted or subsidised local rates and fees.
- Discounted services and utilities fees – utilities such as telephone, electricity and gas services, vehicle registration and insurance fees for volunteer's private vehicles.
- Discounted volunteer's household fire insurance premiums and ambulance service subscriptions.
- Subsidy for loss of income arising from fire fighting duty – direct to the fire fighter whose pay has been stopped during period of absence or who is self-employed, and direct to the employer who makes up the absent employee's pay to its normal level.[59]

6.67 The VFBV submission concentrated on tax rebates as a way to recognise volunteers' contribution and off-set out-of-pocket expenses:

> Volunteers have suggested that a tax rebate is possibly a more equitable way of recognizing volunteer contribution because is not dependent on income or employment status or the claiming of actual expenses against other income. The details of eligibility would need to be clarified but a rebate could, for example, be linked to acquisition of minimum skills that could be validated by a certificate from the fire authority …

58 Jack Hicks, *Transcript of Evidence*, 24 July 2003, p. 70.

59 Ferntree Gully Urban Fire Brigade, *Submission no. 155*, p. 7.

> If the annual amount of rebate were, for example, in the order of say $200 to $300 per volunteer per year, the cost based on Victorian volunteer firefighters alone would be $11.6 to $17.4 million. But this appears relatively small when compared with the CFA volunteer contribution valued at more than $480 million per annum and the potential loss of 12,000 houses in relation to the North East and Gippsland fires conservatively estimated between $840 million to $1.2 billion.[60]

6.68 The VFBV also considered ways to offset the costs incurred by employers who maintain wages (or some form of remuneration) for volunteers, and for the self employed. They noted that the Commonwealth Government through Centrelink has provided compensation in the past for cases of hardship but these have been one-off instances for particular fire related events rather than an ongoing program. It is suggested that an ongoing program of compensation for employers and the self employed could be considered and that such a program would be acceptable within the volunteer ethos. Specifically the VFBV suggested that compensation could be paid to employers and self-employed persons who release volunteers to attend emergency services training in a similar way to the Army Reservist Employer Support Program where employers are reimbursed for releasing employees for routine training.[61]

6.69 The Captain of the Wilberforce Brigade told the Committee the time has come for some form of support for volunteer fire fighters:

> I call it a voluntary relief fund – for firefighters and other volunteer services when a protracted bushfire emergency or other civil emergency extends beyond five days. We need to be able to provide an appropriate level of welfare for our families – in other words, a meal on the plate – if we are not being paid in that period, particularly self-employed contractors who may not get paid for three weeks. I can attest to the fact that, as a public servant, I get fully paid for an entire bushfire emergency, but a number of people in my brigade who are self-employed do not receive income during that period, and therefore I believe it is incumbent upon the government to start looking at that.[62]

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60 Volunteer Fire Brigades Victoria, *Submission no. 380*, pp. 7-8.

61 Volunteer Fire Brigades Victoria, *Submission no. 380*, p. 9.

62 Michael Scholz, *Transcript of Evidence*, 9 July 2003 (Richmond), p. 15.

6.70 There is some variation from state to state in how volunteers are compensated, if at all, for costs and expenses. The Committee believes there is merit in a standardised national approach, especially considering the trend for inter-state deployment of volunteer fire crews. The Committee does not however think it appropriate to interfere with the voluntary nature of the commitment made to bush fire brigades and although some form of compensation or cost offsetting is required it ought not be a direct wages like payment.

Recommendation 27

6.71 **The Committee recommends that**

- **the Commonwealth implement a program similar to the Army Reservist Employer Support Program for the re-imbursement of costs incurred by employers of volunteer fire fighters when attending bush fires for a period exceeding five days in any month; and**
- **the Commonwealth consult with the states and territories through Council of Australian Governments to develop a range of measures related to local government rates, state government charges and insurance costs to provide rebates for registered volunteer fire fighters.**
- **the Commonwealth consider the feasibility of taxation relief on costs incurred by registered fire fighting volunteers in the line of duty.**

6.72 To support the employer compensation program proposed above the Commonwealth should also enact legislation to protect employees against dismissal for reasonable attendance for fire duties as registered volunteer fire fighters. The Committee heard evidence, at the public hearing in Richmond of a volunteer fire fighter being sacked because if his fire fighting duties. This might not be a wide spread problem but it should be easily preventable

6.73 The Committee notes the passage of the Workplace Relations Amendment (Protection for Emergency Management Volunteers) Act 2003. The Amendment protects:

> emergency management workers from unlawful dismissal if their temporary absence from their normal employment is 'reasonable in all the circumstances' …[63]

6.74 The Explanatory Memorandum to the Amendment notes that the:

> reasonableness requirement means that in most circumstances there would be an expectation that the employee would seek the employer's consent before absenting himself or herself from the workplace …
>
> The duration of the absence would also have to be reasonable in all the circumstances … The size of the employer's business is one factor which may affect what is considered reasonable.[64]

6.75 The Commonwealth legislation introduces a national minimum standard for the protection of all volunteers, who are members of or who have a 'member-like' association with an emergency management organisation. Generally speaking: 'The range of employment related rights protected … is narrower than equivalent State and Territory legislation.'[65] However, there are areas where the level of protection is extended beyond those available to volunteers in some jurisdictions. For example:

- There is no legislated protection for the employment rights of emergency workers in Victoria or Western Australia.
- The Act extends protection to volunteers responding to all reasonable emergencies and thus increases the level of protection currently available in the Northern Territory, Queensland and Tasmania where protection is only available to volunteers responding to declared emergencies and disasters.

63 Department of the Parliamentary Library, *Bills Digest No. 131*, 2002-03, p. 1

64 *Workplace Relations Amendment (Protection for Emergency Management Volunteers) Act 2003*, Explanatory Memorandum, http://parlinfoweb.parl.net/parlinfo/view_document.aspx?ID=1441&TABLE=OLDEMS, viewed 20 October 2003.

65 Department of the Parliamentary Library, *Bills Digest No. 131*, 2002-03, p. 6

- The Act protects volunteers against acts of victimisation for being absent from work on emergency relief thus making protection for volunteers in New South Wales no longer only when the Premier directs.[66]

Insurance against death or injury

6.76 Concerns were raised about the under insurance of volunteers. The Committee was told that in New South Wales:

> It is also a problem that we are only insured for $150,000. If we want more than that, we have to go to court to get it. I have had heard that the people burned in the Wingello fires are still fighting for compensation. I do not think that is fair to us. I have been on page for 24 hours a day for the last six years and I do not think it is fair for my family that, if I were seriously injured or killed at my age, they would only get $150,000. It has got to the stage with these men here where it was going to affect their livelihood. It was not going to affect my livelihood but it could have affected me because of the safety concerns I had. Nimmitabel brigade were at the stage where, if it happens again, we will think very hard about not even turning up. We are only volunteers; we can make that decision.[67]

6.77 The Committee does not have sufficient evidence to determine if this is a problem for New South Wales alone or if it is affecting participation in volunteer brigades, but it does believe that the concerns of volunteers needs to be addressed.

