

VICTORIA

REPORT

OF THE

BUSHFIRE REVIEW COMMITTEE

ON BUSHFIRE DISASTER PREPAREDNESS  
AND RESPONSE IN VICTORIA, AUSTRALIA,  
FOLLOWING THE ASH WEDNESDAY FIRES

16 FEBRUARY 1983

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OF 16 FEBRUARY, 1983

APRIL 1984

VICTORIA  
BUSHFIRE REVIEW COMMITTEE

10 April, 1984

The Hon. C. R. T. Mathews, M.L.A.,  
Minister for Police and Emergency  
Services,  
Old Treasury Building,  
Spring Street,  
MELBOURNE, Vic., 3000

Dear Mr. Mathews,

Report of the Bushfire Review Committee

We refer to the Victorian State Disaster Plan Executive Committee meeting on 30 March, 1983, and the subsequent decision by the Government to establish the Bushfire Review Committee.

In accordance with our Terms of Reference and following the Committee's earlier series of Interim Advice Letters, we have pleasure in submitting our report entitled: Report of the Bushfire Review Committee on Bushfire Disaster Preparedness and Response in Victoria, Australia, following the Ash Wednesday Fires of 16 February, 1983.

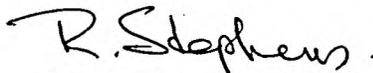
Yours sincerely,



(S. I. Miller)  
CHAIRMAN



(W. Carter)  
DEPUTY CHAIRMAN



(R. G. Stephens)  
MEMBER

COMMITTEE MEMBERS

MR. S. I. MILLER, CHAIRMAN  
AIR VICE-MARSHAL W. CARTER, DEPUTY CHAIRMAN  
MR. R. G. STEPHENS

ACKNOWLEDGEMENT

The Bushfire Review Committee wishes to express appreciation for the outstanding co-operation and support received from the wide range of organisations and individuals contributing to its deliberations. Particularly, the Committee acknowledges the high standards of professionalism shown by the many specialists who were necessarily requested to provide expert opinion, information and advice.

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VICTORIAREPORT OF BUSHFIRE REVIEW COMMITTEEPART I - THE ROLE OF THE COMMITTEEINTRODUCTION

1. Bushfire has long been recognised as the major natural disaster threat facing Victoria. Its potential for inflicting fearful loss on the State has been vividly illustrated and well documented throughout Victoria's recorded history. Such loss is not discriminative. It may equally apply to livestock as to humans, to the natural environment as to the man-made, to private endeavour as to governmental enterprise. The results, however, are almost invariably the same, in that essentially they comprise a handicap to progress and a setback to quality of life.

2. Periodically along the line of persistent threat, and damage and loss, major peaks of bushfire disaster occur. In more recent times, these have included the 1939 fires in which 71 people lost their lives; the 1969 outbreak, during which, on one day alone, 280 fires were raging and the 1977 fires which were the subject of a formal Government enquiry.

3. In parallel with the threat has come equally persistent effort and endeavour to provide adequate counter-measures. The instigation of a State-wide plan in 1962 formed the basis for the State Disaster Plan (DISPLAN) of today, aiming as it does to bring co-ordinated effort to bear on bushfires, as on other types of disaster and major emergency. In the specialised field of fire prevention and suppression, there has been a similar record of awareness and development. The goldfields bucket brigades of the early 1850's were followed by legislation in 1890 to provide

for the formation of the Country Fire Brigades Board. Later came the Forests Commission in 1919 and the Bush Fire Brigades in 1932. Finally, in 1944 there was the establishment of the Country Fire Authority, as constituted and understood today.

4. Thus the bushfires of the 1982/83 season, and the counter-measures taken against them were not, in kind, new. However, their extent and severity, especially in terms of the truly disastrous proportions reached on 16 February, 1983, constituted an unmistakable peak in the disaster record of the State. Even very preliminary assessment of the results indicated to Government that the repercussions in administrative, economic, social and other fields would be serious and wide-ranging, not only immediately but also in the longer term. It was clear, therefore, that in spite of experience of past bushfires and the lessons learned from them, the events of the 1982/83 season needed careful analysis and evaluation. To this end, in conjunction with other initiatives, the Government decided to establish a Bushfire Review Committee to examine the circumstances of the 1982/83 fires and to make appropriate counter-disaster and associated recommendations (See Annexure "A" - Composition of the Bushfire Review Committee).

#### TERMS OF REFERENCE

5. The terms of reference for the Committee required it to examine:

- (a) The adequacy of fire prevention and protection techniques and practices both generally and in respect of individuals.
- (b) The need for re-drafting of sections of the State Disaster Plan and its Welfare Plan component.
- (c) The effectiveness overall of the communications

systems operated by State combatting and assisting agencies and whether there is need for rationalisation of those systems.

- (d) The adequacy of field communications systems in emergency/disaster situations.
- (e) The practicability of introducing more effective systems to warn residents of fire affected areas of approaching fires and the associated matter of the adequacy of evacuation procedures.
- (f) The need for the introduction of improved systems in the provision of information about emergency/disaster situations to the media and to concerned members of the public.
- (g) Co-ordination systems generally in emergency/disaster situations.
- (h) The adequacy and appropriateness of the physical resources available to combatting and assisting agencies, including protection devices for fire-fighters at fire scenes.
- (i) The appropriateness of present procedures in the provision of immediate and longer term relief to persons affected by serious emergencies and by disasters.
- (j) Other matters including, for example, the need for all municipalities to develop and maintain Municipal Disaster Plans.

6. The Committee was also directed to give priority of consideration to issues requiring resolution before the 1983/84 fire season, so that these might receive first attention. To

this end, a series of separate submissions were made to the Minister for Police and Emergency Services as the work of the Committee progressed. These took the form of Interim Advice Letters and a Progress Report (See Annexure "B" - Summary of Interim Advice Letters).

#### AIM OF THE REPORT

7. The aim of this report, therefore, is to consider factors relevant to the bushfires which occurred in Victoria during the 1982/83 season, particularly those of 16 February, 1983, and to make any necessary recommendations for countering disaster situations in the future.

#### SOURCES OF INFORMATION AND COMMITTEE PROCEDURES

8. The main sources of information considered by the Committee were:

- (a) Reports from combatting and other agencies involved in dealing with the fires and their aftermath.
- (b) Results of coronial enquiries.
- (c) Submissions from organisations and members of the public.
- (d) Discussions with relevant organisations and individuals, including those referred to at (a) above.
- (e) Reports from meetings of local government authorities and community action groups.
- (f) Reports from appropriate seminars, meetings

and demonstrations which originated from the events of the 1982/83 fire season.

9. To implement its terms of reference, the Committee adopted the following procedures:

- (a) Formal meetings were held at which relevant organisations and individuals were given the opportunity to present comprehensive information, advice and comment. At many of the meetings where the presentation of such information, advice and comment appeared likely to affect other organisations or individuals, representatives from the latter were invited to attend (See Annexure "C" - Committee Meetings and Appearances - 1983/84).
- (b) Submissions made in writing to the Committee, and those made to the Government which were referred to the Committee, were analysed and summarised under the major headings of:

- Planning and Organisation
- Mitigation and Preparedness
- Legislation
- Public Awareness and Education
- Communications
- Warning and Information Systems
- Shelter
- Evacuation
- Fire-fighting Operations
- Relief Measures
- Research.

Where, in the opinion of the Committee, this summarised information appeared to be of use for

counter-disaster purposes (especially prior to the 1983/84 fire season) it was notified direct to the relevant authorities.

(See Annexure "D" - Submissions Received by the Bushfire Review Committee).

- (c) Visits were made to fire-affected areas by Committee representatives. Such visits were designed, as far as possible, to fit the wishes and needs of local government authorities (See Annexure "E" - Visits to Fire-Affected Areas).
- (d) The Committee was also represented at relevant seminars, meetings and demonstrations (See Annexure "F" - Representation at Seminars, Demonstrations and Meetings).
- (e) As stated in paragraph 6, periodic Interim Advice Letters were sent to the Minister for Police and Emergency Services to keep him informed of important issues, particularly those likely to affect counter-bushfire effectiveness during the 1983/84 season.

PART II - MAJOR CONSIDERATIONS PRIOR TO THE FIRES

GENERAL DISASTER PREPAREDNESS ARRANGEMENTS  
PRIOR TO THE FIRES

10. A summary of disaster preparedness arrangements which were in place prior to the 1982/83 fires is given in paragraphs 11 to 33.

State Disaster Plan

11. The edition of the State Disaster Plan (DISPLAN) which was in force during the 1982/83 fire season (and is still in force today), was issued in March, 1982. It is important, at the outset, to emphasise one particularly significant point about DISPLAN. The essential purpose of the plan is to ensure that there exists, throughout Victoria, a standardised and co-ordinated concept for dealing with disaster situations. To this end, the plan aims to provide clear definition of the roles and responsibilities of all organisations involved and to lay down appropriate guidelines.

12. DISPLAN is a statement of principles. The plan does not tell the relevant organisations how to fulfill their allotted roles, nor does it concern itself with detailed operational procedures. These matters are the responsibility of the participating organisations themselves.

13. The scope of DISPLAN is comprehensive. It does not have to be formally activated. It comes into operation whenever and wherever emergencies or disasters of a major or minor nature occur. Its coverage includes categories of emergency or disaster such as the following:-

Fires

## Floods

Search and rescue operations

Road, rail, marine and aircraft emergencies and  
disasters

Industrial emergencies and disasters

Emergency evacuations

Hazardous materials incidents

Radio-active materials incidents

Animal relief operations.

14. The plan also outlines arrangements for the provision of assistance from Commonwealth Government sources, such as the Defence Force.

15. At the beginning of the 1982/83 fire season, DISPLAN embodied the following committee structure:

State Disaster Executive Committee

State Disaster Planning Committee

Regional Disaster Committees

Municipal Disaster Committees.

16. For operational purposes, during the 1982/83 fire season, the plan functioned in three stages:

Stage 1 - Local or municipal resources capable of dealing with the emergency.

Stage 2 - Regional resources and co-ordination required.

Stage 3 - State resources and co-ordination required.

It is important to recognise that these stages could merge into each other as a disaster escalated and that there was not always a clear line of demarcation between them. The original purpose of establishing stages was to indicate at which level co-ordination and effectiveness of counter-measures could be best achieved.

17. Under DISPLAN, the conduct of operations follows the principle of:

(a) A combatting authority

The Government Department, Statutory Authority or organisation responsible by legislation, or under the provisions of the State Disaster Plan for combatting specified forms of emergencies or disasters.

(b) Supporting services

Government departments and organisations which provide essential services, personnel or material, but which are not designated as combatting authorities (for a particular situation).

18. Under the plan, the term 'co-ordination' means ensuring at both State and Regional levels that personnel and equipment required to:

(a) support the combatting authority or authorities;

(b) initiate or continue operations which are:

(i) ancillary to the operations of the combatting authority; or

(ii) necessary in the public or community interest;

are made available in the required form, type and quantity at the appropriate time and place.

19. Co-ordination is effected at:

- (a) State level - by the Chief Commissioner of Police or by a Police Officer of Commissioner Rank designated by the Chief Commissioner to act as Deputy (and Executive) Co-ordinator.
- (b) Regional level - by the Police Officer appointed as such by the Chief Commissioner of Police (as State Co-ordinator). The Chief Commissioner will also appoint Police Officers as Deputy Regional Co-ordinators where this action is appropriate.

#### Other Plans

20. As indicated in paragraph 12, the individual plans and operating arrangements of the participating organisations constitute an essential part of the State Disaster Plan. Sub-plans, such as the State Disaster Welfare Plan (DISWELPLAN) and Medical DISPLAN cover major functional roles to be fulfilled under DISPLAN, and serve as a basis for concerted operations by agencies which combine to carry out such major roles.

#### Planning Measures - Country Fire Authority and Forests Commission Victoria

21. In the specific field of bushfire counter-measures, the relative roles of the Country Fire Authority (CFA) and the Forests Commission, Victoria (FCV) are spelt out in the State Disaster Plan. These roles, which delineate areas of responsibility, are, of course, agreed to and accepted by the two authorities (See also paragraph 30).

22. Further co-ordination of planning and associated measures which affect CFA and FCV is achieved by the representation of both these authorities on the following bodies:

State Disaster Executive Committee  
 State Disaster Planning Committee  
 Regional Disaster Committees  
 Municipal Disaster Committees\*  
 Regional Advisory Committees\*  
 Local Advisory Committees\*

\*In areas where both CFA and FCV are involved.

23. It is evident, therefore, that in the past considerable attention has been given to achieving effective co-ordination of effort between the CFA and the FCV, both of which have very important combatting roles against bushfire. The effectiveness of such co-ordination is, of course, vital if overlapping of and gaps in fire-fighting operations are to be avoided in those areas where the two authorities have contiguous responsibilities.

#### Fire Mitigation and Readiness Measures - General

24. Certain measures for bushfire mitigation and readiness exist throughout Victoria. These measures are the cumulative result of past experience and analysis. Their main components are outlined in summary form in paragraphs 25 to 31.

25. Planning. Of the bodies indicated in paragraph 22, two are of key importance for planning and co-ordinating fire prevention and suppression. They are:

- (a) Regional Advisory Committees  
 which have representation from CFA, FCV, municipalities and (as appropriate) other government departments and authorities.
- (b) Local Advisory Committees  
 which have representation from CFA, FCV, (in appropriate areas), local council and local proper officer (Note: A municipal proper officer

is a person appointed by local government with responsibilities for fire prevention and associated duties).

These two committees clearly have a key role in ensuring that adequate and efficient fire mitigation and readiness measures are maintained. Much therefore depends on their effectiveness, especially in terms of making sure, as far as possible, that local outbreaks of bushfire are expeditiously dealt with and contained before they reach disaster proportions.

26. Training. Systematic training programs exist to ensure effective fire-fighting operations. These programs include fire-fighting techniques and the handling and readiness of equipment. The CFA Training Wing at Fiskville provides a focal point for maintaining and updating training measures. Generally speaking, training and readiness are brought to peak levels prior to the onset of each fire season.

27. Preparedness measures. Certain preparedness measures are applied prior to and during the fire season in order to reduce risk. They include:

- . reduction of fuel levels by controlled burning-off and clearing.
- . imposition of fire restrictions.
- . arrangements for imposition of total fire bans, when necessary.
- . warning to the public, via the media, of daily levels of fire risk.

28. Public awareness and education. In parallel with the preparedness measures mentioned in the foregoing paragraph, arrangements exist to promote appropriate public awareness and

education with regard to fire prevention and suppression.

Examples are:

- . dissemination of information on how to prevent fires and how to protect homes and properties.
- . issue of notices, car stickers, slogans and similar awareness materials.
- . media information.
- . programs in schools.

29. Concept of operations. In connection with mitigation and readiness measures generally, it is appropriate at this point to outline the principle on which operational counter-measures are based. In essence these measures comprise:

- (a) A specialist fire authority (i.e. CFA or FCV) in the lead-combat (or combatting authority) role.
- (b) The Victoria Police in a co-ordinating role.
- (c) The Victoria State Emergency Service and other agencies in specialist support roles.

30. Division of responsibility between CFA and FCV  
It will be clear from what has already been said regarding planning, mitigation and readiness, and operational concepts that the division of responsibility between the CFA and the FCV is crucially important. This division is defined as follows:

- (a) Country Fire Authority

Under the Country Fire Authority Act, the CFA is

charged with the responsibility for the prevention and suppression of fires in the 'country area of Victoria' and has the duty of superintending and enforcing all necessary steps for the prevention and suppression of fires, and for the protection of life and property in the case of fire. The CFA also has the general control of all Stations and Brigades in the 'country area of Victoria', which is defined in the Act as that part of Victoria outside the Metropolitan Fire District, excluding State Forests and National Parks.

(b) Forests Commission Victoria

The FCV is the combatting authority for fires which occur within State forests, national parks, protected public lands and, where joint operations are concerned, on private land within the fire protected area. This includes a 1.5 km adjacent buffer zone. In the case of emergencies other than fire, the Commission may act, under the terms of DISPLAN, in a supporting role at the discretion of the Co-ordinator (except that should a fire emergency develop the Commission assumes its combat role).

31. It will be appreciated from the summarised information contained in paragraphs 24 - 30 above, that logical and well-conceived measures existed for fire mitigation and readiness prior to the 1982/83 season. In spite of this, however, the 1982/83 season indicated, well in advance of its onset, that special additional measures were warranted.

Special Fire Mitigation and Readiness Measures - 1982/83 Season

32. The following special measures were, therefore, initiated:

- . Fire restrictions were introduced by the Forests Commission and the CFA six to eight weeks earlier than usual because of the weather conditions and the drought.
- . Arrangements were made between various Ministries whereby personnel from Government agencies, such as the Lands Department, would be available as required.
- . The Government approved the employment by the Forests Commission of an additional 600 men in early December, 1982 to be trained as fire-fighters.
- . The Government arranged for the Modular Airborne Fire Fighting System (MAFFS) to be brought out from America and for an RAAF Hercules to be available to carry the MAFFS.
- . The Forests Commission arranged for agricultural aircraft to be on stand-by to drop fire retardants as required.
- . The Forests Commission made arrangements that other agricultural aircraft be available for hire and placed two helicopters and a fixed wing aircraft under contract for fire surveillance and reconnaissance and personnel movement.
- . Arrangements were also made prior to the fire season with owners of equipment such as bulldozers to be available should the situation require.

### General Position Prior to the 1982/83 Fires

33. From the information contained in paragraphs 11 to 32, it is clear that the general preparedness position in Victoria was as adequate as sound, sensible planning and precautions could

make it. Prior to the major fires themselves, however, the fire threat indicators continued to mount. These are the subject of the section which follows.

#### FIRE THREAT INDICATORS SEASON 1982/83

34. An abnormally early onset to the 1982/83 fire season was signalled by a variety of factors. As stated in paragraph 32, fire restrictions had to be brought into force some six to eight weeks earlier than usual and, in fact, the first bushfire broke out even before winter was over (August, 1982). The main indicators that 1982/83 was to develop into one of the most traumatic fire seasons on record are outlined in paragraphs 35 to 45.

#### Drought Conditions

35. Rainfall over most of Victoria in the winter-spring period of 1982 was abnormally low. The winter was exceptionally dry and the spring which followed was little better. Indeed, rainfall for the six months of winter and spring (June - November, 1982) was the lowest ever recorded in the North Wimmera, Lower and Upper North, Upper Northeast, West Gippsland, East and West Central Districts and Western Plains. The previous driest winter-spring recorded in all these districts was in 1914. In the Mallee, South Wimmera, the Lower Northeast, the North Central and the West Coast, the only drier winter-spring was in 1914. In East Gippsland only 1944 and 1979 recorded lower rainfall.

36. A general indicator of these severe drought conditions is the fact that during the ten months, April, 1982 to January, 1983, most of Victoria suffered the driest period on record. In bushfire-related terms, this meant that water storages in many rural areas were virtually depleted, thus seriously reducing fire-fighting capability. More than this, however, the drought had critical repercussions on the conditions and characteristics of forest and grassland fuel sources.

### Fuel Conditions and Characteristics

37. The very low winter-spring rainfall, plus the effects of unusually warm weather during October/November, 1982, resulted in early curing of grassland fuel and a very dry forest floor.

38. However, grassland fuels became relatively sparse due to livestock consumption as the season progressed and certainly by the peak of 16 February, 1983, many grazing areas had been completely eaten out. Thus, many fires originating within forest areas were restricted in spread once they broke out into grassland. In some cases, a clearly delineated fire/non-fire line could be seen where ultra-heavy grazing had reduced flammable grass levels to zero.

39. In contrast, fuel within forest areas was in volatile condition. Leaf-fall, plus other litter, was so dry that it could be crushed by the handful into tinder-dry dust. Additionally, in many private properties adjoining the forest areas, early fire restrictions had limited contingent fuel reduction. Also, valleys and gullies within forest areas, which normally remain reasonably green throughout the summer, had also dried out.

40. In sum, therefore, fuel conditions, especially in forest areas where eucalypts provided a truly explosive element, were such that all the potentials for disaster were primed and set.

### Temperatures

41. Drought levels and the conditions of fuels were very seriously exacerbated by unusually high temperatures. In November, 1982, for example, maximum temperatures were approximately +3°C to +5°C above the average, producing figures in some places of more than 40°C. December also produced very

high recordings and although January, 1983, was slightly less extreme, February was exceptionally hot. In some cases 5°C above normal was registered and on the acutely fire-prone days of 1st, 8th and 16th, readings in excess of 40°C were widespread. Indeed, some highest-ever temperatures were recorded on 8 February, at places in the south of the State.

#### Humidity

42. To add to the already volatile ambience outlined in paragraphs 35 to 41, relative humidity was also abnormal. Very dry air conditions during most of the fire season meant that in terms of both outbreak and containment the fire hazard was accentuated.

#### Wind Conditions

43. Weather patterns also produced some abnormal wind conditions. This was particularly so on 16 February, 1983, when winds of gale force contributed significantly to the eventual conditions of holocaust.

#### The Arsonist Problem

44. As if these natural phenomena were not enough, the problem of arsonists added significantly to the risk of loss of life and destruction of property. Immediately preceding fire seasons had indicated the seriousness of this type of threat, and it seems certain that fire-bug activity was the cause of a number of this season's many fires.

#### The Warning Inference

45. The fire threat indicators which ushered in the 1982/83 season and which developed in acuity as the season progressed, served as a serious underscoring of the extreme risk facing authorities and communities alike. Whilst it is difficult to

generalise with accuracy, it would appear that these indicators did help to enhance levels of awareness and preparedness. Whether this, in turn, had any significant effect on the disastrous circumstances of 16 February, is another matter.

### WARNING ASPECTS

#### General Warning Arrangements

46. The arrangements for initiating and disseminating warning of fire incidents are simple, straightforward and generally well understood. In essence they consist of:

- . Fire danger ratings, which are calculated on conditions of temperature, relative humidity, windspeed, and dryness and amount of fuel; and which are disseminated via media channels.
- . Total fire bans, which are imposed by the CFA in consultation with the FCV and which are also broadcast via the media.
- . Local warning which, depending on situations and circumstances, may be transmitted via sirens, public address systems, radio monitoring devices, helicopter broadcasts, door-to-door visits by fire authority or police members, radio and T.V. broadcasts, and news sheets.

It is significant that there does not appear to have been undue criticism of these arrangements in respect of the many, sometimes severe fires which occurred throughout Victoria during the 1982/83 season, other than those of 16 February, 1983. From this it might be inferred that the holocaust conditions of 16 February were, in themselves, at least partially instrumental in minimising or denying warning to some authorities and communities.

47. However, it must be recorded at this point that, especially in the case of the East Trentham/Mount Macedon fires (see paragraph 56) there was strong criticism by the Coroner concerning the inadequacy of warning in relation to those who died in those particular fires.

48. Part III refers further to the subject of warning.

### COMBATTING AUTHORITIES - COMMAND AND CONTROL

#### Definition

49. As stated in paragraph 17 (a) a combatting authority is defined as a Government Department, Statutory Authority or organisation responsible by legislation or under the provisions of the State Disaster Plan for combatting specified forms of emergencies or disasters.

50. In the case of bushfires the combatting authorities are primarily:

- . The Country Fire Authority (CFA), and
- . The Forests Commission, Victoria (FCV).

The division of responsibility between these two organisations is outlined in paragraph 30.

51. Within the Melbourne Metropolitan DISPLAN Region, the responsible authority for fire combatting is the Metropolitan Fire Brigades Board (MFBB).

#### Factors Affecting Command and Control

52. Obviously, situations can and do arise in which fires run over from one area of combatting responsibility to another. For example:

- (a) A fire may move from an FCV area to a CFA area or vice versa.
- (b) A fire may run concurrently through a CFA area and an FCV area, involving the simultaneous responsibility of both organisations.
- (c) Circumstances similar to (a) and (b) may occur between country areas and the Melbourne Metropolitan DISPLAN Region.

It is evident, therefore, that to cover these and similar circumstances clear definition of command and control is essential.

#### Measures for Command and Control

53. Measures for command and control, as they applied to the 1982/83 fire season, contained the following salient features:

##### (a) CFA and FCV

- . The responsible combatting authority shall appoint a Controller of Operations who shall have overall control of the fire suppression task. Where a Stage 3 fire affects areas of both the CFA and the FCV, they shall confer and agree on which of them shall appoint the Controller of Operations.
- . The Controller of Operations shall set up and operate from a suitably located Field Headquarters.
- . Liaison officers of the combatting and supporting

organisations shall be appointed to assist the Co-ordinator (Police).

- . The CFA and the FCV will control the respective fire fighting operations through their separate Command Headquarters and such Sector Headquarters as are necessary.

(b) Metropolitan Fire Brigades Board

The MFBB, the combatting authority for fires within the Melbourne Metropolitan DISPLAN Region, operates through a system of Divisions and Districts, which is the basis of its operational structure. It co-ordinates its operations, where necessary, with the CFA through a system of liaison officers.

PART III - THE EFFECTS OF THE FIRES

54. The following facts and figures vividly illustrate the extent and severity of the Ash Wednesday fires:

- . 47 people died in Victoria
- . 2,080 homes were destroyed or damaged
- . 32,750 head of stock were lost
- . 8,900 kilometres of fencing were burnt
- . the total area burnt was about 200,000 hectares, including 85,200 hectares of State forest

This information is drawn from the Victorian Government Submission to the House of Representatives Standing Committee on Environment and Conservation Inquiring into Environmental Impact of Bushfires, October 1983.

On the 16 February, 1983, temperatures in excess of 40°C and relative humidities of less than 15 per cent were widespread. The CFA reported attendance at 180 different fires throughout the State, eight of which were considered of major proportions (See Annexure "H"). The general severity of the 1982/83 season can be judged from the fact that more than 3,500 fires were reported to CFA Headquarters. As already inferred in paragraph 46 (in reference to warning), the difference in degree between the 'unstoppable' fires of 16 February and the more 'normal' fires of the rest of the season, needs to be borne in mind. This applies equally to the onset and effects of the fires, the efforts made to deal with them, and any subsequent assessment of Victoria's counter-disaster organisation and capability. With this general consideration in mind, the remainder of this Part of the report concentrates on the fires of 16 February, 1983.

THE IMPACT OF THE FIRESWeather Conditions

55. Weather conditions affecting the 16 February fires are clearly described in the Bureau of Meteorology report entitled 'Preliminary Report on the Ash Wednesday Fires, 16th February 1983'. In brief, these conditions comprised very high temperatures, gale force winds and low humidities; such conditions can only be described as potentially lethal in relation to bushfire outbreak. Additionally, a marked frontal system, moving eastwards across the State, produced a wind change which, in the afternoon and evening of Ash Wednesday, drastically affected the movement and direction of any fires which were already alight.

Fire Severity

56. Because of these weather conditions, plus an extremely flammable fuel state (see paragraphs 37 to 40), the fires assumed dramatically severe proportions. The speed of onset was alarmingly fast, extremely high temperatures developed within the fires themselves, and in certain cases fire-storm conditions prevailed. The result was that fire-fighting resources, normally capable of dealing with more usual fire situations, were virtually over-run. Fire containment and suppression became impossible. The main fire-affected areas designated by the CFA were:-

- . Cudgee/Ballangeich
- . East Trentham/Mount Macedon
- . Otways
- . Belgrave Heights/Beaconsfield Upper
- . Cockatoo
- . Monivae
- . Braxholme

. Warburton

Details of these 8 fire-affected areas are included in Annexure "H" - The Major Fires Originating 16 February, 1983.

#### Disruption of Facilities and Systems

57. The impact of the fires seriously impaired facilities and systems which normally contribute significantly to an effective fire-fight. For example:

- (a) Communications were overloaded, disrupted or lost altogether.
- (b) Power supplies were cut, resulting in loss of some fire-fighting capability and, perhaps even more important in some cases, water supply.
- (c) Provision of warning to key authorities and communities alike was seriously downgraded and, in some instances, made impossible.
- (d) Access into, egress from, and movement within fire-affected areas became impossible, or at best highly dangerous, due to heat, smoke, fallen trees or other hazards.
- (e) Utilisation of water storages, already drastically depleted by drought, was made difficult or impossible owing to problems of movement and access by fire-fighting units.

#### Levels of Destruction

58. The levels of destruction resulting from the fire impact amounted, in many instances, to 'total wipe-out'. Houses, business premises, government properties, churches, farms and

vehicles, were destroyed or damaged beyond repair and, often, recognition. Moreover, because of the severity and extent of the fires, the post-impact demands on fire-fighting authorities for mopping-up and similar operations were enormous.

### PROTECTION AND EVACUATION OF COMMUNITIES

59. As already emphasised, the severity and rapid spread of the fires caused problems which were difficult to counter. This was certainly true where the protection and/or evacuation of communities was concerned. Some relevant factors are contained in paragraphs 60 to 63.

#### Existing Plans and Arrangements

60. Prior to the fires, some local authorities had taken steps to provide for community protection and evacuation. Mostly, this involved the designation of safe havens/assembly areas and evacuation routes. Notification of these arrangements was circulated to residents largely through handbills and local newspapers.

61. Where this kind of safety precaution had been taken, response by communities was reasonably effective. However, because of the extraordinary conditions, cases did arise where spontaneous and sometimes risky reaction occurred. In some instances, people trying to escape found themselves driving towards the fires rather than away from them. Where no such safety precautions had been planned, circumstances often became chancy in the extreme.

#### Main Problems in Protection and Evacuation

62. A number of problems arose in regard to the protection and evacuation of communities, the main ones being:

- (a) Difficulty in providing timely, adequate and accurate warning (see paragraph 57).
- (b) Lack or late provision of transport for elderly and/or immobile persons.
- (c) Problems of designating safe routes due to the speed and direction of fire movement, plus smoke and other hazards.
- (d) The resistance of some people to being evacuated because of their wish to stay and try to defend their homes and property.
- (e) Unwillingness, in some cases, to accept evacuation advice from members of organisations other than the Police.
- (f) Some problems arose, especially in the Western District, over the evacuation of schools and the safe conduct of pupils to their homes (or alternative safe areas). Most of these problems stemmed either from lack of clearly defined procedures or divergence from those procedures which did exist.
- (g) The fact that fire impact came, in many cases, after dark complicated the whole question of providing adequate protection and evacuation facilities for communities.

63. In general, the various experiences mentioned above underline the complexity and danger which attaches to evacuation from severe bushfire situations and, especially, the need for clear definition of responsibility for decision-making and implementation.

