CHURCHILL FELLOWSHIP REPORT 2000

FIRE MANAGEMENT IN USA

BY
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EXECUTIVE SUMMARY

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Project Description:
- Investigate the National Interagency Incident Management System (NIIMS), procedures and training within the United States of America.
- Investigate the liaison between fire agencies within America as it relates to Wildfire management
- Attend the Colorado Wildfire Academy and participate in Incident Management Training Courses

Key Agencies and Personnel Contact
Los Angeles County Fire Department  Captain Mark Whaling
National Interagency Fire Centre   Mr James Stone, Public Affairs Officer
Colorado Wildfire Academy Charles Hamilton, Long Island Conservation Department; Lt Eric Doucette, US Coast Guard, Portland Maine; Mark Mullinex Boulder Fire Department
Riverside County Fire Department/Deputy Chief Officer Bob Green
California Department of Forestry
San Bernadino County Fire Department Chief Officer Peter Hills

Major Outcomes:

**Incident Management**  A compassion made between Incident Management procedures and Both America and Australia are using very distinctively different incident management forms during Wildfires, yet the operational principles remain the same. A number of forms used by American fire agencies could be adopted for use in Australia. The definition of level of command and transition of command at incidents is clearly better defined in America.

The use of incident management teams and expanded structures is much more prevalent in America. This is probably due to the frequency of large wildfires, terrain and in accessible areas.

**Training**  The diversity of training courses in Incident Management and accreditation process used demonstrated opportunities for the CFS and other Fire Services to consider.
MAIN BODY

INTRODUCTION
The purpose of this fellowship was to examine the differences in fire management between Fire Agencies in the United States of America and Australia while focusing on wildfires. Key issues investigated were the structure of the Incident Management Teams and the associated training for various functions and personnel within the Incident Management Team. The outcomes from this investigation is to review practices specifically within South Australia as it relates to:

- The formation of Incident Management Teams
- The collection and dissemination of fire information.
- Review the Incident Command System forms used within South Australia and Australia.
- Examine the opportunities to introduce Incident Command training courses into the CFS

BACKGROUND
The Australian Interagency Incident Management System (AIIMS) was developed in Australia from the American National Interagency Incident Management System (NIIMS) during the mid 1980’s and subsequently introduced the Incident Command System and training standards.

The purpose of an Incident Command System is to provide structure and coordination in the management of emergency incident operations. It also helps to ensure the safety and health of all people involved by enabling the Incident Controller to better monitor their development and activities. Australasian Fire Authorities Council, 1996, Incident Command System Learning Guide, Melbourne, Vic, p14

Both NIIMS and AIIMS consists of five major sub systems that together provide a total systems approach to incident management. These sub systems are

- Incident Command System
- Training that is standardised
- A qualification and recognition system
- Publication management
- Supporting technologies
1. Standardised Training Courses for all functions within the Incident Command System

1.1 America
America trains from the lower positions with ICS up to the major functional sections, with a requirement of pre-requisites in training and experience prior to undertaking higher level training courses. These are defined in the National Wildfire Coordination Group publication titled Wildland and Prescribed Fire Qualification System Guide, January 2000.

Prior to being used in an Incident Management Team or as an operational firefighter the person must have acquired the training relevant to that position, be assessed in a training or practical role and then having their qualification card signed off. In most fire agencies this card is known as the “Red Card” and a firefighter may only undertake duties identified on their Red Card. The “Red Card” normally applies to permanent or paid firefighters in agencies such as Forestry and National Parks. In other agencies and what seems to gaining greater acceptance is the use of Task Books that has been adopted by the National Wildfire Coordination Group. The benefit of the Task Books is that the trainee is able to demonstrate achieving all competencies for the relevant position being studied or worked at over a period of time that is suitable to their needs. This concept is similar to the use of learner drivers log book in use in Australia.

The training courses provided in America are:

- ICS 100 Introduction to ICS
- ICS 200 Basic ICS
- ICS 300 Intermediate ICS
- ICS 400 Advanced ICS
- ICS 401 Multi-agency Coordination
- ICS 402 ICS for Executives
- S- 400 Incident Commander
- S- 403 Information Officer
- S- 430 Operations Officer

Twenty five other ICS skill courses are defined in the Wildland and Prescribed Fire Qualification System Guide, January 2000

1.2 Australia
AIIMS provides standarised training courses in Incident Management these being contained in the National Firefighting Course modules, these are:

4.02 Pre- Incident Planning
4.03 Operational Management
4.04 Incident Control System
5.02 Incident Planning
5.03 Logistics Management
5.04 Incident Management Skills
6.01 Risk Management
6.02 Major Operations Management
6.03 Policy and Legislation
Australian training requirements are also described in the Public Safety Training competencies of the Australian National Training Authority. [www.ntis.gov.au](http://www.ntis.gov.au)

Over the recent years various fire agencies have developed additional courses to assist fire management. These include Strike Team Leader, Sector Commander and Air Operations, all of which are identified in the National Firefighting Course modules.

Australian Fire Agencies until recently provided one training course to what is known as Command staff positions or functional section heads, that is, Incident Commander, Operations Officer, Planning Officer, Logistics Officer. The difficulties encountered over recent years are that the fire agencies have not provided training for individual functional roles. Recently some fire agencies have identified the need for short individual ICS skill courses for Command Staff. (Operations, Planning, Logistics) Yet this seems not to have been adopted Australia wide.

