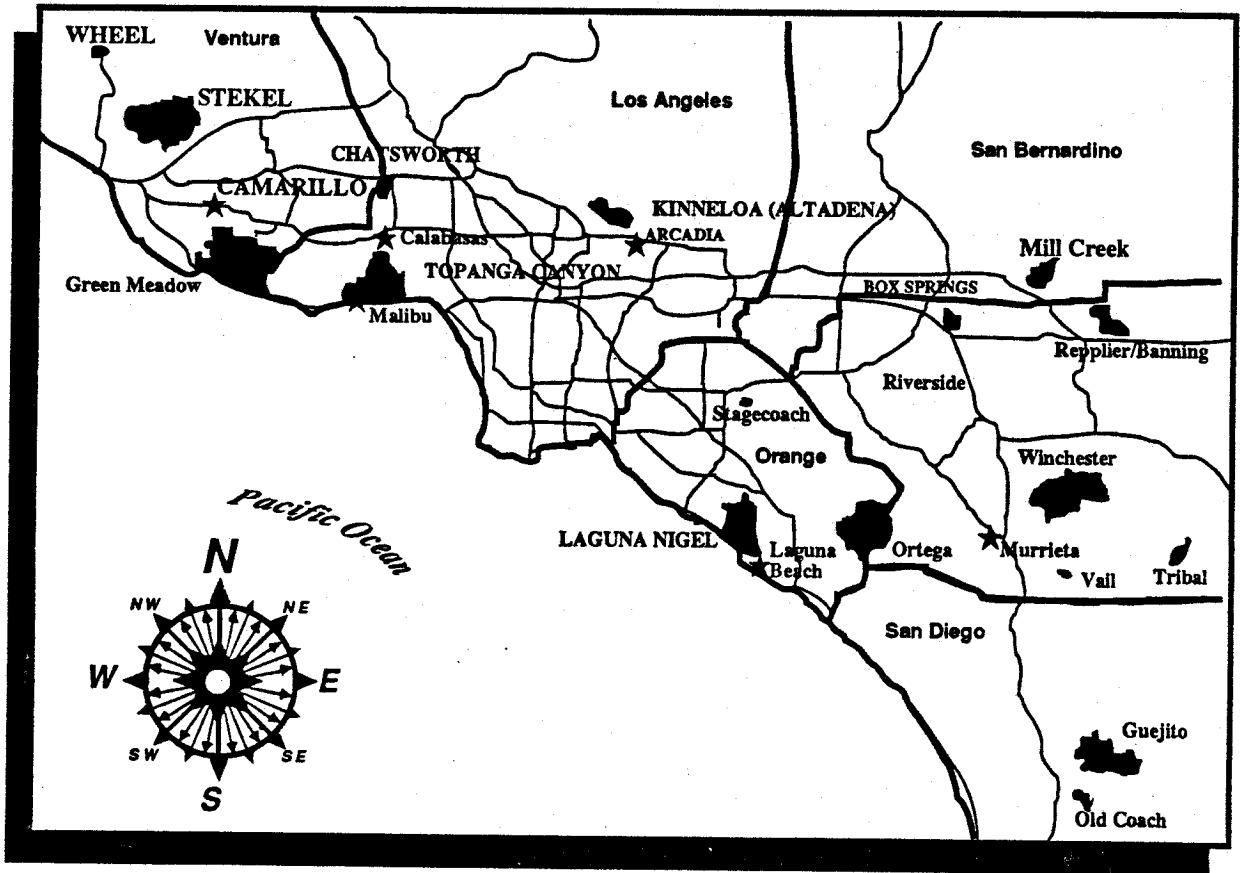




The Southern California Wildfire Siege

October-November 1993



Pete Wilson
Governor

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Fire and Rescue Mutual Aid System Review*

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City of Poway
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Cypress Police Department
Foothill Water District
Irvine Police Department
Kinneloa Water Company
Laguna Beach Fire Department
Laguna Beach Department of Public Works
Laguna Beach Police Department
Laguna Beach Water Company
Los Virgenes Water District
Newport Beach Police Department
Pasadena Fire Department
Pasadena Department of Public Works
Pasadena Police Department
San Gabriel Police Department
San Marino Police Department
Tustin Police Department
Westminister Police Department

PREFACE

Purpose

The Governor's Office of Emergency Services is responsible for producing an "After-Action" report following each declaration of a state of emergency in California.

These reports attempt to identify policies, practices and procedures to improve systems for emergency management in the state. The reports are not intended to provide a narrative or critique of the tactical operations carried out. Evaluations of specific fires are completed by the agencies responsible for managing specific incidents.

This report draws on work by many local, state and federal agencies that were siege, as well as media accounts and other assessments that involved during the 1993 fire were completed at the time of the fires.

This report attempts to assess the effectiveness of the components of local, state, and federal emergency management systems in responding to the events of October/November, 1993; it includes 95 recommendations of actions that would address issues identified in the report.

This after-action report should be read along with the evaluation of the local-state-federal hazard mitigation team, "Hazard Mitigation Survey Team Report For The Southern California Firestorms October 25 - November 10, 1993, FEMA- 1005-DR-CA". The hazard mitigation report identifies actions that can be taken by individual residents, as well as public agencies and insurance companies, to reduce the risk that California faces from future wildland fires.

Report Preparation

This report was developed through the cooperation and contribution of many public and private sector agencies. Their contributions are gratefully acknowledged. The report has been prepared by the Terence Haney Consulting Group under OES Contract 6131-3. Much of the material contained within Section 6 of the report on the Fire and Rescue Mutual Aid System response was provided by the OES Fire and Rescue Branch.

While the conclusions and recommendations hopefully reflect those of all of the contributors, they are expressed as heard and seen by those responsible for preparing the the findings in report. We regret if there are any discrepancies or omissions. We hope this report will contribute to improvements in emergency response for California.

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GOVERNORS OFFICE OF EMERGENCY SERVICES

WILDLAND FIRES AFTER ACTION REPORT

EXECUTIVE SUMMARY

BACKGROUND

Beginning on October 26, 1993, southern California experienced one of the worst wildfire sieges in its history. When the fires finally ended on November 5, 1993, there were four fatalities, over 1,200 structures had been destroyed, nearly 200,000 acres had been swept by 22 different fires -- and the response cost/damage estimate approached \$1 billion.

The events prompted Los Angeles, Orange, Riverside, San Bernardino and San Diego counties to declare local emergencies. Governor Wilson declared a State of Emergency on October 27, 1993, and requested a Presidential Declaration, which was made on October 28, 1993, thereby providing federal assistance and funding.

The California Fire and Rescue Mutual Aid System brought together more resources than had ever been used in its 44-year history, including 15,000 personnel from the fire services and 1,525 fire engines. The current reimbursement costs for mutual aid providers exceed \$12 million.

SCOPE OF THE REPORT

This After-Action Report has been prepared on the 1993 wildfires by the Governor's Office of Emergency Services. The report was prepared over several months through a series of field surveys, interviews and a workshop involving the principal staffs from several of the larger fire incidents. This report also includes documents from several state and local agencies, material from media reports, and input from public hearings.

The report is divided into major sections dealing with: (1) the field response- incident level; (2) local government; (3) regional response; (4) state response; (5) the fire and rescue mutual aid system; (6) communications; and (7) the role of assisting agencies and cooperating agencies.

More than 95 recommendations for improving future responses to major incidents can be found within the report. The recommendations fall into seven broad categories:

1. More Rapid Response - Place more emphasis on developing the capability to provide a more rapid response within the mutual aid system. This includes improved procedures for activating mutual aid resources, providing better in transit tracking and support, providing off-incident Mobilization Centers, and developing a better-overall information base for managing the mutual aid response. Nine areas for improvement to the overall mutual aid system are discussed, including resource tracking processes, communications, use of mobilization centers, reimbursement and demobilization. Providing qualified personnel to facilitate the coordination process is a high priority.
2. Increased Training - Provide increased training in all aspects and levels of Incident Command System (ICS). The opportunities for use of ICS on large incidents are relatively few. Personnel experienced in the use of ICS on major incidents tend to be promoted or retire, leaving a void in personnel with qualifications and experience. Nearly every response to surveys and interviews cited the need for training. The use of ICS advisors on major incidents should be considered.
3. Use of Unified Command - Encourage the use of the Unified Command process within ICS. Unified Command allows all agencies with geographic or functional responsibility to work together within a common Incident Action Plan. The Unified Command component of ICS is a valuable tool. For it to be used effectively, however, there must be full understanding of how it works and to whom it applies. Several responders acknowledged that it should have been used, but was not due to a lack of training and familiarity. Unified Command is not limited to just the fire services. It should be used whenever there is shared jurisdictional responsibility.
4. Improved Communications - The lack of effective communications on incidents, as well as between the incidents and department operating centers, continues to be a major problem. While communications technology has seen great improvements over the years, many of these improvements are not yet within the inventories of the responding agencies. New radio systems, cellular telephones, and satellites all provide greater capabilities -- but also greater challenges and, in some cases, limitations. Many responders cited the need for better use of information processing technology both on and off the incidents. A range of recommendations is offered to improve communications and information systems effectiveness.
5. Aircraft - The use of aircraft in support of operations during these incidents continues to pose special challenges. Recommendations are offered regarding the need to improve procedures for activating military air support, examining, the use of heavy lift helicopters, and working more closely with the media to

avoid possible safety and air space violations. One of the issues regarding aircraft is the widespread misunderstanding of when and how they can most effectively be used during fire suppression.

6. Multi-Agency Coordination - More emphasis needs to be placed on improving the effectiveness of multi-agency coordination. The process and procedures currently in place, while largely effective, need to be examined and in some cases improved. More effective coordination is needed between the Fire and Rescue Mutual Aid System and Emergency Operations Centers at all levels. Training in the use of multi-agency coordination is especially important, as is ensuring that qualified personnel are, available to operate multi-agency coordination systems.
7. Assisting Agencies - Agencies that provide major support to incidents, such as law enforcement, people care agencies, public works, and utilities all expressed the strong need for more cooperation, coordination, direct involvement on incidents, and training opportunities with the fire services. In cases where law enforcement agencies have extensive geographic or functional jurisdiction, they should be made a part of incident Unified Command organizations.

STANDARDIZED EMERGENCY MANAGEMENT SYSTEM (SEMS)

The California Standardized Emergency Management System (SEMS) requires that the principles and primary functions of the Incident- Command System, the Mutual Aid System, and multi-agency or inter-agency coordination be used by all emergency response agencies in multiagency or multi-jurisdictional incidents. Many of the recommendations and lessons learned during the wildland fires of 1993 will be used in the development of the SEMS guidelines and training curriculum. SEMS is undergoing development with a full implementation date of December 1996.

The implementation of SEMS provides the vehicle and the opportunity for major improvements to emergency management within all agencies. SEMS will integrate systems, improve training and make the good systems already in place work even more effectively in the future.

WILDLAND FIRES - AFTER ACTION REPORT

1.0 INTRODUCTION AND BACKGROUND

Beginning on October 26, 1993, southern California experienced one of the worst wildfire sieges in its history. Names such as the Kirinelo, Green Meadow, Topanga and Laguna Canyon fires will be remembered by the emergency management and fire communities, the residents who fled the raging firestorms, and the public who watched the tense drama unfold over state and national media.

The residents of Malibu, Laguna Beach, Emerald Bay, Altadena, and others, experienced not only the fires that destroyed homes and property, but also the complexities of long-term, recovery efforts. When the siege finally ended on November 5, 1993, there were four fatalities, over 1,200 structures had been destroyed, nearly 200,000 acres had been swept by 22 different fires -- and the response cost/damage estimate approached \$1 billion.

The events prompted Los Angeles, Orange, Riverside, San Bernardino and San Diego counties to declare local emergencies. Governor Wilson proclaimed a State of Emergency on October 27, 1993, and requested a Presidential Declaration which was signed on October 28, 1993, thereby providing federal assistance and funding.