IMMEDIATE POST-IMPACT CONDITIONS AND REQUIREMENTSPost-Impact Conditions

64. Post-impact conditions in the badly-affected areas were catastrophic. In many cases the 'total wipe-out' effect mentioned in paragraph 58 closely resembled that more usually associated with war. Most normal life support systems had gone and whole communities were left stunned and bewildered. The effects of bereavement and loss were widespread. In hundreds of cases family loss was total. Homes and belongings had disappeared, sometimes in a matter of minutes rather than hours.

65. Added to this was the particularly severe effect of lost or drastically restricted communications, resulting in heightened anxiety and stress for the relatives and friends of affected families, as well as for the families themselves.

Community Requirements

66. These traumatic post-impact conditions produced some very urgent and immediate requirements; and clearly these had to be met as a matter of high priority if communities were to be safeguarded, as far as possible, from the marked long-term sociological and psychological effects which may emanate from severe disaster. In essence, the major requirements were:

- . Clothing
- . Sustenance
- . Shelter/temporary accommodation
- . Personal and household effects
- . Medical assistance
- . Sanitation and health protection
- . Information (e.g. to and from relatives)
- . Counselling

- . Guidance on relief, insurance and similar matters.

67. Added to these more directly people-related requirements there were, of course, massive tasks in restoring or regularising essential community aspects such as:

- . communications
- . power supplies
- . water
- . road clearance
- . making safe damaged buildings, burnt trees, etc.
- . repair and replacement of fencing in rural and semi-rural areas
- . provision of emergency fodder
- . disposal of dead animals and care for injured ones.

Furthermore, in many cases emergency transport arrangements (often on a considerable scale) had to be provided to cope with the needs of dispersed families and the relief workers endeavouring to tend for them.

### IMMEDIATE RELIEF MEASURES

#### Planning and Organisation

68. Generally speaking, immediate relief measures came under the provisions of the State Disaster Welfare Plan (DISWELPLAN). Under this plan, as it existed on 16 February, 1983, voluntary agencies were designated to fulfill certain specific roles such as catering, provision of clothing and provision of temporary accommodation. The State Emergency Service was charged with initial responsibility for the co-ordination of welfare services and, subsequently, in the post-impact stage, it was to hand over this role to the Department of Community Welfare Services.

69. The effectiveness of these arrangements is discussed in Part IV of this report. However, some relevant points are noted in paragraphs 79 to 80.

#### Problems Affecting Immediate Relief

70. Given the severity of the post-impact situation described in paragraphs 64 to 67, it was to be expected that some problems might arise in the provision of immediate relief.

71. Information Management. One of these problems, widely reflected in post-disaster reports, was the difficulty in achieving effective management of information: that is, the difficulty in obtaining adequate and accurate information relevant to the provision of relief; the correct and timely dissemination of such information where this was necessary; and, overall, the effective utilisation of information in terms of meeting relief requirements.

72. Registration. Directly related to the problem of information management was the existing registration system. A general criticism was that this system did not meet the joint requirements of:

- (a) victim registration (necessary for enquiry, tracing purposes), and
- (b) the registration necessary for relief and welfare assistance.

73. Convergence. The well-known disaster feature known as convergence was well in evidence, especially in the immediate post-impact period and in several cases hampered the provision of relief. This convergence took the form of influxes of people, vehicles and equipment into key areas such as those surrounding local government offices and disaster headquarters. Also, there was typical communications convergence, caused mainly by

enquiries and requests for information to disaster offices. This, in turn, adversely affected communications outflow, thereby contributing to the information problems already mentioned in paragraph 71.

74. The Cornucopia Syndrome. This syndrome, sometimes known as the 'horn of plenty' was also prominent. Vast quantities of clothing, footwear, foodstuffs, children's toys and other commodities were poured into relief agencies and disaster headquarters, often inundating staff capabilities and thus slowing down the effectiveness of the relief effort. Some of these contributions were, in any case, somewhat less than welcome since they comprised stale foodstuffs or unacceptably soiled clothing.

75. Distribution. It will be readily appreciated that (especially in view of the factors mentioned in paragraphs 71 to 74) distribution of relief commodities was bound to be a major problem. In the long run, only a mammoth and tireless effort on the part of SES, DCWS, relief agencies and local authorities succeeded in bringing timely and appropriate aid to those who were in need of it.

76. Behavioural Aspects. Post-disaster behavioural signs began to appear in disaster-affected communities at an early stage. Apart from those most readily recognised as being associated with trauma, loss and stress, certain indications of recrimination, especially against government and other authorities, were evident. These behavioural aspects, whilst not overbearing, did complicate the task of relief agencies. However, perhaps the most unfortunate aspect was evidence, albeit among a minority, that even under these sad circumstances, greed could take precedence over need. Thus, 'double-dipping' and similar questionable tactics were identified.

## The Resolution of Problems

77. Gradually, however, the various facets of relief were pulled together so that, in general terms, victims were able to meet the immediate future with reasonable confidence and hope. In addition to the vitally important initial relief provision of clothing, feeding, shelter and medical assistance, the following consolidation factors were significant:

- . Provision of caravan/mobile home accommodation
- . Prompt financial compensation
- . Well-organised handling of insurance claims
- . Provision of replacement school facilities
- . Restoration of community life support systems
- . Cumulative effects of outreach programs
- . Organisation of community action and similar groups  
(in which the roles of 'emergent leaders' were prominent)
- . Assistance in various forms for speedy home re-building, especially where this was a key factor in rehabilitation
- . Assistance with re-establishing businesses, farming activities, and other services and facilities.

78. Clearly, these results were not achieved without difficulties, delays and disruptions; and key lessons were learned in the areas of planning, organisation and implementation. As already stated, these aspects are specifically dealt with in Part IV of this report.

79. It is, however, worth noting at this stage the interaction between the SES and DCWS in the relief co-ordination role, especially in regard to hand-over of responsibility. DCWS did not have an operational plan, in the generally accepted sense of that term, though it had prepared a set of operational procedures early in the 1982/83 fire season. The Department therefore experienced some of the problems which typically arise when an organisation which is not, by nature, crisis-oriented, is required to adopt a severely accentuated disaster role.

80. Undoubtedly, the experiences of the Ash Wednesday fires indicated the need for clarification and rationalisation of the respective roles of DCWS and SES. In the event, however, there were problems of achieving a smooth and coherent handover of the responsibility for co-ordination of welfare services from SES to DCWS.

#### LONG TERM RELIEF ASPECTS

81. Clearly, a disaster of Ash Wednesday's magnitude was bound to produce long term relief requirements, in addition to the more immediate ones already outlined. For the purposes of this report, these longer-term requirements are recorded in outline only, it being recognised that their resolution involves lengthy processes of Government and associated activity. Some of the areas of major need are outlined in paragraphs 82 to 86.

#### Financial Compensation

82. Once disaster-affected families and individuals had been made reasonably self-sufficient by provision of immediate financial aid, there remained the further problem of longer-term compensation. This usually involved very considerable detailed fact finding, discussion and negotiation. Often, comparisons between individual cases were aired in public meetings, and sometimes acrimoniously so. The accurate assessment of loss, and thus levels of need, therefore became a critical task for all those Government and other organisations concerned with relief and compensation.

#### Re-housing of Victims

83. Although the provision of temporary accommodation for disaster victims was achieved with commendable speed, permanent re-housing constituted a more complex and difficult problem. Particular aspects were:

- (a) The crowded nature of temporary accommodation (e.g. in caravans and mobile homes) soon began to produce sociological and psychological problems for affected families. Consequently, those families and the relevant local government authorities were obliged to instigate permanent re-housing programs in an ambience of pressurised planning and decision-making. This general situation was exacerbated by the early onset of wet wintry conditions in most affected areas.
- (b) Whilst local government authorities and individuals alike were aware of the hazards involved in re-building in some parts of the disaster-affected areas, the pressures and urgencies for re-housing often prevailed.

#### Rehabilitation of Communities

84. Apart from the re-housing of victims, communities also faced significant problems in rehabilitation of businesses, farm properties, and community services and facilities. In some cases, owners of small businesses and farm properties found the prospect of rehabilitation too difficult and daunting altogether, and sought their future along alternative lines. For others, the building priorities necessarily given to re-housing often meant delay in re-establishing business effort. Others, yet again, were obliged to seek new sources of employment because their original ones had been wiped out by the fires. It was clear, therefore, that the longer-term rehabilitation of communities and those persons in need of extended health care was bound to be a complex and protracted process.

## Rehabilitation of the Environment

85. In parallel with the problems affecting the rehabilitation of communities, those applying to the environment were also demonstrably urgent. For example, various species of wildlife had suffered drastically from the fires, whilst destruction of, and damage to, areas of forest was enormous. In many cases also, the scenic nature of community areas, often the basic attraction for living there, had been severely defaced or destroyed altogether. Various programs of rehabilitation were therefore a long-term requirement.

### Major Planning Measures

86. Long-term relief aspects necessarily had to involve consideration of planning measures which might mitigate the effects of future severe fires. This applied particularly to the acceptable risk levels in very fire-prone areas and the consequent potential demand for relief and compensation from Government and other sources. This aspect, again, was likely to produce difficulties and complexities for the future.

PART IV - EFFECTIVENESS OF COUNTER-DISASTER  
ARRANGEMENTS

SCOPE AND LIMITATIONS OF THIS PART

87. This Part of the report is concerned with the effectiveness of counter-disaster arrangements as they applied to the 1982/83 season and, in particular, to the events of Ash Wednesday. It does not refer to the arrangements introduced by the Government of Victoria in November, 1983, in the form of special organisational and other measures, primarily designed to improve the State's counter-bushfire capability during the 1983/84 fire season. Reference to these measures is made in Part V of the report.

PLANNING AND ORGANISATION

The Basic Concept for Dealing with Bushfires

88. The existing concept for dealing with bushfires in Victoria contains certain important factors, not all of which are always fully recognised and understood. For example:

- (a) The existing policy of tactical flexibility at the fire front and direct support levels (with co-ordination of effort being effected from higher organisational levels) is generally considered by those responsible for bushfire operations to be sound, workable and efficient.
- (b) The policy at (a) above has significant effects at community level, where recognition of and identity with the local fire problem produces and maintains the volunteer effort, without which the CFA cannot effectively function.

- (c) The understanding, by involved organisations, of how command, control and co-ordination are applied under the existing concept is an important part of the concept itself. In this context, the following definitions are relevant:<sup>1</sup>

Command relates to organisations, and operates vertically, within an organisation.

Control relates to situations, and operates horizontally, across organisations.

Co-ordination is concerned with the bringing together of organisations and elements to ensure effective counter-disaster response. It relates primarily to resources and operates:

vertically, within an organisation, as a function of command, and

horizontally, across organisations, as a function of control.

- (d) Many voluntary organisations are involved, in various roles, in the total concept for countering bushfires; and these, certainly, cannot be mandatorily directed (except under some form of emergency powers). Their effective support therefore depends on their willingness to participate in a co-ordinated effort.
- (e) Following from (c) and (d) above, it will be clear that suggestions and proposals, made in some

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<sup>1</sup>. Definitions of 'Command', 'Control' and 'Co-ordination' are those used in the Australian Counter Disaster Handbook, published by the Natural Disasters Organisation of the Commonwealth Government in 1980.

submissions to the Committee, that there should be a 'Supreme Commander', are not appropriate.

In this connection, it is worth recording that, even under the powerful provisions of defence legislation and discipline, the major aspects of a military Supreme Commander's role are essentially concerned with the co-ordination of his various force elements, not their detailed command.

89. Against this background, it is significant that the many discussions held by the Committee with involved organisations, plus the number and variety of submissions received, have generally underlined one very important and fundamental fact: the basic concept for dealing with bushfires is sound. Indeed, short of setting up some form of very large and prohibitively expensive full-time bushfire counter-force, there is really no reasonable alternative.

90. This is not to say, of course, that measures cannot be taken to strengthen various facets within the total concept; and references to this are made in other sections of this Part of the report (for example, see paragraph 111 concerning co-ordination and control).

#### The State Disaster Plan

91. In many of the submissions made to the Committee, and during some of the public discussions undertaken by it, it became clear that the purpose of the State Disaster Plan (DISPLAN) was not entirely understood.

92. As DISPLAN itself clearly states, it is not a manual of procedures to be adopted when disaster occurs. Instead, its purpose is to ensure that there exists throughout Victoria a standardised and co-ordinated system for dealing with disaster situations. DISPLAN, therefore, defines roles and establishes

guidelines for involved organisations at local, regional and State levels. It does not tell those organisations how to fulfill their allotted roles but, quite properly in the view of the Committee, leaves these matters as the responsibility of the organisations themselves.

93. Seen in this light, it is understandable that the major combatting authorities and supporting services confirmed to the Committee that, apart from certain needed amendments, DISPLAN should remain unaltered. These authorities and services also confirmed to the Committee confidence in their capability to apply the principles of DISPLAN in the context of a major disaster.

94. However, information placed before the Committee did indicate that the effectiveness of DISPLAN could be improved in the light of the 1982/83 bushfire experience. For instance:

(a) Committee Structure

The Committee structure should be changed to improve decision-making and to achieve compatibility with organisational changes.

(b) Stages of Disaster

Deletion of these Stages (1, 2 and 3) from DISPLAN because they are liable to be misinterpreted, thus causing misunderstanding and even confusion.

The implementation of DISPLAN would then be based on the principle of graduated response, which is regarded as more effective than the utilisation of stages.

(c) Activation

Introduction of an activation system for DISPLAN, comprising:

- Alert - advice received of likely occurrence of emergency or disaster.
- Standby - emergency or disaster impending: relevant agencies ensure resources are available.
- Action - combatting authorities and supporting agencies deploy resources as required.

(d) Disaster Regions

Establishment of a new disaster region for the Melbourne Metropolitan District, comprising twelve sub-regions, to facilitate improved co-ordination of resources and disaster response capability.

(e) Supporting Legislation

Introduction of legislation to support DISPLAN, especially concerning the formulation and maintenance of local disaster plans (see paragraphs 104 to 105).

95. Other significant comments put to the Committee concerning the effectiveness of the State Disaster Plan included the following:

- (a) Effective action at regional level is of key importance and this aspect of DISPLAN should be strengthened accordingly.
- (b) A much wider and significant role for local

government authorities is necessary.

- (c) DISPLAN should contain provisions to ensure that each participating organisation has its own detailed operating plan and that such plans are compatible with the DISPLAN concept.
- (d) Those Government departments, which are not normally crisis-oriented, need a better understanding of their involvement in disaster. They also need to ensure that plans are made and maintained for their 'extended' disaster role.
- (e) There needs to be a wider distribution of DISPLAN information and more effective understanding of its scope and purpose.

96. Overall, on the information available to the Committee, its conclusion is that the State Disaster Plan worked very well, considering the extremely severe, 'unstoppable' nature of the Ash Wednesday fires. In this regard, it must be borne in mind that little, if any, criticism of the plan arose from the many other severe fires of the 1982/83 season.

97. Therefore, the Committee considers that the principles of DISPLAN should be retained, though amendments to detail should be made as suggested in Part V.

#### The State Disaster Welfare Plan

98. The need for a State Disaster Welfare Plan (DISWELPLAN) as a major element in responding to disaster in Victoria was never challenged during the Committee's investigations. However, consideration by the Committee of reports and information concerning the structure and operation of DISWELPLAN strongly indicated that the plan was only partially effective and that, consequently, it requires a good deal of adjustment.

99. The main shortcomings in DISWELPLAN operations appear to have arisen from:

(a) Inadequate Co-ordination Systems within DISWELPLAN

The need for effective co-ordination of effort under DISWELPLAN is especially significant because of the many different interests involved. Such co-ordination applies particularly to the State Emergency Service (SES), the Department of Community Welfare Services (DCWS), the various welfare agencies and local government authorities.

DISWELPLAN did not appear to meet this need effectively, especially under the very severe pressures arising from the Ash Wednesday fires.

(b) Division of Responsibility between SES and DCWS

This division of responsibility required that SES would hand over authority for co-ordinating relief operations to DCWS when the impact phase was over. The timing of this transition, and the necessary arrangements for such transition, were not sufficiently clear and formalised. Thus SES, DCWS and affected municipalities all found some difficulty in the transitional process.

(c) The Nature of the DCWS Role

DCWS is not, by nature, a crisis-oriented organisation, yet under DISWELPLAN it is required to carry out a complicated counter-disaster role under circumstances which may often be pressurised and confused. This proved very much to be the case following Ash

Wednesday. The full implications of this 'extended' disaster role do not appear to have been entirely appreciated by DCWS, in that it did not have a formal plan for fulfilling its role. However, it must be stated that:

- . the difficulty faced by a government department in changing from a routine role into an 'extended' disaster role is not unique to DCWS. It is a factor which is frequently identified in disaster analysis;
- . DCWS did take steps to introduce a set of departmental disaster procedures early in the 1982/83 fire season;
- . there were limitations (in terms of personnel and facilities) which affected DCWS's capability to meet its disaster commitments;
- . the establishment of Area Committees by DCWS after the Ash Wednesday fires was a sound organisational measure which helped to redress some earlier shortcomings in counter-disaster planning and preparedness.

(d) SES Resources

There were some indications that SES resources, especially personnel, were inadequate to meet the requirements of DISWELPLAN.

(e) Information Management

Arrangements for the collection, collation and utilisation of information relevant to DISWELPLAN

proved inadequate. This resulted in problems in registration of affected persons and in the application of relief measures to those persons.

(f) Roles of Organisations

In certain cases, some welfare organisations designated to carry out functions under DISWELPLAN were unable to fulfill those functions effectively.

(g) Local Community Capability

There was contention that local government organisation and resources were not sufficiently integrated and utilised under DISWELPLAN operations and that this aspect needs to be remedied for the future.

100. As a generalisation, therefore, the Committee considers that, especially in the light of Ash Wednesday, DISWELPLAN was not fully effective and therefore requires strengthening for the future. In this regard, however, it does need to be stated that no adverse criticism of individuals was cited in relation to the operation of DISWELPLAN. On the contrary, there was widespread praise for the dedicated and tireless efforts of the majority of those concerned with the direction and implementation of the plan.

Regional Disaster Plans

101. The most general observations concerning the effectiveness of Regional Disaster Plans were that:

- (a) As a matter of general policy, regions should be made more self-supporting, especially as resource centres, management centres and support

bases.

- (b) There are problems in achieving effective co-ordination at regional level (see paragraph 109).
- (c) The system of CFA Regional Advisory Councils is workable and efficient and should be maintained and strengthened.

102. In addition, it appeared to the Committee that the effectiveness of Regional Disaster Plans, both in concept and operation, was inhibited by a serious lack of a local disaster plan in many municipalities and shires throughout the State. It is the Committee's considered view that a Regional Disaster Plan can be fully effective only if it comprises the 'building blocks' provided by local disaster plans.

103. The Committee therefore considers that action is needed to strengthen the regional section of the total DISPLAN concept.

#### Municipal Disaster Plans

104. At the time of the Ash Wednesday fires, only 41 out of the 211 municipalities were reported as having disaster plans. There is no doubt that the lack of such plans was acutely felt in many bushfire-affected areas. It is understandable, therefore, that virtually unanimous opinion was expressed to the Committee that these plans should be made mandatory, if necessary under appropriate legislation. In this regard, it is significant that DISPLAN clearly indicated its conceptual reliance on the existence and support of municipal disaster plans, even to the extent of detailing the composition of local committees and the planning process which they should adopt. DISPLAN, however, lacked the mandatory power to enforce this concept.

105. The Committee has no hesitation in stating that lack of municipal disaster plans seriously reduced the effectiveness of counter-disaster preparedness and response.

### Co-ordination and Control

106. From information and reports presented to the Committee, it is clear that considerable misunderstanding existed, outside the combatting authorities and supporting services, concerning co-ordination and control (see paragraph 88 (c) which refers to definition of these terms). It was also evident that the basic concept for fighting bushfires in Victoria (see paragraphs 88 to 90) was equally misunderstood. Consequently, many of the comments on and criticisms of co-ordination and control, including some proposals for future change, were not soundly based.

107. In paragraphs 108 to 111, the Committee has evaluated the effectiveness of co-ordination and control in the light of the actual circumstances which pertained during the 1982/83 fire season.

108. Considerations at State Level. At State level, the whole thrust of counter-measures under DISPLAN was that these would be co-ordinated, not controlled, from this level. Thus, Co-ordinator DISPLAN (the Chief Commissioner of Police, or his designated Deputy) would ensure effective co-ordination of resources to support the designated combatting authority or authorities.

This, in the Committee's view, was appropriate. Control, especially of a fast-moving bushfire situation, could not possibly be exercised centrally from State level. The time delay in the acquisition, collation and assessment of fire-front information alone renders such control impracticable. It is for this same reason that CFA Headquarters at State level, whilst exercising a co-ordinating role over its own resources, necessarily delegates control to its lower echelons. The same principle applies to the FCV.

In sum, therefore, the State level situation for the Ash Wednesday and other fires of the 1982/83 season was:

. Co-ordination

CFA	-	Co-ordination of CFA resources
FCV	-	Co-ordination of FCV resources
Co-ordinator DISPLAN	-	In consultation with CFA and FCV, co-ordination of resources in support of these two lead-combat authorities.

Co-ordination requirements at State level between CFA and FCV achieved by liaison arrangements.

. Control

Not exercised from State level.

. Command

Exercised within, and downwards through, individual organisations (such as CFA, FCV, Police and SES) as required and on the same principles which apply for normal day-to-day purposes.

The Committee recognises that problems within this system, can, and sometimes do, arise. The crisis nature of counter-disaster operations inevitably causes such problems. Under the circumstances of Ash Wednesday, crisis-level activity was extremely high. Evidence of this is provided by the fact that on 16/17 February, 1983, in a period of approximately five hours, the Police Operations Centre (the information 'nerve centre' of the co-ordination system) received some 57,000 telephone calls.

It follows that, on Ash Wednesday, the co-ordination system at State level was under enormous, concentrated pressure for a considerable period, as were the individual organisations involved. This undoubtedly led to overloads on, and delays within, the system itself. These, in turn, had some repercussions through the total disaster response system. However, three salient points need to be borne in mind. They are:

- (a) that criticisms of the co-ordination system came predominantly from the media and the public (who were quite properly concerned with obtaining news and information) and not from the responsible counter-disaster authorities;
- (b) that it is doubtful, from information placed before the Committee, whether any alternative, available form of co-ordination system could have performed any more effectively during the impact period of the Ash Wednesday fires; and
- (c) that the same co-ordination system did not attract criticism in relation to the other major fires of 1982/83.

In principle, the co-ordination arrangements at State level were soundly based and, with some exceptions, functioned effectively even under the enormous pressures of Ash Wednesday.

109. Considerations at Regional Level. In essence, the following responsibilities for operational co-ordination and control applied at regional level:

. Co-ordination

- |                          |   |  |
|--------------------------|---|--|
| CFA                      | - | Co-ordination of CFA resources   |
| FCV                      | - | Co-ordination of FCV resources   |
| Regional<br>Co-ordinator | - | In consultation with CFA and FCV,<br>co-ordination of resources in<br>support of these two lead-combat<br>authorities. |
| CFA/FCV                  | - | Co-ordination achieved by liaison.   |

. Control

- |     |   |   |
|-----|---|---|
| CFA | - | Exercised control of a fire<br>situation from a regional level if<br>circumstances so required. |
| FCV | - | Regional support provided to<br>District Forester(s) by the<br>Divisional Forester.             |

. Command

Exercised within, and downwards through, individual organisations.

These operational responsibilities were supported by planning, preparedness and associated measures, mainly as functions of:

- . Regional Disaster Committees (Police, CFA and FCV represented)
- . Regional Advisory Committee (CFA and FCV represented).

Comments made in submissions to the Committee concerning these co-ordination and control measures at regional level included the following:

- . There are sometimes problems at regional level because responsibility for co-ordination largely rests with the Police Regional Co-ordinator. Occasionally, these officers may lack necessary disaster experience and training; also their effectiveness may be impaired by the demands of other responsibilities. Nonetheless, it is essential that the Police retain this role because of their authority and legal standing.
- . Consideration should be given to allocating a wider role to SES Regional Officers in support of Police Regional Co-ordinators.
- . Rationalisation of the roles of SES and DCWS would assist co-ordination generally at regional level.

In addition, examination of various reports available to the Committee indicated that problems concerning co-ordination and control at regional level, especially on Ash Wednesday, stemmed from:

- (a) Unsuitability of some CFA Regional Headquarters.
- (b) Problems in the siting and operation of CFA Forward Regional Headquarters.
- (c) Inability of CFA Regional Headquarters to contact FCV District Officers on the FCV radio frequency due to lack of adequate communications equipment.
- (d) Some incompatibility of CFA and FCV facsimile machine networks.
- (e) Some difficulties in establishing division of responsibility between CFA and FCV in areas where

joint operations were involved.

It must be emphasised, however, that these problems and difficulties were not universal; many reports indicated that arrangements for co-ordination and control worked well. On balance, therefore, the Committee considers that a review should be made of planning, organisational, training and operational measures at regional level, with particular regard to improving co-ordination and control.

110. Considerations at Fire-Front Level. The foregoing regional-level considerations bore, to varying degrees, on co-ordination and control at fire-front level. Again, distinction needs to be drawn between the 'normal' fires of the 1982/83 season and the 'unstoppable' fires of Ash Wednesday. Some particular aspects in relation to Ash Wednesday help to illustrate this point, as well as to underline factors which may generally affect co-ordination and control. They are:

- (a) The magnitude of some fire situations literally overran and overwhelmed fire-fighting resources and made controlled response virtually impossible. In this connection, the marked wind change, due to the passage of a strong frontal system, dramatically expanded the already severe and extensive fire fronts.
- (b) After the main fire front had passed, control was generally re-established quickly, regrouping effected, and containment of fire aftermath achieved.
- (c) The difference in fire suppression practices used by the CFA and FCV caused some problems in achieving integrated operations.

- (d) Lack of direct radio communication link between CFA and FCV crews at the fire-front hampered co-ordination and control.
- (e) Destruction of some fire-fighting resources and facilities also adversely affected co-ordination and control.
- (f) Fire conditions themselves made deployment of resources (especially reinforcements) extremely difficult or impossible.

However, despite these mitigating factors, the Committee concludes that co-ordination and control at fire-front level needs to be examined with a view to enhancing future effectiveness.

#### Overall Considerations on Co-ordination and Control

111. Overall, in relation to co-ordination and control, the Committee considers that:

- (a) improvements should be sought at regional and fire-front levels, and
- (b) whilst, in principle, DISPLAN provided a sound basis for co-ordination at State level during the 1982/83 fire season, long-term future arrangements may require modification as a result of experience which might arise from application of the special measures introduced by the State Government in November, 1983.

## Other Aspects of Planning and Organisation

112. Other aspects of planning and organisation brought to the notice of the Committee as affecting counter-disaster arrangements included the following:

- . A vital requirement in dealing with bushfires is the provision of adequate and assured water supplies.
- . A better system is needed for the procurement of necessary equipment under emergency conditions.
- . Planning policies and ordinances should include appropriate fire prevention measures.
- . There should be an improved Commonwealth/State system for dealing with disaster, especially in the areas of consultative arrangements, planning and liaison relationships, and operational arrangements.
- . The resource provided by privately-owned fire-fighting vehicles could be made more effective by improving organisation and utilisation.

In principle, the Committee supports these proposals and comments on them further in Part V.

## Levels of Counter-Disaster Resources

113. During the Committee's discussions with participating organisations, certain deficiencies in necessary resources were revealed, for example within CFA, FCV, SES and DCWS. Where this occurred, the Committee has already supported in principle, applications from such organisations to appropriate Ministers, requesting necessary resource-level adjustments.

MITIGATION AND PREPAREDNESS

114. With regard to mitigation and preparedness, the Committee was constantly reminded of two vitally important facts. The first is that the State of Victoria is one of the most bushfire-prone areas of the world. In principle, this fact cannot be significantly changed; it is determined by a combination of climate and vegetation. It follows that the threat from bushfire will continue into the future, with peaks of periodic potential disaster. Thus, standards of mitigation and preparedness must always rank high on the list of counter-measures.

115. The second fact is that lack of adequate fire prevention measures, for various reasons, significantly raised the fire risk level in some areas during the 1982/83 season and this, in turn, inhibited fire-combat effectiveness.

116. It was against these fundamental considerations that the Committee examined the very comprehensive range of information put before it. Because this total aspect of mitigation and preparedness is so crucial, the Committee has included below, in some detail, the main comments and criticisms which were brought to its attention.

General Standards and Measures

117. In general, it was submitted that current standards of mitigation and preparedness are too low, thus reducing the effectiveness of counter-disaster arrangements. Some suggested reasons for this were as follows:

- . There is distinct apathy among certain sections of the community towards the bushfire problem.

- . The fact that legal action may be taken against major offenders, leading to widespread compensation, encourages apathy in individuals and within the community generally.
- . A hand-out approach to disaster victims by governments also encourages an apathetic attitude.
- . Insufficient incentives are offered to property owners to take out insurance.
- . Not enough funds are available to ensure effective mitigation.
- . There is inadequate fire mapping.
- . The most appropriate measures were not always implemented because of the influence of groups advocating preservation of the environment.

118. To offset these and other deficiencies, the following measures were proposed:

- . Land-use regulations and controls should be used, where necessary, to reduce the bushfire hazard.
- . Land 'buy-back' policies should be implemented to ensure the provision of buffer zones and similar mitigation measures.
- . There should be a review of the legal aspects which currently apply to fire mitigation.
- . Fire-prone areas should be legally designated and required to have certain facilities such as assured water supplies, underground power lines, home shelter

protection, home fire-fighting equipment, a local warden system, safe access/egress roads and designated safe areas.

- . There should be restrictions on living in forest and other vulnerable areas, and fire-resistant building materials should be used. If necessary, there should be Government regulation in these matters.

Further detailed proposals for special measures in fire-prone areas are contained in paragraphs 123 and 124.

### Fuel Reduction

119. The subject of fuel reduction was comprehensively covered in representations to and discussions with the Committee and a preponderance of opinion favoured increased emphasis on this aspect of mitigation. Points particularly emphasised were:

- . Fuel reduction by controlled burning is the only effective means of significantly reducing forest fires.
- . Fuel reduction measures should be increased and the FCV should be allotted more funds for this purpose.
- . The need for fuel reduction is not confined to forest areas; it also applies to other rural areas.
- . Whilst conservation aspects must be respected, they should not be allowed to override reasonable safety measures achievable by fuel reduction.