Recommendation 28

6.78 **The Committee recommends that the Commonwealth Government work with Australasian Fire Authorities Council to review the insurance cover provided to volunteer fire fighters in all states and territories and ensure that cover is adequate for loss of life or injury and related loss of income and property lost in the line of duty.**

66 Department of the Parliamentary Library, *Bills Digest No. 131*, 2002-03, p. 2

67 Ian Blyton, *Transcript of Evidence*, 10 July 2003, p. 9.

Aerial fire fighting

6.79 The Committee was presented with evidence that suggests that a more appropriate use of aerial fire fighting resources would help achieve a more aggressive and effective early attack on fires, as advocated in chapter 5 above. The Aerial Agricultural Association of Australia (AAAA) said that:

> Those States that are currently using aerial agricultural operators in an aggressive initial attack role have been able to change their management approach from generally reactive to a more proactive approach - being able to contain small fires and manage them accordingly, thereby freeing resources for better training and other initiatives.[68]

6.80 The evidence included examples of fire fighting aircraft being available during the January fire but not used even though conditions at the time were conducive to aerial attack:

> During various stages of the January fires, a number of fixed wing fire bombers were on the ground at Tumut awaiting better visibility and tasking from NSW controllers. However, for at least one day just before the Saturday fires sweeping through Canberra, there was sufficient visibility to see the fire front from 1000' above Canberra Airport as it came over the Brindabellas. Unfortunately, tasking onto the fires at that stage did not occur, other than helicopters being tasked into the defensive asset protection role.[69]

6.81 The role that aircraft can play in the early attack on wildfires was explained by Mr Col Adams, an experienced operator of fixed wing fire fighting aircraft:

> While their most appropriate role is in the initial attack on fires – containing fires until ground crews can reach them, they can also be used effectively in assisting to control established fires.[70]

68 Phil Hurst, *Submission no. 57*, p. 2.

69 Phil Hurst, *Submission no. 57*, p. 2.

70 Col Adams, *Submission no. 84*, p. 1.

6.82 Much of the evidence received about aerial fire fighting went to the question of the underutilisation of available fixed wing aircraft compared to the more newsworthy use of helicopters. Mr Adams' submission outlined what work fixed wing aircraft can do. He referred to what could have been delivered by fixed wing aircraft that were available for the McIntryes Hut fire:

> If the RFS had taken the situation seriously and efficiently utilized just half the aircraft available these aircraft could have delivered up to 36,000 litres of retardant mixture per hour to the fire front. This volume of retardant roughly translates into over 2 kilometres of retardant line (a chemical fire break) per hour. In remote or inaccessible terrain, no bulldozer / grader can build a fire break with the speed and effectiveness of a fixed wing aircraft.[71]

6.83 Commenting on the fire suppression effort in the Kosciuszko National Park at a public hearing in Cooma, Mr Michael Apps the owner and Managing Director of the Polo Flat Airfield reported delays in using aircraft to combat fires because of the inappropriate timing of briefings:

> Instead of briefing the pilots on the night before and saying, 'I want you here at five in the morning, when the air is calm and we have good visibility; I want to send you out there to hit the fires hard,' they worked a nine to five routine. They had their briefings at 9.30 or 10 o'clock. By that time the wind was up, the fires were roaring off again, visibility was down to zero and it was another incompetent shambles.[72]

6.84 Mr Apps presented the consequences of the poor level of organisation at Polo Flat Airfield in terms of days of flying time lost:

> The aircraft got in the air one day and did 93 sorties. They flew on four days in total out of 24. That is 20 days when six aircraft, worth $1½ million each, with enormous water-dropping capacity, sat on the ground with the pilots sleeping, watching television and getting very fed up.[73]

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71 Col Adams, *Submission no. 84*, p. 3. The submission indicates that within 10 nautical miles of the site of the original fire there are 5 agricultural airstrips suitable for the operation of Dromader aircraft carrying 2,000 litres of retardant with a turnaround time of less than 15 minutes firebombing operations, and there are also three larger airstrips that could accommodate larger capacity turbine aircraft carrying up to 3,000 litres.

72 Michael Apps, *Transcript of Evidence*, 10 July 2003, p. 114.

73 Michael Apps, *Transcript of Evidence*, 10 July 2003, p. 116.

6.85 The effectiveness of early aerial attack, particularly with fixed wing aircraft was demonstrated in Western Australia in the 2002-2003 fire season. CALM advised that contracted fixed wing (Dromader) aircraft 'have proven to be effective in restricting small fires and in asset protection'.[74]

6.86 For the 2002–03 season additional aircraft were required and two additional Dromader fixed wing aircraft and two helitankers were deployed. It was said that the fixed wing aircraft 'proved yet again to be of major benefit in supporting ground forces in containing small fires. These aircraft were particularly effective in restricting initiating wildfires within forest fuels and heathland fuels'. The helitankers were used extensively for asset protection in the urban bushland interface around Perth. The Department estimated that this deployment of fixed wing aircraft and helitankers, which cost in the order of $1.5 million, resulted in savings of $40 million in assets and suppression costs.[75]

6.87 The IFA suggested that there is a need to recognise the potential to use aerial water bombers as part of a rapid initial response to fires:

> The usefulness of rapid first attack strategies using a combination of aerial fire bombers and ground resources on private land is under-rated. For the last seven years, aerial fire bombers deployed in the Mount Gambier area on a risk-related basis have clearly demonstrated that fires in high value plantations and agricultural crops can be extinguished under extreme fire weather conditions. This is only possible when fires are rapidly detected and strategically located ground crews are able to respond to all fires within 20 minutes.[76]

6.88 It is important to remember however that aircraft are not the entire answer. As the VAFI said that aerial suppression can be very effective only at certain stages of the fire and a ground crew is still required to follow-up and check the fire. Furthermore, all forms of aircraft are only effective in the early stages of fire growth in the right weather conditions:

> They have low effectiveness in smoky, low visibility conditions, or high wind. They should be seen as complementing ground crews, not replacing them. If fire-

74 Western Australian Government, *Submission no. 362*, p. 19.

75 Western Australian Government, *Submission no. 362*, p. 20.

76 Institute of Foresters of Australia *Submission no. 295*, p. 19.

> fighters rely too heavily on aerial suppression then they limit their opportunities for control because aircraft are not suitable for every fire situation.
>
> Reliance on air attack risks failure in a multiple-fire situation like that which occurred in 2003 unless it is supported by a determined ground attack by experienced forest fire fighters.[77]

6.89 The IFA referred to 'the growing enthusiasm for high-cost, high media-value, jazzy suppression tools, such as air crane helicopters. The Institute stated that while these aircraft are useful 'they are not a replacement for solid fire prevention work, and for skilled crews on the ground.[78] This position was supported by the CSIRO:

> We had a project nearly 10 years ago looking at aerial suppression, mainly with fixed wing aircraft in Project Aquarius. Aerial suppression is good as a support activity for ground based things. It can be moved into position quickly. But, at the end of the day, you still need people on the ground and you still need some means of fuel management, if you are going to tackle these things.[79]