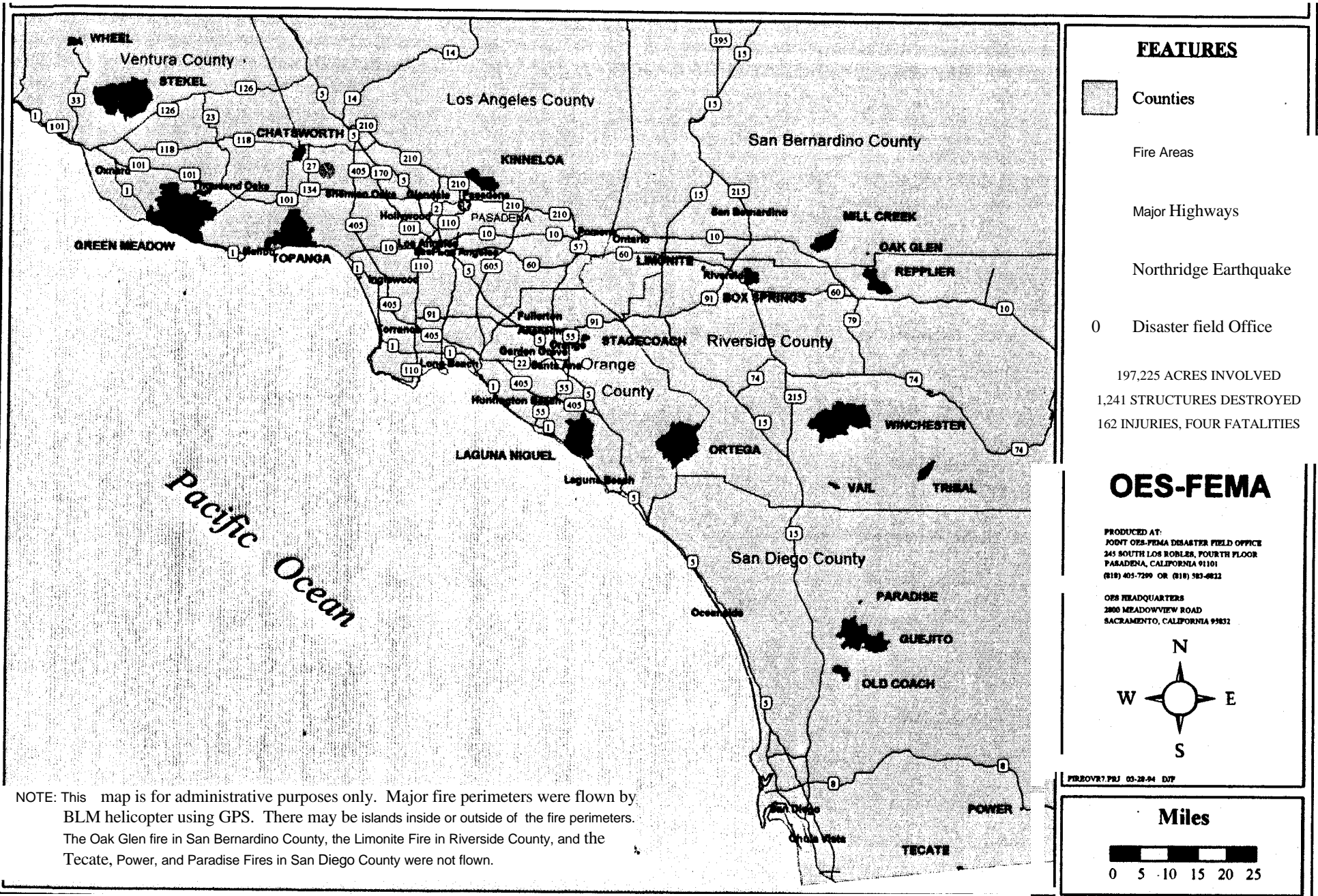
For emergency management and fire services in California, the response was intense and extensive. The Governor's Office of Emergency Services (OES) activated the State Operations Center (SOC) in Sacramento and the Southern California Regional Operations Center (REOC) at Los Alamitos. California Department of Forestry and Fire Protection along with US Forest Service responded with personnel and equipment to meet the requirements of this fire siege. The California Fire and Rescue Mutual Aid system mustered more resources than had ever been used in its 44-year history, including 15,000 personnel from the fire services and 1,525 fire engines. Current reimbursement costs for mutual aid providers exceed \$12 million.

Following this experience, both the fire services and emergency services systems have evaluated what went right during the response, what went wrong, and how to improve the response for the future. This report details those findings and makes recommendations for future operations. Information in this report was developed from several statewide surveys, interviews, and a workshop centered around the following major incidents:






COUNTY	FIRE	AREA	START DATE	CONTAINED
LOS ANGEL19S	Kinneloa	Altadena/Sierra Madre	0349 10/27/93	0600 11/01/93
	Rocky	Chatsworth	0126 10/27/93	1619 10/27/96
	Topanga	Malibu	1041 11/02/93	1800 11/06/93
ORANGE	Laguna	Laguna Beach	1150 10/27	330 10/28/93
	Stagecoach	Villa Park, Santa Ana	2307 10/26/93	2000 10/27/93
RIVERSIDE	Box Springs	South of Riverside	0430 10/27/93	1800 10/28/93
	California	Temecula	2320 10/26/93	0600 10/30/93
	Ortega	Ortega Hwy. from Lake Elsinore	1629 10/27/93	1800 11/02/93
	Replier	Banning	0940 11/02/93	1600 11/04/93
	Tribal	Anza	0329 10/27/93	1000 10/28/93
	Vail	Near Aquatibia Wilderness Area	1537 10/27/93	2400 10/28/93
SAN BERNARDINO	Mill Creek	Yucaipa	0640 10/27/93	2319 10/28/93
SAN DIEGO	Guejito	Escondido	0200 10/26/93	1800 11/01/93
	Old Coach	Poway	1306 11/02/93	1600 11/03/93
	Paradise	Paradise Mountain	1337 10/27/93	1000 10/29/93
	Power	Boulder Oaks	1047 10/26/93	1800 10/26/93
	Tecate	West end of Tecate Road	1342 10/26/93	10/28/93
VENTURA	Green Meadow	Thousand Oaks/Newberry Park	1335 10/26/93	1800 11/04/93
	Steckel Park	Santa Paula	0206 10/27/93	1600 11/03/93
	Wheel	Matilija Area of Los Padres NF	1030 10/27/93	1800 10/30/93

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MAJOR FIRE PERIMETERS FLOWN BV BLM HELICOPTER USING GPS
SOUTHERN CALIFORNIA FIRESTORMS DISASTER DR-1005



FEATURES

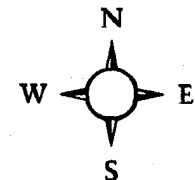
-  Counties
-  Fire Areas
-  Major Highways
-  Northridge Earthquake
-  Disaster field Office

197,225 ACRES INVOLVED
1,241 STRUCTURES DESTROYED
162 INJURIES, FOUR FATALITIES

OES-FEMA

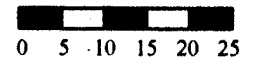
PRODUCED AT:
JOINT OES-FEMA DISASTER FIELD OFFICE
245 SOUTH LOS ROBLES, FOURTH FLOOR
PASADENA, CALIFORNIA 91101
(818) 405-7299 OR (818) 583-6822

OES HEADQUARTERS
2800 MEADOWVIEW ROAD
SACRAMENTO, CALIFORNIA 95832



PIRE0V7.PSJ 03-28-94 DJP

Miles



NOTE: This map is for administrative purposes only. Major fire perimeters were flown by BLM helicopter using GPS. There may be islands inside or outside of the fire perimeters. The Oak Glen fire in San Bernardino County, the Limonite Fire in Riverside County, and the Tecate, Power, and Paradise Fires in San Diego County were not flown.

2.0 FIELD RESPONSE - INCIDENT LEVEL

Field Response recommendations were drawn from four primary sources:

1. A questionnaire survey was sent to the counties, state and federal agencies involved in the incidents. Each was asked to further distribute the survey. Over 40 survey questionnaires were returned.
2. A workshop was held for Incident Commanders, General and Command staff personnel from the major fires. Approximately 45 personnel attended. The workshop was divided functionally into small group sessions covering Incident Command and Command staff, Operations, Planning, Logistics, and Finance and Administration.
3. Follow-up interviews were conducted with select individuals on particular subjects.
4. After-action reports provided by agencies.

2.1 SURVEY RECOMMENDATIONS

All of the incidents used the Incident Command System (ICS) as the on-scene management system. All of the responders to the field survey believed that their agency made effective use of the Incident Command System on the incidents. Concerns and recommended areas for improvements varied by agency and incident. Primarily, these were:

1. Limited numbers of trained personnel - Particular functions most often cited were: General Staff Deputies, Division Supervisors, Information Officers, and Communication Unit Leaders. There was a general pattern throughout the surveys strongly recommending additional training. Many of those who had extensive training and used ICS in the 1980s on large incidents had moved into administrative positions or retired.

The shortage of qualified personnel was not limited to incident level operations. Diminished budgets have had an adverse affect on personnel staffing throughout the mutual aid system.

2. Communications - Communications limitations at the incident level were in two primary areas: interconnecting the many agencies which had mutual aid resources assigned to an incident; and, connecting the incident to off-incident locations.

Although there have been communications improvements in many of the agencies, the lack of effective communications continues to be a major factor affecting both effectiveness and safety on major multi-agency incidents.

There was widespread use of cellular phones on incidents. Some responders believed they were a real asset; others believed they should not be relied upon because of lack of control, overloading, etc. Most agreed that the use of cellular should be included and governed by the Incident Communications Plan. Most agreed they would continue to be used, and the use would probably expand as the technology improves.

3. Unified Command - Unified Command is a procedure in ICS which allows agencies with geographic or functional responsibilities at incidents to collectively work together through a common Incident Action Plan. Responses indicated that agencies must make a better, more rapid effort to utilize Unified Command. Much of this can be accomplished in agreements, training and planning prior to incidents. More emphasis needs to be placed on Unified Command in training programs.

In incidents with extensive involvement of law enforcement agencies, those agencies with jurisdictional responsibility for evacuations need to be brought into the Unified Command structure early in the incident.

4. Improved Technologies - The need was strongest for resource tracking and mapping, and assisting the plans development process. A consistent problem on incidents was the inability to maintain timely resource status. Several incidents employed the INCINET system, generally with enough good results to warrant the continued development and expansion of this capability. (Still under development, INCINET provides for a local area network of computers to be established at an incident. It provides support services for resource status keeping, planning and other functions.) The use of INCINET to assist in the development of Incident Actions Plans was mentioned as a real asset. Recommendations were also offered for bar-coding and scanners for both personnel and equipment check-in.

5. Role of the Media

Opinion was somewhat mixed regarding the role of radio and TV media on incident coverage. Again, this varied by incident. In some cases, the media's ability to provide an airborne picture was of direct assistance to on-the-ground decision-makers. Several responders believed that airborne media should be used to provide information on the direction and probable firespread for areas ahead of the fires.

Another, more negative view, of the airborne media resulted from numerous violations of restricted airspace on some incidents. This caused some concern to Air Operations personnel because of interference and safety issues.

2.2 FIELD RESPONSE INTERVIEWS

The following summary includes individual interviews of personnel who participated in the southern California wildland fires. Ten personnel were interviewed by phone; eight were interviewed collectively at the March 16 Pasadena Wildfire Workshop. The interview process was also extensively used in the fire mutual aid system assessment and in gathering data on the assisting agencies involved in the fires.

All interviews were initially guided by the "Field Response Survey" (Haney Company, 1/12/94), although respondents were encouraged to comment on any aspect of the fires they believed needed recognition. Most respondents raised additional issues. What follows is a condensed summary of the interviews.

1 . Incident Command System

The positive response from those interviewed regarding the use of the Incident Command System was unanimous. Problems cited came not from the system, but from lack of sufficient training, improper application of the system, or from logistical support problems.

Example: Some out-of-state crews arrived on incidents without tools. Receiving personnel at incidents were not always prepared to equip incoming personnel, resulting in lost time because of logistical considerations. Off-incident Mobilization Centers were established to correct these kinds of problems. (Mobilization Centers are off-incident locations where emergency service personnel and equipment are temporarily located pending assignment, release or reassignment.)

Example: Some incidents required bulldozer or water tender managers. Technical Specialists should be assigned to these tasks as necessary.

Example: Smaller agencies lack sufficient ICS-qualified personnel to staff a full organization, even when mutual aid resources are available. Use of unqualified people makes the system work less effectively at the most critical times.

Incident Command System Recommendations

Procedures for rapid activation of off-incident Mobilization Centers need to be developed and implemented within the Mutual Aid System. Locations/layouts for these facilities should be pre-determined with procedures in place for their rapid activation.

OES (working through the FIREScope Board of Directors) should re-establish the concept of using ICS Advisor Teams. In the early period of ICS

.implementation, advisor teams were assigned to larger incidents to provide guidance on the use of ICS to those assigned in key roles.

- A computer program listing "closest available qualified personnel" should be developed for each OES Fire and Rescue Area and Region. This information should be available to all local agencies.

2. Unified Command

Concepts and practices associated with the use of Unified Command are still not being applied appropriately. Some of this stems from lack of training and awareness, some from provincialism. National teams brought in through the National Interagency Fire Center (NIFC) often do not have* experience in working with California local agencies. At the same time, most local agencies, particularly the smaller ones, are unfamiliar with the Unified Command process.

Unified Command Recommendations

- The FIREScope Board of Directors needs to reaffirm the concept and practice of Unified Command with all partner agencies.
- OES needs to implement training for local officials in their rights and obligations concerning Unified Command.
- The California Department of Forestry (CDF), needs to ensure that across the state other agencies (including law enforcement) that have functional or geographic jurisdiction on incidents are involved in Unified Command.
- Larger departments which use Unified Command should, through their training programs, provide training in this important practice to other departments whenever possible.
- The National Wildfire Coordination Group (NWCG) needs to make the same reaffirmation in the training and assignment of all "Class I Incident Management Teams." Special emphasis should be placed on including local agencies with geographic or functional responsibility in Unified Command
- OES should include a detailed analysis of Unified Command activation and application as a significant part of all future SEMS After-Action Reports which relate to fire management.

3. Air Operations

None of the respondents had any information on aircraft accidents or safety violations directly related to incident operations. Three problems emerged.

Media aircraft interference

Despite Federal Aviation Administration (FAA) regulations on "restricted airspace" (Temporary Flight Restrictions), some media craft did interrupt, and perhaps endanger or disrupt operations. Respondents state that current FAA procedures for disciplinary action against violators are slow, cumbersome, and inadequate to handle the number of violations that occur on major incidents.

Respondents also state that aircraft owned by major local media outlets are only part of the problem. It is the contracted "add-on" or "wildcat" aircraft consigned by media/photographers/others to cover the event that commit most of the safety violations. By the time current FAA procedures can be completed, these violators are long gone.

Activation of National Guard Modular Airborne Fire Fighting System (MAFFS) Aircraft

The process of activating MAFFS aircraft involves federal legislative mandates, state contractual agreements with commercial air tanker companies and interagency coordination. Issues related to MAFFS activation have been debated within the fire services for a number of years.