### Organisational Responsibilities

120. Organisational responsibilities in regard to mitigation and preparedness were reviewed in considerable detail by the

Committee. From this a general theme emerged that stronger action was needed on an organisational basis. For example:

- . The CFA needs stronger powers to enforce the reduction of fire hazards.
- . The definition of fire hazards in the CFA Act needs amending, so that an individual's home/property surrounds can be designated as a hazard to himself.
- . The CFA should have a Fire Prevention Department and trained Fire Prevention Officers should be made available to cover regions or groups of municipalities.
- . Vegetation control policies should be established by the Ministry of Planning, the CFA and the FCV.
- . Local authorities must heed the advice of Regional and Local Advisory Committees concerning fire hazard control and take action accordingly; if necessary, local authorities should be placed under stronger mandatory requirements.
- . Some municipal fire prevention plans are below the required standard because of inappropriate proper officers, or no proper officers at all (See paragraph 25(b) for definition).
- . Proper officers should be replaced by full-time Fire Prevention Officers, with independent powers. If this cannot be done, and the current system of proper officers is retained, the incumbents must be properly trained in fire prevention measures.
- . Responsibility for roadside fire prevention measures

must be clearly defined, and implemented accordingly.

- . Local government legislation should be amended so that conservation interests cannot overbear sensible fire prevention and protection measures.

### Individual Responsibilities

121. It was strongly represented to the Committee that individual responsibility was a vital factor in bushfire situations and that, even if future technology significantly improved bushfire counter-measures, the importance of individual responsibility would still apply.

122. It was also put to the Committee that many homes and properties could have been saved during 1982/83 if individual owners had been better informed in safety and survival measures. In this connection it was suggested that some form of training might be considered for persons in fire-prone areas, so that they could be thoroughly versed in all aspects of mitigation, home fire-fighting and personal survival.

### Special Measures in Fire-Prone Areas

123. An important aspect of mitigation and preparedness covered by the Committee concerned the special circumstances which apply to recognised fire-prone areas. Here, much of the information available underlined the basic conflict between a fire-prone, volatile environment and population encroachment. The point was repeatedly made to the Committee that if people choose to 'live in the bush' they must accept the fire danger which this may involve. Moreover, they must be prepared to support and participate in mitigation and preparedness measures which are designed to protect themselves and their community. It was widely felt that, in relation to the 1982/83 fires, many semi-rural communities had failed to recognise both the dangers and responsibilities involved.

124. However, given that communities already exist in fire-prone areas, and are likely to do so in the future, certain special measures to improve counter-disaster effectiveness were suggested to the Committee. They included:

- . Main access/egress roads should be cleared of all trees; and the trees replaced by fire-resistant shrubs.
- . Cleared safe areas must be maintained.
- . More effective measures are required to ensure that power supply systems cannot cause fires, including the installation of underground supply lines.
- . Special attention should be paid to fire-prone areas by local government authorities, such as provision of fire breaks, home protection measures and evacuation arrangements.
- . Housing features in fire-prone areas should include:

- houses built at ground level, on a slab;
- eaves protected with fibro/asbestos;
- windows protected from cracking and from flying debris;
- properties having water storage and their own pumps and generators (water should be sprayed over the house);
- houses possessing a cellar with an unobstructed exterior exit;

houses possessing a readily available oxygen supply, preferably in the cellar;  
housing insulation to be non-flammable;  
spouting to be covered as part of its design;  
sprinklers having underground pipes, because hoses melt.

- . Fire-resistant housing should be encouraged by the provision of plans at reduced price, rebate on insurance, and similar incentives.

### Insurance Aspects

125. The Committee's attention was drawn to certain insurance aspects which are seen as inter-related with mitigation and preparedness. The main ones were:

- . The State Government should introduce a standard insurance scheme for homes and properties; at present insured property owners carry much of the burden caused by property owners who do not insure.
- . The State Government should not encourage the hand-out mentality; it should stop compensating those who do not take sensible precautions to insure and otherwise protect their property.
- . Those who insure are heavily penalised by the inclusion of fire brigade charges; this should be changed so that fire protection costs are shared by all house/property owners.
- . The insurance industry is concerned, for obvious reasons, in mitigation and reduction of risk levels.

### Civil Emergency Training

126. It was put to the Committee that the bushfire hazard in Victoria is serious enough to warrant a form of community auxiliary; and that the existence of such an auxiliary might have made a significant contribution to counter-disaster effectiveness during the 1982/83 fires. It was suggested that members of the auxiliary, if formed, would be trained to assist emergency services in such duties as first aid, evacuation procedures, welfare centre work and emergency feeding. Such an organisation could become an adjunct to SES, or alternatively, constitute a specific resource within municipal disaster plans.

### Link with Public Awareness and Education

127. A general view was emphasised, and is supported by the Committee, that effective measures of mitigation and preparedness clearly have a strong link with public awareness and education. The latter is covered in paragraphs 132 to 136.

### Comments on Mitigation and Preparedness

128. In commenting on the many aspects of mitigation and preparedness presented for its consideration, the Committee's view is that:

- (a) Mitigation and preparedness must always be regarded as a major bushfire counter-measure; it needs to be enhanced and maintained for the future.
- (b) Many discrete aspects influence effective levels of mitigation and preparedness; they include:
  - . general apathy within the community;

- . the policies and attitudes of governments;
  - . use of legislation and regulation;
  - . fuel reduction policies;
  - . the roles, responsibilities and powers of involved organisations, including local government;
  - . individual responsibility;
  - . special policies and measures in fire-prone areas;
  - . emergency training, public awareness and education;
  - . preservation of the environment;
  - . insurance aspects.
- (c) Because of the factors expressed in (a) and (b), some co-ordinating mechanism or system should be introduced at State level to improve mitigation and preparedness generally.

#### LEGISLATION

129. The Committee looked closely at the question of special counter-disaster legislation, particularly since there was an inference that lack of such legislation inhibited certain aspects of counter-disaster effectiveness in 1982/83.

130. Some of the points made to the Committee were as follows:

- . A State Disaster Plan, such as DISPLAN, cannot be fully effective without supporting legislation, because it carries no mandatory obligation on participating organisations.
- . Local disaster plans should be made mandatory by legislation, as also should the plans necessary

for various State authorities to fulfill their disaster roles.

- . Legislation is necessary to ensure that fire prevention requirements are met.
- . There should be legislation to prevent local government authorities from restricting the removal of trees and similar measures which are aimed at reducing fuel levels.
- . Suitable legislation would enable the State Government to declare a 'State of Emergency' or 'State of Disaster', if this was deemed necessary, thus enabling special measures and powers to be applied in the best interest of the community.

131. The Committee's view is that the introduction of suitable legislation would enhance the effectiveness of counter-disaster arrangements in Victoria. Such legislation would not only underpin and strengthen the State Disaster Plan and associated planning measures, it would also assist preparedness, relief and other essential aspects. In particular, it would clarify responsibilities and facilitate interaction between participating organisations.

#### PUBLIC AWARENESS AND EDUCATION

132. The question of public awareness and education figured prominently in submissions to the Committee. This was especially so during meetings held in the disaster-affected areas. In this regard, the general assertion was that the relevant programs and measures were inadequate and/or often went unheeded by sections of the public. Consequently, the Committee accepts the proposition that programs prior to the 1982/83 fire season (see paragraph 28) were not, for various reasons, totally effective.

133. However, the Committee recognises that the whole question of public awareness and education in the counter-disaster field is a complex one; and that it is impossible to be categorical about the selection and effectiveness of programs. Certainly, a mere resort to bigger and better programs in the light of past experience appears unlikely to provide the total answer. Receptivity of such programs by the public must also improve. In this context, it is significant that an informed comment on the events of Ash Wednesday stated that 'the lesson of experience is that we do not learn from experience'<sup>2</sup> Viewed in this light, the following random selection of points brought to the notice of the Committee is of considerable importance:

- (a) The State road toll (Victoria's ongoing 'major disaster by instalments') continues on, though the causes of the problem and much of its solution are very widely known to, and understood by, the public.
- (b) Certain Ash Wednesday victims received severe burns through wearing synthetic clothing materials, yet wide public information is in circulation regarding the dangers of such materials when exposed to, or near, fire.
- (c) In September, 1982, the Insurance Council of Australia, in association with the Australian Counter Disaster College and educational institutions throughout Australia, produced and circulated a first-class counter-disaster guide for school principals.

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<sup>2</sup> "The Second Ash Wednesday: 16 February 1983" by Bardsley, Fraser and Heathcote: Australia Geographical Studies (April 1983)

Although this guide was available in Victorian schools prior to Ash Wednesday, the Committee received reports of inadequate measures on that day for the guidance and protection of school children.

- (d) For many years, the CFA has disseminated practical advice on bushfire precautions throughout the State. This advice has gone unheeded by large numbers of individuals and community groups.
- (e) Already, in some disaster-affected areas, re-building has taken place in the same fire-prone positions, using fire-prone materials and fire-prone house designs.

134. It is certainly not the Committee's intention that these points, and the many similar ones, should be used as an excuse for not trying to improve public awareness and education for the future. However, it would be irresponsible to ignore the fact that there does seem to exist among the Australian community a certain optimism that disaster will not occur; or if it does, it will not strike again in the same place. Therefore, community awareness programs need to be carefully designed and focused.

135. It is against this background that some particular suggestions, submitted by organisations and individuals, for improving the future situation, need to be viewed. For instance:

- . There is a need to link public awareness and education more directly with preparedness. In this regard, consideration should be given to producing an overall 'Bushfire Awareness and Prevention Strategy'. This kind of initiative would essentially be a State Government responsibility and would cover aspects such as public education, better preparedness measures,

reduction of fire hazards and survival techniques.

- . More emphasis should be placed on programs in schools, particularly because these carry long-term dividends; special briefings should be given to school students prior to the fire season.
- . The CFA and local councils should co-operate to improve public education, with pre-season emphasis on aspects such as house protection and personal survival.
- . Public education programs must embrace metropolitan areas, since many residents of those areas become involved, in one way or another, in the bushfire problem.
- . There should be tougher penalties for offences with a potential to cause bushfires and these should be made widely known to the public.

136. In view of the many diverse factors mentioned above, the Committee concludes that realistic improvements in public awareness and education would be achieved by adopting the following policies:

- (a) Public awareness and education to be firmly linked with mitigation and preparedness. This would give broader emphasis and meaning than that achieved by the current, narrower concentration on fire prevention measures.
- (b) Programs to be designed centrally at State Government level and careful consideration given to their timing and emphasis.

- (c) Programs should be designed to achieve community receptivity, using themes similar to 'Life Be In It'. The professional skills of the 'ad-men and the jingle-writers' should be utilised to optimum effect.
- (d) Effort should be maintained to achieve community identity with the fire problem at local level, where the problem arises and has to be fought.

However, the Committee emphasises that only constant, relentless effort, plus subtlety of presentation, will achieve significant and lasting improvement in the awareness and education fields.

### COMMUNICATIONS

#### The Importance of Communications

137. Throughout its deliberations, the Committee received constant reminders of the vital role played by communications and the need to consider their implication through all stages of counter-bushfire planning, organisation and operations.

138. It was emphasised that a major shortcoming in bushfire situations tends to be the inability to maintain a flow of information to controlling headquarters concerning the location, movement and behaviour of the fire front. This is particularly so in very dangerous situations, such as those of Ash Wednesday, when the fire is moving extremely quickly and is accompanied by severe spotting. Under these conditions, in fact, it may have to be accepted that normal methods of communication will be severely handicapped and may even become temporarily ineffective.

139. It was therefore emphasised to the Committee that consideration of communications performance during Ash Wednesday, and the assessment of future communications needs, should not

overlook this fundamental problem of maintaining information flow.

#### Communications and the Operational Concept

140. Parallel with some comments on planning and organisation, certain submissions advocated the need for an 'overall communications command network', or at least for the CFA and FCV to operate on the same radio frequency.

141. However, majority opinion was that if communications were to be effective, especially under severe conditions, the only workable concept was for the main combatting and supporting organisations to retain their own systems but to have assured liaison links between them. These 'lateral' links clearly need to be reliable and to have adequate reserve capability. This principle of separate operational communications networks, linked by appropriate liaison means, was strongly endorsed by the two major combatting authorities, the CFA and the FCV.

142. In this connection it is clear that the whole question of communications, both now and for the future, must depend on and be geared to the designated command, control and co-ordination system. To develop communications solely on the basis of advances in techniques and capabilities would be unlikely to produce optimum communications effectiveness.

#### Comments on Current Communications Systems

143. The Committee received a large number of comments concerning the various communications systems which are currently involved with bushfire operations. Some of these comments were conflicting, some took the form of sweeping statements and some appeared to ignore the realities of financial constraint. However, the majority of comment was constructive and well-informed; and from it certain important factors were clear. These are covered in paragraphs 144 to 148.

### Severity of Fires

144. Whilst the extreme severity of the fires on Ash Wednesday did not unduly affect the technical functioning of communications, it did in many cases, overwhelm crews at the fire front. Therefore, limitations were imposed on the basic information flow (see paragraph 138) and thus on communications generally. In this regard, it is relevant that the CFA reported that for most of the time, its radio network is adequate for fireground operations and that, it is only on days such as Ash Wednesday (which generally occur every few years) that problems arise.

### Traffic Congestion

145. Some reports to the Committee contained comment and criticism concerning inadequacy or breakdown of communications. However, on closer investigation it does seem that the main problem on Ash Wednesday, especially with radio, was traffic congestion and not breakdown of equipment and/or limitation of range. Major causes for this congestion were:

- . The very large number of fire units deployed at the fire front caused unusually heavy radio traffic sometimes reaching saturation point.
- . Because of telephone exchange congestion (see paragraph 73 concerning communications convergence) a heavy additional traffic load was imposed on radio channels.
- . The cumulative traffic load meant that there was no spare capacity on available radio channels. This was compounded by the lack of a reserve channel capability.

- . The unusually high requirements for reinforcement fire units, and the arrangements for their operational deployment, added to the already overburdening traffic load on fire front communications.
- . In some cases radio operators (due to lack of training/experience and/or the severity of fire conditions) failed to keep transmissions down to brief and succinct levels.

In the total context of bushfire response, it is important to bear in mind that communications traffic congestion affects not only combat operations, but also the comprehensive support, co-ordination system and information management systems.

#### Equipment Limitations and Utilisation

146. Although, as indicated above, traffic congestion was a primary problem affecting communications, other factors also apply. For example:

- . Failure of power supplies and lack of reserve power sources affected certain communications facilities.
- . Non-availability of additional radio frequencies had an adverse effect in certain cases.
- . Terrain characteristics impose limitations on radio capabilities in some areas.
- . Emergency needs for extra communications equipment could not always be met.

- . The resources of the Wireless Institute Civil Emergency Network (WICEN)<sup>3</sup> could have been more widely used to supplement emergency communications.

Against such limitations, it should be noted that there was widespread commendation of Telecom's ability to produce speedy and efficient special disaster telephone services.

### Special Area Problems

147. The Committee's attention was drawn to the special problem which exists in Western Victoria, where radio transmissions from South Australian sources affect the CFA network. Resolution of this problem is currently being sought by the CFA but the Committee deemed it advisable to bring the matter to the notice of the Minister for Police and Emergency Services in advance of this report.

### Levels of Training

148. There was strong representation in submissions to the Committee concerning communications training. The following aspects were particularly emphasised:

- . More training is needed to improve communications discipline generally, especially among crews of mobile fire units.
- . Cross-training in communications is necessary between organisations.
- . Operations personnel need to be better informed on communications capabilities. It is not sufficient

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<sup>3</sup> A voluntary organisation providing radio communications in emergency situations.

to leave these matters to a few specialists.

The Committee endorses the view that high standards of efficiency and discipline by operators are of prime importance in maintaining effective communications, especially under intensive operational conditions.

### Future Policy

149. As regards future policy for bushfire-related communications, the Committee noted one particular comment that there should be a complete review of counter-disaster communications, including co-ordination facilities, which should cover wider utilisation of modern equipment and technology.

150. The Committee appreciates the motivation behind such a proposal. At the same time, it is conscious that all relevant factors must be taken into account. These include the following:

- . Throughout the total counter-disaster system in Victoria, individual organisations or groupings of organisations are constantly reviewing communications needs, capabilities and procurement possibilities.
- . Re-equipment programs are not usually straightforward and easy. The call for maximum utilisation of equipment prior to replacement is almost always overriding, in the interests of economy.
- . Because of differing roles and responsibilities undertaken by the various organisations, commonality of communications systems is not practicable.

151. Therefore the Committee has concluded that a sound policy for the future will be best achieved by:

- (a) Gearing communications development, as far as possible, to a generally accepted system for command, control and co-ordination.
- (b) Utilising a central co-ordinating/advisory system, aimed at achieving optimum balance between the communications needs of individual organisations and the requirements of a co-ordinated counter-disaster response.

#### WARNING AND INFORMATION SYSTEMS

152. Two aspects which received considerable attention in submissions to the Committee, and which came under especially severe criticism in disaster affected areas, were:

- . First, the problem of providing adequate, timely and accurate warning to communities faced with a possible fire threat, and
- . Second, the dissemination of information to the public, mainly from media sources, concerning fire situations, casualties, damage and destruction.

The major aspects raised have been divided below into the three categories of general factors, factors concerning warning and factors concerning public information.

#### General Factors

153. Certain general factors were seen as applying to both warning and public information. They included:

(a) The Role of the Media

The capability of the media for disseminating information widely and rapidly is, if properly organised, a valuable counter-disaster resource. This is especially so in regard to promotion of public awareness, broadcasting of weather warnings, fire danger ratings, notification of total fire ban days and similar important data. However, any dissemination of media information which may be inaccurate and/or exaggerated could be misleading and thus cause unwise or unnecessary reaction by the public.

(b) Control of Information

A key factor in ensuring accurate transmission and utilisation of information is to have a Public Information Plan as part of DISPLAN and associated plans.

Official information releases should then be made only by a senior person authorised under DISPLAN, so that only factual and not sensational information would be issued.

Under DISPLAN there should be compulsory acquisition of an appropriate T.V./Radio station, so that this would provide an authentic source of official information. Consideration should also be given to the appointment of a Media Co-ordinator, as a means of helping to ensure dissemination of accurate information.

(c) Systems and Procedures

There needs to be a marked improvement generally in the systems and procedures used for gathering and disseminating information, particularly during disaster operations and during recovery.

As far as possible, warning and information systems need to be independent of normal power supplies, since the latter are prone to failure in fire situations. Thus, for example, sirens or similar devices driven by batteries or compressed air should be used to convey warning messages.

(d) Wider Utilisation Aspects

Better public information, based on an improved system of public communications, would do much to enhance effectiveness of a low-technology, self-reliant bushfire response.

Also, the possibility should be considered of developing a generalised warning and information system, with appropriate emergency broadcast facilities. Such a system would have a wartime civil defence role and would therefore justify the support of funding from the Commonwealth Government.

Factors Concerning Warning

154. The following factors were considered to have special relevance to warning:

(a) Basic Considerations

Maximum warning lead-time is vital, particularly for notification of wind changes and forecasts of

fire front movement.

Accurate meteorological information, plus a close working liaison between the meteorological and fire combatting authorities, is therefore essential for optimum response to fire situations generally.

Warning needs to be standardised and its meaning clear and unambiguous.

However, limitations to warning must always be anticipated and allowed for where erratic weather conditions and/or unusual fire behaviour are likely to apply.

(b) Methods of Providing Warning

One proposed system for providing warning was for T.V. and radio stations to broadcast a special message or warning sound, upon which members of the public could switch to a designated station (perhaps the Australian Broadcasting Corporation (ABC), as the national broadcasting system) from which specific disaster information would be broadcast. Prior to the fire season, the public would be reminded of the system and its procedures.

In principle, greater use should be made of local T.V./radio stations.

Special fire warning sirens should be located at police and fire stations; also, church bells should be utilised.

Consideration might also be given to the introduction of a warden system for local warning purposes.

Police helicopters and other suitable aircraft should be used for warning purposes.

Police should also use local government officials and local citizens to assist in giving warning.

Simple VHF receivers (currently costing approximately \$200) should be made available on a subsidy basis to householders, especially in remote rural areas.

### Factors Concerning Public Information

155. Specific factors concerning public information included:

- . The use of media information facilities should be confined to advance warning and post-emergency purposes; these facilities should not be used during the fire-fighting phase because of difficulties in the acquisition and dissemination of accurate information.
- . The media must be dissuaded from broadcasting inaccurate information because this causes anxiety and alarm. This, in turn, leads to overloading and even jamming of vitally-needed communications systems.
- . In a major disaster the ABC should be used to provide a continuous information service for the public, including details of persons evacuated, tracing of relatives, etc..

### Observations on Submissions

156. As indicated in paragraphs 152 to 155, a wide range of views was presented to the Committee concerning warning and information systems. There is no doubt that on both of these aspects there were major shortcomings, especially on 16 February, 1983. There were a number of reasons for this:

- . The extreme conditions of 16 February, made it fundamentally very difficult to provide adequate and timely warning to threatened communities; and the extent and severity of the fires themselves produced a massive public information problem.
- . The media, with all the good intent, did disseminate vivid accounts of the various disaster situations. The subsequent reaction of relatives and friends (both in Australia and overseas) overloaded information systems. This, in turn, caused cumulative problems in dissemination of official information to the public generally and, in particular, to directly-affected communities.
- . In some cases, misjudgements occurred in warning and/or informing communities of the fire threat. The fires on Ash Wednesday did not conform to a usual pattern of subsiding at nightfall; nor were they impeded by major natural fire-breaks, such as four-lane highways. In consequence, there were cases where warning was initiated belatedly, or not at all.
- . There were also cases where members of the public were unaware how they should best react to warning, even despite the severe fire indicators prior to Ash Wednesday. Some, though not necessarily all, of the reasons for this can be traced to lack of local disaster plans, or lack of information to the public on what to do and where to go if a severe threat should develop.

157. On the question of improving the effectiveness of warning, the Committee considers that emphasis should be placed on the following aspects:

- (a) Combatting authorities, in close co-operation with

co-ordinating authorities, should ensure that, within the limitations of existing facilities, the best possible arrangements are maintained for assessing potential warning situations, and for originating and disseminating warning.

- (b) In parallel with (a), arrangements should be made at community level, under local disaster plans, for warning systems to be clearly notified and explained to the public, together with advice on action to be taken on receipt of warning.
- (c) New systems which offer possibilities of enhancing warning capability should be examined and kept under review so that, provided they are cost-effective, they can be introduced in the future.
- (d) With regard to the provision of special fire warning sirens and/or the utilisation of church bells (see paragraph 154 (b)), it is important that commonality of meaning should be achieved, so that people strange to a particular area would understand any coding and other devices which might be used. In this regard the Committee emphasises that any coding devices must clearly indicate to the recipient of warning precisely what they mean in terms of reaction; also that when such devices are used, they usually require a means of cancellation.

158. Concerning information systems, the following points are emphasised:

- (a) The Committee met with leading representatives of the media, through the courtesy of the Police Media Liaison Bureau and participated in discussions on the possibility that one radio station, preferably the ABC, should be designated as the

official disaster information source. Media representatives present did not indicate support for this arrangement. However, they did agree to utilise the facilities of the Police Media Liaison Bureau for the acquisition of news and information, whilst reserving the right to acquire additional information from other sources and to disseminate it as they saw fit.

Media representatives also undertook to review the possibility of developing an appropriate set of warnings which might be used for disaster purposes. This aspect is being pursued under DISPLAN arrangements.

- (b) The Committee also discussed the possibility of utilising the Police Advice Line to assist in providing disaster information for the public and agreed, in principle, that this should be done.
- (c) Whilst appreciating that arrangements exist under DISPLAN for media liaison, the Committee advocates the addition of a Public Information sub-plan. Also, arrangements should be included in regional and local disaster plans for effective dissemination of information to the public.

159. In sum, therefore, the Committee considers that the warning and information systems applicable to the 1982/83 fire season were not wholly effective, although there were some substantial mitigating factors. Consequently, steps need to be taken along the lines suggested in paragraphs 156 to 158 in the general areas of planning, public awareness and upgrading of various warning and information systems, having regard to the intermittent nature of the threat.

SHELTER

160. As can be judged from Part III, no comprehensive policy or system existed in relation to bushfire shelters prior to the 1982/83 season. It is therefore difficult to make any accurate assessment of shelter effectiveness. However, certain indicators did emerge from the experiences of Ash Wednesday, including the following:

- . Instances occurred where large numbers of people found communal shelter in large, well-constructed buildings and survived, even though the fire threat outside the buildings was acute.
- . In some cases, people who used their own homes as shelters also survived; though others who did likewise perished. On this point, it should be noted that views differ on the issue of whether to evacuate or stay with one's house and fight the fire. Various studies on this issue are still in hand. However, general indications are that people who understand what to do and have made adequate preparations, and, most importantly, have an adequate water supply, stand a good chance of surviving and saving their homes. On the other hand, people who take to their cars may face very high risks where conditions of thick smoke and high radiant heat levels apply, especially on crowded escape routes.
- . Some improvised forms of shelter, used by individuals who understood fire behaviour and fire-resistant materials, were also successfully used.

161. In addition, following the Ash Wednesday fires, proposals were put to the Committee concerning various designs of shelter. Broadly speaking, these fell into the two categories of:

- . Underground bunker-type shelters
- . Shelters which utilised water tanks and their contents.

The essential feature of both these types of shelter is that they provide protection from high levels of heat radiation and, by being on home or property sites, permit fire-fighting action once personal danger has passed. The Committee was represented at tests of one particular type of family-size shelter and considers, on the evidence available, it offers good protection from bushfire. The estimated cost of such a shelter in December, 1983, was approximately \$2,500.

162. Overall, therefore, the Committee takes the view that:

- (a) Under local disaster plans, consideration should be given to designating buildings which could serve as emergency communal shelters. Such buildings would need to be assessed by a competent authority for their fire-resistant capability and for availability of fire-fighting equipment and water supply.
- (b) Individuals in fire-prone areas should be permitted to install family shelters, if they so wish, without restriction from local building regulations, provided they comply with approved design and performance standards.
- (c) Research effort should continue on shelter aspects.
- (d) In developing future public awareness on the question of whether or not to leave one's home/property, the merits of shelter and its availability should be accurately presented.

EVACUATION

163. The question of evacuation was widely canvassed before the Committee; and in disaster-affected areas there were some substantial criticisms of the measures which applied to Ash Wednesday. Most of this criticism maintained that evacuation arrangements generally fell considerably below the required standard. The main problems affecting evacuation (contained in paragraphs 62 to 63) are briefly re-stated here. They involved:

- . Warning
- . Transport problems
- . Evacuation routes
- . Resistance to evacuation measures and advice
- . Difficulties applying to school children
- . Effects of night-time conditions
- . Complexity and danger of bushfire evacuation
- . Need for clear definition of responsibilities.

164. In considering major comments and criticisms, the Committee believes that it is necessary, once again, not to lose sight of the extreme conditions of Ash Wednesday. This is particularly important in regard to evacuation which, under bushfire conditions, can at the best of times be a risky undertaking. The criticisms in paragraph 165 therefore need to be viewed against this proviso. In addition, it should be borne in mind that DISPLAN itself clearly recognises the difficulties and problems involved in evacuation. DISPLAN also makes it clear that the combatting authority and the Police usually have a combined responsibility, a fact which may not have been understood by some persons raising criticisms.

165. The major areas of criticism were:

(a) Inadequacy of Warning

Mainly, people complained that they had little or no warning of the possibility that they might have to evacuate and, sometimes, when such warning was given, it lacked clear direction on what action should be taken. In some cases, people stated that they did not even receive reasonable warning that they were under serious threat from the fires.

(b) Control of Disaster-Affected Areas

There was very strong criticism of the measures taken to seal off disaster-affected areas. In this regard, the Police received the major share of blame. Police measures were said to have been much too severe and inflexible and, in some instances, it was alleged that Police members, brought in from non-affected areas, lacked understanding of the situation and the needs of the local community.

These factors were seen as having a bearing on evacuation, mainly because they affected people who worked outside their home areas and thus prevented them from returning to assist in evacuation problems applying to their families.

(c) Family Aspects

Specific criticism was made of families being split up and losing their family strength and unity under circumstances of distress. Women were very critical of this aspect and claimed that inadequacies of school evacuation often left young children to fend for themselves in circumstances which were potentially very dangerous.

(d) Evacuation Arrangements

There were strong complaints of lack of clarity on routes to be taken, and in some cases destinations, once evacuation had been advised or ordered. This resulted in slow reaction by communities and thus, in many instances, undue exposure to danger. Lack of local disaster plans and/or notification of evacuation arrangements were often cited as being responsible for confusion and high risk levels involved.

Also, some cases were quoted where individuals were ordered to evacuate when they might reasonably have been left to fight for their homes or properties.

(e) Information on Evacuees

There was also marked criticism concerning the lack or inaccuracy of information on evacuees. Family members and close relatives often asserted that they could not obtain information on the whereabouts of evacuees or even that they were given completely wrong information. For instance, some people were reported as still being in areas where fires were raging, when they had already been safely evacuated. Alternatively, persons were reported as being safe although, in fact, they were still under high risk. Generally speaking, criticisms on this aspect underlined the considerable stress, fear and confusion which typically results from inadequate information.

(f) Assembly Area Problems

Problems in assembly areas were also quoted,

particularly concerning lack of preparedness and the various restrictions or lack of facilities which prevented evacuees from notifying relatives or friends of their whereabouts or condition.

166. The Committee considers that there was justification for much of the criticism levelled at the ineffectiveness of evacuation arrangements. The following points are of significance for the future:

- (a) All concerned with the planning, organisation and implementation of evacuation measures (including persons likely to be evacuated) need clearly to understand that evacuation under bushfire conditions can be a complex issue and that it often has to be carried out under difficult and risky conditions.
- (b) Evacuation considerations should be applied selectively to individual areas and situations, so that threats, risk levels, likelihood of evacuation and any other necessary measures can be assessed as accurately as possible.
- (c) Local disaster plans are critically important for designating evacuation arrangements and for keeping the community informed of these arrangements. Such plans usually need to provide for localised moves to safe havens, as well as major evacuation from the danger area.
- (d) The roles of involved organisations and responsibility for decision-making must be clearly defined in plans at all levels and again necessary information made known to communities.
- (e) The question of control measures applying to disaster

areas should be investigated, with the particular object of facilitating access for directly-affected persons (e.g., members of threatened families and key workers).