6.90 Mr Phil Cheney expanded on this point:

> aircraft are limited in what they can do. Our own studies from Project Aquarius back in 1985 indicated that even the largest aircraft that was available in the world at that time, and it is probably still the largest aircraft that is available for firefighting, could not do any better than ground forces with a bulldozer.
>
> In practice, any aerial operation has to be supported with ground fire line instruction. If it is not, it may or may not slow the fire. The air operators, depending on their inclination, may say it did or it did not. But, unless they are properly supervised and the direction of the fire suppression is undertaken, it can be a waste of money. In many cases, I think, in these recent fires there was certainly an over reliance on helicopter attack to slow the fire without the support coming in on the ground. I think analysis in the future will

77 Victorian Association of Forest Industries, *Submission no. 212,* p. 9.

78 Institute of Foresters of Australia, *Submission no. 295,* p. 17.

79 Tim Vercoe, *Transcript of Evidence*, 14 July 2003, p. 73.

> show that the aircraft attack alone had very little impact on the overall spread unless it was supported by ground crews.[80]

6.91 Having said that Mr Cheney indicated that with due preparation and with good aerial supervision that aircraft had an effective role to play:

> In general terms, I would say that the use of aircraft does require preparation. Some states have set up to do it and other states have not. In each case where a state has set up to use light agricultural aircraft they have found that there is a role. The study we did, a desktop economic study, showed that using several of these aircraft dispersed across the state was more efficient than buying one very large single-purpose aircraft.[81]

6.92 The Forest Owners Conference (FOC) also referred to the need for aircraft to be available for rapid attack:

> Contracts for special resources, such as fire fighting aircraft should be flexible enough to allow scaling up and down of resources according to risk.
>
> There has been a tendency in recent years for the Government to support large major contracts for equipment such as the Erikson Skycranes. Whilst these are effective fire suppression equipment, under certain circumstances, (especially around the urban fringe,) the support of these should not be at the expense of smaller more flexible aircraft. 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.[82]

6.93 In part the problem in Australia is due to the practice of calling up aircraft only after a fire has reached some threshold level of threat. This is not the best way to use aircraft, as explained by National Air Support (NAS):

> The most effective use of aircraft in the aerial fire fighting role is when they are used as soon as possible after initial fire

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80 Phil Cheney, *Transcript of Evidence*, 22 August 2003, p. 28.

81 Phil Cheney, *Transcript of Evidence*, 22 August 2003, p. 29.

82 Forest Owners Conference, *Submission no. 350*, p. 4.

> detection and maximum effort is expended when the fire is at its smallest size and intensity. Thus preventing small fires becoming big fires. This approach has a much more effective result for the same level of resources than an incremental response to a fire event. However this requires dedicated resources to be available on immediate call much the same as a metropolitan fire service.
>
> Unfortunately in most parts of Australia an incremental approach is taken resulting from time to time in large fires where no amount of resources aerial or otherwise are capable of combating or managing the fire. In many areas of Australia initial fire suppression including the cost, is the responsibility of the lowest level of government. Responsibility including financial responsibility only transfers when the fire event exceeds the means of the previous level. In recent fire seasons this has seen extensive use of the military and Federal government funds provided to the States.[83]

Use of aircraft during the 2003 fires

6.94 The initial response to the McIntryes Hut fire, as indicated elsewhere in this report was insufficient. In relation to the deployment of aerial assets during the first few days Mr Adams submission detailed the opportunities available to use fixed wing aircraft during the Canberra fires – opportunities that were not taken up:

> Despite the fact that the situation was tailor made for fixed wing firebombing, no attempt was made to really hit them using fixed wing aircraft. While there were 9 fixed wing fire bombers engaged at the Kosciusko National Park fires, another 11 fixed wing firebombing aircraft were available for firefighting in NSW. These 11 aircraft were available to NSW RFS from the onset of the fires on 8/1/03 and it was not until the 17/1/03 that these aircraft were finally tasked (to other locations in NSW).[84]

6.95 On several occasions the Committee heard that aircraft were available at suitable times but were not deployed. For example, in Victoria, the Committee was told that:

> there were very limited opportunities for aircraft to bomb fires or even fly along the fire edge to find out where it was.

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83 National Air Support, *Submission no. 203*, p. 4.

84 Col Adams, *Submission no 84*, p. 2.

> Early in the morning was an opportunity, but … they were not despatched until later in the day and then it was pointless because they could not see anything. … On the morning of the 30th, when we were burnt out, it was calm. The wind did not get up until probably 11 o'clock in the morning. Then it was too late; nothing could be done.[85]

6.96 In another example an experienced pilot told the Committee that on several occasions that aircraft were held on the ground:

> There was nil cloud, there was no smoke and the fire started spotting … The aircraft were kept on the ground; Melbourne would not allow them to fly. This happened on quite a few occasions.
>
> The pilots objected very strongly; they wanted to go and get out. There were four aircraft to start and get into these spot fires. They refused to allow them. They sent one aircraft to go to a hot spot in the middle of a fire over at Tallangatta. I do not think he got there; I think he finished up telling them exactly where they could fit the situation. That happened repeatedly. They were forever being sent to areas that were already reasonably safe …
>
> The use of aircraft could have saved untold troubles. I heard of an instance where the Premier went up to Mount Beauty and they called the aircraft across there, put on a massive demonstration to satisfy him and then they all came back again. They did not bother doing any firefighting; they were not allowed to.[86]

6.97 Mr Jim Norrie, an operator of helicopters raised concerns about the way these aircraft were supported and deployed by fire fighting agencies, including a lack of training of field staff in procedures around aircraft and inadequate tasking of aircraft. It appeared that some incident management teams had a lack of understanding of the capabilities of types of aircraft and pilots, as indicated by the following inappropriate tasking:

- Medium helicopters used in mop up exercises when light helicopters should be used.
- Inexperienced pilots tasked to difficult jobs.
- Aircraft continually flying when they are totally ineffective.

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85 Kevin Rodgers, *Transcript of Evidence*, 28 July 2003, p. 11.

86 Robert Pendergast, *Transcript of Evidence*, 28 July 2003, p. 41.

- Heavy helicopters continually missing targets on bombing runs and in fact light helicopters being much more effective on the same task.
- Mapping runs and surveys being undertaken over and over again, much of which is simply pleasure flights.
- FL1R runs being carried out at the wrong stage of the fire with totally useless information being reported.[87]

6.98 A similar case was put by another helicopter company heavily involved in the 2003 fires. McDermott Aviation also argued that the current system of calling in aircraft once the fires have reached critical stage is a long way short of correct utilisation. The company also indicated that there was a lack of interaction from air to ground units which is vital for effective control. The company proposed a different solution. It suggested that a dedicated helicopter fire fighting unit be established. This was proposed to allow better training of fire fighters in interaction and better use of aerial support for the ground units. This would feature locally available heavy and medium sized helicopters contracted on a long term basis with the contractors providing the full support and management package.[88]

The use of aircraft in New South Wales

6.99 Of particular concern was the approach being adopted in New South Wales compared to other states. Mr Col Adams observed that:

> The Victorian Department of Natural Resources and Environment (DNRE) has over 30 years experience in using fixed wing aircraft in firefighting and has developed a system that should serve as a model for other Australian bushfire authorities to adopt South Australia and Western Australia also place heavy emphasis on rapid deployment of fixed wing aircraft to fires. The NSW RFS on the other hand has steadfastly refused to embrace the concept of using fixed wing aircraft as a first line of attack on fires. Despite over 20 years of advocacy by others, and myself the RFS continues to ignore its potential and denigrate its proponents. While there has been some increase in use of fixed wing fire bombers in NSW over the last couple of years, this seems to have been more for window-dressing rather than a serious attempt to fully utilize their capabilities. There is little corporate knowledge within the RFS on aerial firefighting using fixed

87 Jim Norrie, *Submission no. 182*, pp. 1–2.

88 John McDermott, *Submission no. 226*, p. 1.

> wing firebornbers and apparently little desire to acquire such knowledge. There is also little enthusiasm for the idea that total aviation costs in fire control could possibly be more than halved if aircraft were used proactively rather than reactively.
>
> Despite being one of the most experienced and best equipped firebombing pilots operating in NSW, my attempts to get an effective system in place have been met with accusations from the upper echelons of the RFS of self-interest and not being a team player. Most other operators of fixed wing firebombers hold similar views to mine about the capabilities and organization of firebombing in NSW but are unwilling to voice their concerns publicly for fear of losing contracts or casual work with the RFS.
>
> This is not an unfounded fear – have been virtually sidelined for the past few fire seasons with preference often being given to inappropriately equipped aircraft flown by pilots with no firebombing experience. There are also a small number of casual contractors more concerned with keeping their aircraft flying and the dollars rolling in who don't give a damn about their effectiveness.[89]

6.100 Mr Graham Gray made similar comments:

> Victoria have used fixed wing aircraft in particular for a number of years. Whilst they still have their problems, they have developed the skills for using them far more than we have in New South Wales …
>
> the very large helicopters that have been brought in for this fire season have certainly been very effective around the urban interface but they are an enormous cost. Small helicopters that carry 200 litres or a bit more, dropping fresh water dipped out of a dam, are quite ineffective against fires of the sort of intensity we have seen. They have a role to play but it is certainly not doing that.
>
> The money being spent on those inappropriate uses of aircraft might be better spent on agricultural aircraft, which can drop 2,000 litres at a time instead of 200 litres and can drop water that has been dosed with retardant or foam to make it 10 times more effective …[90]

89 Col Adams, *Submission no. 84*, p. 2.

90 Graham Gray, *Transcript of Evidence*, 10 July 2003, p. 69.

A national approach

6.101 A national approach to the acquisition and management of fire fighting aircraft has emerged over the last few years with the Commonwealth providing funding to enable the states and territories to operate additional aerial fire fighting resources over the 2001/02 and 2002/03 fire seasons.[91] In 2002 the Commonwealth made available up to $800,000 to bring two Erickson Air-Crane Helicopters to Australia. Further funding of up to $50,000 was provided to the peak body for all Australian fire agencies, the AFAC to develop a national strategy. During 2002-03 the Commonwealth provided funding of $8.2 million (inclusive of GST) to enable additional aircraft resources to be available for the 2002/03 fire season[92]. The DoTARS submission detailed this and identifies this expenditure:

> In September 2002 … the Federal Government made a funding offer to the States and Territories of up to $5.5 million to cover half of the direct costs of leasing and positioning three heavy capacity Air-Crane helitankers …in Australia for the 2002-03 season. The States and Territories would meet the remaining costs including all operating costs for the helitankers. In October 2002 … [the Commonwealth] announced additional … assistance of $400,000 to meet half the costs of airfreight for the helitankers to expedite their arrival in Australia.
>
> In January 2003 the bushfire crisis in Victoria, New South Wales and the ACT led to the announcement by the Prime Minister of further funding of up to $2.1 million to meet half the direct costs of leasing and positioning two additional Air-Crane helitankers
>
> In addition $250,000 and $300,000 was provided to South Australia and Western Australia respectively to help meet their needs for small fixed wing water bombers and medium sized helicopters.[93]

6.102 The DoTARS advised the Committee that:

> The Federal Government recognises the potential benefits of a national approach to aerial firefighting to ensure scarce State contracted aircraft equipment can be used more effectively and efficiently across the jurisdictions to combat major fire

91 Department of Transport and Regional Services, *Submission no. 208,* p. 5.

92 Department of Transport and Regional Services, *Submission no. 208,* p. 8.

93 Department of Transport and Regional Services, *Submission no. 208,* pp. 5–8.

> outbreaks. It considers that the national coordination between States and Territories of equipment and placement based on risk would facilitate a more cost-effective national response. [94]

6.103 National Air Support made a submission that argued that there is no national standard or approach for the employment of aerial fire fighting and this combined with ad hoc usage and availability in fire fighting aircraft in Australia is a major impediment to the development of a coordinated and effective aerial fire fighting capability:

> The States have variations on the basic applications of aircraft in aerial fire fighting, which have developed within the constraints of cost and local availability. This has meant that access to highly specialised aircraft and support organizations has not been possible. This is directly attributable to the divided responsibility and legislative basis for fire suppression in Australia.
>
> The application of operator standards, except in Victoria, has suffered from the same approach. Only in Victoria do core service providers have structured contracts and system checks for compliance and call when needed operators under go pre season validation. Outside Victoria this has resulted in recent years in the aviation response during large fire events of an almost anything that flies approach being taken, resulting in numerous incidents and hazards which are in the main avoidable.[95]

6.104 A solution to problems arising from the incremental approach to funding was proposed by NAS:

> Significant funding has generally not being available to place effective numbers of dedicated specialised aircraft on standby / availability for the fire season. However when serious fire events occur large quantities of operational funding becomes available under existing emergency service major incident arrangements. This results in ad hoc, as available, non role specific aircraft being utilised. Flight Safety is significantly compromised with this approach and the effectiveness of aircraft tasked under these circumstances is less than marginal compared to the effectiveness of

94 Department of Transport and Regional Services, *Submission no. 208,* p. 6.

95 National Air Support, *Submission no. 203*, p. 3.

> dedicated aircraft tasked early in the fire management or attack cycle.
>
> This incremental approach and funding matrix almost ensures the most ineffective use of aerial fire fighting assets. The real key to the effective use of aerial fire fighting assets is to transfer the funding made available under the emergency service provisions into funded standby arrangements for dedicated assets. It can be convincingly argued that this will result in the same level or a reduced level of funding being required over time with a far more effective operational outcome.[96]

National Aerial Fire Fighting Strategy

6.105 The approach suggested by NAS is in part embodied by in the National Aerial Fire Fighting Strategy to which the Commonwealth in 2003–2004 is contributing $5.5 million.[97]

6.106 This strategy is based on the view that it has proven to be beyond the resources of individual states and territories to fully provide appropriate aircraft resourcing for the higher levels of threat of fire that may be faced. It is in this context that the possibility of a cooperative resource provision and sharing arrangement involving relevant Commonwealth, state and territory agencies is logical and offers considerable promise to ensure the provision of an appropriate aerial fire fighting capacity to the Australian community.[98]