All involved agencies are aware of the policies and procedures that govern MAFFS activations. MAFFS are a valuable asset and the National Guard, both in California and in other parts of the nation, responds effectively each time they are dispatched. Standard operating guidelines for MAFFS set forth a twenty-four hour benchmark for the time required between the initial request for MAFFS and their eventual mission assignment.

State and federal agencies prepared two reports relating to the use of MAUS aircraft during the 1993 southern California wildfire siege. (See Appendices D and E). These documents provide a chronology of events that took place regarding the activation of MAFFS.

. Shortly before 7:00 a.m. on Wednesday, October 27 additional helicopters and air tankers were requested for use on the Green Meadow fire in Ventura County. Two of these requests were eventually filled with California C-130 MAFFS units located at Pt. Magu Naval Air Station. According to available logs, the time between the initial request for additional air resources and the use of MAFFS on the Green Meadow fire was approximately twenty-six hours. During the day of October 27 first the Kinneloa fire Los Angeles County and then the Laguna Hills fire in Orange County saw several hundred homes destroyed in rapidly moving fires.

It is not clear that earlier activation of the MAFFS units would have reduced the level of property loss, especially on the Kinneloa or Laguna Hills fires. Aircraft were available on all incidents on October 27; however, the erratic and fast-moving fires on that date, combined with the distances between each of the incidents, restricted the ability to reassign resources immediately. It is the strong consensus of all knowledgeable observers that had MAFFS units been operational on the afternoon of October 27 they would have been exclusively used on the fires in Ventura County.

The logs for October 27 indicate state agencies anticipated the need for MAFFS aircraft promptly. During the day on October 27 there were problems with aircraft readiness as well as with the necessary pump and retardant equipment required to make the conversion from a C-130 standard configuration to MAFFS operations. By the time the units were operational, lack of available daylight hours precluded their flying on October 27. The first MAFFS missions were flown in the morning hours of Thursday, October 28 on the continuing fires in Ventura County.

There is widespread press and public misunderstanding of the value of aircraft in fighting urban-wildland interface fires. Fixed-wing aircraft are valuable during the initial attack on fires and during sustained operations on wildland fires. Indeed, because MAFFS are most frequently used at times when wildland fires are burning vast acreage, the twenty-four hour period required to make the units operational rarely has a negative impact on the fire operations. The effectiveness of all fixed-wing aircraft once fires burn into residential areas is greatly compromised, particularly when high winds are present.

Various efforts are underway to accelerate the time frame for using MAFFS resources, especially the two units assigned to the California National Guard. The USFS, CDF, OES, and the California National Guard have developed new guidelines that allow for more effective anticipation of conditions that might lead to a rapid need for MAFFS units, as well as operational protocols to shorten the time required to make the C-130s mission ready.

"Type I" Heavy Lift helicopters may have been underutilized

Two respondents during the workshop reported at least three heavy lift helicopters sitting idle on one fire when they knew another fire could have used them. The respondents believed that the major reasons were (1) lack of awareness of the capabilities of heavy lift helicopters, and (2) inadequate application of "scarce resources" management.

Air Operations Recommendations

- o OES, in conjunction with the CDF and the USFS, needs to develop a "Media Air Operations" program to be made available to all media outlets. The program should inform the media of the critical nature and safety implications of airspace violations. Agencies should consider the assignment of additional "teams"

(Information and Operations Officers) to deal directly with media outlets when violations begin to occur.

- The Directors of OES and the Resources Agency, along with the Regional Forester, USFS Region-5, should prepare a request to the Federal Aviation Administration to simplify processing of airspace violations. The revised regulations should allow for the immediate grounding and license suspension of all violators reported by designated incident management personnel: Suspensions' should last through the current emergency with appeal procedures to follow.
- OES, CDF, USFS, CNG, and the National Wildfire Coordination Group (NWCG) need to form a "Standing Committee" to determine ways and means to activate MAFFS in the most efficient manner. The Committee should review all past activities, determine where policies and procedures are inadequate and recommend specific corrective actions.
- Federal and State National Guard should recognize the need for "compartmentalized" MAUS capabilities. The capability to drop 500 gallon increments of retardant from the C- 130 aircraft has been recommended since 1974.
- USFS, CDF, OES, and local agencies need to recognize that airdrop capabilities are slowly shifting away from fixed wing delivery. Heavy lift helicopters need to be recognized as replacements, and detailed management procedures need to be developed. This includes their designation as "scarce resources" and special tracking during major emergencies.

4. Multi- and inter-agency Coordination

Multi-agency coordination (MACS) is a process which has been used for years in the fire services to provide interagency coordination during periods of extensive wildland fire activity. MACS provides for information sharing, incident prioritization and critical resource allocation between agencies. Multi- or inter-agency coordination is a required component under the California Standardized Emergency Management System (SEMS).

There were several versions of coordinating systems operating during this series of events. While all worked, none of them can be said to be true "models" of effectiveness. Several examples are noted:

Example: The FIRESCOPE MACS operated through the use of conference calling as opposed to having face-to-face meetings of interagency decision makers which was part of the original MACS design. The advantage of using the conference calling is that

agency chiefs are not required to take the time to physically meet. However, a principal advantage of the face-to-face meeting requirement was to ensure that agency decision makers were all equally aware of the regional situation and were in fact, looking at the same picture. In addition, operating MACS during increased mutual aid response has become increasingly difficult due to the shortage of trained and qualified personnel.

In recent years, conference calling has been extensively used, and will likely continue.

However, it is essential that all participants have equal awareness of the overall regional situation, otherwise it will be difficult to accomplish the MACS goal of prioritization and critical resource allocation.

Example: As a result of the impact of these fires on local jurisdictions, many city and county emergency operating centers were activated. Because the Fire and Rescue Mutual Aid System does not, for the most part, operate from within city or county emergency operating centers, there is always a potential problem of information sharing on situation and resource status between Fire and Rescue area, regional coordinators and local government EOCs.

Multi-agency Coordination Recommendations

California has adopted legislation which requires the establishment of a statewide Standardized Emergency Management System (SEMS). That system will provide a structure which should significantly increase the effectiveness of agencies to work together in a more coordinated manner at all governmental levels. SEMS is to be fully implemented by December of 1996. Until that time, the recommendations below should be considered.

- The FIRESCOPE Board of Directors should address the issues related to agency decision making under the Multi-Agency Coordination System (MACS) during those times when there are multiple fires occurring. The Operations Coordination Center (OCC) a joint OES, CDF, USFS facility, provides a place for resources coordination and joint decision making for the response. If agency heads determine they cannot meet face-to-face, then they should commit to having a qualified agency representative for the primary agencies at the OCC at all times under Mode 4 (full regional effort) conditions.
- OES, CDF, USFS, and perhaps others need to develop "Standard Operating Procedures" for all coordination activities. These "SOPs" should recognize (1) SEMS requirements; (2) federal-state-local unique constraints; and (3) some form of annual exercises that require heavy workload interactions from all levels. (Exercises should not be "table-top"; they should require the long-distance contacts that exist in real emergencies.)

The FIRESCOPE Program needs to examine ways and means to improve the ability of the fire and rescue mutual aid system and the FIRESCOPE MACS to coordinate with local city and county EOCs. These steps include meeting essential personnel requirements for operations and maintenance of the MACS, and to ensure that the system functions with state-of-the art technology.

2.3 Field Response Workshop

A workshop was held on March 16 for Incident Commanders, General and Command staff personnel from many of the major incidents. Approximately forty-five personnel attended. The workshop was divided functionally into small group sessions covering Incident Command and Command staff, Operations, Planning, Logistics and Finance and Administration.

Each of the five functional groups was asked to develop a list of primary recommendations they believed were important to be noted from the wildfire analysis. Because of the length of these lists and the fact that they repeat many of the above recommendations, they have been placed in an appendix to this report (Appendix A). It is interesting to note that although they met separately, there are a large number of common recommendations from within the groups.

3.0 LOCAL GOVERNMENT LEVEL

Scope of Response

Local governments were surveyed through two questionnaires distributed by OES. One questionnaire was directed to local government EOC levels; the other to agency dispatch centers.

Survey responses were received from Ventura County, Los Angeles City and six CDF facilities. All responses indicated the ability to perform all functions adequately. The only variations observed were in the use of maps and resource tracking systems.

In both the surveys and the workshops, it was noted that there was extensive interaction during the fires with a variety of other fire and non-fire agencies. It was pointed out in the workshops that non-fire agencies generally do not understand ICS, Unified Command or the FIRESCOPE MACS process.

Recommendations

- There is a clear need to establish more effective communication, coordination and training between the fire services and other disciplines.
- Local EOC staff need a better understanding of how the Fire and Rescue Service mutual aid system functions. They need to know what the fire services resources

inventory contains, and how resources coordination takes place between fire service ordering points and local governments.

- The concept of how MACS functions in the fire services is not clear to other agencies. One of the points that needs clarification is the extent to which the fire

services representative to a MACS organization represents (and speaks for) the whole jurisdiction or just the fire agency.

4.0 REGIONAL LEVEL

Scope of Response

The OES Southern Regional Branch EOC (REOC) was activated on October 27 at the Los Alamitos Armed Forces Reserve Center. A multi-shift, multi-day staffing pattern was prepared together with general assignments. Select OES personnel at Los Alamitos and Pasadena offices were reassigned to emergency duties in the REOC and to select local government EOCs as OES field liaison personnel. The REOC was deactivated on November 3, 1994.

No major problems were encountered in REOC operations during the activation period. Interactions with OES liaison personnel, local government EOCs, the State Operations Center (SOC) and the FIRESCOPE Operations Coordination Center (OCC) were normal and went smoothly.

The only statewide mutual aid activation was in the Fire and Rescue Mutual Aid System. The best overall source of information available to the REOC was through the FIRESCOPE Operations Coordination Center. Information was received through the computer system link and by direct contact.

Recommendations

- o When either the fire or law mutual systems are activated, and the REOC is also activated, it is essential that a representative from those systems be assigned to the REOC.
- o Acceptable and valid sources of information to be used in REOC situation reports need to be identified and/or clarified.
- o Regional management should continue as necessary to maintain and upgrade staffing and organization plans and procedures to provide continuous 24-hour coverage at the REOC.

5.0 STATE LEVEL

Scope of Response

The State Operations Center (SOC) was activated and was largely concerned with ensuring coordination between fire and non-fire resource requests. The duties of staff included:

- o Developing and making audio situation reports
- o Developing information content for Governor's office briefings
- o Producing and distributing Situation Reports
- o Coordinating resources not within the fire and law enforcement mutual aid systems.

The SOC was already configured for operations. SOC procedures were followed, and coordination and communication was immediately established between the SOC and the Fire Branch, the Southern region EOC, California Department of Forestry (CDF), California National Guard (CNG), California Conservation Corps (CCC) and the Governor's staff.

In addition, overall coordination was accomplished through daily conference calls. The conference calls were very effective and essentially provided all of the required interface.

Recommendations

- o Information flow could be greatly improved by accurate and formatted reporting from the local level, to the REOC, and to the SOC via electronic data processing.
- o It is essential that policies and processes for use of conference calling continue to be developed.
- o The initial staffing process for the SOC was not as responsive as it could have been. This situation can be remedied by establishing designated response teams and providing position specific training and cross training.
- o OES staff need position specific, in-depth training. A "mentoring" program in which staff would work alongside more experienced personnel would increase SOC staff capabilities during major disasters.

- Local fire response managers providing estimates to OES need to remember that these major incident estimates serve purposes beyond the immediate fire response, (e.g., legislative and Governor's staff briefings) and therefore must be as accurate as possible.

6.0 FIRE AND RESCUE MUTUAL AID SYSTEM

(See separate attached report on the OES Fire and Rescue Mutual Aid System)

Scope of Response

The State Fire and Rescue Mutual Aid System involved the largest number of resources ever used in its 44-year history. The response included 15,000 personnel from the fire services and 1,525 fire engines. Current cost estimates for reimbursement to pay mutual aid providers exceeds \$12 million.

The increasing demands placed on the fire and rescue mutual aid system require a range of system improvements to ensure that the system remains capable of handling an ever-increasing load. Although fire was the primary focus of this report, the users and providers of the mutual aid system recognized that earthquakes, riots, and other all-risk incidents demand equal time and consideration.

Through a process of interviews and surveys connected with the mutual aid response, nine principal areas were identified for development of recommendations. A condensed summary of the issues and recommendations is provided below.

Alerting of Mutual Aid Resources

Issue: There were no significant problems identified in the alerting phase. Good practices dealing with request and notification procedures, improved information flow and placing trained chief officers in communication centers or EOCs all worked effectively to help facilitate the alerting process.

Recommendation: Fire and rescue personnel should continue to use established alerting procedures.

Mobilization of Resources

Issue: Inaccurate estimated times of arrival (ETAs) created problems in resource management at the scenes of incidents.

Recommendation: Responders must make a special effort to provide better estimated arrival times, based upon factors including call downs, mobilization, transportation, equipment performance, and the condition of travel routes.

Issue: Out-of-state resources may have better response times than those in-state.

Recommendation: State OES should study the viability of interstate agreements for the use of out-of-state resources. This is especially true in areas where they will provide better response times than California resources.

Issue: Pre-designated check-in points along travel routes has been suggested as a method for improving response times during large-scale regional sieges.

Recommendation: The feasibility of developing a system which could be activated under heavy demand conditions needs to be assessed. Components may include pre-designated check-in points along major transportation routes, staffing these locations with mechanics, fuel tenders, communications operators, etc., and providing a state directory showing the location for check-in points.

Issue: Response times are shortened by pre-identifying strike teams' task forces and staging areas.