- (f) In principle, people who choose to stay and defend their home or property should be allowed to do so.
- (g) Consideration should be given to introducing improved evacuation warning and information systems provided such systems are cost-effective and bearing in mind that there will be agitation for their use in all fire-prone areas.

#### FIRE-FIGHTING OPERATIONS

167. Much information was put to the Committee concerning fire-fighting operations. Sources included reports by combatting and supporting authorities, submissions made to the Committee in varying forms and views expressed during visits to the fire-affected communities. The Committee has summarised this information under a series of headings, hereunder, so that an overall assessment of fire-fighting effectiveness may be gained.

##### Operational Coherency

168. As with other sections of the report, any assessment of fire-fighting effectiveness needs to draw some distinction between the fires of Ash Wednesday and the other major fires which occurred during the 1982/83 season. Perhaps the best way of making this distinction is in terms of what might be called operational coherency.

169. Generally speaking, in the 'normal' fires of 1982/83, there was reasonably clear definition of major criteria such as weather predictability, fire perimeters, tactics required, patterns of fire units deployed, nomination and utilisation of

reserve units and co-ordination of general support. Thus, orderly management and decision-making processes could be applied, and operational coherency was achieved.

170. A good example of this was in the Macedon area which suffered a major fire on 1 February, 1983, as well as the holocaust of 16 February. On 1 February, under total fire ban conditions, the fire which occurred caused destruction and damage on a considerable scale. Some details are:

- . 5,500 hectares of bush and grassland burnt out
- . 24 dwellings destroyed
- . 30 head of cattle killed
- . combat resources deployed on 1 February, 1983, included some 335 men, 83 mechanical units, three fixed wing aircraft and two helicopters
- . One CFA tanker was badly damaged
- . fire combat operations extended over 5 days.

The fire outbreak was extensive and, as indicated, required a large-scale operational response. However, it was possible for this response to be carried out in an organised and orderly manner. There were no significant problems of command, control or co-ordination. In other words, a coherent operational response was achieved.

171. In the case of Ash Wednesday, reports clearly indicate that, in many areas of the State, operational coherency was lost, or in some cases never achieved at all. These reports show that loss of operational coherency resulted from some or all of the following factors:

- . The extraordinary weather conditions.
- . The dynamic behaviour of the fires, which raised the need for many units to resort to self-

protection; for instance, fires spotted behind deployment positions and placed units in serious danger.

- . In some cases units were literally over-run and overwhelmed by the fire conditions and, even had they been given substantial reinforcements, could not have held fire lines.
- . Congestion of communications complicated operational response.
- . Acquisition of situation reports concerning the positions of fire fronts and their direction of movement was very difficult, due to the general conditions, even though aircraft were employed in some instances.
- . Because of the generally severe and complex conditions, problems arose in the deployment and utilisation of reinforcement units.
- . Shortcomings in information management systems further complicated operational activity.

172. Thus, to complete the comparison at Macedon, when it came to 16 February, it was the existence of factors such as these which reduced effectiveness of response. This applied to such an extent that the operational coherency which had been achieved on 1 February, by virtually the same resources, now became impossible.

173. In broad terms, therefore, the Committee concludes that, if the level of counter-bushfire resources in Victoria remains generally as at present (and see paragraph 89 for a comment on this), circumstances will almost certainly recur when operational coherency will be lost, albeit for limited periods

only. Thus, in future developments, high priority should be given to measures which may help to maintain operational coherency under all fire-fighting conditions. Such measures might start with a careful and detailed review of all the components which comprise operational response and consequently, identification of those areas in which enhanced capability could be achieved. In this way, overall combat effectiveness and operational coherency might be improved and therefore be more capable of coping with the extreme circumstances which are encountered from time to time.

### Fire Fighting Capability

174. In addition to the major aspects covered in paragraphs 168 to 173, the following important representations were put to the Committee:

- . It was questioned whether the role and capability of the CFA was entirely appropriate to current circumstances. It could be said that resources and techniques were generally suitable for strictly rural areas and, indeed, the CFA had a tried and proven record in this regard. However, modern fire problems in semi-rural areas were considerably different from the mainly grass-fire situations occurring in open country. The semi-rural problem was basically one in which concentrations of dwellings were set among areas of high fuel levels, produced by trees and thick vegetation. Often, houses were literally surrounded by such fuel sources. The difficulties of dealing with fast-moving, large-scale fires in such areas were obvious. In fact, this was the crux of the Ash Wednesday problem in many of the severely-affected areas.

The question therefore arose of whether fire-

fighting effectiveness now needed to be viewed under separate categories such as:

- . urban
- . semi-rural
- . other rural
- . forest

and resources and techniques developed accordingly.

- . Under very severe and extensive fire conditions, such as those of Ash Wednesday, the difficulties facing local CFA commanders (for example, at group level) were sometimes enormous and the need for assistance and advice from more senior and experienced officers was keenly felt. Although the organisation and structure of the CFA makes some provision for meeting this requirement (through its system of Forward Headquarters and similar means) additional strengthening measures are desirable for the future. Extended training for junior fire commanders could comprise one of these measures.
- . Improved arrangements are needed for covering the operating costs, serviceability and capability of privately-owned fire fighting vehicles and equipment. These vehicles and equipment represent a valuable resource during operations and all practicable steps should be taken to ensure their optimum effectiveness.
- . There should be better training in the use of CFA equipment. There are cases where some registered fire-fighters are not trained at all.
- . Fire-fighting capability is reduced, sometimes very seriously, if incoming reinforcements cannot be

deployed rapidly and accurately. Instances of this occurred during the Ash Wednesday operations. Local guides should be designated to assist in these circumstances and the necessary arrangements should form part of local and/or regional disaster plans.

- . The utilisation of aircraft and airborne fire-fighting capabilities should be developed and extended wherever possible. In this regard, means of acquiring fire information, such as airborne infra-red equipment, are especially important.

In parallel with increasing use of air capability, appropriate training for CFA and other ground personnel should be organised.

175. In the view of the Committee, the foregoing comments and proposals indicate that there are aspects of fire-fighting capability which require continuous surveillance and review. Within reasonable financial limits, therefore, Government-sponsored action should be taken to enhance fire-fighting capability within a co-ordinated program.

#### Equipment and Accessories

176. Certain equipment problems which have a bearing on fire-fighting operations were also brought to the notice of the Committee. They included the following:

- . Vaporisation of fuel in CFA tankers was a serious problem, especially during operations on Ash Wednesday. On several occasions this caused crews to have to fight for their lives.
- . Lack of heat shielding on some tankers proved to be a serious operational handicap and there is a need

to rectify this situation. This is underlined by the fact that where tankers were, in fact, fitted with heat shields, crew effectiveness was greatly improved.

- . Fire-fighting efficiency was reduced because of inadequate protective clothing for fire-fighters, many of whom suffered from eye injuries, lacerations and burns. Adequate protective clothing is needed for all fire-fighters and should include helmet, overalls, gloves, boots and suitable eye protection.
  
- . A number of inadequacies were revealed in tanker equipment.

177. In advance of this report, the Committee has been able to lend some support to programs for improving equipment (see paragraph 113) and understands that most of the aspects mentioned in paragraph 176 have received, or are receiving attention. As a general principle, the Committee believes that there is no place for the second-rate in fire-fighting equipment. Such equipment must meet, and be maintained to, the highest possible standards of efficiency.

#### Compatibility of CFA and FCV Operations

178. The Committee received representations, some of them strongly expressed, that for purposes of fire-fighting operations the CFA and the FCV should be integrated. However, generally speaking, these representations tended to overlook certain fundamental factors. For example:

- . As outlined in paragraph 30, the CFA and the FCV have quite separate mandates for fire suppression. In any case, one (the CFA) is essentially a specialist counter-fire organisation; the other (the FCV) is a government department with a wide range of responsibilities, including not only fire suppression, but also the

utilisation of fire practices for forestry development. The two organisations are not, therefore, truly compatible in the sense suggested by the representations.

- . The fire suppression methods used by the two organisations are quite different. In essence, the CFA uses wet fire-fighting methods; the FCV uses dry methods.
- . One organisation (the CFA) depends predominantly on volunteers, whilst the other (the FCV) employs mainly full-time personnel. This difference between a part-time and full-time commitment has an effect on the length of time fire-fighters can be reasonably retained on operations.
- . Arrangements exist where circumstances so require for one of the two organisations to take the lead-combat role, whilst the other fulfills a combat-support role.
- . Arrangements also exist for the two organisations to act conjointly through the use of liaison officers and liaison channels.

179. It would therefore appear that there is no really practicable alternative to the existing system under which, for combat operations at the fire-front, joint CFA/FCV action is dependent on effective liaison.

180. However, it is primarily the effectiveness of such liaison which drew comments in relation to the 1982/83 fire season, and, more particularly, to Ash Wednesday. Some examples are:

- . There was a lack of knowledge of the role and

duties of liaison officers.

- . There were some misunderstandings and conflicts of view at the fire front because the difference in CFA/FCV fire-fighting methods and tactics were not always mutually understood.
- . There were problems of radio communication at fire front level.

The Committee considers that these examples strongly underline the critical need for a clear, workable and effective liaison system between the CFA and the FCV during fire-fighting operations.

181. It must be accepted that there were some shortcomings in the critical area of CFA/FCV liaison in fire-fighting operations. However, the Committee is satisfied that an efficient liaison system is within the combined capacity of the two organisations.

### Training

182. In considering the effectiveness of fire-fighting operations, the Committee noted several instances where training aspects were involved. For example:

- . Relevant cross-training between the CFA and the FCV (and other involved organisations) could normally be expected to improve overall fire-fighting effectiveness.
- . In the light of the Ash Wednesday operations, the need was expressed for wider use of survival training for individual fire-fighters.

- . There is a need for improved training in the use of equipment (paragraph 174).
- . Certain aspects of communications during fire-fighting operations indicate an extended training requirement (paragraph 148).

The Committee concludes that training aspects should be reviewed in order to achieve improved efficiency and effectiveness in fire-fighting operations.

### General Observation

183. In viewing fire-fighting operations overall, the Committee believes it would be remiss if it did not recognise and pay tribute to all those who were involved in the extremely hazardous conditions during the Ash Wednesday fires.

184. However, as with the vast majority of counter-disaster operations, certain shortcomings were revealed. This occurred in the general areas of:

- . operational coherency
- . fire-fighting capability
- . equipment
- . compatibility of CFA and FCV operations and
- . training.

The Committee believes that these shortcomings are capable of being redressed. Paragraphs 168 to 182 indicate some possible lines of action towards this end.

RELIEF MEASURES

185. Information on immediate relief measures and long term relief aspects is contained in Part III (paragraphs 68 to 86).

186. In endeavouring to assess the effectiveness of relief measures generally, the Committee has divided its considerations as follows:

- . Summary of major requirements
- . Planned relief arrangements
- . Establishment of relief allocation needs
- . Availability of resources
- . Implementation of immediate relief measures
- . Implementation of long term relief measures.

It will be appreciated that some of the very long term relief aspects cannot be regarded as complete for several years ahead. Therefore, they can receive only limited reference in this report.

Summary of Major Requirements

187. For ease of reference the major relief requirements which arose from the Ash Wednesday fires are summarised below. They were:

- . Immediate Relief Requirements

- People-related requirements

- Clothing

- Sustenance

- Shelter/temporary accommodation

- Personal and household effects

Medical assistance  
 Sanitation and health protection  
 Information (e.g. to and from relatives)  
 Counselling  
 Guidance on relief, insurance and similar matters.

Community requirements

Communications  
 Power supplies  
 Water  
 Road clearance  
 Making safe damaged buildings, burnt trees, etc.  
 Repair and replacement of fencing in rural and  
     semi-rural areas  
 Provision of emergency fodder  
 Disposal of dead animals and care for injured ones.

. Long Term Relief Requirements

Financial compensation  
 Re-housing of victims  
 Rehabilitation of communities  
 Rehabilitation of the environment  
 Major planning measures.

Planned Relief Arrangements

188. In essence, post-disaster relief arrangements in Victoria followed a typical pattern of:

- . Planned emergency relief measures, followed by
- . Recourse to the normal systems and processes of government as soon as practicable.

If this basic pattern is related to the wide range of requirements summarised in paragraph 187, it can be said that the principle of DISPLAN is sound. By defining roles and establishing guidelines, DISPLAN automatically involves major government departments and organisations. Therefore, it is incumbent upon those departments and organisations to be able to assume their allotted crisis roles as required and then revert smoothly to normal functions as crisis pressure eases.

As regards voluntary agencies and special relief organisations, their inclusion in functional roles under DISPLAN is also sound in principle.

189. Thus, as examples related to paragraph 187, DISWELPLAN aimed to cater for such needs as clothing, sustenance and shelter, whilst Telecom's disaster-related plans were designed to cover both crisis requirements and post-disaster preparations.

190. The Committee recognises that shortcomings may have arisen in the implementation of this general relief pattern but reiterates that the basic principles are sound.

#### Establishment of Relief Allocation Needs

191. Clearly, one of the most difficult and urgent problems which arises immediately following the impact of any major disaster is to establish as quickly and accurately as possible:

- . Who and what is affected?
- . What are the needs?
- . What are the priorities?

This requirement is usually met by a pre-arranged system of survey, assessment and reporting. Such a system should be a key facet of local (and sometimes regional) disaster plans or, in the case of specialist organisations (such as the State Electricity

Commission) their own disaster or emergency plans. The absence of local disaster plans in some of the severely-affected areas, following the Ash Wednesday fires, could clearly be expected to have an adverse effect on the expeditious establishment of relief needs. However, there were other factors which had a bearing on this aspect and they are covered in paragraphs 192 to 195.

192. Information Management. Broadly speaking, the scope of the information system required to deal with a major disaster, such as Ash Wednesday, does not seem to have been fully appreciated by some involved organisations. The survey, assessment and reporting aspect (paragraph 191) constitutes only one part of the total necessary function. Whatever information system is used, it must form the basis for the whole range of decision-making and action which is required for the post-impact and recovery periods. The information system, therefore, needs to cover facets such as:

- . Initial survey, assessment and reporting, to establish the general extent of the relief problem.
- . Detailed listing of affected persons.
- . Definition of community areas which need assistance.
- . Eligibility information.
- . Identification of household membership (to avoid duplication problems).
- . Recording of assistance received and further assistance required.
- . Monitoring of victims' progress.

Against these criteria, various reports submitted to the Committee indicated some serious shortcomings in the handling of the situation following Ash Wednesday. Consequently, there were some adverse results and these were reported as including:

- . Delay in the assessment and satisfaction of individual needs.
- . Duplicate checking of households by different relief organisations to establish relief eligibility.
- . Confusion, irritation and frustration for victims.
- . A sense of insecurity by many victims because, due to the inadequacy of the system, they were unsure whether they were properly registered or not.

193. Registration. Within the system of information management generally, the process of registration was strongly criticised. Some examples are:

- . The use of the National Registration and Inquiry System (NRIS) was not fully understood in all disaster-affected areas. For example, official Red Cross registration teams (acting in a support role to the Police) met opposition from other officials, who were compiling their own lists of evacuees. These officials were obviously unaware of NRIS and its requirements and considered the system was unnecessary. Once again, effective local disaster plans would eliminate this problem, since they could be expected to contain information on the registration process.
- . Stocks of official registration cards were not

readily available in all disaster-affected areas.

- . Failure to conduct initial registration accurately caused many subsequent problems in identifying the location of evacuated victims, re-uniting families, and helping to trace the missing and, possibly, deceased.
- . Many residents self-evacuated and missed registration.
- . Too much was expected of NRIS. Basically, it is an alphabetical system and has a limited capacity to break down its data into other categories.
- . Victoria's Natural Disaster Relief Committee (NDRC) registration forms were confusing to complete, did not obtain the necessary information required for the long term and were not adaptable to computer processing. The information which was, in fact, recorded was not available or recoverable when required for tracing affected persons and determining their ongoing needs.
- . The overall registration system was inadequate. There is difficulty in combining victim registration with the registration which is required for relief/welfare assistance. Any future system must be adaptable to computer processing and provide adequate training for those persons who have to work within the system.

194.        Communications. Communications convergence (see paragraph 73) also had a generally adverse effect on the establishment of relief needs and resource allocation, especially in the early post-impact stage.

195.        Behavioural Aspects. In some cases, eligibility for relief was falsely stated, so that over-allocation occurred. The

Committee found it difficult to assess the full extent of this malpractice but undoubtedly it complicated the overall problem of relief allocation.

### Availability of Resources

196. A common feature of many major disasters is lack or shortage of available resources for relief operations and programs. This usually occurs in areas such as finance, food, accommodation, medical facilities, building materials, communications and transport.

197. In marked contrast, the post-impact situation in Victoria following Ash Wednesday suffered few, if any, serious shortages of essential resources. This fact is recorded by the Committee because it underlines the existence of a basic capability and strength which is of vital importance in countering disaster, generally. At the same time, it emphasises the general need for such resources to be effectively maintained in readiness (mainly through planning and organisational measures) so that they can be utilised rapidly and efficiently when the need arises. It also emphasises that the crux of relief capability in Victoria lies, not in availability of resources, but in effective organisation.

198. Various aspects concerning implementation of relief measures stated below (paragraphs 199 to 206) underline the foregoing important considerations.

### Implementation of Immediate Relief Measures

199. Paragraphs 191 to 195 give a general outline of the main problems which were involved in establishing the needs for relief allocation. To varying degrees, these problems clearly had a detrimental effect on the implementation of planned relief measures, based primarily on DISWELPLAN.

200. However, it is also important to remember that the immediate post-impact conditions themselves had a serious effect on the gearing-up of relief machinery. Communities were shocked and bewildered, communications were either overloaded or out of action, combatting and supporting organisations were temporarily exhausted and government systems, especially at local level, were under enormous pressures and strains. On the morning of 17 February, it was almost as if an official silence had been declared in the disaster areas, whilst communities and relief organisations, alike, drew breath before launching themselves into the next phase. It was against this kind of background that the implementation of immediate relief measures was commenced, and against which the various aspects covered in paragraphs 201 to 206 need to be judged.

201. Activation. Most reports submitted to the Committee claimed that the activation of relief response, under DISWELPLAN, was too slow and cumbersome. For various reasons, some of which are mentioned in paragraphs 191 to 195, involved organisations either wasted valuable time waiting to be called out or, alternatively, self-activated without being aware of the overall response picture. In either case, reduced effectiveness tended to result. This was especially critical in the initial stages, when disaster loss and lowered morale were bearing heavily on disaster victims.

202. Division of Responsibility Between SES and DCWS. The interaction between the SES and DCWS in the relief co-ordination role, particularly in regard to hand-over of responsibility, has been mentioned in paragraph 79. The point has already been made that, for the future, there is a need for clarification and rationalisation of SES/DCWS roles. However, it is clear that in the post-impact situation following Ash Wednesday, SES faced a difficult task. It was inundated by relief requests, incoming relief donations, voluntary helpers and organisations seeking

task allocations. SES was also hampered by the inability of some welfare agencies to fulfill their roles as allocated under DISWELPLAN. In addition, staff limitations inhibited SES capability at a time when round-the-clock functioning was expected and, indeed, necessary. SES capability was further extended because there were delays in handing over co-ordination responsibility to DCWS. As reported in paragraph 79, for various reasons, DCWS experienced some difficulties in extending into its disaster role and, consequently, a smooth and timely take-over from SES was not achieved.

The Committee is aware that, under post-disaster changes to DISWELPLAN, a rationalisation of SES and DCWS roles was put in hand. At the risk of some reiteration, however, the Committee emphasises that if planning had been adequate, and if the relevant plans had been tested through exercises or simulations, the shortcomings of SES/DCWS co-ordination arrangements would have been apparent and could have been eliminated.

203. Distribution of Resources. As indicated in paragraph 197, there were no substantial shortages of resources for relief purposes. If anything, mainly because of the vast donations of voluntary aid, supply exceeded demand. Thus, generally speaking, the needs of the disaster victims were met. However, post-disaster reports high-lighted certain important points:

- . The large number of disaster-affected persons necessitated a somewhat 'refugee-style' welfare response. When such persons come from a variety of backgrounds in an affluent society this approach may not always be appropriate.
- . In the same sense, the quality of relief clothing caused some problems. Secondhand clothing was not well received. This sometimes aggravated people who

were still suffering from the stressful conditions.

- . Not all welfare agencies are accustomed to dealing with the total community structure; they specialise in meeting the needs of the very poor and the under-privileged. This can produce problems when, under severe post-disaster conditions, the welfare response has to be virtually community-wide.
- . Inadequate co-ordination among the wide range of welfare agencies produced some imbalance in levels of resource distribution.
- . The 'cornucopia' effect (paragraph 74) caused problems in that the handling and storage of excess commodities used up valuable manpower and transport resources. In addition, this excess of aid congested relief centres and downgraded provision of services.
- . Extensive requirements for accommodation were envisaged under DISWELPLAN. However, many people declined to avail themselves of the facilities available. An additional load was therefore placed on the resources of SES, DCWS, other State Government departments and local government.
- . The marked tendency for disaster victims to seek accommodation with their families or friends was greater than anticipated, as was the desire to seek an early return to their burnt-out home sites. This latter aspect complicated provision of accommodation, by raising a large demand for caravans and on-site services.

In general, therefore, there were several aspects of resource distribution which fell below optimum effectiveness.

204. Communication and Information. One requirement which was highlighted during the implementation of relief measures was that of maintaining satisfactory two-way communication between relief organisations and disaster victims. This requirement may not have been clearly recognised in the initial stages of the relief effort, when under confused and disrupted conditions, it was characteristically difficult to achieve a co-ordinated response. Consequently, there were problems for disaster-affected persons, and sometimes for relief workers as well, in identifying contact points from which information could be obtained quickly and clearly. This led to additional frustrations for victims and relief workers alike.

It should be noted, however, that when key figures in the overall relief effort were able, personally, to speak to groups or public gatherings, a great deal was usually achieved in bridging information gaps. Similarly, the early issue of improvised local news-sheets and assistance from some media sources, plus the communication value of Area Committees, helped gradually to establish a reasonable two-way flow of information between relief management and disaster victims.

As mentioned in paragraph 158, the introduction of Public Information sub-plans, as part of DISPLAN, would assist in this key area of communication and information in the post-impact period.

205. The Role of Local Government. The role of local government has received widespread comment in relation to the events surrounding Ash Wednesday. This was particularly so in regard to relief measures. Some typical views were:

- . Community members may not always be responsive to the efforts of local government in disaster mitigation and preparedness. But once people are in need

following a disaster, they automatically look to their local government authority to put things right. In this connection, the clean-up operations carried out under local government auspices in the disaster areas were highly commendable and constituted a valuable part of overall relief effort.

- . Local government is familiar with its own area and with the problems faced by community members. This is a valuable asset, not only in terms of its ability to co-ordinate relief operations, but in providing reassurance in the form of familiar local personnel to assist confused and distressed victims.
- . The significant influx into disaster areas of combatting and supporting organisations and, subsequently, welfare agencies, tended to obscure the key role which local government continuously has to play. Sometimes, therefore, communities accused local governments of not doing enough, or being unduly influenced by outside agencies. It should be noted that where there were improvised communication channels, such as those mentioned in paragraph 204, they helped to rectify this misconception.
- . Local government needs to be involved in detailed pre-disaster planning, so that municipal records can immediately assist in victim registration and in helping to define the extent and type of assistance required by individuals and families.
- . Local government constitutes the point at which participants in the relief and recovery process gain access to local communities. Other agencies which contribute to recovery, even if in a co-ordinating

role, must at some time liaise and negotiate with local government, if their policies are to be effective. Local government will also, of necessity, be in working contact with most other organisations which are in any way involved. It follows that, if overall relief measures are to be efficient, and above all timely, local government must have a major co-ordinating role.

- . Local government already has the organisation, structure, on-site staff and a number of relevant counter-disaster resources. Therefore, given ready, pre-arranged access to additional resources and staff at the time of an emergency, it has the ability and basic structure to undertake local co-ordination of relief.
- . Clear decisions are needed to define when emergency conditions and arrangements are to cease and when local government is expected to resume its normal role. This is because many aspects of relief must be carried over into the longer term, when they necessarily tend to become a part of local area management.

As a result of these and similar comments, the Committee is left in no doubt that local government has a key role to play in post-disaster relief; as indeed, it has from pre-disaster through to ultimate recovery. Within the context of an efficient local disaster plan, therefore, the role of local government needs to be carefully integrated with plans and arrangements at other government levels. Similarly, local government should be the reference and liaison point for other organisations which may be operating outside the provision of counter-disaster plans (This is unusual where planning has been properly carried out). Given that these provisos are met, and the necessary additional

personnel and resources made available on a pre-arranged basis, it would seem logical that local government should undertake a more prominent lead and co-ordinating role than that which, in fact, tended to apply during Ash Wednesday and its aftermath (See also Part V).

206. Organisational Change Between Emergency and Normal Roles. The post-disaster relief process is essentially one which depends on the efficiency of a wide range of organisations, the majority of which are not truly crisis oriented. For example, various government departments (including DCWS) and welfare agencies which, whilst working in various relief roles, do not normally operate under conditions of extreme disruption, confusion and stress.

In this regard, the problem for such departments and organisations in extending from their normal role into the crisis role has already been very strongly emphasised. It is certainly a key factor in efficient functioning or otherwise. However, several other important aspects of this general problem were brought to the attention of the Committee. They included the following:

- . Normal bureaucratic decision-making processes, whilst suitable for day-to-day affairs, are inadequate and usually much too slow for dealing with disaster management problems.
- . Relief measures may be seriously slowed down if normal accountability processes are followed. There needs to be a special system for disaster accountability.
- . Government departments, in planning for their possible disaster roles, could well consider the

earmarking of auxiliary personnel, capable of being called upon at short notice. This would be particularly useful for DCWS, which could call on a wide field of trained social worker capability.

- . It is important for government departments to decide on clear priorities between emergency role requirements and the maintenance of normal services.
- . Emergency roles usually demand long and abnormal working hours. Persons accustomed to a 'nine-to-five' routine need to understand this and, if necessary, receive some appropriate orientation training.
- . Many temporary relief workers, unaccustomed to dealing with shocked and confused disaster victims, suffered adverse effects themselves. Disaster management should endeavour to offset this, wherever possible, by suitable orientation and the blending of experienced and inexperienced staff.

#### Implementation of Long Term Relief Measures

207. As indicated in Part III, paragraphs 81 to 86, major long term relief measures comprised:

- . Financial Compensation
- . Re-housing of Victims
- . Rehabilitation of Communities
- . Rehabilitation of the Environment
- . Major Planning Measures.

At the time of completing this report (April, 1984), the implementation of all these measures is still not complete. These measures will be the subject of reports to Government from the relevant departments.

Observations on Effectiveness of Relief Measures

208. Relief measures were not carried out as effectively as expected. This was because of the severe post-impact situation and the magnitude of the response requirement and inadequacies in planning. The result was that those in need did not always receive assistance in the appropriate manner, in the appropriate measure, at the appropriate time. However, after the initial difficulties had been overcome, relief measures reached acceptable standards. This recovery was mainly due to:

- (a) A generally sound basis of organisation.
- (b) Availability of necessary resources.
- (c) The very considerable efforts of the many departments, organisations and individuals who were involved in implementing the relief program and who, with commendable dedication and perseverance, overcame numerous difficulties and problems in order to achieve a successful end result.

209. The experience of program implementation, in these circumstances, revealed a number of areas in which relief effectiveness can, and should be, improved for the future. The most important of these are:

- (a) Establishment of relief needs

There were a variety of problems in establishing, quickly and accurately, the needs of disaster victims, especially to provide immediate relief. The major shortcomings were in:

- . General information management capability, and
- . The registration system.

(b) Implementation Capability

There were several aspects which adversely affected the ability to implement relief measures. The main ones concerned:

- . Activation arrangements under DISWELPLAN.
- . Division of responsibility for the relief co-ordination role.
- . Certain components within the overall system for distributing relief commodities which obviously require review in order to achieve a more coherent and better co-ordinated response.
- . The communication and information process between relief management and disaster victims.
- . The need for clarification of the role of local government, particularly in regard to recognition of its focal position and co-ordinating potential in relief arrangements generally.

210. The Committee has concluded that, in comparing the degree of effectiveness achieved with the shortcomings revealed, necessary improvements for the future are achievable within the existing and potential counter-disaster capability of the State.

RESEARCH

211. The effectiveness of research in relation to the counter-bushfire measures of the 1982/83 season is obviously impossible to assess and quantify in precise terms. There are, however, some clearly discernible areas in which research effort over previous years had a bearing on bushfire-related action. They cover a wide range and include the following:

- . Fire behaviour
- . Fuel reduction, especially by controlled burning techniques and measures
- . Fire mapping methods and equipment
- . Utilisation of airborne fire-fighting capability
- . Protective measures for fire-fighters
- . Medical aspects of fire-fighting
- . Building construction
- . Fire-resistant materials
- . Psychological and sociological aspects.

212. Submissions to the Committee contained the following points:

- . Present research effort is fragmented, whereas there is need for a comprehensive, concerted program, backed by greater availability of funds (This point was reflected in many comments to the Committee). However, one research specialist in the field felt that free-ranging research, with exchanges of view through normal research channels, was preferable.
- . A research co-ordination group should be established, with a requirement to report annually to the Premier.
- . Research is needed into disaster welfare and personal services, especially in relation to the long-term rehabilitation of communities following disaster.

213. The Committee also noted that, in May, 1983, a meeting was held under Commonwealth Government sponsorship to consider the research needed to improve bushfire prevention and control.

214. In addition, the Committee was briefed on the following programs:

(a) Project Aquarius

This is a \$3.2 million research project, funded under Commonwealth Government arrangements. It is being carried out in co-operation with State forestry and fire control authorities. Its aim is to compare the cost-effectiveness of large air tankers with that of conventional bushfire suppression techniques in Australia.

The program began in January, 1982, with the development of airborne infra-red mapping equipment. This equipment provided valuable assistance in the control of the Ash Wednesday fires in Victoria.

Other aspects of Project Aquarius have included various facets of fire behaviour and study of stresses to which fire-fighters are exposed during operations.

The program is scheduled to end in June, 1984, and it is understood that no continuation of this type of important research is envisaged at the present time. This kind of research is fundamental to improved counter-bushfire capability and should be continued, under suitable programs, for the future.