6.107 The Strategy proposed a two stage approach that would lead to a Commonwealth, State and Territory cooperative and equitable arrangement to operate an Australian Interagency Fire Coordination Centre and provide a shared national aerial fire fighting resource. In a way that is consistent with the evidence presented above, the Strategy notes that:

- aerial firefighting is not always the appropriate tool to employ, for safety and effectiveness reasons – firefighter and public expectations must be managed
- optimum returns come from rapid attack on incipient fires – there is a key requirement to *invest* in ensuring that the aircraft are readily available and are dedicated to rapid response

96 National Air Support, *Submission no. 203*, p. 4.

97 John Doherty, *Transcript of Evidence*, 21 August 2003, p. 49.

98 Australasian Fire Authorities Council, *National Aerial Fire Fighting Strategy*, Draft 3.1, p. 5.

- aerial fire fighting firefighting must be integrated into the overall fire control strategy and will require ground follow up
- appropriate, competent management, supervision and support is crucial
- competent, experienced highly skilled aircraft operators and pilots must be employed
- access to a range of aircraft types is necessary to ensure the right aircraft may be matched to the right task.[99]

6.108 The principles underlying the strategy are that agencies should continue to provide their own base load aircraft (that is, provision for a normal season) but with enhanced arrangements for sharing this base load resource, and that to address gaps there needs to be a pooled national resources of specialised aircraft with management and support resources.

6.109 The AAAA has expressed serious concerns about the steps towards a national strategy that have so far occurred. The Association argues that there is a lack of commitment to aggressive initial attack using at least fixed wing fire bombers and, as appropriate, large helicopters. This is a flawed approach with the AAAA suggesting that all that will happen is that the funding will be divided between the states without a great deal of thought to strategy or a commitment to aggressive initial attack. The Association is also concerned 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, in particular, on aggressive initial attack. [100]

6.110 The Association is also concerned about the call for expressions of interest and tender process managed by the AFAC. It is concerned that the tender process was actually aimed at removing consideration of fixed-wing aerial firebombing. The definitions in the contract proposal for both the medium and the heavy-lift capacities, in the Association's view, make it very clear that it was really looking at helicopters only.

99 Australasian Fire Authorities Council, *National Aerial Fire Fighting Strategy* Draft 3.1, p. 5.

100 Phil Hurst, *Transcript of Evidence*, 30 July 2003, p. 19.

6.111 The specifications include comments that actually indicate that helicopters with fixed underbelly tanks would be preferred and the water carrying capacities for heavy lift aircraft appear to have been set at a level to favour the Erikson Air Crane helicopters. The Association told the Committee that:

> 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.[101]

6.112 The Association also argues that the bias towards helicopters is misplaced because the use of fixed-wing aircraft is a more cost-effective method, particularly when coupled with the aggressive initial attack. Whilst a role for helicopters is acknowledged in moving people, doing sling loads, bucketing and fire fighting it was suggested that:

> 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.[102]

101 Phil Hurst, *Transcript of Evidence*, 30 July 2003, p. 26.

102 Phil Hurst, *Transcript of Evidence*, 30 July 2003, p. 26.

6.113 It remains to be seen whether or not the AAAA's fears for the tender process are valid. If the strategy for 2003-04 does not provide for a mix of aircraft type – including fixed wing and helicopters and if provision is not made to disperse the aircraft on a risk basis nationally for early rapid attack then it will, in the Committee's view have been flawed. The Committee notes that the Air Cranes that appear to be favoured by the tender process may not comply with all the specifications in relation to modern well maintained aircraft if, as the Committee has been told, they are old aircraft now out of production and subject to high maintenance costs.[103]

Steps towards improving aerial fire fighting

Improved contractual arrangements

6.114 NAS outlined a crucial element of any contractual arrangements that needs to be remedied for a national approach to be effective:

> In order to ensure access to high quality, safe, reliable and effective aircraft resources for fire fighting duties sufficient funding needs to be provided on a long term viable basis. The use of short term contract (less than 5 years) will in effect pre prescribe the use of older more marginal aircraft and not provide the certainty for operators to invest in high quality systems and well developed experienced operations. Long term contracts allow operators to invest in high quality, modern, high cost but effective and safe aircraft and provide the certainty to invest in the development of high quality operations.
>
> Other contracted aviation operations have recognised and benefited from this approach with the majority of aviation service contracts being in the 7-10 year range and moving out to 15 year terms. Examples of this approach are the Australian Customs Service Coastwatch program, New South Wales Air Ambulance and RAAF Search and Rescue.[104]

103 Email by Keith Logan (forwarded to the Committee by Peter Cochran), 28 July 2003.

104 National Air Support, *Submission no. 203*, p. 7.

Aerial control

6.115 Mr Phil Cheney told the Committee that the thing that would contribute most to the effectiveness of aerial water bombing is better aerial supervision:

> I think the use of aircraft in Australia requires a very thorough look and overhaul because, based on research overseas, we are not using aircraft in this country very efficiently. Of all the different types of aircraft and the studies that have been done on them, the one single factor that has been shown to most improve the efficiency of the operation is having it closely aerial supervised.[105]

A better approach to a national strategy

6.116 The Committee concludes that there is strong evidence to show that a mix of medium fixed wing and helitankers should support fire fighting efforts but they need to be available for initial attack and not just called upon once fires escalate. The states and territories should commit to using aircraft effectively in rapid initial attack mode as a prerequisite for accessing funds made available by the Commonwealth. There is clearly a need for a national strategy that involves long term contractual arrangements and the strategic deployment of aircraft around the country on a risk basis as the fire season unfolds.

6.117 The National Aerial Fire Fighting Strategy appears to be on the wrong track in targeting helicopters. The Committee is concerned that this reflects a bias in New South Wales against fixed wing aircraft. This could prove costly to the Commonwealth and the Australian community. If the arrangements to be made for the 2003–2004 season reflect the Committee's concerns then there will be a need for the Commonwealth to review its options before making commitments to further long term funding. The Commonwealth should ensure that the national strategy includes a better mix of aircraft and more flexible arrangements, and it should ensure that aircraft are utilised for initial attack.

105 Phil Cheney, *Transcript of Evidence*, 22 August 2003, p. 28.

6.118 The Committee notes the approach indicated by Mr Cheney that using several medium fixed wing aircraft dispersed across the state was more efficient than buying one very large single-purpose aircraft. This should be a fundamental aspect of the national strategy.

6.119 Any national strategy should include provision of suitable ground support equipment positioned at key strategic locations as well as training for key personnel in the fire suppression agencies.

Recommendation 29

6.120 **The Committee recommends that the Commonwealth should commit funding for aerial fire fighting beyond the 2003–04 season on the proviso that the Australasian Fire Authorities Council and the state and territory governments make a commitment to:**

- **Rapid initial attack of all wildfires during the bush fire season regardless of tenure.**
- **Deployment on long term contracts of a mix of aircraft, including fixed wing.**
- **Deployment of aircraft on a nationally coordinated risk analysis basis to be updated as each fire season unfolds.**
- **Provision of nationally coordinated full ground support.**
- **Development of training arrangements for air crews, ground support crews, incident management teams and fire fighters to a national standard.**
- **Development of systems of effective aerial control of fire bombing operations.**

Other proposals for the use of aircraft

6.121 The Committee received a number of proposals for the development, acquisition or deployment of larger aircraft and aerial fire bombing systems. The Committee is not in a position to make technical and engineering assessments of these proposals but it notes that there is evidence to show that effective and efficient medium to heavy lift fixed wing and helicopter aircraft are available in Australia and have been used with success when properly tasked. The Committee also notes the comment from Mr Cheney reported above about the outcomes of the Project Aquarius study. It is a matter for state and territory authorities to further consider these particular types of aircraft as part of their overall strategy.