Recommendation: Mutual aid providers should identify and organize strike teams and task forces prior to emergency call-outs. Some "trigger" such as mode changes may activate this process. (The fire services use a four-tiered mode system to describe response conditions.)

Communications

Issue: Four primary communications problems were identified:

- 1 . The OES "White One" frequency is being used as a travel frequency which interferes with its use in the field.

Recommendation: The state should disseminate a training package on the use of common frequencies, with mutual aid responders as the target audience. Also, obtain the necessary authorizations to provide the California Coordination (CALCORD) Travel Frequency.

2. Communication systems hardware for mutual aid responders should be varied.

Recommendation: Mutual aid providers should supply their personnel with more than one type of communications equipment, e.g., radios and cellular telephones.

3. Radio communications proved ineffective during several canyon area operations.

Recommendation: Several suggestions were made regarding the use of satellite technology. It is recommended that the FIREScope communications working group

evaluate the possible, application of satellite technology and advise on how best to proceed.

4. The increasing use of the 800 megahertz band is being targeted as one cause of the breakdown of mutual aid communications. Coverages and lack of cross band connectivity create interagency communications problems.

Recommendation: The radio communications problem (systems hardware, frequency availability, interface connections and coverages) should be analyzed by the FIREScope communications working group to develop solutions utilizing the equipment and frequencies that are available to all.

Mobilization Centers

Issue: Some fire service representatives have made specific recommendations regarding the use and management of Mobilization Centers.

Recommendation: While widely supported, the issues of management and funding of Mobilization Centers are complex and costly, and should be examined by the FIREScope Board.

Use of Mutual Aid Resources

Issue: Comments made by fire service personnel indicate that mutual aid resources may not have been utilized efficiently following assignment to incidents. Not all mutual aid providers were sure of their status or pending assignments on incidents. Some believed they were lost in the system and either underutilized or not utilized at all. Some of the issues are related to communications, some to effective status keeping.

Recommendation: Several suggestions were offered, focusing primarily on training of both providers and users to ensure that resources are used effectively, and that all mutual aid resources in mobilization centers and staging areas should be kept informed regarding their potential utilization. The development and distribution of quality Incident Action Plans will also help providers prepare for their assignments, and give them the security of knowing when and where they, will be used.

Mutual Aid Tracking

Issue: General comments indicate that providers and users of mutual aid resources are not satisfied with the current methods of tracking resources from the activation at agency level to assignment at incidents. A part of this issue relates to the antiquated methods involved in current tracking systems. Another aspect relates to the providing of adequate

staff at coordination centers to ensure oversight of the mutual aid process. These two aspects are heavily interrelated.

Recommendation: Additional analysis should be done to clearly describe the specific problems associated with the tracking process of mutual aid resources. From this analysis, the areas and requirements for improvements must be identified to develop the specifications necessary to design automated systems, and to determine the extent to which lack of personnel contribute to diminished system operation.

Basic requirements are that the mutual aid tracking system must be standard throughout the state, accurate, have the ability to expand with increases in incidents, and capable of being updated over time. Identifying specific problems and those parts of the current system that failed are necessary prior to any new system design.

Mutual Aid Reimbursement

Issue: Delays in reimbursements and the costs of long-term mutual aid commitments create substantial financial burdens for mutual aid providers. Also, the current agreement between federal and state agencies, in the opinion of mutual aid participants, fails to address incidents other than wildfires, and fails to provide equitable reimbursements, including repairs to or replacement of damaged equipment.

Recommendation: These issues call for the FIRESCOPE Board and State OES to take the lead in addressing reimbursement problems and current accounting and tracking practices to meet the needs of a growing mutual aid system.

Training

Issue: Users and providers have identified the need for more training in a variety of areas in order to better support the mutual aid system.

Recommendation: All agree that training should be a top priority for all agencies, and must be broad enough to cover all risks. Local agencies should provide ICS training and develop agreed upon certifications for all staff officers. Local agencies are requesting more opportunities for state and federal training. One recommendation is for the U.S. Fire

Administration to consider a West Coast training facility to augment existing state training programs.

Demobilization

Issue: The demobilization process on large incidents tended to be slow and cumbersome, causing delays in returning needed resources to their jurisdictions and significant morale problems among the field responders.

Recommendation: ICS places considerable emphasis on incident demobilization. Nearly all of the suggested recommendations to improve the demobilization process are contained within current ICS policies and procedures; therefore, this matter appears to be related more to training than to problems in the system.

7.0 TELECOMMUNICATIONS AND INFORMATION PROCESSING

7.1 Telecommunications

When established procedures were followed, the in-place systems and methods appeared to work well. Many of the communications problems on incidents were a result of not implementing existing procedures to move into a disaster mode rapidly enough. This was not so much of a problem in fires which principally involved wildland areas, but it was an issue in a number of the urban/wildland interface fires.

Some Incidents did not activate a Communications Unit within their organization in a timely manner, which led to the majority of the incident communications difficulties. In some cases, a Communications Unit was activated without a Communications Unit Leader, resulting in poor performance by untrained and inexperienced personnel.

In all of the incidents reviewed, when a Communications Unit was activated in a timely fashion with a trained and qualified Communications Unit Leader in charge, that incident operated with generally effective communications.

Recommendation

Early activation of Communications Units on incidents should be stressed in all ICS training courses. Communications Unit Leader training should also be stressed.

Frequency Management

Minor frequency management problems occurred on several fires, but were readily dealt with on those fires utilizing National Interagency Fire Center (NIFC) equipment. Not so readily

dealt with were the problems which arose on those incidents where personnel did not make wide use of the NIFC radio cache packages.

Strike teams from all over the state arrived and attempted to carry out tactical communications on their home frequencies -- which in some cases were also the frequencies assigned to other agencies in Southern California, thus creating harmful interference with the local agencies. This problem was compounded by an inclination of units to utilize the tone-coded squelch decoders in their radios so as to not have to listen to the "unwanted" local traffic.

Thus, transmissions were frequently made without monitoring the channel for other users prior to transmission, causing substantial interference to the local, authorized users.

Recommendations

Additional training is required. Line firefighters need to be educated in the proper use of their radios in a mutual aid situation, including the appropriate uses of fireground and intersystem channels, as well as interservice channels such as CALCORD. This training should be a part of initial basic training, and the subject of frequent inservice review. More sophisticated communications training should be made part of the requirements for Chief Officer's certification.

Additional radio frequencies on a statewide or national basis for tactical operations would also prove useful in resolving this problem. Unfortunately, this is unlikely to occur in the already crowded California radio environment.

Use of Federal Communications Resources

Available federal communications resources were not fully utilized. Once utilized, however, federal resources worked well, and were rapidly dispatched when requested. On the Old Topanga Fire, for example, a large communications resource order was on-site only six hours after it had been requested from its Boise, Idaho base. This equipment was invaluable, and its importance to the effectiveness of the response to each of the individual fires cannot be overstated.

Use of State Communications Resources

Available OES Telecommunications Branch resources were not fully utilized during the firestorms. None of the OASIS trailers, which can provide as many as 40 telephone circuits into a fixed location, such as a command post, were requested. Neither were the "RF" vehicles utilized. These trucks carry a wide selection of radio communications equipment, which could have been utilized to provide a bridge between large agencies' systems and the various federal resources which were in use, among many other possible missions.

It appears the primary reason that state (and federal) resources were not requested was due to a lack of awareness on the part of agencies of these assets. Again, in some cases by not having a designated Communication Unit Leader, there was no one on the incident who was aware of these resources -- thus, they were never requested.

Recommendations

The significant communications resources and capabilities within the OES inventory should be put to greater use, especially in situations like the firestorms. This will require a greater effort in making local and state agencies aware of these capabilities, and how to obtain them.

Significant federal resources can also be made available within a relatively short time frame. These include the radio and INCINET caches under the control of the National Interagency Fire Center. Again, greater awareness of these resources is necessary.

Law Enforcement Liaison Communications

Law enforcement liaison communications were a point of concern. Because most law enforcement agencies usually set up command posts at locations physically separate from the fire command posts, telecommunications between police and fire were of special sensitivity and importance. Unfortunately, none of the incidents reported fully effective liaison communications with law enforcement.

Few agencies, either police or fire, are fully aware of the California Coordination (CALCORD) frequency and its intended application. Even fewer are equipped to use it. Most law enforcement agencies in southern California operate in the 450 MHz and 800 MHz bands, while fire agencies focus on 150 MHz and 800 MHz.

Few law enforcement agencies in southern California have radios installed in their vehicles which are even capable of operation on the 150 MHz CALCORD channel. A notable exception is the California Highway Patrol, which has CALCORD equipped in each of the handheld radios carried by almost every State Traffic Officer. Their vehicle radios, however, cannot operate on CALCORD.

Despite the lack of effective telecommunications methods for maintaining liaison with law enforcement, most of the liaison problems could have been eliminated by a continuous law enforcement presence in the fire command post, or, preferably, a joint police/fire command post operating under ICS Unified Command.

Recommendations

Develop methods to make agencies aware of the CALCORD capability and ensure the widest possible utilization of this frequency.

Through procedures and interagency agreement, provide for agency representatives from law enforcement to be assigned to all major incidents.

Cellular Telephone Service

Cellular telephones were of great importance on these incidents. In many cases the only command communications available to strike teams, both in-bound and once assigned, was by cellular telephone. Cellular telephones could readily be brought onsite by responding units. While the responding equipment may not have had any mutual aid communications systems installed, or were equipped with a limited capability (such as Fire White 1 only), many did have a cellular mobile or portable telephone.

The cellular industry itself was quite helpful. On very short notice it provided hundreds of telephones for use by fire responders. Cell enhancers and other tools to improve spot coverage were also readily provided and installed.

Recommendations

Methods and procedures should be developed for the implementation of cellular system augmentation equipment. For example, many cellular operators own so-called "cell sites on wheels" (termed COWs) which consist of a trailer with an equipment shelter, a tower and a generator. It can be quickly installed to provide service in an area where a permanent cell has been damaged or destroyed. Other equipment exists which permits "donor cells" to provide enhanced coverage in an area where only limited or no service was available prior to its installation.

The Telecommunications Branch of OES should work with the state's cellular system operators on an ongoing basis to obtain a detailed understanding of the specific capabilities and shortcomings of cellular service throughout California.

We suggest this take place at the State level because many cellular system operators consider system performance data to be highly proprietary, and would prefer to release it to the minimum necessary number of people and agencies. Having OES as the focal point for this assistance and expertise also provides local agencies with a convenient, identified point of contact for assistance, if required.

Cellular telephone use throughout these incidents was quite heavy. Based upon our review of this incident, as well as prior and subsequent incidents, we have identified a

trend toward the increasing use of cellular telephones as key incident communications tools. We believe this trend will continue.

Recommendations

Cellular telephones have become at least as important as landline telephones in emergency management operations. It is essential that OES' knowledge base regarding

cellular telecommunications become as strong as its expertise in wireline communications.

It is also essential that the use of cellular technology on incidents be integrated into Communication Unit Leader training and into overall incident communications planning.

Communications Personnel

Several Logistics Chiefs interviewed for this report expressed a strong desire for more fully trained and qualified Communications Unit Leaders, or CULs. (A fully trained and qualified Communications Unit Leader has, in addition to successfully completing the two-week CUL training class, worked as- an assistant to an experienced CUL on an actual field incident.)

Currently, the list of fully trained and qualified CULs in Southern California numbers approximately 40. Many more have completed the class, but have not worked their "training" incident. There is a reticence to release staff members from their daily duties for the extended period necessary to gather the field experience -- especially when the training incident is distant from their home jurisdiction.

Recommendations

More individuals experienced in the technical and engineering aspects of communications need to be trained as CULs.

Additional training would also be appropriate for incident dispatch personnel. These vital links need to become better acquainted with ICS and related issues, as well as the peculiar environment and challenges posed by a firestorm incident.

7.2 INFORMATION SYSTEMS

The majority of information tracking throughout the various incidents was carried out using manual methods. Some of the incidents utilized the newly developed "INCINET" software.

However, as many of the functions necessary for incident management have not yet been developed for INCINET, manual methods of tracking still predominated.

Current systems developed and in use, such as INCINET, do not yet permit the tracking of resources across multiple incidents, or of off-incident resources.

Incident information systems, to be of the greatest use, must provide tracking data to both the local incident and regional coordination facilities.

Due to the manual methods of record keeping, only the most basic information was shared between incidents and higher headquarters. Resource allocation was an ongoing problem, with OCC Riverside being forced to make important resource allocation decisions with hours-old data.

Even if a complete package for incident management was available, few command and communications vehicles are equipped with the necessary computing power to run such a system. A notable exception to this restriction is the new CDF communications units, which contain a system capable of supporting a medium-sized fire camp operation. We know of no local jurisdiction which has implemented similar automation capabilities in its command and communications units.

Recommendation

OES should work toward developing and integrating information systems to be used to support resources tracking for major incidents. OES and CDF should explore together the needs associated with such systems and perhaps establish a collaborative effort for development of a system that will enhance the overall mutual-aid capability of the state.

8.0 ASSISTING AGENCIES

During these incidents, a large number of agencies participated in the response. These include law enforcement, people care agencies, animal control, public works, and utilities. A number of these were surveyed and interviewed, and the recommendations are listed below.

8.1 LAW ENFORCEMENT

Scope of Response

The effectiveness of law enforcement response in the Los Angeles County fire areas was, due in large measure to the efforts of the Los Angeles County Sheriffs Department (LASO) to bind together the 88 jurisdictions and 45 police agencies for a coordinated mutual aid effort. This planning and coordination effort commenced after the civil disorders of 1992 and resulted in the pre-structured organization of mutual aid "Rainbow Platoons" for supportive actions. The

Orange County Sheriffs Office is in the process of scheduling meetings with LASO to explore this effort with a view toward possible adoption of a similar approach.