With the expansion of Incident Management Teams beyond Command Staff to fill unit leader positions, the training is absent. One could argue that personnel filling those roles were not competent in understanding their duties and responsibilities and may expose them to failure or examination during legal proceedings.

2. Expanded Incident Management Teams

Within South Australia the wildfire pattern is such that the majority of uncontrolled fires are of short duration and rarely progress beyond 24 hours. This poses its own unique set of problems as it relates to incident management. Time and response of ICS management staff and the establishment of a formal incident command post challenges the development of Incident Action Plans, as fires are usually contained within the first (initial attack) or second operational period (extended or upgraded response). As the majority of fires are generally small being less than 100 hectares the management of the wildfires are within the responsibilities of either Brigade or Group Officers at first and second levels of response as defined in the Country Fire Service Four Levels of Response, 1996.

One or two personnel operating form a Command vehicle within close proximity to the fire normally achieve this. The emphasis at these smaller fires is the coordination of resources and development of strategies. The transfer of information up the chain of command to assist in dissemination of information for public safety is challenging because of workload on personnel during the initial response phase of a fire.

When campaign or long duration wildfires occur beyond 24 hours the formation of Incident Management Teams occur although in the past the teams mainly consisted of Command Staff. (Incident Commander, Operations Officer, Planning Officer and Logistics Officer)

Previous ICS training within Australia focuses on the Command Staff, although training materials suggest the appointment of additional staff, the reality is that students are not exposed to the benefits, roles and training of expanded incident management teams. The result being that they practice what they have learnt and are oblivious to the concept of an expanded incident management teams. Within the CFS there has been and identified need for training in other areas of ICS. This has resulted from recent expansion of roles within the incident management teams, greater use of the planning unit, lack of situational information and the use of Strike Team Leaders and Sector Commanders on the fire ground.
Although National Training modules have identified various skills or units no agency has developed unit leader courses that assist the Command Staff. By comparison in America a greater use of an expanded incident management team is applied during wildfires and as a result a wide range of training courses for unit leaders and ICS skills. As stated previously the American agencies trains from the bottom up, with pre-requisite training in a number of unit leader courses prior to obtaining training in the major units or Command positions. Eg Planning, Operations and Logistics Officers. Within South Australia there is no formal pre-requisite training in ICS skills required prior to undertaking Command Level training.

3. **Unified Command**

Due to the complexities of jurisdiction or responsibilities American agencies utilise a Unified Command System.

The objectives of Unified command are to:

- Improve information flow and interface between all agencies
- Develop a single collective approach to the incident, regardless of its functional requirements
- Optimise the efforts of all agencies to perform their respective missions
- Reduce or eliminate duplicate efforts or missions
- Ensure that no agency’s authority will be compromised.
- Develop objectives for the entire incident
- Improve each agencies awareness of the plans and actions of all other agencies

Unified command is used when:

- Incidents involve more than one jurisdictional boundary
  
  Individual agency responsibilities and authority is normally legally confined to a single jurisdiction

Unified Command is often required in America due to the number of agencies involved in fire firefighting operations or land owners. The following lists some of the main agencies involved in fire operations:

- Local Fire Department
- County Fire Agencies
- US Forest Service
- Bureau of Land Management
- Department of Agriculture
- Department of Indian Affairs
- National Parks Service.

By comparison the diversity of agencies in Australia and the legislative powers provided through various Fire Service Acts provide reasonable clarity in regards to firefighting operations during Wildfires. Various State Disaster Act’s in Australia also provide further explanation of agencies responsibilities however there exists the potential for conflict as to who has ultimate responsibility for incident management and that agencies such as fire, police ambulance and state emergency services do not operate within a unified command system and that incident objectives and priorities vary between all agencies during major
incidents are rarely agreed to and prioritised. It is recognised that during minor incidents that all emergency service organisations generally operate in a co-operative manner. Only as incident complexities increase that the potential in management problems and co-ordination also increase.

4. MACS Multi-Agency Coordination System
The Multi-agency Coordination System is a combination of facilities, equipment, personnel, procedures and communication integrated into a common system with the responsibility for coordination of assisting agency resources and support to agency emergency operations. Firescope, Field Operations Guide, 1999

MACS primary functions are to:
- Evaluate new incidents
- Prioritise incidents
- Ensure agency resource situation is current
- Determine specific agency resource requirements
- Allocate resources based on incident priorities
- Review policies

MACS Groups are made up of top management agency personnel from responsible agencies/jurisdictions within each state.
MACS Group have a range of forms that are used to determine incident priorities. A number of these forms would be suitable in adapting at lower levels in determining incident priorities.
The MACS Group function is similar to the State Disaster structures throughout various Australian states.

5. Incident Management Forms
Australia has recently revised the number and type of incident management forms. The major reason behind this were to evaluate objectives with situation reports, avoid duplication, reduce the confusion as to what form and which part is to be filled out and by whom. By comparison the American NIIMS system has a diverse number of forms, 22 in total. The comparative list below illustrates the differences between the two countries.