(b) University of Melbourne, School of Environmental Planning

This program has included comprehensive study of events relating to the Ash Wednesday fires. Its aim has been to investigate areas of need in long term research, relative to recurrent bushfires in Victoria.

Four main areas of research have been identified, as follows:

- . What are realistic and effective communication techniques for all groups of people, agencies and institutions which can address both the preventive needs and post-disaster concerns?
- . What are the vegetation behaviour and management characteristics which can minimise destruction and risk before, during and after fires?
- . What are acceptable and effective fuel break designs and management schemes to insulate existing bush communities from fire?
- . What are the roadside corridor management schemes that resolve ecological, aesthetic, economic and fire safety principles?

Research under this program could make a valuable contribution to bushfire preparedness and response, and should be supported accordingly.

The Committee appreciates that other bushfire-related research projects exist throughout Australia (e.g. those undertaken by CSIRO) but quotes the foregoing programs to emphasise the type of research effort which is necessary.

215. Therefore the Committee endorses the widely-held general view that effective research is a vitally important part of the total effort to counter the bushfire threat. It considers that the maximum support practicable should be given by governments and appropriate organisations to this research effort, in which international co-operation plays a significant role.

#### OVERALL EFFECTIVENESS OF COUNTER-DISASTER ARRANGEMENTS

216. From the information contained in Part III and in paragraphs 87 to 215, it is abundantly clear that the fires of Ash Wednesday and their aftermath subjected Victoria's

counter-disaster arrangements to an extremely harsh and rigorous test. Under such circumstances, it was inevitable that shortcomings in these arrangements would be revealed. This is typical of post-disaster analysis. In the light of these shortcomings, therefore, the Committee has endeavoured to identify important considerations for the future. These are contained in Part V.

217. However, in general terms the Committee believes that, both organisationally and individually, the Government and people of Victoria came through this ordeal with considerable credit. The planning and organisational base, centred on DISPLAN, from which combat and relief operations were mounted was fundamentally sound. Counter-disaster resources were mostly adequate and their utilisation and application was, in principle, correct.

218. It was in some of the major support areas and specialised facets that shortcomings were apparent. Thus, public awareness and some aspects of preparedness must be held in question. The critical matter of warning and public information requires further attention. Evacuation under severe, fast-moving bushfire conditions is another area of concern. There are also specialist aspects of relief organisation and operations which require rectification, particularly to deal with a situation as severe and extensive as that which followed Ash Wednesday. The fundamentals of legislation and research effort also require to be strengthened.

219. Clearly, the foregoing comments provide only a broad summary. They are not intended to be more. They are designed to attune the reader of this report to the wider and more detailed comments and proposals contained in Part V.

PART V - IMPORTANT CONSIDERATIONS FOR THE FUTURE

220. For ease of reference, and as a precursor to the Committee's final conclusions and recommendations, this Part of the report aims to identify, mainly from the information contained in Parts II to IV, some important considerations which apply to the future effectiveness of Victoria's counter-disaster preparedness and response capability.

221. In this Part the more conventional format of working from State Government level downwards has been reversed, so that local government and local community requirements are considered first. This process is designed to provide a better and more accurate perspective of what is required at higher organisational levels in order to meet the realistic needs at the 'disaster front'.

222. Also included in this Part (see paragraphs 262 to 263), is a brief summary of the interim organisational measures introduced by the Government of Victoria in November, 1983, to strengthen the State's capability for dealing with potential major fire disasters.

The Nature of the Fire Threat

223. Before directly addressing future requirements, it is important to emphasise the nature of the contemporary fire threat. In particular, three aspects need to be underlined. They are:

- (a) The periodic peaks of extreme fire severity in Victoria.
- (b) The arsonist problem.
- (c) The nature and development of semi-rural areas.

224. The Peaks of Fire Severity. This aspect has been referred to in various ways in earlier parts of the report.

However, it must be repeated here because it has a basic and inescapable bearing on future fire occurrences and the relevant counter-measures. It is well illustrated in W. S. Noble's account of the Black Friday fires of 1939<sup>4</sup> which, inter alia, states:

"Victoria is one of the most hazardous bushfire areas in the world. Its climate, the nature of its forests, the fierce northerly gales that sometimes accompany days of searing heat, make it peculiarly susceptible to outbreaks of fire that can mount in fury within a few hours to uncontrollable proportions.

Although predictions based on weather cycles may be made from time to time, no one can forecast accurately when one of these great outbreaks of fire will occur. For bushfires of that order, as distinct from grass fires which occur in different years, the combination of factors involves prolonged drought, high temperatures and winds up to sixty miles an hour or more.

Nothing can be done to alter the periodical occurrence of these natural forces. Only the most rigorous policy of fire suppression can give any hope of preventing outbreaks such as this book describes. But we must never forget that a forest fire which burns in heavy fuel on a hot, windy day can release so much energy when it is in full flight that it cannot be stopped."

All future consideration of bushfire counter-measures must take realistic account of this scenario and the fact that further Black Fridays and Ash Wednesdays lie ahead (See Annexure "G" - Bushfire History in Victoria, Australia and Annexure "I" - Bushfire Chart 1939-1983 Comparison).

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<sup>4</sup> Ordeal by Fire by W. S. Noble, published by the Hawthorn Press Pty. Ltd., Melbourne, in 1977.

225.       The Arsonist Problem. If natural events can produce the frightening fire potential illustrated in the foregoing paragraph, they do not need the arsonist to exacerbate them. Yet, it appears that the arsonist problem will remain with us. Consequently, the natural threat is compounded by the human one. Future requirements cannot ignore this additional threat.

226.       The Semi-Rural Problem. In many semi-rural areas a particular kind of real estate advertisement can often be seen. It reads 'Town Living, Country Style' or something similar. This, in its simple way, hits at the heart of the fire problem in these areas. Communities, often commuter-oriented, have chosen to live cheek by jowl with an enormously hostile and dangerous fire environment. Often, dwellings are left vacant by day as man and wife go out to work, or a wife and small children may be left on their own. The risk to life and property does not end there. Other major factors are involved. They include, for instance, the fact that many such communities have no background of living in the bush and are generally unused to fending for themselves under fire conditions. Additionally, some of those with an interest in preserving the environment resist measures designed to reduce hazards. However, perhaps worst of all, the fire-fighting problem in these areas, where high fuel levels and relatively crowded populations co-exist, is probably the most difficult of all to manage.

It seems unlikely that this situation will change significantly in the foreseeable future. Therefore it also becomes an important factor.

227.       Threat Versus Capability. From these three factors concerning the threat, a question emerges. It is not a question of combatting authorities and other relevant organisations being unaware of this developing threat. The real question is whether our fire-fighting response capability is keeping pace with it. Unquestionably, this ongoing development in the threat must be a fundamental consideration in all counter-measures which might be contemplated in the future.

### The Overall Counter-Disaster System

228. At this point, it is appropriate to refer to the general counter-disaster arrangements in Victoria, in order to make one specific point. This is that measures to deal with bushfire should not be separated from the State's system for dealing with disasters overall. To do otherwise involves an extremely high risk of operational failure, especially under the stresses and strains of severe disaster conditions. The need to avoid separate disaster systems has wide recognition internationally. It is notorious that the co-ordinated effort, which is so vital in disaster response, inevitably becomes seriously downgraded, unless patterns of organisation and channels of responsibility are clearly defined, standardised where possible, and thoroughly understood by the various organisations involved. It is literally courting disaster to expect organisations to operate under different systems for different types of disaster situations. Thus, it is important that counter-bushfire arrangements should be seen in this light and, for the sake of future effectiveness, be integrated in the State Disaster Plan, in an appropriately developed format.

### Categorisation of Fire-Prone Areas

229. The Committee recognises that the principal fire combatting authorities fully understand the priorities which need to be given to various areas of the State in terms of proneness to fire. The Committee also appreciates that in times of severe disaster, local governments often employ measures of mutual assistance.

230. However, arrangements for the future could be enhanced by designating, under DISPLAN and in current and future legislation, groupings of local government areas as being particularly fire-prone. In principle, these areas would receive some priority of assistance in preparedness measures, operational response capability and potential relief. This would have the

obvious effect of strengthening the capability of local governments and communities in particularly vulnerable areas. At the same time, areas with a less severe threat could, in addition to their own self-protection measures, be allotted support and reinforcement roles for major fire disaster situations. This concept should help to ensure a reasonably high level of preparedness throughout all local government areas and provide for the optimum utilisation of available resources.

231. To this end, consideration should be given to the introduction of a system for categorising fire-prone areas.

#### The Role of Local Government

232. The role of local government in counter-disaster affairs has been referred to throughout this report. Clarification of this role is of particular importance for the future effectiveness of Victoria's counter-disaster capability. Local government tends to be automatically involved in aspects such as:

- . counter-disaster planning
- . fire prevention and other mitigation and preparedness measures
- . community involvement in disaster affairs
- . local government and community support for CFA units
- . assistance from local government staff and equipment under disaster circumstances
- . numerous aspects of post-disaster relief and rehabilitation.

233. The role of local government should therefore be clearly defined under appropriate legislation so that, not only its responsibilities but also any entitlement to an allocation of financial and other counter-disaster resources from State Government level, would be clarified.

The Interaction between Local Government and the Community

234. Circumstances surrounding Ash Wednesday illustrated very clearly the importance of and the necessity for a coherent interaction between local government and the community. In some cases, the relationship was confused and uncertain, especially in the immediate post-disaster stages. Longer term, however, the involvement and contribution of community support groups (in a variety of forms) tended to indicate that some more permanent arrangement for linking government and community would have benefit for the future.

235. These support groups could assist in developing community strength and cohesion in fields such as:

- . general preparedness
- . knowledge of what individuals and families should do under actual disaster circumstances
- . maintaining community knowledge of evacuation plans
- . assisting in welfare support measures
- . developing understanding of the need to balance sensible fire precautions with the conservation of the environment
- . disseminating information.

Also, pre-fire season meetings of these groups would help to:

- . alert communities to the oncoming seasonal threat
- . keep alive knowledge, experience and lore of past major disaster affecting the community
- . inculcate a sense of awareness/preparedness in younger generations and, especially, help to attune them to the realities of living in a potentially dangerous environment
- . reinforce counter-disaster education in schools.

236. The Committee has concluded that this aspect should be pursued as part of Victoria's overall counter-disaster concept.

#### The Local Basis of Preparedness

237. Prior to the Ash Wednesday fires there was wide acceptance that, within Australia, a community needed to meet three basic objectives if the effects of disaster were to be successfully mitigated.<sup>5</sup> They were:

- (a) An alert and informed community;
- (b) An active and involved local government;
- (c) A local counter-disaster plan, supported by a sound local organisation.

With hindsight, it could be said that Ash Wednesday proved that these three tenets were fundamentally sound, if only, in many cases by default. However, in the light of detailed 1982/83 experience and in the interests of future effectiveness, some comment appears justified.

238. The Alert and Informed Community. As indicated earlier in this report, information put to the Committee strongly indicated that many communities were not sufficiently alert and informed, especially in the general preparedness sense of that term. Sadly, references such as the following appeared in the statements of fire-affected persons:

- . "A friend of mine is burnt for the rest of her life because she had no idea of the danger she was in. She was standing in the street in her bathers".

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<sup>5</sup> See the Australian Counter Disaster Handbook, 1980, Section 4, 1.34.

- . "The neighbours said I was neurotic (about clearing around house and property); people were not aware".
- . "My eldest girl had on a nylon dressing gown. I think it just burned on her. She is grafted from top to bottom of her legs. We have learned a lot of things the hard way".

The Committee reiterates, therefore, that the standard of awareness at community level must be raised and maintained (paragraph 136) if the effects of future fire and other disasters are to be mitigated.

239. The Active and Involved Local Government. On this aspect, there appears to be need for some change in approach and emphasis (see paragraphs 232 to 233). Perhaps, therefore, for the future the concept suggested in paragraph 237 (b) should be:

- . A local government with clearly defined legal responsibilities, provided with the necessary support from State Government level to fulfill those responsibilities.

The particular point here is that local government comprises only one part of the total counter-disaster capability. The other parts comprise the recognised emergency services (e.g. the Police, Fire Services, Ambulance Services, State Emergency Service), State Government departments, voluntary organisations, welfare agencies and others, all of which may have defined roles. It would, therefore, seem not only logical but essential, that local government should also be given a clear, formally defined counter-disaster role. Moreover, that role must, from a State Government viewpoint, form part of the State's total capability. Consequently, if necessary and within reasonable limits, local government should be provided with support from State Government level.

This clarification and rationalisation of local government role would facilitate inter-relationship, in the counter-disaster sense, with the other relevant authorities and organisations.

240. The Local Counter-Disaster Plan. It also appears necessary, for the future, to make some adjustment to the concept and scope of the local disaster plan and the supporting 'local organisation'. In reality, a local disaster plan comprises a number of separate but inter-related planned activities by organisations which have their own defined and mostly hierarchical structures, for instance:

- . Police
- . Fire-fighting authorities
- . State Emergency Service
- . Elements of government departments
- . Welfare organisations
- . Local government authorities.

These activities are not necessarily concurrent, nor of equal emphasis, throughout a disaster time scale. The overriding consideration is that responsibilities must be clearly defined and these activities must be effectively co-ordinated. Therefore, from the viewpoint of local preparedness, and the involvement of local government, the local disaster planning requirement (paragraph 237 (c)) appears to be more accurately stated as:

- . Agreed and co-ordinated arrangements for the utilisation of local resources in support of the counter-disaster plans of specialist agencies.

The development of local counter-disaster planning along these lines would produce the following advantages. It would:

- . recognise the realities of the situation wherein combatting, supporting and assisting organisations operate primarily according to their own structures and specialist plans
- . clarify the role and responsibilities of local government
- . facilitate the optimum utilisation of local government/community resources (and indeed, resources overall)
- . help effect co-ordinated activity along the total disaster time scale.

241. As indicated in paragraphs 237 to 240, the importance of adequate and effective preparedness at local community level cannot be over-emphasised. Counter-disaster effectiveness is directly dependent upon developing the proper relationship between an aware community, local government and the specialised counter-disaster agencies. This should be a major requirement for the future.

#### Local Factors in Operational Response

242. Obviously, in most disaster situations it is at local community level that the 'disaster front' originates and builds up. Thus, the kind of preparedness measures discussed in paragraphs 237 to 241 are of vital importance in terms of helping to facilitate speedy activation and implementation of counter-measures. It is, however, important to realise that under most circumstances, especially involving bushfires, there is at local or disaster front level a complex interaction of activities. In a typical bushfire situation this could include:

- . CFA carrying out fire-combat operations under its own command and control structure.

- . FCV doing likewise.
- . Locally-owned fire units employed in self-protection or assisting CFA/FCV.
- . Police carrying out a variety of tasks, including isolation of the disaster area, evacuation responsibilities and designated co-ordination tasks.
- . SES performing designated roles under DISPLAN and DISWELPLAN.
- . Regional and State level aspects of DISPLAN being implemented.
- . Local government reacting in various ways to the particular local situation, for example, providing disaster headquarters facilities, heavy equipment, resources and personnel.
- . Members of the community taking various forms of action to assist in combatting the disaster and/or seeking to protect themselves, their families and their properties.
- . A high level of traffic movement in the area.
- . Utilisation of aircraft and airborne systems.
- . Reinforcement elements of various organisations moving into the disaster area and requiring direction and assistance concerning deployment and utilisation.
- . General convergence activity involving

communications, equipment and people.

- . Liaison activity between various organisations usually adding to vehicular movement and communications traffic.
- . Welfare and similar organisations taking preparatory action for post-impact roles.

243. By any standards, this activity produces an extremely complex management and co-ordination problem. It is at the heart of the loss of operational coherency mentioned in paragraphs 168 to 173. Moreover, it is seldom understood by persons outside the combatting, supporting, assisting and other organisations which are directly involved. Indeed, sometimes persons within these organisations may not always appreciate its total complexity.

244. It is reiterated, therefore, (paragraph 173) that an important consideration for the future is to try to find practical means of reducing or off-setting this complexity and, in particular, avoiding loss of operational coherency. This would not only involve careful and detailed study of disaster management structures, techniques and practices currently in use; it would also need to cover key aspects such as warning, communications, information systems and evacuation principles.

245. The Committee realises that a study or review of this nature would involve consideration of arrangements at regional and State levels. The important point, however, is to focus attention at the disaster front area, where the problems actually arise and need to be resolved. This aspect of Victoria's total counter-disaster system warrants investigation.

#### Local Factors in Post-Impact Activity

246. Viewed from a disaster front or local community perspective, post-impact activity has a number of features which correspond with those more directly concerned with operational response. Significant aspects are:

- . Lead organisations change (that is, fire-fighting or similar authorities make way for relief-type organisations) but the total number of organisations is not necessarily reduced. In fact, it may increase.
- . The level of activity, whilst appearing less concentrated and dynamic, remains very high.
- . The range of activity may, if anything, widen because it involves numerous community restoration and people-oriented requirements.
- . Much immediate post-impact activity tends to merge into very long-term considerations and, almost unwittingly, protracts emergency relief programs.

As with operational response, there is a need, especially from a disaster management viewpoint, to recognise clearly the scope and level of this activity and, more importantly, to be able to identify its constituent elements.

247. The role of local government in post-impact activity has been referred to in paragraph 205. Some comments on the general interaction between local government and the community are contained in paragraphs 234 to 236. It is not proposed to elaborate on these references here. However, it is of importance for the future to recognise that, in the wide range of essential post-impact activities, success depends upon the correct relationship between the disaster-affected community, local government and the specialised relief agencies. It goes without saying that, if sensible planning and associated measures have been undertaken, such a relationship should never have to depend on trial and error, as happened in some areas after Ash Wednesday. The lessons learned from post-impact experience following Ash Wednesday must be used as a reference for the future.

248. This post-impact aspect of counter-disaster effectiveness also needs detailed evaluation for the future.

### Operational Facilities, Systems and Procedures

249. In Parts III and IV of this report, reference has been made to the utilisation and effectiveness of various facilities, systems and procedures which were used during and following the Ash Wednesday fires. These included communications, warning and information systems, shelter, evacuation, information management and the registration of disaster-affected persons. The Committee's observations on these aspects are translated into appropriate conclusions and recommendations in Part VI. However, certain key factors which especially affect the future are contained in paragraphs 250 to 256.

250. Communications. As indicated in paragraph 150, several different considerations affect the development of communications within disaster-related organisations. Also, in paragraphs 242 to 244, exposition of the complex nature of counter-disaster operations illustrates the comparable problems of communications needs. Looking to the future, the following factors are likely to influence developments:

- . Counter-disaster operations, especially under severe impact conditions will remain complex in nature, even given that significant improvements may be made through the kind of action mentioned in paragraphs 244 to 245.
- . Because of this operational complexity and because communications requirements differ as between disaster-related organisations, a common communications system is not a viable proposition. The oft-repeated call for an overall 'command net' on which all organisations operate simultaneously has no practical

validity. This is not to suggest that improvements cannot be made in arrangements for organisations to exercise combined control and co-ordination. Of particular relevance, in this regard, is the Mobile Automatic Telephone Service (MATS) which has the capacity to provide an additional communications link for senior officers of combatting authorities, providing versatility, reasonable security and a priority override for use in emergencies.

- . Advances in communications will undoubtedly continue, but constraints of finance and economy of utilisation will preclude parallel and simultaneous advances in equipment capability by all organisations.

The Committee, therefore, reiterates (paragraph 151) that future communications effectiveness will best be achieved by:

- . gearing communications developments to a generally accepted system of command, control and co-ordination
- . utilising a central co-ordinating/advisory concept aimed at achieving optimum balance between the needs of individual organisations and overall counter-disaster requirements.

251. Warning and Information Systems. As stated in paragraph 156, the Committee accepts that there were major shortcomings in warning and information systems, especially on 16 February, 1983. For the future, the main avenue for improvement lies in recognising that a number of components are involved. Co-ordinated programs covering these components should therefore be undertaken wherever possible. Examples of these components are summarised below:

- . Advance seasonal weather warnings

- . Effects of prolonged drought.
- . Build-up of fuel due to weather factors.
- . Other factors affecting fuel reduction.
- . Long range weather forecast indicators.
- . Assessment and warning of developing fire risk.
  
- . Meteorological capability
  - . Optimisation of existing meteorological capability to provide most effective warning.
  - . Future developments in meteorological capability to have specific regard to fire warning needs.
  
- . Monitoring of seasonal fire danger developments
  - . Utilisation of Landsat (satellite) monitoring, and similar systems, to provide progressive fire-related information on state of vegetation.
  - . Meteorological surveillance of seasonal fire danger development, and provision of relevant warning.
  
- . Official policies and programs
  - . Development of awareness programs concerning fire prevention, fire safety and survival techniques.
  - . Review, development and enforcement of official policies and regulations concerning fire prevention, fire restrictions and fire danger ratings.
  
- . Policies, interpretations and practices of media
  - . Continued mutual effort by counter-disaster authorities and the media to establish and maintain understanding and co-operation on disaster-related matters, such as:
    - . acceptance by the media of official assessments when confused disaster conditions apply.
    - . development of easy-access information bases to

- provide information to the media.
  - . establishment of briefing systems to assist the media in knowledge and understanding of counter-disaster plans, operational systems and techniques.
  - . further joint study by counter-disaster authorities and the media concerning utilisation of media capability in the disaster resource role, e.g. provision of advanced warnings and notification of relief needs and availability.
  - . Co-operation of the media with counter-disaster authorities in development of public information sub-plans.
- . Public awareness and preparedness standards
    - . Policies and programs to assist the public in its willingness and ability to accept, correctly interpret and act upon disaster-related information.
    - . Encouragement of public to participate in programs which assist local government to maintain dissemination of information, aimed to promote adequate levels of preparedness.
  - . Acquisition of fire intelligence
    - . Development of infra-red and other systems which may improve acquisition of fire intelligence for combatting authorities.
  - . Local warning arrangements and systems
    - . Arrangements by the responsible counter-disaster authority for notifying the public of local plans, including warning aspects.
    - . Warning devices on which the public self-activate e.g.

sirens.

- . Radio public address systems.
  - . Contact-warning arrangements and systems e.g. warning patrols by Police, SES, possibly authorised warden-type personnel.
  - . Utilisation of helicopters and other airborne warning systems.
- . Action to be taken on warning
    - . Importance of correct interpretation of warning by communities and individuals.
    - . Planning aspects aimed at ensuring correct interpretation.
    - . Public understanding of how to act upon receipt of warning.
    - . Options open to affected individuals i.e. whether to stay with their homes or move to designated safe areas or shelters.
    - . Knowledge by communities and individuals of local evacuation plans, covering large-scale evacuations.
  - . Post-impact aspects
    - . Information needs of evacuees and other affected persons e.g. concerning whereabouts of relatives, state of evacuated homes and community areas.
    - . Arrangements for meeting information needs at welfare centres and other focal points.
    - . Relationship between counter-disaster authorities and the media to assist in disseminating information on relief availability.
  - . Development of future systems
    - . Future development must aim to enhance overall effectiveness of warning and information systems;

there is no point in upgrading one aspect if others are adversely affected e.g. improving technical means of providing warning, if warning signals then become more difficult to receive and comprehend.

- . Systems must be cost-effective, especially when compared with the need to develop other counter-disaster capabilities and systems.
  - . Development of new systems should be allied with research programs into aspects such as survival techniques, the evacuation 'stay-or-go' problem, and communications.
  - . Consideration of reaction to warning and information by people who may well be under severe stress or in personal danger.
  - . Need to achieve commonality between systems, wherever possible.
- . National considerations
- . Account to be taken of parallel civil defence (war-related) developments, so that optimum compatibility of systems is achieved.
  - . Emergency utilisation of national facilities by State authorities e.g. use of emergency broadcast systems.

Significant improvements can be achieved in warning and information systems provided, as inferred above, the various components are developed within a co-ordinated program.

252. Shelter. In paragraph 162, the Committee emphasised the need to make provision for emergency communal shelters and family shelters. Within future counter-disaster policy, therefore, there should be examination of:

- . Assistance by the State Government to local government in the provision or adaptation of buildings which could serve as communal shelters.

- . Suitability of school buildings for use as shelters, particularly to mitigate the possibility of students being exposed to risk by being sent home ahead of an advancing fire front (see paragraph 62 (f)).

253. Evacuation. (See paragraphs 59 to 63 and 163 to 166 ). As regards the development of future policy on evacuation, certain key criteria must always be borne in mind. They are:

- . Fundamentally, evacuation (as distinct from localised movement to shelters and/or safe havens) under severe bushfire conditions is not really a desirable option. Limitations of visibility due to heavy smoke, exposure to high levels of heat radiation, traffic congestion and the additional difficulties during darkness, all indicate the hazardous nature of such evacuation and the extremely high risks which are involved.
- . In principle, therefore, evacuation is better seen as a measure of last resort. Thus, in terms of developing counter-disaster effectiveness, consideration should be focussed on those awareness and preparedness measures which assist persons to defend their own lives, homes and properties, thereby providing themselves with a viable option to evacuation.
- . Another option, in appropriate circumstances, is that early evacuation might be seen as a measure of first preference. This may be particularly so in the light of previous experience.

254. Information Management. There is no doubt that the severity of the Ash Wednesday situation had a marked effect on information management (paragraph 71). This applied particularly to the establishment of relief requirements (paragraph 192). Also, the heavy load on communications and notably communications

convergence (paragraph 73) added to information management difficulties. The registration problem was singled out in many of the submissions made to the Committee as being a very critical area, in which the National Registration and Inquiry System (NRIS) and the procedures of the State Natural Disaster Relief Committee both revealed significant shortcomings.

For the future, therefore, action is needed:

- (a) On a Commonwealth/State basis to rationalise the NRIS problem (which, as the Committee appreciates, is in hand).
- (b) For counter-disaster purposes in Victoria, to work towards a better information management system covering not only relief aspects but also disaster-combat operations.

In pursuing the objective suggested in (b), the problems of achieving optimum balance between the needs of individual organisations and overall counter-disaster requirements clearly need to be recognised (c.f. paragraph 250 on communications requirements). However, improved information management should be an important aim for the future.

255. Supply of Power and Water. One of the standard operating procedures in some disaster circumstances, particularly bushfires, is for the State Electricity Commission to disconnect power supply to affected areas. This is done, understandably, as a precaution to safeguard both disaster workers and members of the public. The procedure may have serious repercussions on a number of important counter-disaster aspects, for example:

- . Provision of water supply, which is of vital importance in fire situations.
- . Operation of warning systems.
- . Utilisation of some emergency equipment.

- . Availability of lighting.
- . Operation of various counter-disaster systems, including communications.

The Committee has discussed this problem with the authorities concerned and with the relevant counter-disaster organisations. In particular, the State Rivers and Water Supply Commission has confirmed that there are circumstances in which the required supply of water cannot be maintained without normal electric power supply. There appears to be no ready solution to this problem. However, the supply of power and water is of such importance that consideration should be given to means of ensuring it. For instance, priority for the provision of underground power supply could be given to fire-prone areas under a long-term program. All legitimate sources for funding such a program should be examined. For example, since many fire-prone areas constitute sectors of the national heritage in terms of the environment and resources, it might be that financial support from the Commonwealth Government could justifiably be sought. Further examination of this problem should be undertaken in order to achieve optimum short and long term results.

256. Required Courses of Action. On operational facilities, systems and procedures generally, the Committee submits that the following inter-related lines of action are necessary:

- . Individual disaster-related organisations should continuously monitor future possibilities and developments appropriate to their own operational needs.
- . There should be a general monitoring and advisory system to indicate to the State Government which program priorities should receive support, in the interests of overall counter-disaster effectiveness.

The Local Perspective on Counter-Bushfire Arrangements

257. The intricacy and breadth of activity involved in preparedness and response at local community level underlines the value and indispensable nature of the voluntary effort which is forthcoming from within the community itself. This is particularly so in the case of the CFA but the contribution made by other community-related organisations (such as local SES units, Red Cross, Country Women's Association, Church bodies, WICEN, hospital auxiliaries) must not be overlooked. In a very real sense, therefore, the local community participation constitutes a resource without which successful counter-bushfire and other counter-disaster action cannot be achieved.

258. It has sometimes been said that the CFA will always be there, because the members' interests are at stake and consequently they are vulnerable to organisational, financial and other constraints. The telling alternative perspective is expressed in the final comment in W. S. Noble's book (paragraph 224). How much, Noble asks, are Victorians prepared to pay to save their State from disaster when the day of testing comes - to pay not merely in terms of money and organisation but in unremitting vigilance against this most terrible enemy? In the Committee's view, at least part of the answer to that question must surely be that, at local level, the CFA with community backing and support, pays its fair share of the price, and more.

259. A viable alternative to the current CFA system would, in the view of the Committee, be difficult, if not impossible, to find and would be prohibitively expensive. This local resource and contribution must be preserved. Moreover, it must be given all possible support and assistance to function effectively. Thus policy and organisational measures which are applied from regional and State Government level, must be designed to give proper weight to the CFA system.

Regional Co-ordination and Support Measures

260. It is evident that, if counter-disaster preparedness and response capability is to be effective at local level, it must be supported by appropriate co-ordination and support measures at regional level. Prior to the 1982/83 fires, arrangements at regional level were designed, in principle, towards this end. They mainly comprised:

- . Regional Disaster Plans
- . Regional Advisory Committees (on fire prevention and suppression)
- . Planned arrangements by individual organisations to provide support and co-ordination from regional level to local level.

261. Subsequent to the 1982/83 fires, proposals and/or arrangements for strengthening regional co-ordination and support have included introduction of the following:

- . A Regional Disaster Training Scheme
- . Regional Fire Prevention Officers
- . Regional Disaster Welfare Support and Recovery Committees.

The Committee fully supports these initiatives and advocates that there should be further development of counter-disaster capability at regional level.

Interim Organisational Measures, November, 1983

262. Various measures were introduced by the Government of Victoria in November, 1983, to improve and strengthen the State's capability to deal with disaster. These measures were centred on a State Disasters Act, the prime provisions of which were:

- . To empower the Premier to declare a state of disaster.
- . To provide for the appointment of a Minister as Co-ordinator-in-Chief.
- . To give wide powers to the Co-ordinator-in-Chief, under a declared state of disaster, to implement and control counter-disaster combat action.
- . To authorise the Co-ordinator-in-Chief to co-ordinate the activities of welfare agencies.
- . To make the Co-ordinator-in-Chief responsible for developing counter-disaster planning; for implementing and co-ordinating preparedness measures; and for formulating policy for welfare relief arrangements.