Ground to air communications at the fire front

6.122 The consultant engaged by the Committee to examine communications matters (see Communications section below) reported that there was evidence of complaints from fire fighters of not having direct communications from the fire ground to the air support resources engaged in water bombing or reconnaissance work. Some agencies that normally have access to their own air resources can maintain communications from the fire ground to the aircraft, but as a general rule the practice is frowned upon. During water bombing operations an 'Air Attack Supervisor' would normally direct the aircraft to the target in compliance with the request from the 'Air Operations Manager'. The air operations manager within the Incident Control System structure is working in conjunction with the 'Operations Officer', and it is considered to be inadvisable for air resources to be prioritised or directed from any other location once the management structure is up and running.[106] Although, as noted above, there is also a need for effective aerial supervision.

6.123 The Committee agrees that the management of air operations should continue to be the responsibility of incident management teams but considers that there needs to be better co-ordination with ground crews. This will not be achieved by putting the direction of air operations in the hands of ground crews but if the level of support to the fire ground is inadequate then steps needs to be taken to correct this anomaly. The need to address concerns about difficulties in communicating operational information from the fire front to aircraft

106 Brian Parry and Associates, *Report on Communication Issues*, September 2003, p. 34.

should be taken up in the changes to incident management systems as proposed in the preceding chapter.

Recommendation 30

6.124 **The Committee recommends that in changing the incident management systems as proposed in recommendation 23 above all bush fire agencies review concerns about difficulties in communicating operational information from the fire front to air operations.**

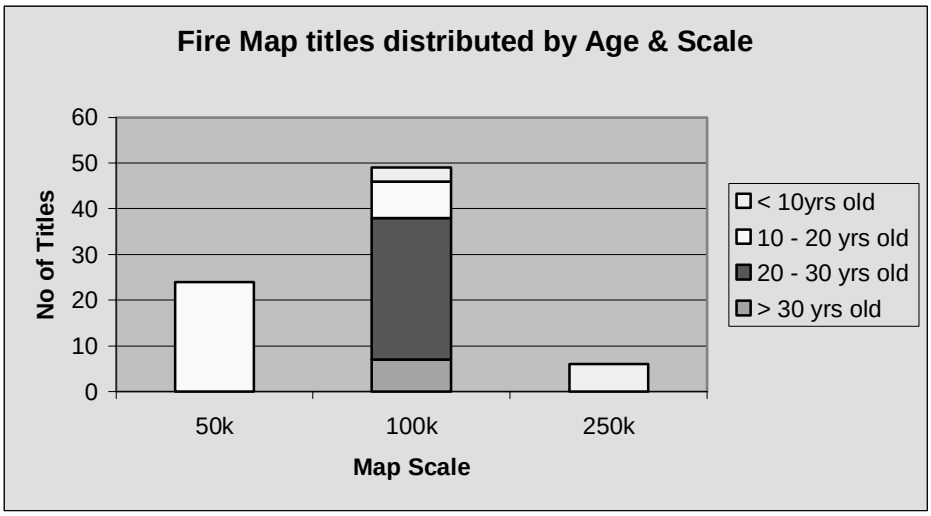
Maps and geographical information systems

6.125 The Committee on several instances was told that fire fighters were hampered in their efforts by a lack of basic up to date maps. On the other hand the Committee heard evidence of the availability of very powerful geographical and spatial information systems (GIS). Both these matters raise issues of concerns – on the one hand the effectiveness of fire fighting operations and the safety of fire fighters is compromised. On the other there is a risk of over-reliance on technology that may then lead to the same risks.

6.126 Clearly there is a need to use the right mix of technology and to use it in a way that best supports operations. Good information is vital to incident controllers, support teams and fire fighters on the ground. The lack of up to date maps requires urgent attention to mapping programs in the states and territories.

6.127 The Committee was given information about the availability of maps used in the recent fires that confirmed the view that many maps were out of date. Information provided by Geoscience Australia indicated that most of the maps they distributed during the January fires were 1:100 000 scale titles that were 20 to 30 years old, as illustrated in Figure 6.1 (below).

Figure 6.1 Age of Maps Distributed by GeoScience Australia for the January fires



Source: GeoScience Australia

6.128 The Australian Spatial Information Business Association (ASIBA) briefed the Committee on some of the problems impeding the development and delivery of geographical information systems for bush fire fighting. Whilst theses issues are generic across the geo-spatial data industry they do also impinge on fire management planning, fire fighting operations and fire analysis. The Association differentiated between two basic kinds of data:

- Reference data – mainly cadastral and topographical information used in all stages of emergency management. This data is generally collected and maintained by the government and is accumulated over long time periods and has national coverage.
- Operational data – collected, processed and distributed to decision makers within a few hours to assist tactical operations. This data covers only the relatively small areas in which operations are taking place. It requires a lot of costly infrastructure that sits idle for most of the year.

6.129 Reference data was said to be generally available (albeit at some cost) but also generally out of date and incorrect. In emergency situations it is hard to update this information without access to base data sets maintained by various governments. If the question of cooperation and policy are resolved with respect to the access to this critical data then information could be enhanced by the use of currently available technology.

6.130 A central feature of any national approach would be a move to greater standardisation of data collection and processing. According to ASIBA there would be several benefits of this approach:

- Standardisation lets peers communicate.
- Minimises cost of uptake of new information.
- Maximises utility and stability of information products.
- Permits more applications to operate under known conditions.

6.131 This approach would require that there be a coordination agency which ASIBA suggested could be Geoscience Australia or EMA.

6.132 The Association argued that this data needs to be used in a proactive way and not just accessed during major emergencies. It was proposed that there be a national Spatial Data Policy which provides for free access to base spatial data held by governments across the country. The Association has found that there is little leadership shown at the national level on this issue and that EMA seemed reluctant and disinterested in developing the opportunities to improve access to data and its use prior to and during emergencies. The development of a national policy and supporting programs should be a matter taken up by Geoscience Australia with EMA in a supporting partnership role in assisting with the dissemination and uptake of geographical information technology.