In the law enforcement interview sessions, the degree of concern expressed over the following issues varied based on the fire location, the fire period, the command and control organization, and the law enforcement agency(ies) involved.

Communications

There were difficulties in communications between the fire service and law enforcement agencies. Some problems were because of a lack of compatible equipment, some because of terrain, and others because of loss of a repeater station. The heavy volume of traffic, particularly on cellular phones, also contributed greatly to communications difficulties.

In some areas/regions, there were requirements to relay information through multiple locations and the communications problem was compounded as a result.

Law enforcement agencies are generally not adequately integrated into the fire service information net. Law enforcement suffered from a lack of intelligence from incident and unified command locations. The provision of such information would have allowed for more effective forward planning. Although it was generally recognized that the fast-moving fires complicated the situation, it is believed that a lack of recognition by fire service personnel of the responsibilities and operations of law enforcement resulted in failure, in many cases, to integrate the law enforcement agencies into the information net.

In several areas slow decision-making resulted in law enforcement not being advised of conditions early enough to initiate necessary actions.

Recommendation

Much closer coordination and advance planning is necessary between law enforcement and fire agencies to ensure that there is an effective communications and coordination process available to assure effective and timely information transfer.

The technical interface between fire and law enforcement communications need to be addressed through an inter discipline communications assessment conducted at the State OES level.

Evacuation - Rescue

There were many instances where law enforcement was involved in evacuation operations which suddenly turned into rescue operations because of the fast moving fires and the lack of information.

Recommendation

Law enforcement officials should be privy to the latest intelligence and command decisions regarding fire development. Therefore, law enforcement should be fully integrated into the fire operation through proper utilization of unified command. A fully informed law enforcement command structure should avoid most, if not all, instances of rescue operations by law enforcement officers.

Training

The ICS system, as developed and used by the fire services, does not translate directly to law enforcement.

Recommendation

The ICS system needs to have a law enforcement modification/application. There should be more joint training between law enforcement and the fire service, including integrated communications training. This issue is being addressed within the training curriculum associated with the State's Standardized Emergency Management System (SEMS).

Planning, Coordination and Transfer of Fire Service Responsibilities

In some areas law enforcement coordination between the various agencies, e.g., CHP, sheriff, and local police departments, was complicated because all agencies did not respond to established Incident Command Posts, Unified Command Posts and/or EOCs. When there was a transfer of fire service responsibility(ies) because of incursion of fires from urban to forestry areas (and vice-versa), law enforcement experienced difficulties in coordinating its required actions.

Recommendation

Law enforcement needs should be integrated into fire service planning and plans development. Planning operations/workshops should include identification of the methods of converting Incident Action Plans into Field Operations Plans.

Public Response and Concerns

There were many cases where law enforcement could not effectively conduct traffic control and emergency vehicle escort operations because the public impeded traffic flow. It is believed that in most cases this occurred because the public ignored advice and warning notices.

After fire has passed through an area, impacted citizens desire to enter the area to determine the extent of damage/loss. This access generally is denied for protracted periods of time for safety (and sometimes security) reasons. In many cases, quicker access could be provided if closer coordination existed between the fire service and law enforcement to identify conditions and specific hazard areas.

In at least one area, improper information was relayed to the local population by the EOC Rumor Control element in Public Information because of inaccurate media information. Erroneous broadcast information was not verified by the Rumor Control element prior to communication to the population.

Recommendation

Law enforcement escort of resident citizens into impacted areas would be more effective and efficient if special vans or other conveyances were used for group movements.

A greater effort needs to be made to provide-accurate information to the public through the media. This can be done at the incident level through the Information Officer function if the incident is being run under a joint law and fire Unified Command. If not, it must be done through local EOCs.

8.2 COOPERATING AGENCIES

8.2.1 AMERICAN RED CROSS AND SALVATION ARMY

1. American Red Cross (ARC)

Shelter Operations

The fluid fire situation required re-designation and movement of shelters in some locations - at times very rapidly - and advance coordination with fire and law agencies was not always possible. This led to some confusion for evacuees and for fire and law personnel directing evacuations.

- o The media was not always quick to recognize the changing situation.
- o Evacuees arrived at shelters with pets, requiring special actions.
- o Evacuees appeared at shelters without necessary medications.

There was at least one significant case of "patient dumping" at an ARC shelter by a convalescent hospital which was evacuated. These patients were left at the shelter without support staff, medications, charts, or advice.

Support Operations

In addition to providing the normal food and water, the ARC was tasked to provide gloves, dust masks, chapsticks, and sunscreen for response personnel at some fire locations. This requirement existed because logistics support through the ICS was not responsive.

Provision support to response agencies was difficult in some areas because ARC volunteers had to "seek out" the needs from fire and law command and staff personnel.

Coordination and Information Flow

Coordinating ARC operations was difficult because command locations and EOCs did not provide information if ARC liaison people were not available/present. In some cases this was brought about because Incident Commanders do not understand ARC operations.

There was one occasion where a deputy opened a shelter on his own without coordination with ARC, his agency or his EOC.

It was apparent that in some local jurisdictions emergency planners did not understand ARC operations. Relaying information to ARC elements was most effective when the chapter proactively provided liaison to EOC and IC locations. Generally, the fire services did not provide an Identification of Incident Command Post locations to the ARC; the information was ferreted out by staff and volunteers.

There were some fire locations where the significant question at the outset of operations was "Who's in charge?" There were some fire locations where ICs did not allow ARC participation in briefings.

Communications

ARC chapter staff and volunteers used a variety of communications resources: telephones, cellular phones, radios (ARC 47.42 frequency and 800 MHz), pagers and amateur radio.

Recommendations

The above issues point to a need for closer integrated training between ARC and response agencies on the local, state and federal levels. This should also lead to closer coordination in operational and communication planning activities. This is in addition to the on-going training and exercise programs conducted with the ARC structure.

2. Salvation Army

Scope of Response

Scope of response included mobile canteens at staging areas and adjacent to incident command posts, as well as smaller field units set up in remote areas where emergency responders were working. The services were provided mainly to emergency responders, although some victims were aided and the press and ambulance crews were fed in some locations.

The canteens were open for sandwiches, fruit, snacks, beverages, etc., 24-hours-a-day, with some meals also served. Hygiene kits, eye drops, chapstick, cots and blankets were among other items provided. Service was as long as five days in some areas, depending on the scope and the needs. Additional Salvation Army services were also provided to victims through other channels.

How the Salvation Army learns about disasters and when it should show up is not well defined. In one instance response was based upon seeing the smoke; in another, by listening to the news on the radio. The usual method of inclusion results from the Army making repeated calls to determine when to show up. The Army does not want to be in the way; yet, it also feels that it should be among the first to quickly provide needed services before other kitchen resources are set up.

Once CDF or other kitchen facilities arrive, the Army provides a 24-hour snack and sandwich service, especially valuable for teams which show up at odd times or which can not leave remote fire fighting areas.

Recommendations

The Salvation Army should be considered part of the emergency response team. One recommendation is that the incident liaison officer, as a part of standard operating procedures, notify the Army as soon as the event is identified as large enough to warrant the resource. The liaison officer can then provide the Army with an estimate of mobilization time and the resources needed.

Another recommendation is for CDF to contract with the Army in advance to provide feeding services for emergency responders for the first 48 hours of response to major events. This would take place prior to mobilizing its own feeding operations, which typically takes at least 48 hours. A system needs to be developed for emergency responders other than fire or law enforcement personnel, to quickly and easily show they have business beyond the barricades (when safe). In some of the fires Army relief workers had difficulty getting through police lines to mobile canteens. In Altadena the Army believed it could have been more effective if it had been allowed access to neighborhoods where victims needed

help. The Army is not asking for access into dangerous situations, but does want to be allowed to provide service.

8.2.2 PUBLIC WORKS

Scope of Response

Public works personnel built, cleared, barricaded, closed and opened roads. They were also responsible for sewers, parks and providing support and equipment to fire services and law enforcement.

Recommendations

Communications capabilities need to be improved so that public works personnel can communicate more easily with other agencies involved in the response and recovery.

Better communication of information both to the field and from the field to the city would make the response more effective. In two fire situations public works personnel in the field noted that they could have used better status and situation information. In another fire, it was determined that the involved city did not have the correct information to relate to citizens regarding road closures. It was suggested that in the future, public works have a liaison at the Incident Command Post to relay information to City Hall.

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There needs to be a clearer understanding of agency responsibilities particularly in light of the immediate recovery activity. There was some confusion between what the State was promising to do and who was going to do it (e.g., County or the California Conservation Corps). Confusion also occurred regarding who was in charge of certain aspects of response vs. recovery.

Access to the fire area by supporting agencies needs to be ensured. It appears as though public works is generally considered part of the emergency response team and has less difficulty with access than other coordinating entities. Nevertheless, access was a problem in the Malibu fire.

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8.2.3 ANIMAL CONTROL

Scope of Response

Animal Control evacuated and rescued animals during the fire, searched for and trapped animals stranded after the fire, and housed pets for people who did not immediately have a place to keep them. In Laguna the fire threatened the animal shelter and it had to be evacuated which

split staff responsibilities. Access to areas where Animal Control needed to go was sometimes a problem.

Recommendations

Animal Control workers need to be identified as emergency responders and allowed access to areas where they can safely rescue animals.

Interagency communication is inadequate and needs to be evaluated and improved.

In the future, Animal Control must work more closely with the media to ensure that the information communicated to the public is the same information released by Animal Control and other agencies. In Malibu, the biggest problem for Animal Control was an erroneous announcement made by the media stating that volunteers with horse trailers were needed to help rescue horses. Animal Control already had enough horse trailers (it moved 1, 100 horses) and the large number of people and trailers that responded to the announcement impeded operations.

Consideration should be given to feeding the coordinating agencies along with fire service and law enforcement personnel. There was no food provided for Animal Control Officers and that made it more difficult for them to do their jobs quickly and efficiently.

8.2.4 UTILITIES

Several utilities were interviewed for their input to this report. It is interesting to note, that their comments often had common concerns regarding access, communications, training and liaison.

Southern California Edison

Scope of Response

The scope of response was extensive. Edison opened up 12 storm centers to coordinate activities associated with the fires. Over 600 department personnel worked the major fires. Beyond the work related to transmission and distribution of electricity, Edison supported fire fighting operations by supplying generators to key water pumping facilities when needed. Many

Customer Service Department locations supported the community by providing generators, vans and drivers for evacuations, and ice to evacuation centers.

Recommendations

Develop a system to ensure that in the future utility personnel have access to safe areas where they must work. During the firestorms, access was sometimes denied, delaying the response. At one point, workers were denied reentry to an Edison temporary equipment yard even though they had already been given permission to set up. In order to do their job efficiently, utility personnel need to be perceived as part of the emergency response team,

For better communications and increased safety in the field, a common net channel is needed so that utility crews, the Incident Command Post, law enforcement and fire strike teams can all communicate when necessary.

The state should work with local jurisdictions to increase local emergency power capability, especially generators that can run pumps at reservoirs. In addition, reservoir sites that went down in the firestorms should be studied, reasons for the problems identified and mitigative measures taken to avoid some of the same problems in the future.

The state should work with utility companies to simplify/standardize connections for emergency generator hook-ups to pumps that pump water into reservoirs for fighting fires. Currently, the connections are varied and it often takes much more time to hook up a generator than it would if they were standardized.

Edison requests that fire crews wet down the lower two-thirds of any smoldering power pole as the crew goes by. Poles will burn for several hours before structural damage occurs. If poles are left smoldering they may eventually fall, pulling down wires, blocking roads and becoming a hazard to equipment.

Southern California Gas Company

Scope of Response

The Gas Company response involved mitigating any damage to facilities and to residential and business customers threatened by the fires, while maintaining service to other customers. Some fires did not have facilities involved. The three fires that required the largest response were the Altadena, Malibu and Laguna Beach fires. The Gas Company Emergency Response Center was activated for these fires, as well as its regional EOCs.

Recommendations

Again, there should be closer coordination between the Incident Command Post and cooperating agencies. The sooner the Gas Company is told where the Incident

Commander would like it to be, the sooner it can start to do its job. In one instance, making contact was so difficult that the crews left, went to the field, and started doing what needed to be done before they ever talked with the command post.

Alternative communications resources are needed so that everyone can talk to each other in the field. When the crew of a cooperating company looks around and finds everyone else has gone, it is important to be able to quickly call and talk to someone outside their company who can provide status on the situation.

Coordinating agencies and companies responding to an emergency in an area where access options are limited and traffic is gridlocked need an escort or other option to provide better right of way. Utilities and other emergency responders who are not law enforcement or fire service and thus do not have flashing lights and sirens, at times find getting to the fire scene is next to impossible.

City of Los Angeles Department of Water and Power

Scope of Response

The DWP's role was limited to support for operations in the Malibu Fire, and it went into a readiness mode in the event a fire should break out in its area.

Recommendations

Smoke damages insulators; therefore, when possible, keep fire away from large transformers.

More water tanks are needed in fire prone areas of southern California. There is no substitute for water tanks being located in the area being threatened. DWP supplied water from the Santa Inez Reservoir for helicopters and recognized that more water tanks closer by would have been more effective.

San Diego Gas and Electric

Scope of Response

SDG&E committed fire coordinators, pole fire units, line crews (Company and contract), insulator washer units and trouble men.

Recommendations

The response seems to have gone well and no recommendations were provided.