The Minister for Police and Emergency Services was appointed Co-ordinator-in-Chief and appropriate organisational and administrative arrangements were introduced in order to permit him to perform his designated functions.

263. It was provided that the State Disasters Act, 1983, should remain in force until 30 June, 1985.

Relationship Between the State Disaster Plan and the Provisions of the State Disasters Act

264. The Committee has considered the relationship between the State Disaster Plan and the arrangements which flow from the State Disasters Act, 1983.

265. The State Disaster Plan has operated effectively since its formulation in 1965. It is well understood by the participants who comprise the constituent group within DISPLAN. It is regrettable that this understanding is not always shared by those not involved in DISPLAN.

266. Pursuant to DISPLAN, regular meetings are convened at the appropriate levels of responsibility. At local and regional levels respectively, meetings of Municipal Disaster Committees and Regional Disaster Committees occur. At State level biannual meetings of the State Disaster Planning Committee and the State Disaster Executive Committee are conducted. These meetings are designed to ensure that participants are familiar with their responsibilities and their relationship to each other and also to maintain a state of preparedness.

267. The weight of submissions to the Committee emphasised that DISPLAN operated effectively during the Ash Wednesday fires. Although there were instances in which individuals or organisations did not perform as well as was expected, this does not detract from the effectiveness of DISPLAN as such.

268. DISPLAN arrangements are constantly reviewed in the light of experience gained in emergency and disaster situations. It must be remembered that DISPLAN, like the State Disasters Act, applies to all kinds of disasters, not bushfires in isolation. The principles of DISPLAN are applied every day by the participating authorities in motor car accidents and other minor disasters. A graduated response occurs as the degree of disaster escalates.

269. There were no criticisms of DISPLAN arrangements in the context of the Macedon fires of 1 February, 1983. In regard to Ash Wednesday, it is significant that with one exception (Dean's Marsh) all the fatalities occurred after the wind change on 16 February, 1983. There was no criticism of DISPLAN arrangements before the wind change. The conditions produced by the wind change have been described, by all concerned, as extraordinary. Experienced fire-fighting officers have said that if the available fire-fighting resources, in areas such as Cockatoo, had been multiplied many times they would have been powerless to control the unstoppable fires.

270. The Committee is satisfied that the concept of DISPLAN has stood the test of time and that it is the appropriate mechanism for disaster-combatting operations. At the same time, the Committee believes that further refinement would result in even more efficient operation of the plan.

271. Prior to the completion of this report, the Committee indicated by way of interim advice, that the following action should be taken with regard to DISPLAN:

- (a) Incorporation of the action sequence ALERT - STANDBY - ACTION, as a standard operating procedure which would improve response arrangements.
- (b) Deletion of the Stages of Disaster (Stage 1, 2 and 3) because of the uncertainty and misunderstanding which has emerged from use of these terms.  
(This would not involve change in the co-ordinating or combatting responses, which would continue to operate on the basis of the customary graduated response).
- (c) Re-organisation of the Melbourne Metropolitan DISPLAN Region, including Port Phillip Bay, into one disaster region with 12 sub-regions, to coincide with the 11 Metropolitan Police Districts and one functional Police District currently responsible for marine search and rescue co-ordination under DISPLAN.

These proposals are in the process of being incorporated into DISPLAN.

272. It is also recommended that the committee structure under DISPLAN should be altered to permit more rapid and effective decision making. As DISPLAN stands, the Disaster Planning Committee, which is chaired by the Chief Commissioner of Police as the Co-ordinator, DISPLAN, is comprised of senior officers of all combatting and supporting agencies. The Committee makes recommendations in regard to changes in DISPLAN arrangements. These recommendations are then forwarded to the Disaster Executive Committee, chaired by the Minister for Police and Emergency Services, which may ratify the proposal or return it to the Disaster Planning Committee for further consideration. This is a cumbersome procedure, particularly when it is considered that the members of the Disaster Executive Committee (with the exception of the Minister) are also members of the Disaster Planning Committee.

273. The aim could be achieved more efficiently and expeditiously if those members of the Disaster Planning Committee who are also members of the Disaster Executive Committee constituted an Executive Sub-Committee of the Disaster Planning Committee. The Executive Sub-Committee could express recommendations to the Minister, on behalf of the Disaster Planning Committee. The Minister could then ratify or express his view on the recommendation, at his convenience, without the need to call a committee meeting. The proposal could then be returned to the Executive Sub-Committee for implementation.

274. This procedure, if adopted, would eliminate the need for the Disaster Executive Committee (but see paragraph 279). The result is not inconsistent with the Minister's role of Co-ordinator-in-Chief pursuant to the State Disasters Act, 1983. In the process, the existing Fire Disaster Unit, which currently services the Minister, could be re-titled "Disaster Advisory Unit". In this role it would operate as a secretariat for Ministerial matters relevant to disaster abatement and control generally, and provide a link between the Minister and the

Disaster Planning Committee, Executive Sub-Committee and a direct interface with responsible departments, authorities and organisations under both the State Disaster Plan and the State Disasters Act (See Annexure "J" for State Disaster Control Structure which shows the proposed relationship between the Minister and the participating bodies).

275. The State Disasters Act, 1983 clearly refers to disasters, generally, and not to fire disasters in isolation. Therefore, it is highly desirable that the same co-ordination structure should operate in the case of management of emergencies or disasters under both the State Disasters Act and the State Disaster Plan. As already emphasised (paragraph 228), it is highly undesirable, indeed potentially dangerous, to employ two different mechanisms, one of which would be activated only in exceptional circumstances.

276. The concept of a State Disasters Act which makes one Minister responsible for counter-disaster planning, preparedness, co-ordination of participating agencies and welfare relief measures is sound. In this regard, the Committee believes that the same mechanism should be superimposed on the existing structure of the State Disaster Plan by extending the legislation. This would provide for a simple transition through a graduated response (inherent in DISPLAN) from 'routine' DISPLAN arrangements to the extraordinary circumstances of a declaration of a state of disaster under the State Disasters Act.

277. The result of this modification would be that the Co-ordinator, DISPLAN, would continue to be responsible for DISPLAN arrangements, subject to his accountability to the Minister, as is currently the situation understood by all participants. In the event of a declared disaster, pursuant to the State Disasters Act, the Minister would assume his responsibilities for the implementation and control of all measures to combat the disaster in his capacity as Co-ordinator-

in-Chief. This would involve the least possible disturbance of the accepted co-ordinating and combatting arrangements.

278. What is not at first apparent in regard to the State Disaster Plan, is that there are really three separate phases -

- . Pre-impact
- . Impact
- . Post-impact.

In this regard, a number of agencies have 'combatting' roles in one or more phases. Those agencies include -

- . Country Fire Authority
- . Forests Commission Victoria
- . Metropolitan Fire Brigade
- . Police
- . State Emergency Service
- . Department of Community Welfare Services
- . Health Commission
- . Department of Agriculture.

Each of these organisations is required, under DISPLAN, to maintain its own plan for its combatting role in disasters of various kinds. Each of these combatting plans would include, where appropriate, details of arrangements in regard to:

(a) Pre-impact

- Policy
- Planning
- Preparation
- Prevention.

(b) Impact

Combatting responsibilities  
Co-ordination of resources.

(c) Post-impact

Relief  
Recovery.

279. In proposing that the Minister, as Co-ordinator-in-Chief, should be superimposed on DISPLAN, it would be necessary for him to establish and chair a committee, to be known as the State Disaster Committee (see paragraph 274). This Committee would be comprised of all those organisations required to maintain a combatting plan. This arrangement would enable the Minister, as Co-ordinator-in-Chief, to satisfy himself that all necessary plans were functional, effective and current.

280. The State Disaster Plan would, therefore, be under the direct control of the Minister for Police and Emergency Services. The State Disaster Committee would be the mechanism employed by the Minister to satisfy himself that all pre-impact, impact and post-impact arrangements were incorporated in the combatting plans of the respective functional agencies.

281. The State Disaster Planning Committee would continue to exist, embracing, as it does, all supporting agencies as well as combatting authorities at the State level. The Executive Sub-Committee of the State Disaster Planning Committee would communicate with the Minister on matters requiring Ministerial approval.

282. Regional and municipal committees would operate as at present.

283. Accountability would rest with the head of the particular combatting authority or supporting agency involved, through the senior officer at the local, regional or State level.

284. The Committee therefore considers that inter-relationship between the State Disaster Plan and the State Disasters Act, 1983, should be formalised along the above lines.

285. Annexure "K" is an illustration of proposed State Disaster Organisational Arrangements for the combatting authorities and supporting services at State, regional and municipal levels pursuant to the State Disasters Act and the State Disaster Plan.

#### Legislation

286. If action were taken in line with the immediately preceding paragraphs, the State Disasters Act, 1983, would require revision. Future legislation would need to include provision for:

- . Declaration of a State of Disaster by the Premier
- . Appointment of a Minister as Co-ordinator-in-Chief
- . Definition of powers and responsibilities of the Co-ordinator-in-Chief
- . Details of counter-disaster organisation, including structure, roles of organisations, planning and other responsibilities
- . Powers and duties of local authorities
- . Protection from liability under the Act
- . Offences under the Act
- . Protection of employment rights
- . Compensation
- . Regulation-making powers.

Summary of Important Considerations for the Future

287. In summary, important considerations for the future which have been identified by the Committee, include:

(a) The Nature of the Fire Threat

The periodic peaks of severity in Victoria's fire threat are well known and further peaks will undoubtedly arise in the future.

The threat is currently compounded by the arsonist problem and by the development of communities in semi-rural, high-risk areas.

It is important to monitor carefully changes and developments in the threat and, where possible, to adjust future counter-bushfire capability accordingly.

(b) The Overall Counter-Disaster System

Arrangements for countering the bushfire threat should form an integral part of Victoria's overall counter-disaster system, based on the State Disaster Plan and the State Disasters Act.

(c) Categorisation of Fire-Prone Areas

Consideration of a system of categorising fire-prone areas, so that priority can be given to countering the bushfire threat in those areas which are particularly vulnerable.

(d) The Role of Local Government

The counter-disaster role of local government needs to be clearly stated, under appropriate legislation, so that its responsibilities and entitlements to governmental counter-disaster resources can be clarified.

(e) The Interaction between Local Government and the Community

The means of involving community support groups in counter-disaster affairs at local government level warrants further investigation.

(f) The Local Basis of Preparedness

Current doctrine applying to inter-relationship between community awareness, the role of local government and the local counter-disaster plan, requires revision in order to improve preparedness and response capability.

(g) Local Factors in Operational Response

The interaction of activities at local or disaster front level is complex. Under extreme disaster conditions, this may lead to loss of operational coherency and a serious reduction in response effectiveness. This aspect should be investigated with the object of improving Victoria's counter-disaster system for the future.

(h) Local Factors in Post-Impact Activity

Similarly, post-disaster activity should be examined, especially in the light of experience following the Ash Wednesday fires, in order to identify areas for improvement.

(i) Operational Facilities, Systems and Procedures

Certain operational facilities, systems and procedures will continue to be of key importance for the future. They include:

- . Communications
- . Warning and Information Systems
- . Shelter
- . Evacuation
- . Information Management
- . Registration of disaster-affected people.

The future effectiveness of these aspects depends on:

the following inter-related lines of action:

- . Individual disaster-related organisations should continuously monitor future possibilities and developments appropriate to their own operational needs.

- . There should be a general monitoring and advisory system to indicate to the State Government which programs should be given priority in the interests of overall counter-disaster effectiveness.

(j) The Local Perspective on Counter-Bushfire Arrangements

The CFA, backed by local community involvement and support, is a vital counter-bushfire resource. A viable and cost-effective alternative is not apparent. Policy and organisational measures which are applied from regional and State Government level must, therefore, be designed to give proper weight to the CFA system.

(k) Regional Co-ordination and Support Measures

Recent (1983/84) initiatives to strengthen co-ordination and support measures at regional level are valuable and should be extended as appropriate.

(l) Relationship between the State Disaster Plan and the Provisions of the State Disasters Act, 1983

A suitable combination of provisions under the State Disasters Act, 1983, with those inherent in the State Disaster Plan, would significantly strengthen Victoria's counter-disaster capability. By providing for Ministerial control and direction across the whole spectrum of preparedness, combat and relief activities, the State Government could expect to be assured of optimum effectiveness from its available counter-disaster resources.

Proposed arrangements are illustrated in Annexures "J" and "K".

(m) Legislation

If action is taken in line with sub-paragraph (l) above, the State Disasters Act, 1983, would require amendment.

PART VI - CONCLUSIONS AND RECOMMENDATIONSSECTION 1 - POLICY, PLANNING AND ORGANISATIONThe Counter-Disaster System in Victoria

288. Counter-bushfire arrangements must form part of the State's total counter-disaster system and not comprise a separate entity.

Recommendation: That separate counter-disaster systems be avoided by retaining counter-bushfire arrangements as part of the State's total counter-disaster system.

[Reference paragraph: 228]

The Counter-Bushfire Concept

289. The present counter-bushfire concept of utilising the Country Fire Authority and the Forests Commission, Victoria, in the major lead-combat role, supported by arrangements under the State Disaster Plan, is fundamentally sound. This concept is understood and accepted by all involved authorities and organisations and they are experienced in its implementation. In addition, the concept helps to promote a sense of close identity with the bushfire problem at community level, thus promoting community support for the CFA system. Without this community support, counter-measures would be significantly reduced in effectiveness. In terms of resources and cost-effectiveness, there is no viable alternative.

Recommendation: The current counter-bushfire concept be retained, with the proviso that it be kept under continuous review to ensure that all relevant future developments and techniques are effectively utilised.

[Reference paragraphs: 88 to 90 and 257 to 259]

## Ministerial Responsibility and Supporting Organisation

290. There is strong justification for a policy, formalised by legislation, under which a Minister is designated as Co-ordinator-in-Chief of disaster affairs and is responsible for direction and control across the whole spectrum of preparedness, combat and relief activities.

The basic structure and role of the State Disaster Plan is effective and the plan should be retained and utilised, in a suitably enhanced form, in the future.

Recommendation: There be a close integration of the responsibilities of the Minister under the State Disasters Act and the State Disaster Plan, thereby strengthening overall counter-disaster management, direction and control. To this end, the organisational arrangements shown in Annexures "J" and "K" should be adopted. The main features of these are:

- . A Disasters Advisory Unit
- . A State Disaster Committee
- . A State Disaster Planning Committee, with an Executive Sub-Committee reporting direct to the Minister/Co-ordinator-in-Chief
- . Ministerial responsibility for direction and control of counter-disaster preparedness, combat and relief activities.

[Reference paragraphs: 264 to 285]

## Regional Co-ordination and Support Measures

291. Co-ordination of preparedness and response at regional level is of vital importance within Victoria's overall counter-disaster structure and capability. Specifically, the ability to organise rapid and effective support to disaster-affected areas during combat and relief operations is a key factor in disaster management.

Recommendation: Effective planning, organisational and training capability be maintained at regional level and developed, as appropriate, for the future.

[Reference paragraphs: 260 to 261]

## The Role of Local Government

292. During and following the Ash Wednesday fires there was considerable uncertainty in some areas concerning the role and responsibilities of local government. This matter needs to be resolved for the future.

Recommendation: The role of local government in counter-disaster affairs be clearly defined and formalised by legislation. Local government authorities would then be fully aware of their responsibilities and of their entitlement to financial and other counter-disaster resources from State Government level.

[Reference paragraphs: 232 to 233]

## Planning Aspects

### 293. The State Disaster Plan

In the light of experience gained in dealing with the Ash Wednesday fires, certain amendments to the State Disaster Plan are considered necessary. They include:

- . Deletion of the Stages of Disaster

- . Introduction of an activation sequence
- . Revision of the committee structure.

294. The State Disaster Welfare Plan

The State Disaster Welfare Plan requires a complete revision, with the particular aim of ensuring that:

- . the numerous organisations have their roles and responsibilities clearly defined;
- . these organisations are capable of effectively undertaking their allotted tasks;
- . requirements for co-ordination are assured within the plan.

It is important that when the plan has been revised, its effectiveness be tested by exercises or simulations.

295. Municipal Disaster Plans

Lack of municipal disaster plans, especially in some disaster-affected areas, proved to be a serious deficiency in dealing with the Ash Wednesday fires.

296. Knowledge and Understanding of Plans

There was evidence that lack of knowledge and understanding of existing plans adversely affected certain aspects of disaster response and also gave rise to uninformed comment and criticism.

Recommendation:

- . Proposed amendments to the State Disaster Plan be formalised
- . Revision of the State Disaster Welfare Plan be completed as a matter of urgency and the plan tested at the earliest opportunity
- . Municipal Disaster Plans be made mandatory by legislation
- . A co-ordinated effort be made, directed from State Government level, to promote better knowledge and understanding of plans, especially

where these have been recently revised.

[Reference paragraphs: 264 to 285]

### Utilisation and Management of Resources

297. All aspects of response to the Ash Wednesday fires indicated the importance of effective utilisation and management of counter-disaster resources. Where effective utilisation and management were not achieved, serious deficiencies tended to result.

Recommendation: In the future development of Victoria's counter-disaster capability, effective utilisation and management of resources be regarded as a major objective.

### Command, Control and Co-ordination

298. The meaning and correct application of command, control and co-ordination are not standardised throughout Victoria's counter-disaster system. Consequently, misunderstanding can arise, resulting in reduced effectiveness.

Recommendation: The definitions of command, control and co-ordination, as stated in the Australian Counter Disaster Handbook, be standardised throughout Victoria's counter-disaster system.

[Reference paragraphs: 106 to 111]

## SECTION 2 - LEGISLATION

299. Legislation is of key importance in providing an effective basis for counter-disaster measures. It is particularly valuable in defining roles and responsibilities, and in specifying mandatory requirements. The introduction of the State Disasters Act, 1983, was of significant importance in this regard. However, if the recommendation in paragraph 290 is adopted, and a suitable combination of Ministerial responsibility

and the role of the State Disaster Plan is thus achieved, an amendment to current legislation would be necessary.

Recommendation: The provisions of the State Disasters Act, 1983, be extended to cover the proposed policy and organisational amendments.

[Reference paragraph: 286]

### SECTION 3 - MITIGATION AND PREPAREDNESS

300. Mitigation and preparedness must always be regarded as a major bushfire counter-measure. Many discrete aspects influence its effectiveness. They include:

- . General apathy within the community
- . The policies and attitudes of governments
- . Use of legislation and regulation
- . Fuel reduction policies
- . The roles, responsibilities and powers of involved organisations, including local government
- . Individual responsibility
- . Special policies and measures in fire-prone areas
- . Emergency training, public awareness and education
- . Preservation of the environment
- . Insurance aspects.

301. Current standards of mitigation and preparedness in Victoria are too low, thus reducing counter-disaster effectiveness.

Recommendation: Mitigation and preparedness be enhanced and maintained for the future. Some co-ordinating mechanism or system be introduced at State Government level for this purpose.

[Reference paragraphs: 114 to 128]

#### SECTION 4 - PUBLIC AWARENESS AND EDUCATION

302. Public awareness and education is a key consideration in counter-disaster affairs. It is closely linked with mitigation and preparedness in helping to ensure effective disaster counter-measures. A wide range of program possibilities exist, among which education in schools offers long-term benefit. All programs do, however, need constant effort, plus subtlety of presentation, if significant and lasting results are to be achieved.

Recommendation: Programs of public awareness and education be co-ordinated at State Government level and careful consideration given to their timing and emphasis.

[Reference paragraphs: 132 to 136]

#### SECTION 5 - COMMUNICATIONS

303. There were undoubtedly communications problems during the peak period of the Ash Wednesday fires, when disaster conditions were extraordinarily severe. These problems were mainly concerned with traffic congestion, though some limitations in equipment capability and training were revealed. However, the main communications principle remains valid. The major combatting and supporting organisations must retain their own systems, with assured liaison links between them. Within this principle, progressive updating of communications systems to provide improved capability should be carried out.

Recommendation: A sound policy for maintaining future communications capability will best be pursued by:

- Gearing communications development, as far as possible, to a generally accepted system for

command, control and co-ordination, with combat and support organisations retaining their own systems;

- . Utilising a central co-ordinating/advisory system, aimed at achieving optimum balance between the communications needs of individual organisations and the requirements of a co-ordinated counter-disaster response.

[Reference paragraphs: 137 to 151 and 250]

## SECTION 6 - WARNING AND INFORMATION SYSTEMS

304. Strong criticism was expressed in relation to the Ash Wednesday fires concerning:

- . The provision of adequate, timely and accurate warning to communities faced with a possible fire threat, and
- . The dissemination of information to the public, mainly from media sources, with regard to fire situations, casualties, damage and destruction.

There was justification for this criticism. However, there were mitigating factors in the form of:

- . The very severe fire conditions
- . The overloading of information systems
- . Misjudgements in warning, due to the unusual nature of fire behaviour
- . Limitations in public awareness, often due to lack of local disaster plans.

On balance, there is no doubt that, for the future, improvements in warning and information systems must be sought. In this regard, it is important to recognise that the satisfactory provision of disaster-related warning and information depends on effectiveness throughout a number of inter-related component systems and activities. Therefore, careful co-ordination is necessary.

Recommendation: Warning and information systems be

the subject of a detailed review, undertaken at State Government level, utilising the information contained in this report.

Meanwhile, there should be:

- . Inclusion of public information sub-plans in main plans at State, regional and municipal levels.
- . Further efforts to improve warning lead-time and warning systems.
- . Promotion of improved awareness, knowledge and understanding of existing warning systems.
- . Continued discussion between counter-disaster authorities and the media to ensure optimum co-operation in the dissemination of disaster-related information and associated matters.

[Reference paragraphs: 152 to 159 and 251]

## SECTION 7 - SHELTER

305. There was no policy to cover bushfire shelters prior to the 1982/83 fire season. During the Ash Wednesday fires a considerable number of people found communal shelter in large, well-constructed buildings and survived, even though the fire threat outside the buildings was acute.

306. In some cases, people used their own homes as shelter and survived, though others who did likewise perished. General indications are that people who understand what to do in the face of a bushfire threat and have made adequate preparation (especially ensuring a supply of water) stand a good chance of surviving when they stay with their homes. Some improvised forms of shelter, used by individuals who understood fire behaviour and fire-resistant materials, were also successfully used.

307. In general, shelter from bushfire needs continued examination.

Recommendation: There be examination of:

- . Possible assistance by the State Government to local government in the provision or adaptation of buildings which could serve as communal shelters.
- . Suitability of school buildings for use as shelters, particularly to mitigate the possibility of students being exposed to risk by being sent home ahead of an advancing fire front.

[Reference paragraphs: 160 to 162 and 252]

## SECTION 8 - EVACUATION

308. Numerous problems arose concerning evacuation from fire-affected areas during the Ash Wednesday fires. They were mainly related to:

- . Inadequacy of warning
- . Controls applied to disaster-affected areas
- . Safety of children who had been sent home from school
- . Lack of, or deficiencies in, evacuation plans
- . Misleading information concerning affected persons and families.

309. Fundamentally, evacuation (as distinct from localised movement to shelters or safe havens) under severe bushfire conditions is a very difficult and hazardous undertaking. It should, therefore, be regarded more as a measure of last resort than as a desirable option. Thus, in developing counter-disaster effectiveness, consideration should be focussed on those awareness and preparedness measures which assist persons to defend their own lives, homes and properties, thereby providing themselves with a viable alternative to evacuation.

310. Another option is that, in certain circumstances, especially if prior experience so indicates, evacuation might be seen as a measure of first resort.

Recommendation: Evacuation considerations be applied selectively to individual areas and situations, and be appropriately reflected in disaster plans. Such plans should cover, inter alia:

- . Warning, transit arrangements and alternative evacuation routes
- . Designation of shelters, safe havens and evacuation destinations
- . Clear definition of responsibility for decision-making
- . Clarification of individuals' rights to stay and defend their homes and properties, if they so wish
- . Arrangements for keeping members of the community fully informed at all times.

Consideration should be given to introducing improved evacuation warning and information systems, provided such systems are cost-effective.

[Reference paragraphs: 163 to 166 and 253]

## SECTION 9 - FIRE-FIGHTING OPERATIONS

### Operational Coherency

311. During the Ash Wednesday fire-fighting operations, there were undoubtedly numerous instances where loss of operational coherency occurred. This was due to a combination of:

- . extraordinary weather conditions
- . dynamic behaviour of fires
- . overwhelming of fire units by the severity and rapid advance of fire fronts
- . communications congestion
- . difficulties in acquiring accurate fire intelligence
- . shortcomings in information management systems.

Consequently, there was inability to maintain a clear definition of fire situations and of the necessary patterns of fire-fighting

response. Therefore, operational coherency was lost.

312. At fire-front level during large scale operations there is inevitably a complex interaction of activities. Thus, when conditions become extreme, the risk of losing operational coherency will arise. This is likely to remain a problem in the future.

Recommendation: The question of maintaining operational coherency during fire-fighting operations be examined, with a view to achieving improvements in the future.

[Reference paragraphs: 168 to 173 and 242 to 245]

### Fire-Fighting Capability

313. The experience of Ash Wednesday emphasised the problem of dealing with bushfires in semi-rural areas. In these areas, concentrations of dwellings tend to be closely surrounded by the high fuel levels inherent in trees and thick vegetation. The resultant fire problem is very difficult to handle and differs significantly from the grass-fire problem more usually associated with strictly rural areas. There is an indicated need, therefore, to view the overall fire problem under separate categories of:

- . urban
- . semi-rural
- . other rural
- . forest

and to develop resources and techniques accordingly.

314. Other relevant aspects ensuing from the Ash Wednesday fires were:

- . The difficulties which face local CFA commanders in extreme fire conditions and, consequently, the need for ready assistance to be available from more senior and experienced officers.

- . The need to improve arrangements for optimum co-ordination and utilisation of privately-owned fire-fighting vehicles and equipment.
- . The necessity for ensuring effective deployment and utilisation of fire-fighting reinforcements sent into stricken areas.
- . The need to develop effective airborne fire-fighting systems, especially those which facilitate acquisition of fire intelligence.

Recommendation: As fire-fighting counter-measures require continuous surveillance and review, Government-sponsored action be taken to enhance fire-fighting capability within a co-ordinated program.

[Reference paragraphs: 174 to 175]

### Equipment

315. The following problems concerning equipment were identified during the Ash Wednesday fires:

- . Vaporisation of fuel in CFA tankers, sometimes resulting in serious risks for crews
- . Lack of heat shielding on some tankers
- . Inadequacies in protective clothing for fire-fighters
- . Some inadequacies in tanker equipment and accessories.

Although these aspects are reported as receiving, or having received attention, it is emphasised that there is no place for the second-rate in fire-fighting equipment.

Recommendation: All fire-fighting equipment must be operationally effective and maintained to the highest possible standards.

[Reference paragraphs: 176 to 177]

Compatibility of CFA and FCV Operations

316. Suggestions that the CFA and the FCV should be integrated for the purpose of fire-fighting operations, are not realistic. The following reasons apply:

- . The CFA and the FCV have quite separate mandates for fire suppression. The CFA is essentially a specialist counter-fire organisation. The FCV is a government department with a wide range of responsibilities. These include not only fire suppression, but also the utilisation of fire practices for forest management.
- . The fire suppression methods used by the two organisations are quite different. In essence, the CFA uses wet fire-fighting methods; the FCV uses dry methods.
- . The CFA depends predominately on volunteers, whilst the FCV employs mainly full-time personnel. This difference between part-time and full-time commitment affects the length of time fire-fighters can be reasonably retained on operations.
- . Arrangements exist whereby, if necessary, one of the two organisations takes the lead-combat role, whilst the other fulfills a combat-support role.
- . Arrangements also exist for the two organisations to act conjointly through the use of liaison officers and liaison channels.

It therefore appears that there is no practicable alternative to the existing system under which joint CFA/FCV operations depend upon effective liaison.

317. However, in relation to the 1982/83 fire season, and more particularly to Ash Wednesday, some CFA/FCV liaison problems did arise. These problems underline the critical need for a clear, workable and effective liaison system between the CFA and the FCV during fire-fighting operations. Such a system is within the capacity of the two organisations.

Recommendation: Operations by the CFA and the FCV be based on the current arrangements. However, an effective liaison system between the two organisations must be maintained.

[Reference paragraphs: 178 to 181]

### Training

318. The effectiveness of combined CFA/FCV fire-fighting capability depends significantly on adequate standards of training. This applies particularly to fire-fighting techniques, utilisation of equipment and mutual understanding of roles.

Recommendation: Training within the CFA and FCV be maintained at the highest possible standards and cross-training between the two organisations be further developed.

[Reference paragraph: 182]

## SECTION 10 - RELIEF MEASURES

### Relief Requirements and Planned Relief Arrangements

319. Relief requirements arising from the Ash Wednesday fires were enormous. Immediate requirements comprised a wide range of personal needs and also restoration of community services. Longer term measures extended from financial compensation to major planning measures for the future.

320. Planned relief arrangements in Victoria were based on a typical pattern of:

- . Pre-arranged emergency relief measures, followed by
- . Recourse to the normal systems and processes of government, as soon as practicable.

This basic pattern proved to be sound.

[Reference paragraphs: 188 to 190]

### Establishment of Relief Allocation Needs

321. In common with most major disaster situations, the establishment of relief needs following the Ash Wednesday fires was both urgent and complex. Normally, to meet this requirement, a pre-arranged system of survey, assessment and reporting is used. Generally speaking, no such system was available in Victoria. This was mainly due to inadequacies in, or lack of, local disaster plans. There were, however, other contributory factors, such as:

- . Weaknesses in information management, which contributed to delays in the assessment and satisfaction of relief needs.
- . Problems in achieving satisfactory registration of disaster-affected people, due to certain shortcomings in, and inadequate knowledge of existing systems.
- . Overloading of communications.
- . Some instances of falsely-stated relief claims.

There were, therefore, difficulties and inadequacies in establishing relief allocation needs.

[Reference paragraph: 191 to 195]

### Availability of Resources

322. Contrary to the situation following many major disasters, there were few, if any, serious shortages of essential resources to meet relief requirements. This was a considerable asset from the viewpoint of both disaster victims and relief organisations.

[Reference paragraphs: 196 to 198]

### Implementation of Immediate Relief Measures

323. The post-impact situation following Ash Wednesday was complex and difficult in terms of implementing immediate relief measures. Damage and destruction was extensive, communities were shocked and bewildered, and many normal services were badly

disrupted. The relief system therefore faced an enormous problem.