<table>
<thead>
<tr>
<th>United States of America</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Briefing Form ICS 201</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Incident Objectives ICS 202</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Organisational Assignment List ICS 203</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Assignment List ICS 204</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Incident Radio Communications Plan ICS 205</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Medical Plan ICS 206</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Incident Organisation Chart ICS 207</td>
<td>Structural Chart</td>
</tr>
<tr>
<td>Incident Status Summary ICS 209</td>
<td>Incident Action Plan/ Sitrep</td>
</tr>
<tr>
<td>Status Change Card ICS 210</td>
<td>Structural Chart</td>
</tr>
<tr>
<td>Check-In List ICS 211</td>
<td>Message Form</td>
</tr>
<tr>
<td>General Message ICS 213</td>
<td>Message Form</td>
</tr>
<tr>
<td>Unit Log ICS 214</td>
<td>Unit Log</td>
</tr>
<tr>
<td>Operational Planning Worksheet ICS 215</td>
<td></td>
</tr>
<tr>
<td>Hazard and Mitigation Form ICS 215A</td>
<td></td>
</tr>
<tr>
<td>Radio Requirements Worksheet ICS 216</td>
<td></td>
</tr>
</tbody>
</table>
There are a number of American forms that could be utilised by Australian Fire Services. Appendix 1
These are:
- Operational Planning Worksheet ICS 215
- Hazard and Mitigation Form ICS 215A
- Support Vehicle Inventory ICS 218
- Check-in List ICS 211
- Medical Plan ICS 206
- Incident Briefing Forms ICS 201.

With the exception of the Incident Briefing form ICS 201 the majority of these forms would be best utilised during larger or major incidents. (CFS Regional or State Level Incidents).

6. Transition Process
One of the American fire management processes is the transition of command from Initial Attack to Extended Attack through to Type 1 and 2 Incident Management Teams. The transition process described in American Manuals provides a clear guide for evaluation and transfer of Command to a higher level officer. Appendix 1.
The transition process is an assessment of current and predicted fire situation and the degree of incident management complexity. This procedure assists in justifying the transfer of command to a higher level.

By comparison within the CFS there is no clearly defined processes used to assess an incident complexity or transfer of command to an officer of a higher level.

Appendix 2 discusses individual findings from American Fire Agencies visited.

CONCLUSIONS
From the finding of this Fellowship it is intended to progress several aspects, these being:

1. Recommend to merge levels of Command into the CFS document of Four Levels of Response.
2. Introduce the transition process into CFS documentation to improve the transition of Command at incidents.
3. Review the concept of Expanded Incident Management Teams within the CFS
4. Propose several American ICS forms as previously identified.
5. Introduce Flagging into the CFS.
This will achieved through the submission of proposal as developed to Executive Management and State and Regional Committees. It is hoped that this can be achieved within six months from submission of this report.

RECOMMENDATIONS
As a fire manager and Regional Commander of the Country Fire Service I feel that after experiencing the methods used in America as they relate to Incident Command Systems and Interagency Liaison, that there are a number of issues that are important to fire services and the Country Fire Service of South Australia. The methods of bringing about change not only includes the Country Fire Service (CFS) but other Agencies within South Australia. To achieve this the methods I propose to use include:

- written submissions to the CFS
- other interagency committees within South Australia
- presentations at different State and Inter-state forums eg. AFAC
- submissions to fire and emergency magazines

From the experience and exchange of fire management concepts through this Fellowship the other significant improvement that can be made is for short and long term exchanges for fire managers at various levels between America and Australia. At various times people and agencies tend to focus on local issues. I draw the analogy of a goldfish bowl. Unless we climb out of the bowl and look around, we will never understand or see how other people and agencies operate and therefore our path of continual improvement becomes restricted and influenced only by local events.

Mark Thomason
22 August 2000
APPENDIX 1

Incident management

Policy
It is Bureau of Land Management (BLM) policy to use the incident command system (ICS) to manage all incidents and to have an operational briefing for all fire personnel on any type of incident. A delegation of authority outlining clear, obtainable objectives will be provided to the incoming incident commander.

Introduction
The ICS provides for a management/organisational structure on incidents that evolve in complexity or increase in size, whether within a few hours or over several days. Many safety problems, organisational issues and cost-efficiency concerns emerge as an incident transitions into a larger operation. These transitions historically have been the most dangerous phase of incident management. Careful planning of transitions during operational periods is essential to mitigating safety issues.

Managers should strive to transition incidents at the start of a new operational period, with transfer of command and incident action planning complete.

Incident management requires both on site incident organisations and off site coordination and support organisations. To effectively manage an incident, it is important to understand the roles and responsibilities of these organisations.
Agency Administrator

Off site (Co-ordination)   On site (Command)

- Initial attack dispatch
- Extended attack (Type 3 incidents)
- Buying teams
- Geographic area co-ordination
- MAC Groups
- Initial attack (Type 4 & 5 incidents)
- Type 2 incidents
- Type 1 incidents
- Area command

24 June 2000
On site incident organisations

All fires, regardless of size, have an incident commander – a single individual responsible for all incident command level functions and incident activities.