6.133 The Committee believes that any application of this proposal should involve the emergency management agencies as closely as possible and should be focused on the development of technology as an aid to those agencies. Geoscience Australia and EMA have already been involved in this type of activity through the development with the Technik Group of the GeoInsight Project. Technik developed the GeoInsight project in recognition of opportunities to more widely utilise such information and associated technologies in order to achieve greater protection of lives, property and the environment. It brought together the spatial information industry and the emergency management community to create a better understanding of each other's capabilities and needs. The project incorporated the production of demonstration and awareness resources and a range of example spatial applications. It conducted demonstration and awareness workshops in each state and territory and provided skills development tools to complement the program. The program built on existing spatial initiatives in the states and territories to enhance diffusion of spatial technologies in the emergency management community. The resource material created by the project was

distributed to 3000 emergency service personnel and geospatial businesses across Australia.[107]

Recommendation 31

6.134 **The Committee recommends that Geoscience Australia take responsibility, in conjunction with Emergency Management Australia, for developing a national spatial data policy to coordinate the development of data systems, the collection of data and the sharing of data between all the emergency response agencies across Australia, and that both agencies participate in the development and delivery of spatial information systems as part of a national approach to emergency planning and management data. The first priority in policy development and of systems should be related to bushfire hazards.**

Recommendation 32

6.135 **The Committee recommends that Emergency Management Australia be required to participate in the development and delivery of spatial information systems as part of a national approach to emergency planning and management data. The first priority in policy development and of systems should be related to bushfire hazards.**

Recommendation 33

6.136 **The Committee recommends that the 1:100,000 national mapping program be accelerated to achieve an average life of no greater than 10 years with priority given to those areas most susceptible to national disasters.**

107 Geoinsight, http://www.technik.com.au/special_projects.html, viewed 1 October 2003.

Communications

6.137 The submissions and evidence contained many comments about communications. Many of the comments arose because of failures to effectively pass on information and many others referred to problems with communication systems. Given the Commonwealth's general role in managing the radio spectrum and communications matters, the Committee is particularly concerned about system failures. The Committee also notes that some of the submissions and evidence called for the development of a national approach.

6.138 These are complex issues and are associated with difficult technical matters. They need to be addressed in a comprehensive way because effective solutions will improve the safety and efficiency of fire fighters thereby helping to solve some of the problems identified elsewhere in this report. The Committee commissioned Brian Parry and Associates to review the evidence, gather further information and propose some possible remedies to the reported communications problems (see Appendix F). The matters discussed in this section reflect the work done by the consultants.

6.139 Brian Parry and Associates reported that many of the matters they looked at had been the cause of a considerable amount of anxiety for people during, and after the fires. In many cases these were matters that can be fixed for the future without any significant injection of funds. It was observed that where there is a need for expenditure on radio equipment, it is extremely important that everyone works together to ensure that, further down the track, they can communicate with each other on an agency and national level.[108]

6.140 The communication systems that have been developed by the states and territories to ensure that adequate coverage is available for fire fighters, utilises a diverse range of radio technology within a number of radio spectrums. Matching the equipment to the geography of the area is critical to the performance of the network.[109]

108 Brian Parry and Associates, *Report on Communication Issues*, September 2003, p. 7.

109 Brian Parry and Associates, *Report on Communication Issues*, September 2003, p. 5.

6.141 There is a growing tendency towards 'whole of government radio networks', and while these may suit many agencies, it could be contended that the time and current climate dictates, that on a national basis, emergency services must plan to work more closely together. Communications across agencies is one of the major elements in establishing this cooperative climate.

6.142 From the submissions and evidence presented to the inquiry, Brian Parry and Associates identified several major issues – some of which were relevant to one incident or agency, but many also had relevance to other agencies.[110]

Radio network problems at the command level

6.143 The inability of agencies (in operation) to communicate on one radio network was seen as a planning issue and it became evident during the consultancy that the development of incident action plans has not always been supported by the preparation of communications plans. Planning should occur well in advance of any major bushfire incident and include due regard for effective communication. The Committee accepts the view that there is a need for the state and territory bushfire agencies to give a greater emphasis on pre-incident and incident preparation of communication plans as a means of ensuring effective interoperability between agencies at command and tactical levels. The speed of transfer of operational information between agencies at command level needs to be regularly monitored to ensure that operational objectives are not being compromised.

110 Some other issues identified by the consultants are discussed in chapter 4.

Support for the retention and use of UHF CB radios throughout the fire services

6.144 Brian Parry and Associates advised the Committee that in previous years some fire services have actively set out to discourage brigades from the use of CB radio, principally when CB radio was operated in the 27 MHz range. For rural fire fighting, the attitude has now changed with some services encouraging the installation of the equipment, while others are condoning its use for other than operational communications. The evidence shows that on numerous occasions during the last season, UHF CB proved to be invaluable to brigades when they found that they had lost all other means of communication. The service was also used for the initial reporting of fires, reports on the progress of fires and in particular the proximity to assets, tactical communication between the vehicles and personnel working at the fire front. It also proved to be critical as a means of alerting the community. It was suggested that currently UHF CB is the only nationally available radio system that has wide-spread access and acceptability.

6.145 However, there are problems with this band because it is an 'uncontrolled' network that allows unsupervised access from anyone with a radio transmitter capable of operating on these open frequencies. Operators have reported very little deliberate interference and that through local planning, and with access to 40 channels, procedures are in place to overcome such problems. The use of the network by vehicle mounted radios and handheld units has wide acceptance in most states for tactical communication on the fire ground. With such wide-spread use within the fire services and rural landholders throughout Australia, the system is achieving interoperability at a very practical level.

6.146 The Committee accepts that that the use of this equipment for this purpose should continue and that the use of UHF CB between units on the fire ground be included in communications planning for intra-state and interstate deployments.

Inadequate radio coverage during recent major events

6.147 During many of the recent major fires better communication was provided by VHF radio in steep terrain and heavily vegetated areas. The consultants noted that the forced migration of fire services to the use of UHF radio systems in mountainous terrain has in itself become a major occupational health and safety issue.

6.148 Some emergency services have made huge financial commitments to developing high performance UHF networks, installing numerous repeaters at accessible high points, still without achieving complete coverage of their respective areas. For such situations, further financial commitment has then been required to overcome the black spots by introducing satellite phones or some other technological solution.

Failure to achieve interoperability via communications at fire ground level

6.149 Some agencies have UHF and VHF systems specifically for communications at fire ground level using low power transmissions, enhanced by 'talk around' channels. In some places a specific channel on the main network is nominated for tactical fire ground communication. There is enormous disparity between various fire services and other agencies involved in fire fighting which in some states is a 'day to day' issue. The increasing trend for the interstate deployment of fire crews and incident control staff increases the need, as discussed in chapter 5 for standardisation of equipment. The Committee is advised that currently this can most efficiently be achieved by the utilisation of the UHF CB network but in the longer term, use of this system may prove to be impractical.

6.150 The Committee strongly agrees that Australia must work toward developing a National Strategic Radio System whereby, in any major incident, agency commanders and their respective communication centres can achieve full community interoperability.

Radio congestion at fire ground and command level

6.151 Complaints in regard to this matter were found not to be relevant to all states and territories. It is less likely to be an issue where an effective communications plan has been developed. It is clear that at fire ground level, on some recent incidents, there were too many users for the available channels.

6.152 At a command level there was an obvious need for further diversification of channels. These radios operate as a controlled net, hence each call from a mobile requires a response from the control operator. This can mean that if 60 mobiles are operating on the one network then the average transmission time can be as low as 30 seconds per hour, per vehicle. This further reinforces the need for interoperability communications to be relayed through the communications centre, rather than introduce other agencies onto the

main operational fire channels. It also highlights the need for communication training on protocols and operating procedures.