324. In dealing with the problem, the following major issues emerged:

- . Activation of relief measures was too slow and cumbersome.
- . The division of responsibility between SES and DCWS, in the relief co-ordination role, gave rise to difficulties.
- . Distribution of resources was hampered by a number of organisational and social problems, some of which were characteristic of large-scale post-disaster relief programs.
- . Initially, there were problems of communication and information flow between relief organisations and disaster victims. These were resolved as relief measures progressed.
- . Relief operations emphasised the importance of the role of local government in disaster situations, and indicated that this role had not been sufficiently recognised and developed in prior planning and organisation.
- . Problems were experienced by some departments and organisations, which are not by nature crisis-oriented, in extending from their normal role into the crisis role.

However, despite these problems and difficulties, eventual implementation of immediate relief measures was reasonably effective.

[Reference paragraphs: 199 to 206]

#### Implementation of Long Term Relief Measures

325. Full implementation of long term relief measures will extend beyond the completion date of this report and will, presumably, be covered later in relevant departmental reports.

[Reference paragraph: 207]

Overall Assessment of Relief Measures

326. Relief measures were not carried out as effectively as expected. This was because of the severe post-impact situation, the magnitude of the response requirement and inadequacies of planning. The result was that those in need did not always receive assistance in the appropriate manner, in the appropriate measure, at the appropriate time. However, after the initial difficulties had been overcome, relief measures reached acceptable standards. This recovery was mainly due to:

- . A generally sound basis of organisation.
- . Availability of necessary resources.
- . The very considerable efforts of the many departments, organisations and individuals who were involved in implementing the relief program and who, with commendable dedication and perseverance, overcame numerous difficulties in order to achieve a successful end result.

[Reference paragraph: 208]

Recommendation: Relief measures be reviewed and improved for the future. The main areas of requirement are achievable within the existing and potential counter-disaster capability of the State. They involve:

- . An examination of the post-impact aspects of counter-disaster effectiveness.

[Reference paragraphs: 246 to 248]

- . Establishment of relief needs, especially concerning information management and the registration system.

[Reference paragraph: 209]

- . Implementation capability, especially:
  - . activation arrangements;
  - . division of responsibility for the relief

- co-ordination role;
- . certain components within the overall system for distribution of relief commodities;
- . the communication and information process between relief management and disaster victims;
- . clarification of the role of local government.

[Reference paragraph: 199 to 206]

- . Revision and testing of the State Disaster Welfare Plan.

[Reference: Recommendation in paragraph 296]

## SECTION 11 - RESEARCH

327. Prior to the 1982/83 fire season, considerable research into bushfire and associated problems had been undertaken in Australia. Much of this research was related to parallel effort overseas.

328. Effective research is a vitally important part of the total effort to counter the bushfire threat. Therefore, maximum practicable support should be given by governments and appropriate organisations to this research effort, in which international co-operation plays a significant role.

Recommendation: The Government of Victoria encourage and contribute to further research into bushfire-related subjects, including co-ordination of research effort.

[Reference paragraphs: 211 to 215]

## SECTION 12 - IMPORTANT CONSIDERATIONS FOR THE FUTURE

329. Certain important considerations apply to the future development of Victoria's counter-disaster capability. Some of these have been covered in earlier conclusions and recommendations. They are:

- . The Counter-Disaster System in Victoria [paragraph 288]
- . The Role of Local Government [paragraph 292]
- . Local Factors in Operational Response; Operational Coherency [paragraph 311]
- . Local Factors in Post-Impact Activity [paragraph 326]
- . The Local Perspective on Counter-Bushfire Arrangements; the Counter-Bushfire Concept [paragraph 289]
- . Regional Co-ordination and Support Measures [paragraph 291]
- . Relationship between the State Disaster Plan and the Provisions of the State Disasters Act, 1983. [paragraph 290]

Other important considerations for the future are dealt with hereunder.

#### The Nature of the Fire Threat

330. The periodic peaks of severity in Victoria's fire threat are well known and further peaks will undoubtedly arise in the future. The threat is currently compounded by the arsonist problem and by the development of communities in semi-rural, high-risk areas.

Recommendation: Changes and developments in the fire threat be monitored and, where possible, counter-bushfire capability adjusted accordingly.

[Reference paragraphs: 223 to 227 and 287(a)]

#### Categorisation of Fire-Prone Areas

331. Categorisation of fire-prone areas would enable priority to be given to countering the bushfire threat in those areas which are particularly vulnerable.

Recommendation: Consideration be given to the introduction of a system for categorising fire-prone areas.

[Reference paragraphs: 229 to 231 and 287(c)]

### The Interaction Between Local Government and the Community

332. Community support groups played a significant part in assisting local government in various post-disaster activities following the Ash Wednesday fires.

Recommendation: The involvement of community support groups in counter-disaster affairs at local government level be subject to further investigation.

[Reference paragraphs: 234 to 236 and 287(e)]

### The Local Basis of Preparedness

333. The experience of the Ash Wednesday fires revealed the necessity for revision of current doctrine concerning the local basis of preparedness.

Recommendation: Current doctrine applying to the inter-relationship between community awareness, the role of local government and the local disaster plan be revised, in order to improve preparedness and response capability.

[Reference paragraphs: 237 to 241 and 287(f)]

### Operational Facilities, Systems and Procedures

334. Certain operational facilities, systems and procedures will continue to be of key importance for the future. They include:

- . Communications [paragraph 303]
- . Warning and Information Systems [paragraph 304]
- . Shelter [paragraphs 305 to 307]

- . Evacuation [paragraphs 308 to 310]
- . Information Management [paragraph 326]
- . Registration of Disaster-Affected People [paragraph 326]
- . Supply of Power and Water [paragraph 255].

The future effectiveness of these aspects depends on systematic review and development.

Recommendation: Operational facilities, systems and procedures be reviewed and developed along the following lines:

- . Individual disaster-related organisations to monitor future possibilities and developments appropriate to their own operational needs.
- . There should be a general monitoring and advisory system to indicate to the State Government which programs should be given priority, in the interests of overall counter-disaster effectiveness.

[Reference paragraphs: 249 to 251 and 287(i)]

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COMPOSITION OF THE BUSHFIRE REVIEW COMMITTEE

Chairman

Mr. S.I. Miller, Chief Commissioner of Police and  
M.V.O., O.St.J., Q.P.M. Co-ordinator of the Victorian State  
Disaster Plan

Members

Air Vice-Marshal W. Carter International Disaster Consultant  
C.B., D.F.C., F.A.I.M. and Director of the Australian  
(Deputy Chairman) Counter Disaster College, Macedon,  
1969-1978

Mr. R.G. Stephens, Principal Adviser, Public Service  
B.Com., Dip.Pub.Admin., Board of Victoria  
A.A.S.A. (Snr)

Executive Staff of the Committee

Mr. C.G. Vennix, Research Officer, Ministry for  
B.Ec. Police and Emergency Services  
(Secretary of the Committee from  
28 June, 1983, to 14 August, 1983)

Mr. K.B. Wilkinson, Administrative Officer, Department  
B.A., B.Bus., Dip.Bus. of the Premier and Cabinet.  
(Public Admin.) (Executive Officer of the Committee  
from 15 August, 1983)

Support Staff of the Committee

The Committee records its appreciation of the valuable administrative, typing and stenographic services provided by the following persons at different stages of the Committee's activities:-

Misses S.A. Devery, J.L. Sinnott, M.J. Strickland, V.A.  
Theobald, Z. Mitrevska, P. Thompson, Mrs. T.L. Davies, Mrs. S.E.  
Brown and Snr. Const. D. Jennings.

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SUMMARY OF INTERIM ADVICE LETTERS

In addition to a Progress Report submitted to the Minister for Police and Emergency Services on 26 October, 1983, information outlined below was conveyed to the Minister in the form of Interim Advice Letters. This was mainly to enable action to be taken by the Government on matters requiring early attention with the onset of the 1983/84 fire season.

16 August, 1983, No. 1

Municipal Disaster Plans, Public Awareness, Safety, Country Fire Authority, Radio Communications and Fire Fighting Equipment

1. Municipalities need to develop and implement effective fire prevention plans and municipal disaster plans.
2. Publicity material incorporating essence of DISPLAN, should be circulated to municipalities before 1983/84 fire season.
3. Action should be taken to ensure principals and other staff of schools are aware of their responsibilities for safety of school children in the event of bushfires.
4. A fire protection section should be developed within the Country Fire Authority.
5. A national radio frequency assignment plan should be developed for emergency services.
6. Additional administrative staff should be employed in CFA regions.
7. Adequate protective clothing should be provided to all CFA fire-fighters.
8. The CFA fire-fighting vehicle modernisation program should be accelerated with particular reference to crew safety aspects.

26 August, 1983, No. 2

Forests Commission Fire Prevention and Protection Measures, Police Pilot Training, Commonwealth Government Support and Amendments to DISPLAN

1. Additional finance should be available for employment of more regular Forests Commission staff for application of fuel reduction burning techniques in forests.
2. A public education program at Local Government level is required.
3. There is a need for full access for FCV, CFA and other fire-fighting agencies, to farmlands, privately owned forests and areas adjacent to Crown land during fire-fighting operations.
4. Proper fuel reduction techniques should be applied in private forest areas and adjacent areas as well as in areas under FCV jurisdiction.

5. Full training procedures for police pilots, as well as commercial pilots and those from other organisations, engaged in aerial fire-fighting support, should be established.
6. Arrangements for access to Commonwealth Government resources should be simplified.
7. The stages of DISPLAN should be deleted to avoid confusion. The response to disaster is simply an escalation of resources to meet the severity of the particular disaster. The following activation sequence is recommended:
  - ALERT - warning of an impending disaster where the requirements of DISPLAN may be implemented.
  - STANDBY - to ensure initial readiness measures are implemented.
  - ACTION - when it appears certain that a disaster is imminent or it has occurred. Combatting authorities act on their own initiative and supporting services await advice from the DISPLAN Co-ordinator.

20 September, 1983, No. 3  
Amendments to DISPLAN and DISWELPLAN

1. The Committee believes amendments are required to procedural matters and terminology to remove any obscurity, especially for those unfamiliar with DISPLAN and DISWELPLAN.
2. The Committee has arranged for representatives of Victoria Police, State Emergency Service and Department of Community Welfare Services to meet to resolve DISWELPLAN problems and report back to the Committee.
3. This letter included a Committee request for a DCWS statement of resource needs for an optimum state of operational preparedness for the next fire season (Later provided and forwarded to the Minister. Detailed statements of SES needs were also sent by the Committee to the Minister).

26 September, 1983, No. 4  
Operations Under DISPLAN and Municipal Visits

1. Interaction routinely occurs between officers of the Defence Force and the various fire combatting authorities, at local level.
2. Representatives of the Committee would meet with municipalities and representatives of combatting authorities, including voluntary organisations in the local fire areas (This occurred and was expanded to include individuals who wished to raise matters of particular concern).

13 October, 1983, No. 5  
Computerised Fire Detection, Evacuation and Early Weather Warning Systems

1. Mr. Andrew Helps of Pakenham has submitted a proposal for a computerised pilot program relating to the above factors, for the Dandenong Ranges and Mornington Peninsula regions of Victoria.

2. The Committee recommends that a feasibility and cost-effectiveness study of the proposal be undertaken and that a computer consultant should be engaged for this purpose.

26 October, 1983, No. 6  
Municipal Disaster Plans

1. From the Committee's discussions, it is evident that the basis of disaster control resides in the creation and maintenance of effective municipal disaster plans and that this requires a legislative basis.
2. Legal advice on the feasibility of legal sanctions is suggested.

26 October, 1983, No. 7  
Health Commission Resources and Health DISPLAN

1. The Health Commission has prepared a detailed medical disaster plan.
2. The Health Commission has personnel resources able to provide community services to victims of a major disaster in the immediate post-impact stage and in the longer term. These resources could supplement DCWS resources.

29 November, 1983, No. 8  
Communications and the Media

1. The Police Advice Line (PAL), a Telecom dial-in service, is able to provide a range of public information services in emergencies or disasters and was used for this purpose during Ash Wednesday.
2. Each combatting and supporting agency should appoint a Liaison Officer to provide accurate and progressive situation reports to the Police Media Liaison Bureau, and if necessary, direct to the media.
3. The PAL facility should be properly marketed and publicised.
4. Following a meeting with representatives of the electronic media, they agreed to use the services of the Police Media Liaison Bureau in addition to their own information sources.

29 November, 1983, No. 9  
Fire Safety and Fire Shelters

1. The Committee examined test reports of a shelter developed by Mr. A. R. Toyne of Frankston. The results appeared to be highly satisfactory but the Committee suggested that a research and development project should be undertaken by a Government organisation, such as the CSIRO, to develop performance standards in a range of designs, including community shelters and basement cellars (Representatives of the Committee attended demonstrations of the Toyne shelter, 'Bushbaby').
2. Although a planning booklet, which supplies advice to applicants for building permits, has been made readily available to all Council offices throughout Victoria, the Committee is concerned that of the 2,080 houses

destroyed, at least 1,100 have been replaced in basically the same form and location. Action should be taken to publicise the availability of this booklet to people re-building in the fire areas.

3. A report to the Garden State Committee, entitled "Fire Vegetation and Houses" by Dr. R. G. Downes, provides useful information on reduction of fire hazards and the use of vegetation to protect houses. The Master Builders' Association and the Housing Industry Association could be asked to make this information available to the public and prospective home builders/renovators.

19 December, 1983, No. 10

Agronometeorology Research by Bureau of Meteorology

1. Research by the Commonwealth Government into agronometeorology, in regard to fuel states, would assist the States in bushfire intelligence, fire prevention and combatting operations. It could benefit the States and improve the expertise of the Bureau of Meteorology itself. The CFA and FCV consider intelligence reports on fuel states to be critical in bushfire and grass-fire situations.
2. Digitised satellite pictures are already available to the Bureau but a research team of either three or four officers would be necessary to provide an operational service throughout the year.

20 December, 1983, No. 11

Standing Committee on Disaster Training at Regional Level

1. There is an urgent need for training in disaster management at the regional level, including common procedures and understanding by supporting agencies in disaster combatting and recovery and relief operations.
2. The Committee recommends a standing committee be appointed comprising representatives of Police Operations, SES and DCWS. A standing committee could recommend appropriate funding for courses.

21 December, 1983, No. 12

Fire Detection and Mapping Systems

1. These systems have the capacity to supply strategic and tactical fire intelligence to fire combatting authorities.
2. As the National Safety Council of Australia has available resources and technology, the combatting authorities should be encouraged to make use of these facilities, as a cost effective measure, instead of duplicating this capability. This is not to suggest the CFA should not persist in its research and development of the Landsat capability.
3. The CFA considers a central facility should be developed in Victoria to analyse Landsat data as a valuable tool in fire prevention/suppression.

21 December, 1983, No. 13Bushfire Disaster Control Structure

1. There is some uncertainty concerning the arrangements to comply with the establishment and functioning of the new control structure and the associated Fire Control Unit. The Committee believes there is a need for clarification of certain of the issues involved, including the circumstances in which the central command centre is to be activated.
2. The Committee recommends that a meeting of the Fire Disaster Committee should be convened to resolve these issues.

23 December, 1983, No. 14Destruction of Injured Livestock Following Bushfires

1. The Department of Agriculture was invited by the Committee to express its policy (a sensitive approach in consultation with stock owners, where present) on the destruction of injured livestock pursuant to the Protection of Animals Act.
2. This policy could be disseminated through the Department of Agriculture's official publications and those of the Victorian Farmers and Graziers Association. The VFGA has also offered to disseminate information through their bulletins to members, to minimise any future problems and misunderstandings which arose in some farming communities in the aftermath of Ash Wednesday.

23 December, 1983, No. 15Fuel Reduction on V/Line Property and Roadside Reservations

1. During discussions in Airey's Inlet, Warrnambool and the Dandenong Ranges fire areas, local people expressed concern about the urgent need for fuel reduction on V/Line reservations and roadside reservations.
2. The Committee draws attention to the need for assurances from V/Line and authorities responsible for roadside reservations, that they carry out fuel reduction on all property for which they have managerial responsibility.

23 December, 1983, No. 16Computerised Fire Detection, Warning and Evacuation Systems

1. The Minister for Police and Emergency Services asked the Committee whether a proposed pilot project in the Dandenong Ranges, as submitted by a consortium, should be endorsed.
2. The Committee advised it was unable to endorse the proposal until the findings of the computer consultant, examining its feasibility and cost effectiveness, had been fully assessed.

8 February, 1984, No. 17Radio Communications and Frequency Allocations

1. After discussions with the Manager, Licensing Operations, Commonwealth Department of Communications, the Committee sees a need to examine

requirements of all Government departments, statutory authorities and other organisations with fire combatting responsibility and capability.

2. The Chief Commissioner of Police, in his capacity as Co-ordinator of DISPLAN, would convene a meeting with Mr. J. McPhee of the Department of Communications, and representatives of the above organisations, to discuss matters regarding frequency allocations and capabilities of different types of equipment. The aim would be to ensure maximum benefit and versatility from equipment and frequencies available, and to enable any difficulties to be resolved.

8 February, 1984, No. 18

Radio Communications Resources

1. It is apparent from discussions with representatives of the Wireless Institute Civil Emergency Network (WICEN) that their organisation has considerable resource capacity throughout Victoria.
2. Arrangements are thus being made for WICEN to have a re-vitalised role within DISPLAN. Police regional co-ordinators would be asked by the DISPLAN Officer to invite representatives of WICEN to participate in Regional Disaster Committee meetings so that their resource capability can be evaluated and expressed in municipal disaster plans.
3. WICEN wishes to operate within the formal structure to provide services to organisations such as SES, DCWS, Health Commission, Red Cross, the Salvation Army, municipalities and other support services without radio communications capability.
4. The DISPLAN Officer will advise the State Disaster Planning Committee, including the above authorities, of this potential resource, at its next meeting.
5. WICEN proposes to enhance its organisational structure, training methods and publicity regarding its resource role and capabilities.
6. These proposals are consistent with the principle of community self-help inherent in DISPLAN and should provide a useful auxiliary communications capability to organisations involved in DISPLAN at no cost to the State.

8 March, 1984, No. 19

Country Fire Authority-Bureau of Meteorology Officer

1. The CFA wishes to have a Bureau of Meteorology Officer present at the CFA Operations Centre on days of Total Fire Ban.
2. The Committee considers this would be a useful measure to facilitate prompt dissemination of accurate weather warnings, especially as the interpretation of synoptic weather charts requires the experience and knowledge of a meteorological expert.

3. The Committee suggests an approach be made to the appropriate Commonwealth authorities in this regard.

The Committee notes that the Government has initiated action upon matters raised in these Interim Advice Letters.

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COMMITTEE MEETINGS AND APPEARANCES - 1983/84

A total of 109 people appeared at formal meetings of the Committee, many people appearing more than once. Sixty-six formal meetings were held, extending over 45 sittings days.

Included among those who appeared at the invitation of the Committee, were the following:

(dates of first appearance shown)

- |               |   |
|---------------|---|
| 28 June, 1983 | Inaugural Meeting -<br>Mr. R. L. King, Secretary, Ministry for Police and Emergency Services, Mr. M. Walsh, Dr. L. Foreman, Mr. C. Vennix - Ministry for Police and Emergency Services. |
| 12 July,      | Mr. E. T. Millar, Deputy Commissioner (Operations), Victoria Police, Inspector B. E. Bingham, DISPLAN Officer, Victoria Police.   |
| 26 July,      | Mr. L. J. Newell, Chairman, Country Fire Authority, Mr. R. A. Orchard, Chief Officer, CFA and Mr. B. Potter, CFA; Asst. Commissioner R. C. Knight, Victoria Police.                     |
| 9 August,     | Mr. K. B. Wilkinson, Department of the Premier and Cabinet.   |
| 16 August,    | Commissioners G. Griffin and A. Hodgson and Mr. S. F. Duncan, Chief, Division of Forest Protection - Forests Commission, Victoria.  |
| 23 August,    | Mr. R. J. Aitken, Director, Victoria State Emergency Service and Mr. R. G. Newton, SES.   |
| 6 September,  | Professor J. Power, Political Science Department, University of Melbourne; Mr. M. Dumais, Ministry for Police and Emergency Services.   |
| 13 September, | Mr. K. Williams, Asst. Director-General, Family and Community Services and Ms. L. Benham and Mr. V. Coull - Department of Community Welfare Services.                                   |
| 20 September, | Major-General J. C. Hughes, Major R. Lenard, Defence Force; Dr. A. T. Griffin and Mr. F. Honan, Department of the Premier and Cabinet.  |
| 27 September, | Mr. K. Fisk, Acting President, Metropolitan Fire Brigades Board, Mr. L. Lavelle, Chief Fire Officer and Mr. A. F. Rowden, Secretary, MFB.   |
| 4 October,    | Mr. E. J. Baynes, President, Victorian Rural Fire Brigades Association, Mr. D. A. Austin, Senior Vice-President, VRFBA, Mr. J. B. Barclay, Secretary, VRFBA.                            |

- 11 October, Mr. A. Helps.  
Mr. F. E. Thorogood, Executive Director, Australian Red Cross Society (Victorian Division), Miss L. M. White, Mr. C. W. Butters, Ms. S. Baxandall, Australian Red Cross Society (Victorian Division).
- 12 October, Mr. K. Murphy, Mt. Macedon Volunteer Fire Brigade; Mr. D. Beatson, Macedon Volunteer Fire Brigade.
- 18 October, Cr. P. Meeking, Pakenham Shire; Cr. P. Harris, Sherbrooke Shire; Mr. A. Hubbard, Upper Yarra Shire; Mr. P. Gogorosis, Department of Community Welfare Services, Ringwood.  
(Representing the Dandenong Ranges Fire Affected Area Committee.)  
Messrs. B. Rowe, K. Taylor, J. Anstey - Public Service Board, Victoria.
- 19 October, Dr. J. Evans, Commissioner, Health Commission, Victoria, Dr. J. Grigor, Assistant Director (Clinical Services) Mental Health Division, Health Commission, Victoria.
- 25 October, Mr. I. R. Pawsey, Secretary, Municipal Association of Victoria, Mr. B. Whelan, MAV, Mr. N. A. Smith, Chairman, Bushfire Appeal (1983) Trust Fund, Mr. A. Gayleard, Bushfire Appeal (1983) Trust Fund.
- 2 November, Mr. R. Webster, Chairman, Bushfire Reconstruction Task Force, Department of Management and Budget, Mr. S. Mather, DMB.  
Mr. A. Wilson, State Electricity Commission.
- 3 November, Chief Inspector L. J. Blogg, Public Relations Division, Victoria Police, Mr. G. Wilkinson, Media Director, Victoria Police; Chief Inspector A. Campbell, Inspector A. McDonough, Senior Sergeant K. McKenzie, Victoria Police; Mr. R. Ellenby, State Chairman, Federation of Australian Radio Broadcasters (FARB), Mr. B. White, President, FARB, Mr. R. Josephs, Telecom, Mr. J. Maher, News Director, HSV 7, Mr. R. Rowe, Operations Manager, News Room, GTV 9, Mr. M. Long, Manager, ABC Radio, Mr. D. Fay, ABC Radio.
- 8 November, Dame Phyllis Frost, D.B.E., Chairman, State Relief Committee.
- 15 November, Mr. G. Morris, Emergency Services Liaison Officer, Telecom Australia;  
Messrs. B. H. Fryer, F. Lawless, I. Holt, Melbourne and Metropolitan Board of Works.
- 22 November Mr. R. Morgan, Director of Building, Local Government Department, Victoria;  
Mr. F. A. Powell, Regional Director (Victorian Regional Office) Bureau of Meteorology.

- 29 November, Dr. R. G. Vines, CSIRO.
- 6 December, Mr. W. Williamson, State Rivers and Water Supply Commission, Victoria;  
Mr. D. Meckiff, Government Computing Service; Messrs. R. Wheeldon, G. Hartnett, and R. Sayers - Consortium, including B.W.D. Instruments Pty. Ltd..
- 13 December, Mr. D. Crowe, President and Messrs. T. Barker and H. Cock - Victorian Farmers and Graziers Association; Dr. R. W. Campbell, Chief, Division of Veterinary Services, Mr. J. V. Mullaly, Chief, Division of Plant Industries - Department of Agriculture, Victoria.
- 20 December, Mr. R. Smith, Chief Executive, and Mr. L. Lester - Insurance Council of Australia Ltd.;  
Mr. D. R. Packham, National Centre for Rural Fire Research, Chisholm Institute of Technology, Victoria, Mr. A. Wilson, Researcher.
- 21 December, Mr. J. Frederick, Director, National Safety Council of Australia; Mr. R. Rawson, Fire Research Officer, FCV;  
Mr. J. Barber, Asst. Chief Officer, (Research), CFA.
- 7 February, 1984 Mr. J. McPhee, Manager, Licensing Operations, Commonwealth Department of Communications; Inspector B. Poulter, Victoria Police; Mr. D. Turner, Communications Officer, FCV; Mr. B. Russell-Clarke, Communications Officer, CFA; Messrs. A. Noble, P. Ford, D. McNeil, P. Mitchell and J. Linton - Wireless Institute Civil Emergency Network (WICEN).
- 14 February, Mr. L. Rudolph, Department of Architecture and Building, University of Melbourne; Messrs. D. Coldbeck and C. Thompson, SES Regional Officers.
- 29 February, Mr. R. C. Webster, Counsel assisting the Coroner; Senior Sergeant R. L. Jacobs, Senior Sergeant J. A. Hart, Sergeants I. L. Fidler and I. W. D. Dosser, Bushfire Investigation Team, Victoria Police; Professor M. McCarthy, Elisabeth Murdoch Professor of Landscape Architecture, University of Melbourne.
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SUBMISSIONS RECEIVED BY THE BUSHFIRE REVIEW COMMITTEE

The following 139 formal submissions were received by the Committee after the placing of press advertisements. The list includes submissions from a number of people involved in fire combatting operations, debriefing reports from various Government authorities under the State Disaster Plan, and from the Department of the Premier and Cabinet which had a co-ordinating role in the aftermath of the Ash Wednesday fires. In addition, many comments and suggestions were received from people who wrote to the Minister for Police and Emergency Services, the Premier and to the fire combatting authorities.

INDIVIDUALS

Adami, T.  
Adams, R. A.  
Angus, R. L.  
Anonymous Member of the Country Fire Authority  
Armitage, G.  
Austen, H.

Bacon, A.  
Baird, I.  
Baker, R. G.  
Batson, J. M.  
Baynes, E. J. and Fraser, B. A.  
Bretherton, L. N.

Carr, R. V.  
Clark, B.  
Cleary, V. P.  
Coldbeck, D. E.

Davis, A.  
Dawson, S. W.  
Dodge, E.  
Dremer, P. M. and Walker, M. G. K.  
Dunstan, D.

Farthing, F.  
Fleming, J.

Griffin, D.  
Griffiths, Dr. J. F.  
Grove, N.

Hamel, A. R.  
Hardiman, R. J.  
Heather, G.  
Helps, A. G.  
Herbert, K.  
Hoddinott, W. J.  
Holmes, C. J.

Humphery, Dr. T. J.  
Hyndes, P.

Irving, B. L.

Jones, R. T.

Kakris, D.

McCarthy, Prof. M. M.

McLarty, J. P.

Marryatt, H. W.

Millard, S. J.

Mills, C.

Moore, Dr. G.

Morgan, A. L.

Murphy, Hon. B. A., M.L.C., on behalf of A. Hooper .

Pickerd, P.

Poulton, J.

Probert, C.

Radford, A.

Reid, P.

Robbins, P.

Rudolph, L.

Russell-Clarke, M.

Searle, N. and B.

Sharp, J.

Shipton, R., M.P.

Sloan, J.

Stephens, I. E.

Stewart, M. A.

Stroud, D. J.

Toghill, A.

Topp, H.

Toyne, A. R.

Warfe, L.

Wettenhall, Dr. R.L.

Wilkinson, K. B.

GOVERNMENT AUTHORITIES, MUNICIPALITIES AND OTHER ORGANISATIONS

Government Authorities

Bureau of Meteorology

Country Fire Authority, Victoria

Department of Agriculture, Victoria

Department of Community Welfare Services, Victoria  
Department of Management and Budget, Victoria, (Bushfire Reconstruction Task Force)

Department of Planning, Victoria  
Department of the Premier and Cabinet, Victoria

Gembrook-Cockatoo-Emerald Waterworks Trust

Melbourne and Metropolitan Board of Works  
Metropolitan Fire Brigade  
Minister of Forests, Victoria  
Minister of Housing, Victoria  
Ministry for Conservation, Victoria

State Electricity Commission, Victoria  
State Electricity Commission, Victoria (Latrobe Valley Region)

Telecom Australia

Victoria State Emergency Service  
Victoria State Emergency Service, Geelong Region

Municipalities

City of Berwick

City of Chelsea

Shire of Barrabool  
Shire of Dimboola  
Shire of Eltham  
Shire of Gisborne  
Shire of Hampden  
Shire of Healesville  
Shire of Melton  
Shire of Omeo, (Proper Officer/SES Controller)  
Shire of Pakenham  
Shire of Sherbrooke  
Shire of Wannon  
Shire of Warrnambool

Other Organisations

A.P.M. Forests Pty. Ltd.  
Ash Wednesday Study Group, Upper Beaconsfield  
Australian Red Cross Society, Victorian Division

Barwon Disaster Area Committee  
Beaconsfield Upper Association  
Blackburn Dyer and Associates  
Bullengarook Reconstruction Advisory Committee

Cockatoo Disaster Welfare Planning Committee

Dandenong Ranges Fire Affected Area Committee  
Dandenong Ranges Fire Brigades Group  
DataPage  
Delphi-D

Emergency Services Technical Group  
E.S.R.I. Australia Pty. Ltd.

Gisborne and District Bush Nursing Hospital

Insurance Council of Australia Limited

Lions Club, Richmond  
Local Government Engineers Association, South Eastern Outer  
Metropolitan Group

Municipal Association of Victoria

National Centre for Rural Fire Research,  
Chisholm Institute of Technology  
National Council of Women, Victoria  
National Safety Council of Australia

Pakenham Fire Brigades Group  
Prince Henry's Hospital, Community Outreach Service

Royal Children's Hospital  
Royal Melbourne Institute of Technology, Bushfire Technology Group

Safety and Preservation Committee of the South Riding in the Shire of  
Sherbrooke  
Scout Association of Australia, Victorian Branch  
State Relief Committee

United Firefighters' Union (Victorian Branch)  
Upper Beaconsfield Fire Review Committee  
Upper Beaconsfield Rural Fire Brigade

Victorian Council on the Ageing  
Victoria Emergency Services Association Inc.  
Victorian Farmers and Graziers Association  
Victorian Rural Fire Brigades Association

Warrnambool Fire Area Committee  
William Angliss College  
Wireless Institute of Australia  
Woodend Racecourse and Recreation Reserve Committee of Management

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VISITS TO FIRE-AFFECTED AREAS

Representatives of the Committee held individual and public discussions with local people, area committees, and local government representatives, as detailed below.