**Type 4 (Initial Attack Incident)**
- Major functions within the Incident Management Team are not activated
- Initial attack
- Resources vary from a single appliance to several resources or a task force or strike team
- Resources required typically vary from two to six firefighters
- The incident is generally contained within the first burning period and often within a few hours after resources arrive on scene
- Additional firefighting resources or logistical support are usually not required
- The incident is limited to one operational period in the control phase. Mopup may extend into multiple periods
- No written incident action plan (IAP) is required
- Role of the Incident Commander:
  - Operational plans which include objectives and priorities

**Type 3 Incident – (Extended attack)**
- Some of the major functional positions activated (Incident Controller, Operations, Planning and Logistics)
- Division Commander and/or unit leader normally appointed
- Resources may vary from several resources to several task forces/strike teams
- The incident may be divided into divisions or sectors
- The incident may involve multiple operational periods prior to control, which requires a written action plan
- Staging and assembly areas may be used
- Role of the Incident Commander:
  - Operational plans which include objectives and priorities
  - Operational analysis

**Type 2 Incident**
- Most or all of the command and general staff positions are filled
- Incident Command Post and staging/assembly areas are established
- The incident extends into multiple operational periods
Type 2 Incident (continued)

- A written action plan is required for each operational period
- Many of the functional units are needed and staffed
- Operations personnel normally do not exceed 500 per operational period and total incident personnel do not exceed 700 (numbers are guidelines only)
- Divisions/sectors are established to geographically facilitate work assignments; a qualified division/sector commanders is required on divisions established for reasons span of control or other complexity factors
- Use of other emergency services/government agencies may be required
- May involve activation of Divisional Disaster Emergency Operations Centre
- State Emergency Operations Centre alerted
- Role of the Incident Commander:
  - Operational Analysis
  - Organisational briefings
  - Written delegation of authority

Type 1 Incident

Characteristics include all of the criteria for a Type 2 incident, plus the following:

- All Incident Management positions are activated
- Operations personnel often exceed 500 per operational period and total personnel will usually exceed 1000 (numbers are guideline only)
- Divisions are established requiring division supervisor qualified personnel
- May require the establishment of branches
- The Incident Commander will have briefings and ensure delegation of authority are updated
- At this stage, interface with the team often takes more of the agency administrator’s time
- Use of other emergency services/government agencies at the incident command is required
- High impact on the local office occurs, requiring additional staff for the office administrative and support functions
- Will require activation of the State Emergency Operations Centre
**Area Command (AC)**

Area command is an organisation established to oversee the management of multiple incidents that are each being handled by an incident management team. An AC can also oversee the management of a very large incident that has multiple IMT\(^8\) assigned to it. However, an AC can be established at any time incidents are close enough that oversight direction is required among IMT\(^8\) to ensure conflicts do not arise.

- The functions of an AC:
  - Co-ordinate the determination of incident objectives and strategies
  - Set priorities for using critical resources allocated to the incidents assigned to the area command
  - May be responsible for the co-ordination of demobilisation
  - The organisation is usually small, with personnel assigned to command, planning, aviation and logistics. Depending on the complexity of the interface between the incidents, specialists in other areas such as aviation safety or information may also be assigned to area command
  - The AC is responsible for supervising, managing and evaluating the incident management teams

As the numbers of wildland fires, complex incidents and the involvement of or impact on other agencies increases, it is necessary to expand day to day co-ordination and management organisations to ensure efficient and effective use of critical personnel and equipment. This is not an expansion of the ICS but rather an expansion of the co-ordination and management system that supports on the ground incident management organisation(s).
Extended attack complexity analysis

Appraising the situation
An Extended Attack Complexity Analysis should be used as a guide for agency administrators and/or fire managers to identify and mitigate certain complexity or safety issues by selecting a different strategy, tactic or higher qualification of incident management personnel to safely and effectively manage the incident.

In developing this analysis, certain assumptions are made:

1. As an incident becomes more complex, the need for an incident management team or organisation increases
2. To facilitate assembling an efficient and effective organisation, key managers should be involved during the early stages of complexity analysis
3. The analysis is not a cure all for the decision process; local fire history, current fire conditions and management requirements must be considered

Guidelines for using the Extended Attack Complexity Analysis
One check in each of the five major elements would indicate a complexity level suggesting consideration of a Type 2 IMT. If some elements are not involved, use the following ranges:

1-3 Current management should be able to handle the incident. The local organisation fills positions as needed. Continue to monitor objectives and accomplishments; consider a Type 3 organisation
4-6 Indicates complexity level suggesting a Type 3 team
7-10 Scrutinise overall complexity and safety concerns, consider past fire history and current and expected situation and review WFSA. This complexity suggests the need for a Type 2 Team

The Extended Attack Complexity Analysis should be reviewed periodically to determine the level of management required.