National Emergency Channel

6.153 The Committee's consultants found that there appeared to be an accepted point of view across all of the emergency service organisations, that there is a need for radio frequencies to be set aside as a means of ensuring interoperability between the various states and agencies. This need was first identified back in 1974 after Cyclone Tracey, and the Australian Communications Authority (ACA) issued a block of 64 channels to fulfil this purpose. The combined police forces of Australia took control of all 64 channels and this situation remains unchanged. Currently the police, on a national basis, have identified a need once again for channels where they can communicate between services and with other emergency service organisations, but it seems highly unlikely that they will surrender all or any of the 64 channels that previously had been set aside for this very purpose.

6.154 This matter was discussed with the ACA, it was indicated that whilst this is a very complex issue, the ACA is sympathetic to the need for interoperability at a senior level and on a nation wide basis.

6.155 An Inter-government Spectrum Harmonisation Committee has been established by the states and territories but despite this both the New South Wales and Victorian Governments are currently procuring totally incompatible equipment within the same radio band. The states and territories appear to be driven by the need for short term fixes for current problems. If the national approach is ever going to succeed, then the states and territories will need to adopt a long term approach to the matter.

6.156 If a national radio system is to be operational at command level across many agencies there needs to be commitment by the Commonwealth, state, and territory governments to plan and procure the necessary infrastructure and hardware. This would be facilitated by one Commonwealth organisation fulfilling the coordination role. The Committee agrees with proposals that this coordination role should be adopted by EMA. To make this possible there may be a need to a review of the current role of EMA and the administrative arrangements under which it operates.

6.157 The issues raised above require a consolidated review of the allocation and use of frequencies and channels within frequency bands.

Recommendation 34

6.158 **The Committee recommends that Emergency Management Australia and the Australian Communications Authority jointly with the Australasian Fire Authorities Council:**

- **Initiate an urgent review on a district basis, of the suitability of the current allocated radio spectrum to ensure that as far as possible, fire fighter safety is not being compromised through inadequate communications.**
- **Commit to the development, in conjunction with representative bodies of all emergency services, to a National Strategic Radio System.**
- **That the coordination of the deliberations be assigned to Emergency Management Australia.**

Recommendation 35

6.159 **The Committee recommends that:**

- **As a short term objective, the use of '40' channel UHF CB equipment be adopted for coordination and interoperability of communications at fire ground level.**
- **As a longer term objective a national communications plan be developed and incorporate the provision of low powered VHF channel allocations for the purpose of ensuring compatible fire ground communications between all agencies on a national basis.**
- **That the use of UHF CB between units on the fire ground be included in communications planning for intra-state and interstate deployments.**

Recommendation 36

6.160 **The Committee recommends that Emergency Management Australia and the Australian Communications Authority work with state and territory bush fire authorities to ensure that that district communication plans have regard for the amount of radio traffic that may be generated under the most severe conditions.**

Recommendation 37

6.161 **The Committee recommends that Emergency Management Australia work through the Australasian Fire Authorities Council to ensure that:**

- **A greater emphasis be placed on pre-incident and incident preparation of communication plans as a means of ensuring effective interoperability between agencies at command and tactical levels.**
- **That the speed of transfer of operational information between agencies at command level be regularly monitored to ensure that operational objectives are not being compromised.**

Survivability of communications sites during major bushfires

6.162 During the recent fires some communication sites were rendered unserviceable for prolonged periods of time due to direct impacts of fire or loss of power following damage to electricity supplies. This included mobile telephone towers, two way radio transmitter and repeater sites, and commercial radio and television. Such loss of service can affect fire fighting operations and pose risks to safety.

6.163 Brian Parry and Associates reported that these situations should be avoidable because in most cases, the fuel levels surrounding this equipment could be controlled by either burning or mechanical means without major environmental degradation of the area.

Recommendation 38

6.164 **The Committee recommends that Emergency Management Australia and the Australian Communications Authority, in conjunction with the respective state and territory governments, ensure the survivability of essential communication installations during fire incidents by strategic fuel management around the assets.**

Inadequate telephone infrastructure in bushfire prone areas

6.165 The recent bushfires caused major disruption to power distribution and, consequently, telephone communications failed in some areas when eight hour battery back up became depleted. This problem was seen to be common to both the mobile telephone network and the standard telephone system. Management of major bushfire situations involve numerous agencies. The lack of interoperability and the failure of radio systems referred to above, necessitate access to effective telephone communication.

6.166 Through their inquiries Brian Parry and Associates found that very few telephone or mobile phone facilities now have automatic generators to cope with power outages, with full reliance on the eight hour battery back up. Further advice is that if the power is expected to be out longer than the eight hours, then a contractor is required to deliver an emergency generator to the site to facilitate the resumption of telephone service. The events of the past fire season have proven this system to be totally inadequate.

Recommendation 39

6.167 **The Committee recommends that the Commonwealth investigate, and where necessary, require the urgent enhancement of the provision of emergency power and telecommunications services for the purpose of restoring essential services expeditiously in areas affected by fire or other natural disaster and where necessary to place licence requirements on telecommunication providers to do so.**

Cost of Repeater Sites

6.168 Many of the UHF radio network repeater sites are controlled by other agencies who contribute very little to the fire fighting effort that protects these facilities but which charge the fire fighting services rental to have the repeater equipment installed at their sites. The consultant found that this has been identified by brigades as being totally inequitable. Many of the agencies that are involved in this practice are commonwealth, state and territory government bodies.

Recommendation 40

6.169 **The Committee recommends that, for the purpose of communications for the police, ambulance and fire brigades, any rental costs associated with the use of radio sites under the care, control or management of the Commonwealth, state, territory or local government be waived, other than for the ongoing cost associated with the use of power at the site.**

Other developments

6.170 The Committee was also provided with advice on alternative and emerging communication methods. These include data radio communication and satellite telephony. There is the potential that without due regard for inter-operability and standardisation some of the problems outlined above will be repeated and impede the effective national deployment of such equipment.

Recommendation 41

6.171 **The Committee recommends that Emergency Management Australia request the Australasian Fire Authorities Council to:**

- **Determine protocols and standards on a national basis for the adoption and implementation of mobile data services by all fire fighting agencies with a view to ensuring national compatibility.**
- **Consider the development of a 'closed user group', utilising satellite telephony, as an interim measure for achieving interoperability between member agencies on a national level.**

6.172 The work that Brian Parry and Associates undertook led them to make a number of recommendations. Some of these have been incorporated above in this section, others have been discussed elsewhere in the report. A few relate to very localised action and are entirely within the jurisdiction of the states and territories. The Committee urges bushfire authorities to study the report prepared by Brain Parry and Associates and implement those recommendations.

Other technology

6.173 The Committee received several submissions and proposals for the development or utilisation of fire fighting technology, including fire attack vehicles and water delivery systems. Several information technologies were also put forward for the Committee's attention. The scope of the Committee's inquiries and the time available did not allow for detailed consideration of these proposals.