In most cases, the public were given the opportunity to participate by advance publicity, organised by area committees, through local newspapers.

<u>Date</u>	<u>Location</u>	<u>Individual/Group</u>
10 Nov. 1983	Upper Beaconsfield Drop-In Centre	Upper Beaconsfield Fire Review Committee, comprising - Dr. C. Wilson, Dr. G. Silberbauer, Cr. K. Ewenson, Messrs. D. Packham, M. McDonald and E. Bumpstead. Representing views of Local Government: Ms. M. Splatt, Social Worker, Shire of Pakenham, Mr. J. Fyfe, Social Planner, Shire of Sherbrooke, Mr. J. Marjoram, Social Planner, City of Berwick. Representing Cockatoo Disaster Welfare Planning Committee: Mr. J. Beckwith and Mrs. N. Hawley. Community Worker, Cockatoo - Mr. G. Edgar. YWCA Outreach Worker - Mrs. J. Pentland. Messrs. I. Baird, F. Brunda and T. Fogarty, Mr. H. and Mrs. S. Griffiths, Mrs. B. Hails, Mr. G. Heather, Mr. D. and Mrs. M. Irving, Mr. R. and Mrs. J. Newbury, Mrs. D. Pockett, Mrs. C. Ross, Mrs. J. Sloan, Mrs. J. Toon, Mrs. H. Topp, Mrs. E. White. Cr. P. Meeking, Ms. M. Da Costa, Ms. L. Gullquist, Mrs. R. Hepburn, Ms. R. Mullin.
10 Nov. 1983	Upper Beaconsfield Public Hall	Open Public Meeting - approximately 70 people present.
17 Nov. 1983	Shire of Gisborne Council Chamber	Mr. T. Larkins, Shire Secretary; Mr. R. Jones, Deputy Director, Australian Counter Disaster College, Mr. R. Hardiman (Ret.) - ACDC; Cr. A. Hobbs, Cr. I. Bennett, Messrs. J. Rowe, P. Moore and K. Murphy, CFA; Messrs. P. Simmonds and B. Rickard, SES: Mr. M. Wallace, Shire of Gisborne.
8 Dec. 1983	Geelong State Offices	Mr. R. J. Peel, Regional Officer, SES, and Mr. A. Sullivan, SES.
	Airey's Inlet Hall	Mrs. M. Benson, Red Cross; Mr. Burton, Dr. J. Eckersley*, Ms. F. Foster*, Captain I. Walding, CFA; Mrs. Ethel, Cr. P. Hickford, Chairman, Area Committee; Messrs. P. Jose, G. Cattanach, and M. Wright, DCWS Geelong;

Date	Location	Individual/Group
		Cr. A. Riley, Messrs. M. Hair, D. Nicholas, S. Milson, Shire of Barrabool.
8 Dec. 1983	Airey's Inlet Hall	Open Public Meeting - 19 people present.
9 Dec. 1983	Shire of Warrnambool Council Chamber	Warrnambool Fire Area Committee comprising: Cr. J. Howarth, Chairman; Cr. D. O'Keefe, Messrs. A.J. Bowes and W. Pitts, Shire of Warrnambool; Messrs. D. Jacquier and M. Clanchy, DCWS; Captain N. Scrimshaw, Salvation Army; Mr. T. Newton, Shire of Hampden; Mr. H. Fisher, Rural Finance Commission; Mr. D. Coldbeck, SES; Mr. I. Colquhoun, Ministry for Planning and Environment; Cr. K. Jubb and Mr. E. Liebold, Shire of Mortlake; Mr. J. Mahony, VFGA Cr. A. Drayton, Shire of Heytesbury; Mr. V. Robson, City of Warrnambool; Mrs. R. Schultz, Red Cross.
9 Dec. 1983	Ayrford Hall	Open Public Meeting - Cr. J. Howarth, Chairman, Cr. D. O'Keefe, Mr. A. J. Bowes and approx. 20 members of the public.
15 Dec. 1983	Upper Beaconsfield Drop-In Centre	Messrs. E. Dodge, P. Reid and N. Searle, Cr. P. Meeking, Shire of Pakenham. Upper Beaconsfield Fire Review Committee, comprising: Messrs. E. Bumpstead and G. Jackson, Dr. G. Silberbauer and Cr. K. Ewenson.
15 Dec. 1983	State Primary School Hall, Belgrave South	Open Public Meeting - Mr. J. Shone, Community Development Officer, Shire of Sherbrooke (Chairman) and approx. 25 members of the public.
31 Jan. 1984	Upper Beaconsfield Drop-In Centre	Beaconsfield Upper Association, comprising: Dr. G. Silberbauer, Cr. K. Ewenson, Messrs. G. Jackson and E. Bumpstead.

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\* Dr. Eckersley and Ms. Foster also met with representatives of the Bushfire Review Committee at the Old Metropolitan Fire Brigades Building, East Melbourne, on 13 December, 1983.

REPRESENTATION AT SEMINARS, DEMONSTRATIONS AND MEETINGS

The Committee was represented at the following Seminars, Demonstrations and Meetings, etc.:

<u>Date</u>	<u>Detail</u>
23 June, 1983	Bushfire Reconstruction Task Force Consultative Workshop, Public Offices, Treasury Place, Melbourne.
8 September	Introductory CFA Fire Prevention Seminar for Municipal and Proper Officers, Police Academy, Glen Waverley.
17 and 18 September	Symposium and Field Trip (Macedon-Trentham) on Fuel Reduction Burning, Monash University, Clayton, sponsored by: Monash Graduate School of Environmental Science, Forests Commission of Victoria, and the Conservation Council of Victoria.
15 October	Workshop on Counter-Disaster Planning, Melton Community Hall, sponsored by: Shire of Melton and Municipal Association of Victoria.
20 October	Test of Mr. A. R. Toyne's "Bushbaby" fire and cyclone shelter, at Department of Agriculture Horticultural Research Institute, Knoxfield.
24 October	Presentation to Minister for Police and Emergency Services, of Shire of Gisborne's Ash Wednesday Debriefing Report, Shire Offices, Gisborne.
26 October	Wesburn/Millgrove CFA Brigade Exercise at St. John Ambulance Brigade Camp, Millgrove.
10 November	"Bushfires and Houses", CSIRO Division of Building Research - - Presentation and launch of Boral Book: "The Design of Bushfire Resistant Homes".
3 and 4 December	Fifth Annual Combined Emergency Services Seminar entitled: "Did We Cope?" Latrobe University, Bundoora.
19 February, 1984	Ash Wednesday Anniversary Church Service, Upper Beaconsfield.
22 and 23 February	House of Representatives Standing Committee on Environment and Conservation (Environmental Impact of Bushfires), Melbourne Hearings, Tivoli Court, Bourke Street, Melbourne.
10 March	Demonstration at Portarlington - 101st Annual Event of the Victorian Urban Fire Brigades Association.

In addition to the above, the Deputy Chairman met with:

Mr. E. J. Baynes, State President, VRFBA and Mr.  
B. A. Fraser, CFA Group Officer, Tallangatta.

Mr. Phillip Dunn.

Brigadier I. G. C. Gilmore, O.B.E., Director,  
Australian Counter Disaster College, Macedon.

Sir Robert Law-Smith, C.B.E., A.F.C., Grazier and  
Company Director.

Professor M. M. McCarthy, Elisabeth Murdoch Professor  
of Landscape Architecture, University of Melbourne.

Mr. A. R. Toyne, during an early demonstration of his  
fire and cyclone shelter.

Sir Thomas Ramsay, C.M.G.

Various Action and Community Groups in Macedon.

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BUSHFIRE HISTORY IN VICTORIA, AUSTRALIA

1. Bushfires have caused considerable loss of life and damage to property in Victoria.

The recorded occurrence of fires in the open grasslands/farmlands and in the forested areas of the State, starts with Black Thursday, 6 February, 1851 when fires covered about one-quarter of the region that was to become the Colony of Victoria later that year. Until the late 1890's the records of bushfires are sketchy and incomplete. However, during the past eighty-six years, the most destructive and widespread bushfires have occurred in 1898, 1905, 1906, 1914, 1926, 1932, 1939, 1942, 1944, 1952, 1962, 1965, 1969, 1977, 1981 and 1983. Serious, less destructive and widespread bushfires have also occurred in most of the other fire seasons; only a few seasons (about 15%) have been free from bushfires.

2. Statistics on lives lost in bushfires between 1939 and 1983, are as follows:

<u>Year</u>	<u>Number</u>	<u>Comments</u>
1938/39	71	Included four forest officers
1943/44	51	
1951/52	7	
1953/54	1	
1954/55	1	
1956/57	4	Included three volunteer firemen
1957/58	1	Volunteer fireman
1958/59	1	Volunteer fireman
1961/62	12	
1964/65	12	
1968/69	23	
1975/76	3	Volunteer firemen
1976/77	5	Volunteer firemen
1979/80	1	Volunteer fireman
1981/82	4	Volunteer firemen
1982/83	49	Included two Forests Commission employees and 13 volunteer firemen
<hr/>		
TOTAL	246	
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Source: Victorian Government Submission for Inquiry into Environmental Impact of Bushfires by the House of Representatives Standing Committee on Environment and Conservation, October, 1983, pp. 3 and 7.

THE MAJOR FIRES ORIGINATING 16 FEBRUARY, 1983

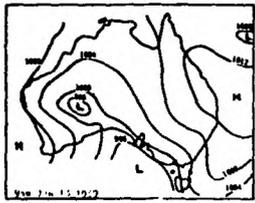
The major fires in Victoria on Ash Wednesday caused loss of life and property damage as shown below in 16 municipalities in the respective fire areas: 1. Shires of Warrnambool, Mortlake, Heytesbury and Hampden 2. Shires of Gisborne, Newham & Woodend, Romsey and Melton 3. Shires of Barrabool and Winchelsea 4. Shires of Sherbrooke and Pakenham, City of Berwick 5. Shires of Sherbrooke and Pakenham 6. Shire of Dundas 7. Shire of Portland 8. Shire of Upper Yarra.

<u>LIST OF FIRE AREAS</u>	<u>FATALITIES</u>	<u>AREA</u>	<u>HOUSES</u>	<u>OTHER BUILDINGS</u>	<u>SHEEP</u>	<u>CATTLE</u>	<u>FODDER</u>	<u>FENCING</u>
1. Cudgee/ Ballangeich	9	50,000 ha	157	715	11,500	7,800	1,000,000 bales	7,000 km
2. East Trentham /Mount Macedon	7	29,500 ha	628		3,631	149	10,350 bales	50 km+
3. Otway Ranges	3	41,000 ha	729	53	2,624	159	25,000 bales	1,000 km
4. Belgrave Heights/ Beaconsfield Upper	21	9,200 ha		238	526	452	-	650 km
5. Cockatoo	6	1,800 ha	307		N.A.	N.A.	N.A.	N.A.
6. Monivae	Nil	3,181 ha	3	Numerous	1,469	203	N.A.	209 km
7. Branholme	1	200 ha	1	9	Nil	Nil	900 bales	20 km
8. Warburton	Nil	40,000 ha	27 (incl. 14 holiday homes)	30	Nil	Nil	300 bales	10 km (approx)
<u>TOTALS:</u>	47	174,881 ha	1,545	807	19,750	8,763	1,036,550 bales	8,939 km+

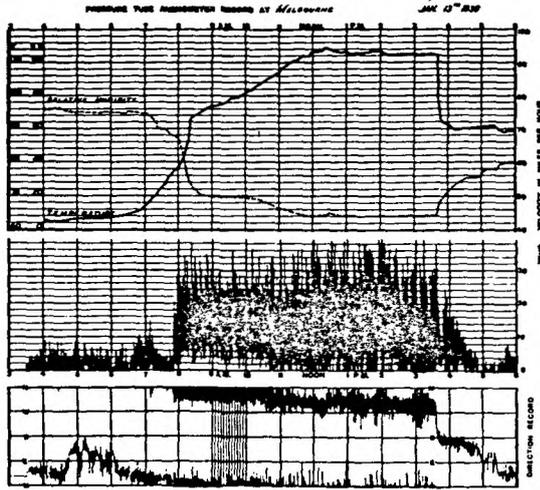
SOURCE: COUNTRY FIRE AUTHORITY, VICTORIA, The Major Fires Originating 16th February, 1983, December, 1983, pp. 14, 25, 28, 30, 33, 35, 37 and 38.

# BUSHFIRE CHART 1939 - 1983 COMPARISON

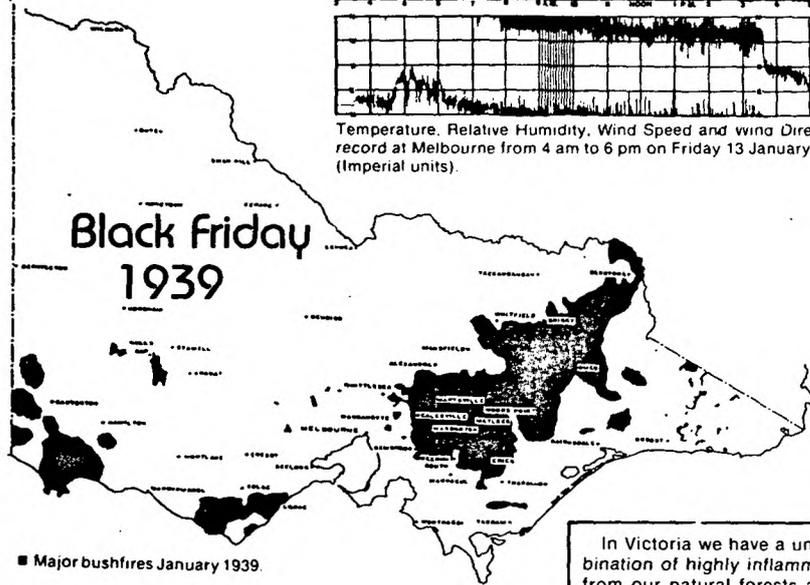
# ANNEXURE 'I'



Mean sea level pressure analysis for 9 am EST 13 January 1939.

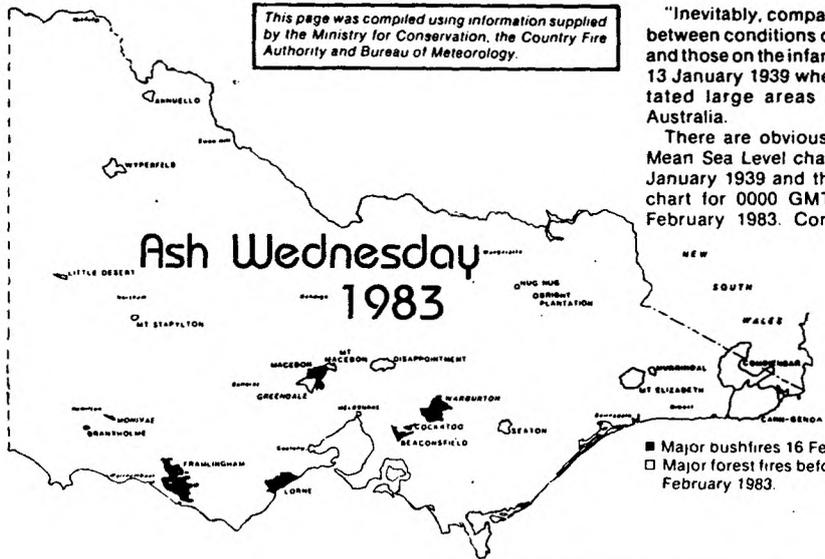


Temperature, Relative Humidity, Wind Speed and wind Direction record at Melbourne from 4 am to 6 pm on Friday 13 January 1939 (Imperial units).



Major bushfires January 1939.

In Victoria we have a unique combination of highly inflammable fuels from our natural forests and severe fire weather conditions, producing situations such as those experienced during 'Ash Wednesday'.

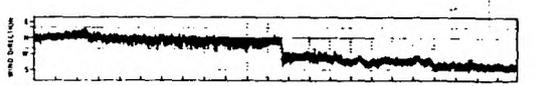
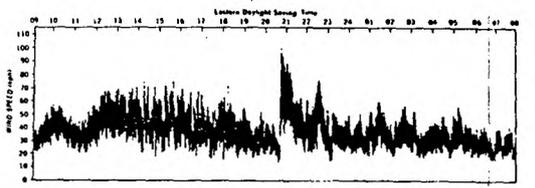
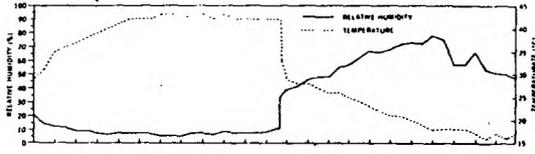


"Inevitably, comparisons will be made between conditions on Ash Wednesday, 13 January 1939 and those on the infamous 'Black Friday', 13 January 1939 when fires also devastated large areas of south eastern Australia. There are obvious similarities in the Mean Sea Level charts at 0900 EST 13 January 1939 and the Ash Wednesday chart for 0000 GMT (1100 EDST) 16 February 1983. Common features on both charts are: the sharp trough through South Australia; the location of the high pressure system in the north Tasman Sea; and the strong north westerly flow over south eastern Australia between these two systems.

The composite display of wind, temperature and humidity variations in Melbourne on 13 January 1939 should be compared with the Ash Wednesday observations at Melbourne airport. There are considerable similarities in the magnitude of the high temperatures and low humidities on both days, although the hot, dry conditions continued well into the evening on Ash Wednesday, whereas they ended in midafternoon on Black Friday. However, there is an important and very significant difference in the wind behaviour. Whilst the strength of the northerly wind gusts was about the same on both days and there was an abrupt, cool wind change on both days, on Black Friday, the wind change was a quite weak southerly that soon died down. On Ash Wednesday, however, the change was a gale-force south-westerly that was maintained for a long time as a strong wind, even after the initial gales had eased. Considering the effects of wind on the rate of fire spread and on the difficulty of fire control, it must be concluded that meteorological conditions on Ash Wednesday 1983 were, in some respects, worse than those on Black Friday 1939.

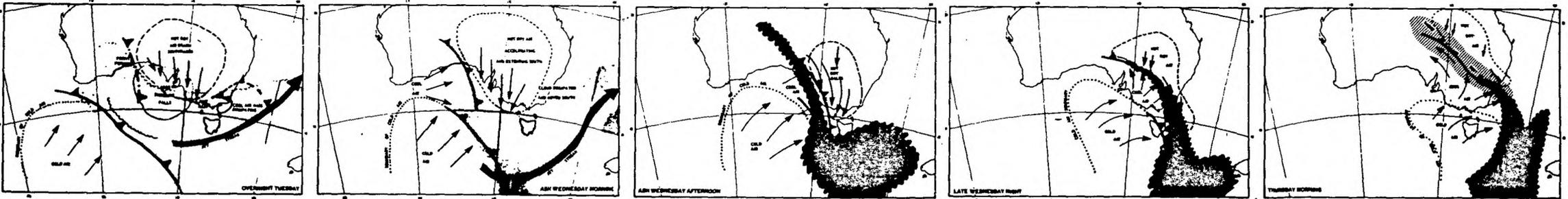
This conclusion should not be extended to surmise that Ash Wednesday fires were, in a general sense or collectively, worse than those of Black Friday. From the various sources of information on both fires significant differences are noticed in the nature of the fires on each occasion, in their duration and the area burnt. The influence of human habitation and its infrastructure must also be markedly different. Indeed it is difficult and perhaps unwise to compare both events except at very detailed specific levels. Certainly it cannot be said that one fire was overall 'worse' than the other.

Victoria is one of the most hazardous bushfire areas in the world. Its climate, nature of its forest and the fierce northerly gales that sometimes accompany days of searing heat combine to produce potential disaster situations with regularity. On days such as 'Ash Wednesday', those potential disasters are realised. Fire in these conditions are intense and difficult to control. If this is further compounded by such fires occurring during drought periods and northerly winds persist for a number of days, then the probability of damaging and disastrous fires is very high.



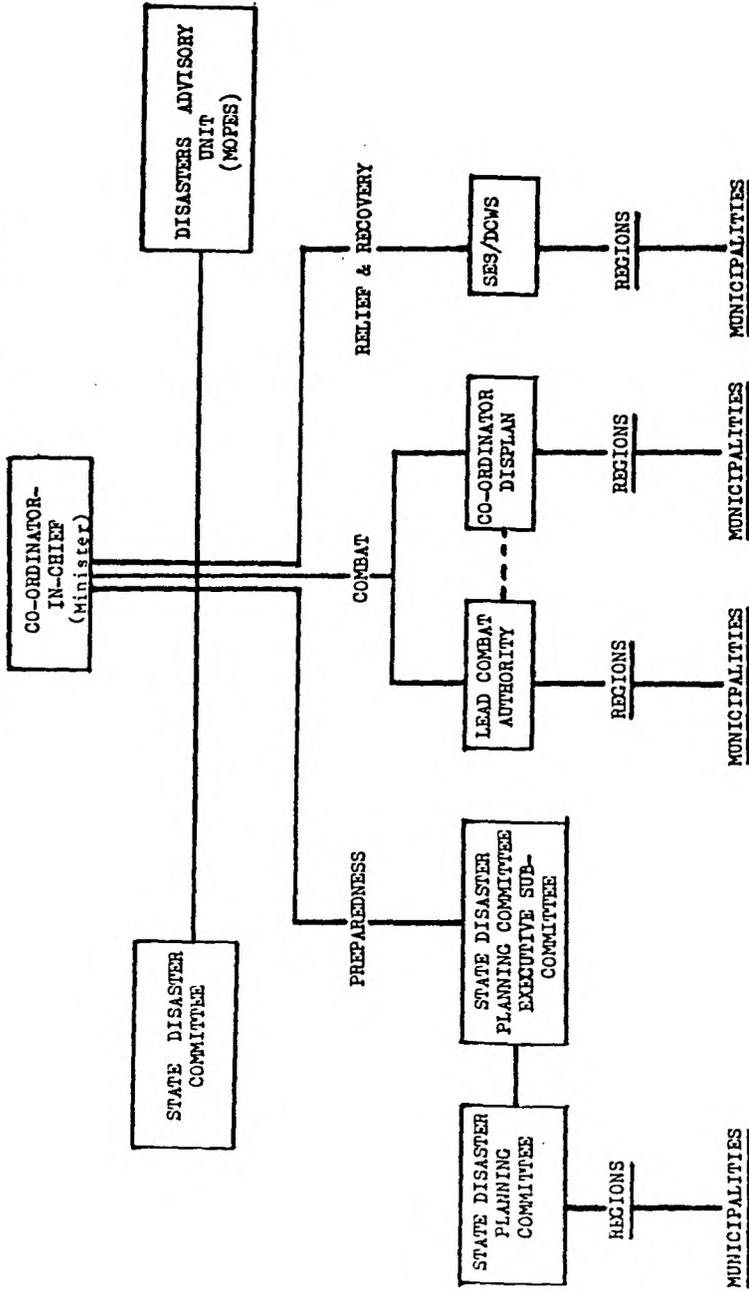
Temperature, Relative Humidity, Wind Speed and Wind Direction record at Melbourne Airport, Tullamarine on Wednesday 16 February 1983.

Staged Conceptual of the Evolution of the atmospheric circulation on Ash Wednesday.



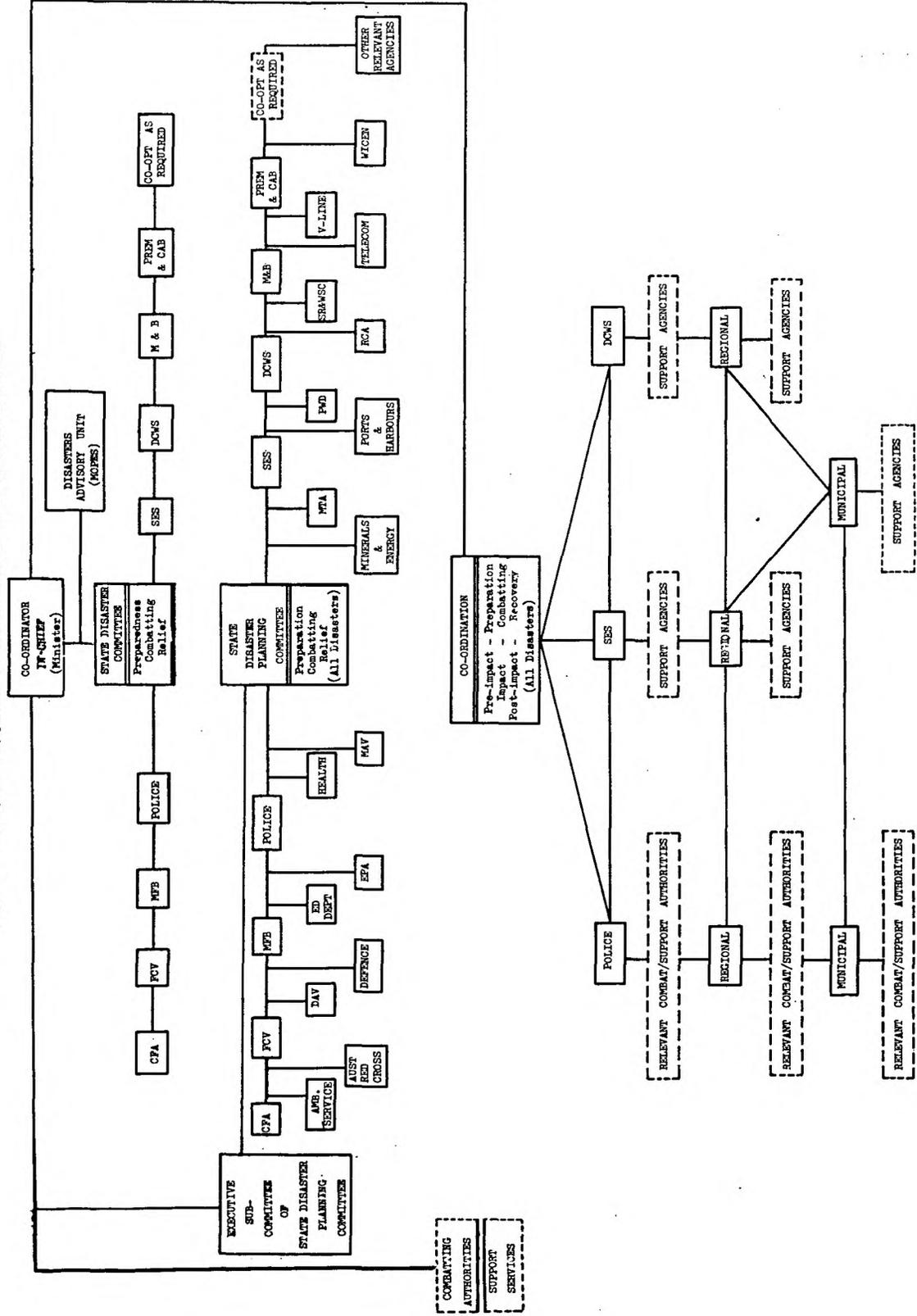
STATE DISASTER CONTROL STRUCTURE

Ministerial control structure at State, Regional and Municipal level, pursuant to the State Disasters Act and the State Disaster Plan.



**STATE DISASTER ORGANISATIONAL ARRANGEMENTS**

The organizational arrangement of the combatting authorities and supporting services at State, Regional and Municipal levels, pursuant to the State Disasters Act and the State Disaster Plan.



STATE DISASTER ORGANISATIONAL ARRANGEMENTSLIST OF ABBREVIATIONS

AMB SERVICE	Ambulance Service Victoria
AUST. RED CROSS	Australian Red Cross Society (Victorian Division)
CFA	Country Fire Authority, Victoria
DAV	Department of Agriculture, Victoria
DCWS	Department of Community Welfare Services
DEFENCE	Department of Defence
ED DEPT	Education Department
EPA	Environment Protection Authority, Division of the Ministry for Planning and Environment
FCV	Forests Commission, Victoria
HEALTH	Health Commission of Victoria
MAV	Municipal Association of Victoria
M & B	Department of Management and Budget
MFB	Metropolitan Fire Brigades Board
MINERALS & ENERGY	Department of Minerals and Energy
MOPES	Ministry for Police and Emergency Services
MTA	Metropolitan Transit Authority, Ministry of Transport
POLICE	Victoria Police
PORTS & HARBORS	Division of Ports and Harbors, Ministry of Transport
PREM & CAB	Department of the Premier and Cabinet
PWD	Public Works Department
RCA	Road Construction Authority, Ministry of Transport
SES	Victoria State Emergency Service
SR & WSC	State Rivers and Water Supply Commission
TELECOM	Telecom Australia
V/LINE	Railways Division of Ministry of Transport
WICEN	Wireless Institute Civil Emergency Network

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BIBLIOGRAPHY

The following Textbooks, Publications, Reports and Papers, Legislation, Organisational Plans and Guides, and Press Articles, were consulted by the Committee in preparing its Report.

In addition to the documents listed in the Bibliography, the Committee had access to a large number of internal documents relating to fire prevention/ combatting operations, articles on organisational and welfare matters; also video recordings of television news coverage of the Ash Wednesday fires and other documentary films from Melbourne television stations.

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Textbooks

Luke, R. H. and  
McArthur, A. G.

Bushfires in Australia, AGPS, Canberra, 1978.

McArthur, A. G.,  
Cheney, N. P. and  
Barber, J.

The Fires of 12th February, 1977, in the Western  
District of Victoria, CSIRO, 1982.

Noble, W. S.

Ordeal by Fire, Hawthorn Press Pty. Ltd.,  
Melbourne, 1977.

Wettenhall, R. L.

Bushfire Disaster: An Australian Community in  
Crisis, Angus and Robertson, Sydney, 1975.

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BIBLIOGRAPHYPublications

- AUSTRALIAN INSTITUTE OF CRIMINOLOGY, Reporter 4:4, July, 1983.
- BEACONSFIELD UPPER ASSOCIATION, The Village Bell, February, 1984.
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