24 June 2000
## Extended Attack Complexity Analysis

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure of personnel to unusually hazardous conditions</td>
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<td></td>
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<tr>
<td>Accidents/injuries have occurred</td>
<td></td>
<td></td>
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<tr>
<td>Multiple fixed wing aircraft and helicopters involved or anticipated</td>
<td></td>
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<tr>
<td>Potential for public evacuations</td>
<td></td>
<td></td>
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<tr>
<td>Terrain adversely affects performance of tactical resources, limits safety zones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance of firefighting resources affected by cumulative fatigue</td>
<td></td>
<td></td>
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<tr>
<td><strong>External/political factors</strong></td>
<td></td>
<td></td>
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<tr>
<td>Potential for numerous damage claims</td>
<td></td>
<td></td>
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<tr>
<td>More than one jurisdiction involved</td>
<td></td>
<td></td>
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<tr>
<td>Controversial fire policy</td>
<td></td>
<td></td>
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<tr>
<td>Sensitive public/media relationships</td>
<td></td>
<td></td>
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<tr>
<td>Smoke management problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of cohesive organisational structure</td>
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<td></td>
</tr>
<tr>
<td><strong>Resources issues</strong></td>
<td></td>
<td></td>
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<tr>
<td>Structures</td>
<td></td>
<td></td>
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<tr>
<td>Cultural values</td>
<td></td>
<td></td>
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<tr>
<td>Recreational developments</td>
<td></td>
<td></td>
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<tr>
<td>Urban interface</td>
<td></td>
<td></td>
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<tr>
<td>Critical municipal watershed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatened and endangered species</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fire behaviour</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current or predicted fire behaviour dictates indirect control strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuels extremely dry and susceptible to rapid and explosive spread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme fire behaviour/blow up potential exhibited</td>
<td></td>
<td></td>
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<tr>
<td>Current or predicted winds above 45 kph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sever weather predicted for next 2 operational periods</td>
<td></td>
<td></td>
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<tr>
<td><strong>Personnel/equipment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 or more personnel assigned to incident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variety of special support personnel or equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources unfamiliar with local conditions and local tactics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy commitment of local resources to logistical support</td>
<td></td>
<td></td>
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<tr>
<td>Existing forces worked 2 operational periods without success</td>
<td></td>
<td></td>
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<tr>
<td>Communication ineffective with tactical resources or dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total number of elements checked:</strong></td>
<td></td>
<td></td>
</tr>
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</table>

24 June 2000
Extended attack complexity analysis rating

1-3  
Current management sufficient. Type 3 organisations should be considered

4-6  
Complexity level suggests a Type 3 team

7-10  
Consider ordering a Type 2 team

Remarks

Prepared by:  
Date:  
Time:  

Reviewed by:  
Date:  
Time:  

Reviewed by:  
Date:  
Time:  

24 June 2000
### Incident Complexity Analysis (Type 2 Incidents)

<table>
<thead>
<tr>
<th>Category</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Fire Behaviour Observed or Predicted</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Burning index (from on site measurement of weather conditions) predicted to be above the 90% level using the major fuel model in which the fire is burning</td>
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<tr>
<td>2. Potential exists for extreme fire behaviour (fuel moisture, winds, etc)</td>
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</tr>
<tr>
<td>3. Crowning, profuse or long range spotting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Weather forecast indicating no significant relief or worsening conditions</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Resources Committed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 200 or more personnel assigned</td>
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<td></td>
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<tr>
<td>2. Three or more divisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Wide variety of special support personnel</td>
<td></td>
<td></td>
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<tr>
<td>4. Substantial air operation which is not properly staffed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Majority of initial attack resources committed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C. Resources Threatened</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Urban interface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Developments and facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Restricted, threatened or endangered species habitat</td>
<td></td>
<td></td>
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<tr>
<td>4. Cultural sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Unique natural resources, special designation areas, wilderness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Other special resources</td>
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<td><strong>D. Safety</strong></td>
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<tr>
<td>1. Unusually hazardous fireline construction</td>
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<td>2. Serious accidents or fatalities</td>
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<td>3. Threat to safety of visitors from fire and related operations</td>
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<td>4. Restrictions and/or closures in effect or being considered</td>
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<td>5. No night operations in place for safety reasons</td>
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<td><strong>E. Ownership</strong></td>
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<tr>
<td>1. Fire burning or threatening more than one jurisdiction</td>
<td></td>
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<td>2. Potential for claims (damages)</td>
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<td>3. Different or conflicting management objectives</td>
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<td>4. Disputes over suppression responsibility</td>
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<td>5. Potential for unified command</td>
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24 June 2000
### F. EXTERNAL INFLUENCES

1. Controversial fire policy
2. Pre existing controversies/relationships
3. Sensitive media relationships
4. Smoke management problems
5. Sensitive political interests
6. Other external influences

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### G. CHANGE IN STRATEGY

1. Change in strategy to control from confine or contain
2. Large amounts of unburned fuel within planned perimeter
3. WFSA invalid or requires updating

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### H. EXISTING OVERHEAD

1. Worked two operational periods without achieving initial objectives
2. Existing management organisation ineffective
3. Overhead extended mentally or physically
4. Incident action plans, briefings etc missing or poorly prepared

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24 June 2000
**Organisational Overview**

- **Population**: 3,575,364
- **Budget**: $545.6 Million US
- **Number of engines**: 192
- **Number of firefighters**: 2,516
- **Total No. of Calls**: 221,821
- **No. of Fire Calls**: 9,136
- **No. of EMS Calls**: 146,977

**PURPOSE OF VISIT**: To investigate wildfire management and interagency liaison

**Outcomes/Findings**

1. **Fire Suppression and Blackout.**
   All wildfire’s require a hand trail around them and for them to be completely blacked out. The Fire Department avoids being called out to the same fire if a tree or area is left burning. The 911 dispatch centre must react to any report of fire. This procedure is likely to impact on the CFS when central call receipt and dispatch is introduced. There are also significant pressures from local residents to avoid rekindle and escape from the original fire. Public expectations also drive some of their procedures in their weight of response and suppression.