Water Districts

Scope of Response

Water District personnel responded to the district water system needs. These needs included trying to keep reservoir resources available to fire fighters, monitoring the water distribution system, and shutting it down where needed. (A tremendous amount of water was lost through sprinklers, hoses, and melted and broken pipes that continued to flow after residences were evacuated.) In Laguna, the fire threatened the Water District office and evacuation of the office was added to the list of actions taken. In the larger fires mutual assistance was requested from neighboring water districts and MWD.

Recommendations

A system needs to be designed to assist water company personnel in gaining access to the areas they need to go to as emergency responders. In several instances, law enforcement did not perceive the water company personnel as emergency responders, or the individuals were not in company vehicles, or they did not have a form of identification which was considered sufficient and thus were initially not allowed beyond the police barricades.

Having a water district liaison at the Incident Command Post would be helpful. The water companies believed that not all fire service personnel understood how the water system worked (both its capabilities and limitations), and overloaded the system.

Communications hardware and the process of communications could be improved. Communication between water company personnel, the Incident Command Post and the local EOC was not always adequate. In some cases, messengers were the only viable option.

Water companies recommend standardizing the size of pumping connections and fire hydrants. Fire trucks and other districts' pumping equipment could not be used at emergency pumping connections. Most of the equipment was set up to use fire hydrant connections, not the flanged connections that were at the emergency pumping connections.

When fighting large fires in mountainous areas, helicopters should take on water for water drops only at low altitude sites so that higher altitude reservoirs are reserved for fire hydrants. Water from these higher reservoirs will provide greater water pressure due to the greater gravity flow.

In areas that have a high potential for firestorms, computer modeling should be available to analyze the flow and spread of the fire given current or anticipated conditions. These models would assist water districts and other responding agencies in planning for and anticipating general resource needs.

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APPENDIX A - FIRESTORMS WORKSHOP

Listed below is a brief summary of the main points raised during the March 16 Firestorm Workshop which involved the primary staffs from several of the larger incidents. Each of the five functional groups was asked to develop a list of primary recommendations they believed were important to be noted from the wildfire analysis. Note that there are a large number of common recommendations from within the groups.

Incident Command and Command Staff

- o A funding mechanism is needed to cover establishment of Mobilization Centers.
- o Statewide interagency all-risk management teams should be developed.
- o Need to increase and make maximum use of Unified Command, both within fire agencies and by including law enforcement as appropriate whenever there is shared jurisdictional responsibility.
- o ICS' application should be broadened to all users, not just the fire services.
- o Training should focus on best qualified people, independent of rank.
- o Expand and improve statewide mutual aid communications systems.
- o Enhance on- and off-incident resources tracking systems with greater use of automated systems and techniques.
- o Develop procedures to provide for more rapid mobilization of mutual aid resources.

Operations

- o It is essential to combine Incident Command Posts (ICPs) as soon as possible on Unified Command incidents.
- o The role of the State Fire Marshal on incidents needs to be clarified and made known to incident management staffs.
- o Coordination with indirectly affected jurisdictions should be improved.
- o Need to improve and broaden the scope and use of INCINET.
- o Deputies used in support of ICS management positions need better training and experience.
- o A faster transition from Initial Attack to Extended Attack is needed, with qualified persons available.
- o Increased and more effective use of Technical Specialists is needed on incidents.
- o Improved interactions with Unified Incident Commanders.
- o Improved interactions between Department Operations centers and local- EOCs for overall coordination of resources (not just fire equipment).
- o Better definition of resource requirements based on actual and projected needs.
- o Mobilization Centers are needed to locate incoming resources prior to incident assignments.

- o The fire services need to continue to support the goal of having the ability to simultaneously staff and operate seven incidents, each of which can have up to five Operations Section branches.
- o Recognize the need for type III engines on wildland incidents.
- o Need to practice ICS -- and not variations.
- o Emphasize mutual aid rules and procedures.

Air Operations

- o Correct and diminish news media airspace violations.
- o Provide improved media awareness and cooperation.
- o FAA process cumbersome for obtaining temporary flight restrictions.
- o Continue to support use of heavy-lift helicopters.
- o Reactivate a statewide communications group within the FIRESCOPE program.

Planning Section

- o Need for more training. A major problem is the lack of qualified personnel to fill positions.
- o There is currently a lack of commitment to training. Identify who (SFM, OES, CDF, or FS) has training leadership role.
- o Law enforcement also needs training to effectively operate within ICS.
- o Planning section training should be extended to all risk emergency responders.
- o Better resource tracking is needed on incidents.
- o Mutual aid system computer (e.g., bar codes, smart cards) is needed.
- o Need more and better use of INCINET technology to help in demobilization.
- o Planning kits should be available at incidents.
- o Overall need for improved communications capabilities.
- o it is important to stay with and use established systems.
- o Lack of infrared technology hampers ground planners ability.
- o Need to standardize maps and grid systems, especially on multi-agency incidents.
- o More cooperation/coordination needed with the media.
- o More coordination for the use of real-time video as a planning tool.
- o More use of Global Positioning Satellite (GPS) technology for mapping and tracking resources.
- o Need for Mobilization Centers for off-site marshaling of resources.
- o Demobilization planning needs to be emphasized on large incidents.
- o Communications - better planning for the use of radios, cellular phones, and portable ground and airborne repeaters.
- o Expansion of mutual aid frequencies is needed in VHF and UHF bands - 150-400-800 MHz.

Logistics

- o It is important to stay within the ordering process described in ICS.
- o Need to develop a policy relating to use of cellular equipment.
- o Need to develop an integrated communications system for Unified Command.
- o Lack of understanding of the logistics ordering process is a problem.
- o Planning and logistics on incidents need to have a better interface.
- o Command and operations personnel do not always understand the time delays involved in acquiring resources from outside the immediate area.
- o The training system lacks depth. Younger people have basics of ICS but lack on-the-job training.
- o Incoming units and teams arrive with incomplete or inadequate equipment, causing delays.
- o Caches of tools and protective gear should be strategically established for access by logistics elements.
- o Handling of inmate populations on incidents complicates housing, feeding, showering and general management and control.
- o Communications frequency management is a problem. No protocol exists for integration of cellular phones, radios, and hardline communications.
- o Difficulties in making the transition from single IC to Unified Command. Special difficulties with communications systems.
- o Need for additional communications leaders. Greater emphasis on managers and personnel who can integrate systems, frequencies and equipment.

Finance

- o Expedite the process to bring national Type I teams in earlier.
- o More in-place, pre-assigned agreements between agencies are needed.
- o Mutual aid interagency agreement needs to be understood by all users.
- o Use agency resource descriptors in INCINET, to help in specific agency tracking.
- o Lack of priority commitment to training.
- o Handling major equipment repair costs is unresolved.

Appendix B - Summary of Public Hearing Comments

Introduction

Recommendations for the After-Action Report were solicited from town meetings held in the fire-ravaged communities. Local government officials, fire services and law enforcement personnel, other emergency workers and the general public all participated in these meetings.

Issues raised at these meetings centered around reducing the hazards associated with the urban/rural interface. The great majority of the fires began in wildland areas, and spread to populated areas. As the likelihood is strong that this trend toward urban/rural interface will only accelerate in coming years, steps must be taken now to reduce the hazards associated with living in these high risk areas. The following is a brief summary of the principal recommendations.

Recommendations

1. Fuel Breaks or Fuel Modification Zones

Fuel breaks or fuel modification zones are essential defense mechanisms as they provide the initial means to reduce flame temperatures as a wildland fire approaches a structure. Recommendations centered around widening and extending fuel breaks to increase their effectiveness.

2. Create Defensible Space

Creation of defensible space between structures and the wildland exposure must be a priority. Building standards should be drawn up that support the development and maintenance of adequate defensible space. Included in these guidelines should be a listing of proper types of vegetation that do not contribute to, but rather, reduce the rate of fire spread near adjacent structures.. Fire services personnel (or community volunteers, see #6 below) could implement inspections of houses adjacent to wildland areas to determine compliance.

3. Fire Resistive Construction

Fire resistive construction is another key defense mechanism. The fires demonstrated the need for more restrictive provisions for wildland/urban interface zones than currently exist in the Uniform Building Code (UBC). Proposed special building requirements include:

- o Class A minimum roof coverings (pressure-treated wood shingles and shakes allowed).

- o Non-combustible building surface coverings (wood siding allowed over fire - resistive underlayment).
- o Non-combustible surface coverings of projections and accessory structures, or minimum framing sizes of fire-retardant treated exposed wood members.
- o Dual glazing in windows facing the wildland area.
- o Fire resistive covering inside garages.
- o Prohibition of vents in eaves and deck soffits.
- o Maximum vent sizes for required screened vents.

4. Access

Emergency access roads must be further developed and maintained. Access and maneuverability are the keys to efficient and effective evacuation and fire services response.

5. Supply and Delivery of Water

The supply and the means to deliver water for fire fighting use should be analyzed for ways to increase effectiveness.

6. Community Support

The support of the community can be a major component in implementing hazard reduction prior to a fire, and in assisting evacuation during a fire. Building community support and creating effective assistance groups should be a priority.

7. Funding

Funding for fire improvements will be difficult to find in recession-plagued southern California. Nevertheless, the money must be found. The federal government (through FEMA) may be one potential source of funds, especially in the area of direct hazard mitigation (e.g., improving fuel breaks).

A Review of the Fire and Rescue
Mutual Aid System and its Performance
During the Southern California Fires
October-November 1993

Appendix C

June 1994

ACKNOWLEDGMENTS

The consultants would like to thank the following agencies for their contributions to this report.

Arroyo Grande Fire Department	Orange City Fire Department
Linda Fire Department	Montecito Fire District
USFS South Zone/Riverside	San Diego County Fire Department/CDF
CDF Sacramento	Willows Fire Department
Lawrence Livermore Lab Fire Department	Sutter County Fire Department
Hawthorne Fire Department	Los Angeles County Fire Department
San Francisco Fire Department	Millbrae Fire Department
Indio Fire Department	San Diego City Fire Department
Holtville Fire Department	Poway Fire Department
Calapatria Fire Department	Cleveland National Forest
El Centro Fire Department	Kings County Fire Department
Riverside County Fire Department/CDF	Mid Valley Fire District/CDF
Stanislaus County Fire Department	Escondido Fire Department
Los Angeles City Fire Department	Orange County Fire Department
Montebello Fire Department	Montecito Fire District
San Bernardino National Forest	OES Fire and Rescue Branch
Loma Linda Fire Department	Central Fire District/Santa Clara County
Long Beach Fire Department	CDF Felton Ranger Unit
Laguna Beach Fire Department	Shasta County Fire Department
Merced City Fire Department	Sacramento County Fire District
Ventura County Fire Department	Banning Fire Department
Clovis Fire Department	CDF Fresno County
Tulare County Fire Department	San Luis Obispo County Fire Department/CDF
Tehama County Fire Department	La Verne Fire Department
CDF South Area Office - Riverside	USFS North Zone/Redding
San Bernardino Communications Center	CDF Sierra South Region Command Center

Purpose

The purpose of this report is to examine the performance of the Fire and Rescue Mutual Aid System during the Southern California fires of October through November, 1993, and to provide recommendations to improve the system.

Introduction

The response to this fire siege was deemed by the Governor's Office of Emergency Services (OES) to be an excellent case study of the Fire and Rescue Mutual Aid System. More resources responded to these fires than any other incident in the 44 year history of the Mutual Aid System. 22 fires were battled during this siege that began on October 23 and ended on November 5, 1993. After the smoke had cleared, statistics showed that 1,525 fire engines and over 15,000 fire and rescue personnel had responded to these incidents. It is estimated that the cost of this mutual aid effort will exceed 12-million dollars. The system, obviously, was impacted and taxed as it never had been before. This report will help the emergency management community assess the adequacy of the current mutual aid system, and provides recommendations for the systems future.

OES contracted with Jerry E. Smith and Richard Barrows, fire service consultants to prepare this report. Mr. Smith conducted interviews with over 100- fire service personnel during the period from January 19 to March 25, 1994. Those personnel included mutual aid participants from city, county, district, state and federal entities.

Mr. Smith's draft reports were reviewed and edited by the OES Fire and Rescue Branch, which then prepared the final document.

The body of this report is divided into nine main topic areas: Alerting Phase, Mobilization of Resources, Communications, Mobilization Centers, The Use of Mutual Aid Resources, Mutual Aid Tracking, Mutual Aid Reimbursement, Training Needs, and Demobilization. Each topic area contains a description of pertinent issues, discussion of the issues, and subsequent recommendations for improvement.

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Executive Summary

The body of this report has been constructed to provide the clear and concise identification of issues related to the improvement of the Fire and Rescue Mutual Aid System. To summarize further, one can distill the recommendations down to three main themes: budget, technology, and training.

The increasing demands of the mutual aid system are dictating that more dollars be spent on preparing the fire service to handle the gamut of emergency situations. Although fire was the primary focus of this report, the users and providers of the mutual aid system recognized that earthquakes, riots, and other "all-risk" incidents demand equal time and consideration. Hazards seem to be outrunning the technology and training that are in place to handle them. Dollars must be committed to applying current technology to improve communications, resource tracking, and cost recovery. More intense and frequent training must occur in order to provide the best possible protection for the State, and to help prevent injuries to the responders.

The reader may wish to keep these factors in mind while reviewing the specific issues that follow.

Alerting Phase

Issue:

Were resources alerted in a timely manner to support resource requests?

Discussion:

There were no significant problems identified during this phase. General comments regarding good practices have been noted below.

Accurate and timely information appears to have been provided at all levels of the mutual aid network.