2. **Hose Lays**
   LACFD is proficient in laying of long hose lays around fires. It is often common to have a hose lay of 1,000 metres with laterals (branches). Fire Engines/Crews often have back packs that enable rapid deployment of hose. A mixture of 38 and 25 mm hose is used during these long hose lays.
3. Air Operations
LA County Fire Department, is examining the possibilities of contracting a Firehawk (Blackhawk Helicopter) into service to improve delivery of suppressant agents. The Firehawk can deliver 4,5000 litres of water and refill with a retractable snorkel in 1 minute. One of the disadvantages with the Firehawk over the larger Sky crane is that the Sky crane has excellent visibility via bubble windows that protrude from the cockpit.
LA County Fire Department Operates 8 Helicopters throughout their jurisdiction.
   2 Bell 205
   5 Bell 412
   1 Bell Jetranger
Each Helicopter has a qualified Paramedic on Board as they are frequently called upon to perform rescues in the Mountain areas or to transport road crash victims to hospitals. The response time from an accident to the nearest hospital is around 5 minutes therefore there is no requirement to have a Trauma Doctor on board.

4. Initial Response to Vegetation/Brushfires
   5 Engines
   2 Hand crews
   1 Water tanker
   3 Helicopters
   1 Bulldozer
   1 Battalion Chief
On severe fire days the initial response is upgraded to include an additional 2 engines and 1 Helicopter.
When Helicopter/s is dispatched to a Brushfire one of the 5 engines dispatched has to respond to a pre-determined helispot to act as water supply.

5. Lifeguard Patrols
LA CFD contracts to other cities around Los Angeles and contracts lifeguard services in the form of 9 Baywatch Boats to a number of beaches around Los Angeles. Regular beach patrols occur on weekends and public holidays to ensure public safety. The Lifeguard services provide water and beach rescue, fire fighting water response. The Baywatch patrols are supported by a number of beach lifeguard stations.

6. Residents not permitted to burn. There have been too many escapes. Burning of small pile of rubbish is also prohibited.

7. Power lines do not have spacer fitted or are Aerial Bundle Cable (ABC), LA County Fire Dept. are not aware of how many fire started as a result of power lines clashing.

8. Radio systems not trunked use a combination of simplex and repeater bases and cell phones( mobile phones). One radio is used as a Tactical Channel and the other being Command.

24 June 2000
LA County Fire Department Helicopter, Barton Airbase, CA

US Forestry Service Appliance California
NATIONAL INTERAGENCY FIRE CENTRE
BOISE, IDAHO

Liaison Officer/Host  Mr James Stone
Contacted persons:
- Jon Rollens National Aerial Attack Systems
  Specialist
- Rick Orhoa   Staff Metrologist NIFC
- Tom Frey International Relations Bureau of Land
  Management

Areas Visited
- Smoke Jumping Centre
- National Dispatch Centre
- National Cache
- Air Operations Branch
- International Relations Branch
- Weather Centre
- Bureau of Land Management Dispatch Centre and Fire Engine Centre

PURPOSE OF VISIT: To investigate interagency management of wildfires at a national level

OUTCOMES
1. Attended Daily Weather Forecast Meeting
   Weather briefing was similar to CFS briefing aspects covered during daily briefings
   included: Water Vapour, Infra Red Chart, Radar, Lighting for the previous day Haines
   Index and general prognosis. Briefing included prognosis of high pressure cell
   breaking down and having an impact on Fire behaviour.
   $13 million of firefighting equipment and training materials retained at Boise Cache.
   Equipment supports Regional Caches around the country. Fire Fighting equipment is
   turned over 3 or 4 times a year and is immediately charged to the respective agency.
   Upon completion of the fire equipment is returned to the cache and a credit is provided
   to the fire agency. An agreement has been established whereby various fire agencies
   may access the Regional or National Caches.
3. Training material store
   NIFC at Boise also provides for the National warehouse for Training Material
4. Air Operations/Smoke Jumpers
   9 smoke jumping crews in Idaho. 7 CDF and 2 Fire Agencies. No common parachute
   CDF uses square chute that enables greater directional control, whereas Fire agencies
   use circular chutes.
5. National Dispatch Centre & Coordination Centre
   National Centre organises Human and Physical resources after Regional and Local
   resources are exhausted or vacancies exist. This centre also coordinates National Type
   1 ICS teams.

6. Firefighters Memorial:
   National Firefighters memorial unveiled mid May 2000 to recognise the efforts and
   commitment’s that Wildland Firefighters provide.

7. BLM Dispatch Centre
   Dispatch centre coordinates dispatch of resources for Bureau of Land Management and
   National Parks for Idaho. This Centre is located adjoining the National Interagency
   Fire Centre.

NIFC Dispatch Centre Boise ID
COLORADO WILDFIRE ACADEMY

Salida Colorado
Liaison: Wendy Fischer
Course Coordinator

Salida Middle School
June 4-11 2000
850 Students from 32 USA States
representing 16 different agencies
31 Training Courses delivered using ICS
to organise Academy

Overview

During 1995 fourteen Wildland Firefighters lost their life on Storm King Mountain. This was shortly followed by the loss of a further two lives in Idaho. The outcomes from investigations into these tragedies developed the following.

- National Standards
- National Readiness Inspection Program
- Formal Investigations
- Board of Inquiry

The Colorado Wildfire Academy was born to meet the National Standards for Wildland firefighters, and has been running for 5 years. Its success is evident by the growth in other Wildfire Academies (New York, Texas, Wyoming) and interest shown from the Federal Emergency Management Agency.

The Colorado Wildfire Academy runs over 9 days delivers 31 courses with a total of 750 students attending 2 or 3 day courses. Average daily student attendance is 450.