Recommendations:

- 1) Prompt requests and notifications are necessary for timely responses.
- 2) Providers that are the furthest from the incident should receive priority notifications due to extended travel times. This responsibility appears to rest with each level: State, Region Coordinators, and Operational Area Coordinators.
- 3) Accurate information flow and efficient dispatching can be facilitated by placing trained chief officers in the emergency communications centers or Emergency Operations Centers.
- 4) Fax communications between the State, Regions, and Operational Areas can improve accurate information dissemination.

Mobilization of Resources

Issue:

Inaccurate estimated times of arrival (ETA's) created problems in resource management at the scenes of incidents.

Discussion:

The estimated time of arrival for a requested resource plays a critical role in the management of incidents. Without accurate information on ETA's, the requesting agencies cannot provide effective assistance to their incident commanders. In some cases, mutual aid requests appeared to have been duplicated due to the failure of resources to arrive at expected times. Faced with immediate threats to life or property, and the failure of specific resources to arrive on schedule, incident commanders ordered duplicate resources, hoping for faster responses. Accurate ETA's would allow the incident commanders to make more intelligent decisions based upon "real" time.

Recommendations:

Responders must provide better estimated arrival times, based upon factors including call-downs, mobilization, transportation equipment performance, and the condition of travel routes.

Given improved ETA's, incident commanders must react with corresponding trust in that information to avoid duplicated resource orders.

Issue:

Out-of-state resources may have better response times than those in-state.

Discussion:

Local government resources provide the foundation for the Fire and Rescue Mutual Aid System. While reliance upon neighboring in-state providers normally makes sense, there are locations in California which are closer to out-of-state resources. To victims, the geographical source of rescuing resources is less important than prompt attention, as long as the responders are trained and qualified to carry out the rescues. The concept of out-of-state responders create a medley of problems for management: quality control, training standards, tactical methods, and reimbursement. Assuming these types of issues can be resolved, out-of-state sources may help provide better response times.

Recommendations:

The State should study the viability of interstate agreements for the use of out-of-state resources, especially in areas where they will provide better response times than California's own comparable resources. Given the resolution of the salient issues, implementation should proceed without delay. State OES should be responsible for initiating the process.

Issue:

Pre-designated check-in points along travel routes have been suggested as a method for improving response times during large-scale, regional sieges.

Discussion:

The care and management of mutual aid resources travelling significant distances appears to be the catalyst for this recommendation. Negative factors, such as mechanical failure, fatigue, and poor communications begin to affect the responders. Pre-designated check-in points, staffed with mechanics, fuel tenders, personal care facilities, and communications operators, might help put resources which would otherwise be taken out of operation, back on the road.

The details and logistics of building this check-in point system will be challenging, and will require careful study and planning.

Recommendations:

The State will need to initiate the research and development of this system. The components recommended by fire service representatives include: pre-designated check-in points along major transportation routes; staff the locations with mechanics, fuel tenders, "rest stop" amenities, and communications operators; provide a state directory mapping the check-in points.

Issue:

Response times are shortened by pre-identifying strike teams, task forces, and staging areas.

Discussion:

As with any planning effort, the identification and packaging of resources before an incident will help cut response times during emergencies.

Recommendations:

Both mutual aid providers and requesters may benefit from identifying and organizing strike teams and task forces prior to emergency call-outs. The providers will shoulder the responsibility for implementing this recommendation.

Communications

Issue:

OES "White One" is being used as a travel frequency, which interferes with its already congested use in the field.

Discussion:

The solution to this problem seems to be an educational issue. Plans are in place for the management of statewide VBF high-band frequencies, including White One.

Recommendations:

The State should initiate the dissemination of a training package on the use of common frequencies, with mutual aid responders as the target audience. Mutual aid providers are encouraged to use the California Coordination Travel Frequency in place of White One. The ICS 420-1 Field Operations Guide contains a section on the "Statewide Frequency Plan", including the California Travel Net (169.125 Direct and Receive, and 168.325 Transmit and Repeater). Authorization for use of this frequency requires a sharing agreement and installation of several other federal frequencies. Information can be obtained from the fire service Operational Area Coordinators.

In order to promote this recommendation, state, regional, and operational area coordinators should facilitate an uncomplicated, streamlined process for obtaining the authorizations. Bureaucratic delays will not prompt the users to go through the process.

Issue:

Communications systems hardware should be varied.

Discussion: The reliance upon a sole source of communication often assures problems for the user. As evidenced by damage to a repeater in Orange County during the fire siege, normal systems may be destroyed by the incident. The use of a combination of communications tools, including radios, cellular telephones, hard-wire telephones, satellite telephones, and mobile data terminals helps ensure that back-up systems are available for immediate use.

Recommendations: It is recommended that mutual aid providers supply their personnel with more than one type of communications equipment, (e.g.: radios and cellular telephones).

Issue:

Radio communications proved ineffective during several canyon area operations.

Discussion: Canyon area communications are often hampered by the inability of radio signals to reach receivers outside the immediate environment. Normal mobile communications hardware

fail in these situations, whether they may be radios or cellular telephones, thereby placing the responders in grave danger. During the recent fire siege, several examples were cited in which command centers were thwarted in attempts to warn field personnel of pre-ignition conditions or other safety hazards. With no links to the outside world, the firefighters became potential victims.

Several interviewees suggested the use of satellites to solve canyon area communications problems. Unfortunately, satellite technology is unlikely to be the panacea, since the users must still get their signals to a point outside the canyon. Satellites cannot be counted upon to be above canyons during fires. As an example, to use a satellite telephone the antenna must be pointed, fairly accurately, to a point above the horizon in order to lock in to the satellite. This process will not help the firefighter at the bottom of a canyon.

Repeaters usually provide the link for radio communications out of such areas. This system is dangerous at best, since the canyon fire is likely to affect the repeater serving the area.

Recommendation: The problem of canyon area communications needs to be referred to a pool of knowledgeable communications experts who are familiar with fire service needs as well as communications technology. While the concept of satellite systems seems to be popular with those interviewed, the pitfalls and special challenges of satellite technology must be considered. It seems prudent to refer these issues to a body of experts, such as the communications working group under FIREScope.

Issue:

The 800 megahertz band is being targeted as one cause of the breakdown of mutual aid communications.

Discussion:

It would appear that any time agencies adopt radio systems in different bands, common communications will suffer. The blame on 800 MHz. is misplaced, as the same fault could be laid at the feet of low band or high band as well.

The real cause of the problem is that the availability of radio frequencies is limited for all users: fire, law, local, state, federal, private, commercial, marine, or amateur. Agencies budget a tremendous amount of money to build radio systems. These systems are very expensive and, once installed, must serve the agency for many years. As radio technology increases, agencies with the funds to do so will move up to more advanced systems. It cannot be expected that all fire agencies will be able to budget for like equipment, in like bands, in like fiscal years.

Rather than target one band as the cause for the breakdown, the focus should shift to solutions utilizing the equipment that is available to all. Although many large agencies have moved to 800 MHz., smaller ones have not, and cannot be expected to due to financial constraints.

Recommendations:

As in the case of canyon area communications, the lack of radio band inter-operability should be referred to experts in that discipline. Again, FIREScope should take the responsibility to initiate a review of this problem.

Mobilization Centers

Issue:

Some fire service representatives have made specific recommendations regarding the use and management of mobilization centers.

Discussion:

During the interviews for this report, fire service personnel were quoted as making the following suggestions:

- Identify mobilization center locations prior to activating Regional mutual aid resources.
- Strategically located mobilization centers will relieve resource traffic congestion near incidents.
- Mobilization centers can be used as bases for staging and response to new fires in the Regions.
- Resources may be reassigned or demobilized at mobilization centers. Mobilization centers should provide 24-hour logistical support-for personnel and equipment.
- Mobilization centers should be managed and "funded" by the State.

In general, these suggestions do not seem to depart from the general description of a mobilization center and its use in the Incident Command System: "An off-incident location at which emergency service personnel and equipment are temporarily located pending assignment, release, or reassignment".

The question of management and funding, however, must be carefully examined. Generally, mobilization centers have been set up to support *multi-region* operations. They are expensive to run, and require a significant amount of human resources. In terms of cost, it can take approximately \$15,000 to support one strike team for a 24-hour period in a mobilization center. The tactical danger of these centers is that resources tend to be criticized for "sitting" without being assigned to incidents. Local providers justifiably concerned that their personnel are used effectively and efficiently.

In practice, the entity requesting a mobilization center has been responsible for its management and funding. On large incidents, this responsibility typically falls under the California Department of Forestry and Fire Protection (CDF) or the United States Forest Service (USFS).

It is obvious that the process of setting up and managing mobilization centers involves a significant amount of money and human resources for an extended amount of time. The suggestions which have been made must be carefully examined by a qualified body.

Recommendations: These suggestions should be referred to the FIRESCOPE Board for review and comment.

The Use of Mutual Aid Resources

Issue:

Comments made by fire service personnel after the Fire Siege indicate that mutual aid resources may not have been utilized in efficient ways.

Discussion:

Most of the criticism involving the use of resources came from personnel who perceived that they were under-utilized, or not utilized at all. These complaints are not new to large operations. Experience has shown that some of the complaints are usually justified, while others are simply the result of enthusiastic first responders reacting to down time. Waiting is often part of the process on mutual aid responses. That concern becomes justified, however, when resources sit for extended periods of time without being utilized. The expense to the funding authority is significant, and the loss of the resource to its home agency during that period can be tactically and politically difficult. Continued training for incident commanders with emphases on the management of mutual aid resources seems to be the best way to mitigate these problems.

Recommendations: Emphasize the need and reasons for effective mutual aid resource management during training for incident commander personnel. The following issues seem to be common to large incidents:

- providers request that justified recalls of their resources be given priority consideration by incident management; it is incumbent upon incident managers to utilize existing
- resources wisely before ordering additional aid; when possible, providers would appreciate status updates on their pending assignments while they wait in staging or
- mobilization centers.

Issue:

Unified command was praised as a very effective tool in the command structure.

Discussion:

The fires validated the reasoning behind the concept of unified command as applied to multi-agency operations in single or multi-jurisdiction incidents.

Recommendations:

There were no recommendations for changes to the concept of unified command. The recommendation is to continue using unified command as an effective method of management, and to consider using it as early as possible during incidents.

As with any mutual aid response, the providers must be sensitive to the political climate and concerns of the local jurisdictions. This sensitivity is crucial at the Unified

Command level. Affected jurisdictions must be confident that their authorities are not being undermined.

Issue:

The Multi-Agency Coordination System (MACS) conference calls were praised as being valuable for general incident coordination.

Discussion:

MACS conference calls were regularly scheduled and facilitated by State OES through its Fire and Rescue Operations Control Center in Riverside. This sharing of critical information and subsequent coordination was deemed a critical component of the overall management of the fire siege. It should be noted that MACS has also been used effectively during other types of disasters and emergencies.

Recommendations:

No recommendations for major changes were made. The recommendation is to continue using MACS conference calls as an effective method of coordinating incident response. It was suggested that the length of each conference call be limited to 45 minutes or less.

While some of those interviewed felt that the MACS conference calls worked so well that face-to-face conferences could be eliminated, others cautioned that personal "across-the-table" meetings have their value, and should not be totally disregarded.

Issue:

Not all providers were sure of their status or pending assignments.

Discussion:

The management of a large number of mutual aid resources is not easy and is often plagued by a number of logistical problems no matter how efficient the management personnel may be. Good communication between management and its resources, however, can help reduce the severity of those problems and help bolster the morale of firefighters eager to do their jobs. Many strike teams complained that they felt "lost" in the system, and were subsequently under-utilized or not utilized at all.

Recommendations:

The development and distribution of quality Incident Action Plans will help providers prepare for their assignments, and give them the security of knowing when and where they will be used.

Mutual Aid Tracking

Issue:

General comments indicate that providers and users of mutual aid resources are not satisfied with the current methods of tracking resources throughout incident responses.

Discussion:

It was difficult to pinpoint the specific deficiencies in the current tracking methods based upon the very general nature of the comments. Quotes generally referred to the need for "automation" of the system, but they lacked specific recommendations.

The task of tracking each resource during a mobilization of this magnitude is extremely difficult. Manual "pencil to paper" tracking appears to be the standard form of data management, whether by T-cards or pre-printed forms. Delays in reimbursements to providers, confusion during check-in and demobilization, and the inability to quickly access information on current status of resources on assignment can be traced to overwhelmed tracking methods.

Very specific problems must be identified in order to provide data experts with the information necessary to design automated systems that will effectively handle resource tracking needs. In general, it would seem prudent to provide a system that is standard throughout the state, one that will grow with an incident, and one that can be expanded and updated over time.

Recommendations:

The users and providers of mutual aid need to be re-interviewed, with these questions in mind:

- what *specific* problems were encountered?
- what *parts* of current tracking systems failed?
- were the failures due to system problems or human error?

Armed with such information, the fire service can provide data management experts with a basis for designing new systems. To proceed with design recommendations at this point would likely be counter-productive.

Issue:

Strike team and taskforce leaders can help mitigate tracking problems in the short-term by using the following suggestions made after the 1993 fires.

Discussion:

The peer comments that follow appear to be part of good, proactive practices, and might be considered by FIRESCOPE as, worthy of review and distribution to strike team and task force leaders.

Recommendations:

- organize and brief strike teams and task forces prior to mobilization;
- complete T-cards as much as possible prior to submission;
- follow *all* check-in protocols;
- do not self-dispatch to incidents;
- monitor personnel and equipment status at all times;
- make face-to-face contact with supervisory personnel when appropriate;
- seek out active line assignments;
- keep the home agency updated on the status of its resources;
- prepare for demobilization in advance by completing forms for submission;
- when released, make all required notifications prior to leaving, including updates to the home agency.