Training academy run annually to train personnel in all facets of Wildfire Suppression and Incident Management. The Colorado Wildfire Academy is run as an incident with the Incident Management Team developing an Incident Action Plan for the following day so as to coordinate students, instructors, catering and transport. Instructors come from all over the United States to assist in either the Incident Management Team or to Instruct. Students gain theory accreditation and this assists in completion of their task books and accreditation for various positions or tasks.

24 June 2000
OUTCOMES
1. Undertook three training courses; Initial Incident Attack Commander, Extended Attack Commander, Intermediate Incident Command
2. Liaison with 32 different states and 16 different agencies.
3. Examined Incident Management Team coordinating training Academy.

Planning Team at Wildfire Academy Salida Co

24 June 2000
Information Desk at Wildfire Academy

Situation Display at Wildfire Academy Salida CO

24 June 2000
RIVERSIDE COUNTY FIRE DEPARTMENT & CALIFORNIA DEPARTMENT OF FORESTRY

Liaison Officer/Host Mr Bob Green
Deputy Fire Chief
Western Area
Riverside Country Fire Dept.

Organisational Overview

- Population 1,400,00
- Budget $62.5 Million
- Area of protection 7,004 square miles
- Real property value $77.4 billion dollars US
- Number of Engines 89
- Number of firefighters 1,840
- Total number of Calls 79,396
- No. of Fire Calls 10,925
- No. of EMS Calls 58,520

PURPOSE OF VISIT: To investigate fire management and interagency liaison

California Department of Forestry

The California Department of Forestry and Fire protection is a state resource protection agency. It is the largest fire department in the USA and is responsible for the protection of over 30 million acres in the United States. CDF contracts with 40 of the 58 Counties in the State of California. CDF protects 20 incorporated cities. CDF also provides dispatch services to over 126 other fire protection agencies.

CDF operates 45 courses at the State Academy in Sacramento. In addition, CDF operates 5 training centres for the training of inmate and ward handcrew firefighters.

CDF is divided into 22 administrative units (fire) departments with 156 Battalions. CDF operates 577 fire stations (223 State funded stations and 354 locally funded stations).

CDF operates 961 engine companies, 164 rescue squads, 5 aerial trucks, 63 initial attack bulldozers and 230 handcrews. In addition CDF funds 82 engines, and 12 Bulldozers in six ‘contract counties’. In addition to the arsenal of ground attack capabilities CDF operates a fleet of 51 aircraft. 19 Gruman S-2 800 gallon air tankers, two 2000 gallon contract air

24 June 2000
tankers, 13 Cessna 337 air attack aircraft, 10 Bell 204 helicopters one contract helicopter and six other support aircraft.
During 1990 CDF responded to 187,287 incidents annually

Riverside Fire Department.
Riverside Fire Department is the largest Regional Fire Service in California and is part of the California Department of Forestry fire agency contract program.
Riverside County Fire Department operates 87 fire stations in 16 Battalions, providing fire suppression, emergency medical, rescue, and fire prevention services. The Department is divided into two operational areas and six divisions.

Areas visited
- Clark Training Centre (former Strategic Air Command Base)
- Riverside Headquarters, Perris; including Dispatch Centre
- Fire Station visits: Palm Desert, Temecula, Moreno Valley, Home Gardens No7, Perris Stn No 1
- Office of Emergency Services; Emergency Command Centre
- Southern California Coordination Centre
- Oak Glen Conservation Camp (low security prison) Hand Trail construction and Camp operation
- Hazmat unit Beaumont Fire Station
- Air Attack Base Hemet
- March Air Force Reserve Base; Fire Station and Aircraft
- Paramedical unit Temecula Fire Station

KEY OUTCOMES/FINDINGS
1. Unified Command System
2. Multi Agency Command System (MACS)
   MACS is used by the fire and emergency service providers in California. The MAC Group is made up of top management personnel from various agencies or jurisdictions. The aim is to supplement existing Agency, State and Federal directives and guidelines.
The specific purpose is to improve:
   - Resources acquisition or allocation
   - Regional situation status information
   - Incident priority determination
   - Political interfaces
   - State, Federal disaster coordination

There are several aspects of this system that could possibly be utilised by the CFS at a State level. These relate to assisting in determining Incident resource prioritisation. I envisage that this could be used during multiple major incidents to justify actions at Regional and State level. MACS Form 429 and 430 are examples that could assist this process.
3. Emergency Operations Centre
   The Emergency Operations Centre is responsible for the Planning, Preparedness, Mitigation and Recovery efforts in the State of California. The most significant aspect
was that in California a Senate Bill requires for the Management Standardisation throughout the State. This is commonly known as SEMS (Standardised Emergency Management System). The basic components of SEMS were to improve on existing systems. These components are:

- Incident Command system
- Multi-agency coordination
- Master Mutual Aid agreements
- Operational Area Satellite Information System

4. Handline/trial construction

The use of handline construction is an integral part of fire suppression throughout the United States. The California Department of Forestry utilises hand line construction by the use of both fire fighters and inmate teams. A standard handline is referred to as 6 X 4 six foot clearance of aerial fuels and a four foot ground clearance to mineral earth. Due to our existing fire suppression strategies fuel types and fire behaviour, it is difficult to envisage the Australian Fire Agencies in adopting handline construction as part of its primary suppression tactics.

5. Breathing Apparatus procedures

Many Australian Fire Agencies have the practice of 2 in and 2 out for many years. Many American fire departments are progressing towards this practice.

6. Incident Command System Training

The CDF/Riverside Fire Department trains from the bottom up. Training is provided at unit level first prior to Command and General Staff training (major IMT functions) being provided. By comparison CFS and other Australian Fire Services train from the top down and have generally stopped at Main functional section leaders. (General Staff positions). Eg. Planning, Operations & Logistics Officers.

7. Video Production Unit.

Riverside County Fire Department has a full production studio, outside broad casting van and video editing van. This department produces regular training and promotional videos as well as reviewing news footage and compilation into training videos.

**INTERESTING ASPECTS**

- Type One engines (Main Pumpers) have crews varying from 2 –3. CDF pursuing increasing manning levels by one. The crewing levels may be set depending on the revenue from the relevant city or area. The funding being based on similar principles to the South Australian Emergency Services levy although revenue is kept within the city or area of collection and is not pooled and provided against any resourcing standard or agreements.
- CDF is aiming for 30% female firefighters. There were varying degree of separate sleeping and ablution facilities. The standards found in Australia were higher than that found in America. There were a significant number of women who were engineers (drivers and pump operators) The CDF also has a number of women Battalion Chiefs and Captains.
- CDF operates an Air Attack Aircraft known as an OV-10 ex Vietnam plane. This type of air attack /observation aircraft provided excellent visibility, speed, cruise and endurance (6 hour) capabilities.
- Riverside Fire Department receives and dispatches some 280-300 calls per day, with a staffing of 3 for the majority of the 24 hour period. An exception occurs during a period

24 June 2000
from midday through to late afternoon. In this case five operators may be on the floor in the dispatch centre. During major incidents or significant overload, then volunteers are called in to support CRD activities. Although the CRD is computer based the system doesn’t allow for tracking of resources on the computer. This is being upgraded shortly. The current system uses T-cards to track incident allocation and commitment. The CRD Centre is set up in an oval fashion with operators inside the oval back to back. CDF has found that the personnel are better able to operate as a team and assist each other.

♦ American Medical Response (AMR) provides for the transport of patients, in some areas they will also act as Paramedics, although by the majority this is left to the Fire Department, AMR is fined for not meeting response times of 10 minutes to the patient. As a result they are fined for not meeting their contract requirements. The estimated monthly fines vary between $5-10,000 per month per zone. This money is diverted to CDF who purchases additional firefighting equipment.

Hand trail construction, Oak Glen Crew Riverside CDF CA
SAN BERNADINO COUNTY FIRE DEPARTMENT

Liaison Officer/Host: Mr Peter Hills

Fire Chief
San Bernadino County
Fire Department

Purpose of visit: Interagency liaison

Organisational Overview

San Bernadino County Fire Department is a new fire service provider for the San Bernadino County, and replaced the California Department of Forestry in 1998. San Bernadino County Fire Department provides fire protection to 46 communities via 23 staffed and 40 paid call fire stations.

Outcomes/Findings

1. Fire Department is in a similar position to South Australian Country Fire Service in terms of limited funding source. Agency has a diverse economic and terrain range and its resourcing for remote areas is similar to South Australia. One fire station at Baker only has one paid fire fighter (Captain). The area is subject to frequent road crashes with multiple injuries or deaths. Specialist resources have to travel considerable distances to reach accident.

2. Training Centre Procedures: Flashover training props use propane gas not timber. Training props are cooled by spray system around fire area to extend the life of the training prop. San Bernadino County Fire Department not currently pressured to recover water used on props.

3. USAR Training props. Training props constructed to simulate collapsed concrete and building structures. Props have a series of Concrete pipes that provide for confined space rescues. Basic training props are concrete blocks that are required to test ability to raise, move and shore the blocks.

4. Fire Departments. Cities within the San Bernadino County are able to establish their own Fire Depts. Within the Bear Lake area five separate departments exist. This causes complexities in terms of areas of responsibility and Mutual Aid arrangements. These separate Fire Departments and Cities are not interested in any form of amalgamation. Residents are very protective of their own resources.

5. An area within the County has a Special Service area and the Water Department is a Fire Department within their own rights and gain powers through County legislation.

Areas Visited

- Training Centre
- Vehicle Workshop
- Dispatch Centre
- Office of Emergency Services: Operations Complex

24 June 2000
- Air Operations Base
- Fire Station Inspections; Fawnskin, Lakewood Stns 91 & 92
- Zone 3 Mutual Aid Meeting (Big Bear Lake)
- Joint Services Operations Meeting (USFS, CDF, SBCFD)
- US Forestry Service Dispatch Centre
- San Bernadino Sheriffs Dispatch Centre

San Bernadino Dispatch Centre, San Bernadino CA
Sky Crane, San Bernadino March AirBase
BIBLIOGRAPHY


Country Fire Service of South Australia, 1996, *Four Levels of Response*, SACFS, Adelaide

### ACRONYMS

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<th>Acronym</th>
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<tr>
<td>AIIMS</td>
<td>Australian Inter-agency Incident Management System</td>
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<tr>
<td>CFS</td>
<td>Country Fire Service of South Australia</td>
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<tr>
<td>ICS</td>
<td>Incident Control System</td>
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<tr>
<td>NIIMS</td>
<td>National Inter-agency Incident Management System</td>
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