Mutual Aid Reimbursement

Issue:

Delays in reimbursements and the costs of long-term mutual aid commitments create substantial financial burdens for mutual aid providers.

Discussion:

Mutual aid providers state that they are finding it increasingly difficult to front the funds necessary to pay for mutual aid response during extended commitments, especially when reimbursements are delayed. In the case of small volunteer agency providers, the negative effect is felt by the individual responders as they may be waiting several months for personal reimbursements.

Dollars are at the root the problem, but the issue is complicated by the underlying commitment to the philosophy of mutual aid. Will cost become the overriding "go/no-go" consideration for providers due to reimbursement delays and long-term commitments, or will the prospect of becoming a potential *user* in need of help soften that point of view? In a state with so many types of hazards, mutual aid has become, and probably will continue to be, a vital necessity.

The challenge is to make the *entire* system grow with its increasing use. While it has been proven by the response to these fires that the mechanisms for mobilizing extraordinary numbers of mutual aid resources *can* handle the load in a fairly efficient manner, the mechanisms for corresponding financial reimbursements *cannot*. The current system is slow and cumbersome, according to the users. Some agencies are experiencing, four-month delays for reimbursements. Several small agencies exhausted their employee overtime accounts in order to pay for mutual aid as *providers*.

Again, the issue of automated tracking systems was brought up by the persons interviewed. From alert to demobilization, resources must be tracked in more accurate and efficient ways. Information must be able to be extracted quickly and accurately from databases in order to provide quick turn-around on reimbursements.

Recommendations: The State must address these reimbursement problems and take a hard look at changing current accounting and tracking practices to meet the needs of a growing mutual aid system. The FIREScope Board and State OES must take the lead by having database experts examine the current tracking systems, and provide recommendations for automated systems that will effectively and efficiently handle increasing numbers of resources and incidents. These systems should embrace the entire scope of the mutual aid system, from initial alerts and computer aided dispatch (CAD) through demobilization. State OES must also examine its internal system of processing the data needed for reimbursements, with emphases upon the following:

- how can the system be automated?
- how can information be reviewed more efficiently for faster processing?
- are more personnel needed for processing (e.g.: emergency hires)?
- is better and/or more frequent training needed at the local and state levels on tracking systems?
- Are personnel in the overall reimbursement process being used efficiently in terms of job description, duties, experience, and skills?
- Are field coordinators being used effectively on incident to support the tracking process?
- Could staff support positions be utilized on-scene during demobilization to help the process?

Issue:

The "Five-Party Agreement" used for mutual aid reimbursements is intended for wildland fire responses only. New reimbursement agreements are needed to address "all-risk" responses by the fire service.

Discussion:

There are no reimbursement agreements in place to support responses to incidents other than wildland fires.

Recommendations:

It is recommended that the FIRESCOPE Board examine new means of reimbursing mutual aid participants for "all-risk" responses.

Issue:

Suggestions were made that the State institute an "all-risk" reimbursement fund for mutual aid

Discussion:

It was not clear from the responses whether this fund would provide "front payment" money to mutual aid providers with federal disaster dollars backfilling the fund, or whether the fund would provide for *all* mutual aid response costs, federal declarations notwithstanding.

This suggestion appears to remove all financial burdens from the providers, and shifts that burden to the State for initial and long-term costs. Again, the full intent is unclear, especially in terms of short-term, day-to-day mutual aid, as opposed to long-term commitments.

Recommendations:

The issue of a State-funded "all-risk" fund for mutual aid responses must be clarified through further interviews, and should be referred to the State OES Director and FIRESCOPE Board for further discussion and feasibility studies.

Training

Issue:

Users and providers have both identified the need for more training in a variety of areas in order to better support the mutual aid system.

Discussion:

Participants in the mutual aid system identified a variety of training needs, some dependent upon local agency budgeting and others dependent upon State and Federal programs. The following points were noted by those interviewed: one untrained or poorly trained person can negatively affect an operation; some agencies experienced the need for more trained incident managers and chief officers; some firefighters were ill-prepared for their duties, and were overrun and cut off by fires; personnel are arriving on-scene without proper safety gear, including fire shelters; some agencies now have a very young cadre due to attrition, which has resulted in a lack of trained, experienced performers in the field.

Recommendations: The following recommendations were made by users and providers of mutual aid:

- training should be a top priority for all agencies;
- training needs to encompass all hazards, including earthquakes and civil disturbances;
- new officers should receive appropriate management training, along with an apprenticeship program with experienced officers;
- more Incident Command System training and certification needs to be provided for all ranks in the fire service;
- intensified training and refresher programs should be provided on field safety, with emphasis on safety tactics and the proper use of personal safety gear;
- ICS and mutual aid training should be emphasized from the beginning of a firefighter's career;
- local agencies are requesting more opportunities for State and Federal training courses, including those offered by the State Fire Marshal, the OES California Specialized Training Institute (CSTI), OES Fire and Rescue, and the U.S. Fire Administration (USFA).
- The USFA should consider a West Coast satellite training facility to better serve the agencies in that area; local agencies should provide "red card" ICS training and certification for *all* their staff officers;
- more training programs are needed on wildland firefighting to prevent injuries and potential safety problems.

Demobilization

Issue:

The demobilization process on large incidents tended to be slow and cumbersome, causing delays in returning needed resources to their jurisdictions, and significant morale problems among the field responders.

Discussion:

Generally, the problems with demobilization rested with all participants in the process. Management appeared to be ill-prepared for the sheer numbers of resources with which to cope. Demobilization systems appeared to be not-fully developed, and the required staffing seemed inadequate. Many line-level firefighters on engines did not seem to fully understand why demobilization procedures must be followed carefully and conscientiously.

As with any demobilization effort, the planning process must begin as soon as the incident itself begins. The smooth departure of resources depends upon proactive planning and the dedication of qualified personnel to carry out the mission. Patience, a cooperative spirit, and proper training are all required to make demobilizations work effectively.

Recommendations:

- planning should begin immediately after resources are committed to the incident; all participants, including responders, should be trained to know the fiscal and logistical importance of demobilization;
- management must provide sufficient staffing for the process;
- updates on demobilization status will help prevent the decay of morale as resources wait to be released;
- paperwork must be filled out completely by trained personnel. Task force and strike team leaders must be better trained in their responsibilities, and must take more care in completing the required paperwork prior to release;
- local government resources from furthest distances should be given priority for release;
- cost-recovery rates for damaged equipment must be clarified in agreements and training;
- more mechanics are needed to complete safety checks on large-scale incidents;
- releases might progress more quickly if supplies for common safety problems were on-hand at the demobilization centers (e.g.: supplies of tires);
- plans for traffic flow should be integral parts of the demobilization process;
- morale problems may be mitigated by posting release schedules;

- for safety considerations, management must ensure that resources needing to travel long distances are adequately rested prior to departure;
- nighttime releases should be discouraged due to safety considerations.

Issue:

Some providers indicated that the existing Five-Party Agreement fails to adequately address cost-recovery issues for damaged equipment.

Discussion:

As cited earlier in this report, the adequacy of existing mutual aid agreements to support the expanding needs of the mutual aid system has been called into question. There were obvious concerns from providers that the Five-Party Agreement did not clearly present the rates to be used for repairs to or replacement of damaged equipment.

Recommendation:

State OES and the FIREScope Board must review existing agreements to ensure that they meet all anticipated needs of providers and users in the mutual aid system.

KAFFS ACTIVATION CHRONOLOGY

FOR THE PERIODS OF
OCTOBER 27 - 29, 1993

AND

NOVEMBER 2 - 3, 1993

PREPARED

NOVEMBER 5, 1993

BY THE

CALIFORNIA DEPARTMENT OF
FORESTRY AND FIRE PROTECTION

MAFFS ACTIVATION CHRONOLOGY

FOR THE PERIODS OF

OCTOBER 27 - 29, 1993

NOVEMBER 2 - 3, 1993

CALIFORNIA DEPARTMENT OF

FORESTRY AND FIRE PROTECTION

WEDNESDAY, OCTOBER 27, 1993

0653 HRS. Ventura County Dispatch requested six helicopters and four additional airtankers. Note: Two of these requests were later filled with the California MAFFS. Note: The word MAFFS in the resource ordered column of the Aircraft Resource Order, Document #3, for requests #571-574 is there because everyone (Stan Lake, John Bryant, and others) were saying order the MAFFS according to Bill Hall.

0800-0815 HRS. TIME APPROXIMATE

Lloyd Limprecht, CDF Headquarters Fire Protection Division Chief, called California National Guard Headquarters giving "heads up", request for four MAFFS will be placed. Two from Channel Islands and two from elsewhere. Not sure how long it will take to go through system. Asking for Federal Activation.

0800 HRS. "Heads up" phone call from Charlie McDonald to Air National Guard (ANG)- Channel Islands. Note: No record of this call in ANG Channel Islands log. There is record of call placed at 1101 hrs.

0800-0815 HRS. TIME APPROXIMATE

Charlie McDonald called John Bryant regarding MAFFS and states he was advised the MAFFS had been ordered. Note: John Bryant states he received numerous calls regarding airtankers and MAFFS and advised airtankers were being obtained and to let the system work.

HRS. ANG Channel Islands, cancelled local flights for morning. Conversion of C-130s from Air Force configuration to MAFFS configuration started.

0830 HRS. TIME APPROXIMATE

Alan Batchelder, CDF State Emergency Command Center Chief, Sacramento, advised Dennis Orrick that MAFFS were being requested. Dennis Orrick then called Charlie McDonald who already knew. Dennis Orrick then contacted CDF Headquarters Fire Protection Section. Dennis Orrick called Charlie McDonald again and was advised McDonald had not been activated.

0840 HRS. ANG Channel Islands Maintenance Control was notified that aircraft are being configured for MAFFS.

0847 HRS. ANG, Channel Islands started removing external pylons from two aircraft (#s 826 and 862). Time of completion estimated to be 1400 hrs. Aircraft to be defueled after pylon removal and should be accomplished about one hour later (1500 hrs.). Pylon removal and defueling will be performed on a third aircraft (851) for backup purposes. Estimated time of completion is 1700 hrs.

0746 HRS. Ventura's 0653 hrs. request for four additional airtankers went to NICC.

0855 HRS. MAFFS pit areas A1 and B1 have been cleared.

0902 HRS. Aircraft 826 pylon removal and defueling time of completion now estimated at 1200 hrs.

0915 HRS. ANG Channel Islands intent to prepare aircraft as soon as possible for water drop for Pt. Magu Naval Air Station (NAS)

0924 HRS. All three aircraft pre-flighted.

0930-1000 HRS. TIME APPROXIMATE

John Moore received call from ANG Channel Islands inquiring if he knew anything about activation. He did not know anything official.

1002 HRS. Navy no longer concerned with fire around perimeter area. Request for water drop cancelled.

1008 HRS. Notation of Charlie McDonald's phone number by ANG Channel Islands.

1047 HRS. Estimated completion for pylon removal on 862 is 1200 hrs. When complete 826 will have pylons removed. Spare aircraft 851 is having pylons removed now.

1100-1200 HRS. TIME APPROXIMATE

John Moore called Dennis Orrick and was advised that MAFFS activation was likely. John Moore had called sometime earlier asking what was known about MAFFS.

1101 HRS. Charlie McDonald advised ANG Channel Islands of MAFFS being requested by both State and Federal agencies.

1110 HRS. Pt. Magu NAS Base Commander called requesting aircraft ready for drop due to fire on base.

1122 HRS. Decision for MAFFS 4 to fly fire within perimeter of Pt. Magu, NAS. Update on activation status is that contract airtankers are still available. State and Federal activation is a good way off.

1130-1200 HRS. TIME APPROXIMATE

Dennis Orrick called Charlie McDonald and was advised that McDonald had not been ordered yet. Orrick advised CDF Headquarters Fire Protection that MAFFS had not been activated by National Interagency Coordination Center (NICC).

1200 HRS. TIME APPROXIMATE

CDF Headquarters Fire Protection Section advised by CDF Southern Area/South Zone that NICC was not requesting MAFFS until available contract airtankers are committed. and NICC was checking on contract airtankers. CDF should go to California National Guard for State Activation of two ANG Channel Islands MAFFS. Two of the requests place with N ICC were withdrawn and filled by CDF Sacramento ECC by going to the California National Guard for the ANG Channel Islands aircraft.

1200 HRS. Pt. Magu. NAS Fire Department requested MAFFS aircraft stay on the ground.

1225 HRS Fire threat to Pt. Magu NAS is over.

1240 HRS. Order Number VNC 18195, Request #s 571 and 574 for two ANG Channel Islands MAFFS. Dennis Orrick advised ANG Channel Islands of this at 1300 hrs.

1245 HRS. Call from State National Guard Headquarters. ANG Channel Islands to use mission #93-1122 to launch or request support for MAFFS.

1300 HRS. TIME APPROXIMATE

Dennis Orrick was advised MAFFS had been activated and that Charlie McDonald had been requested as Federal MAFFS Liaison Officer (MLO) and Jim Carter as State MLO. Dennis Orrick called Stan Lake and advised him that Carter was not a qualified MLO.

1300 HRS. ANG Channel Islands two MAFFS aircraft activated. CDF Order Number VNC-18195, requests 571 and 574. Stan Lake is point of contact. Aircraft to fly Green Meadow fire.

1343 HRS. Mission Order for two MAFFS to Green Meadow Fire faxed from CNG Headquarters to 146th ANG Channel Islands.

1330-1400 HRS. TIME APPROXIMATE

John Moore, Monsanto Technical Representative, arrived at ANG Channel Islands. Advised Colonel Iffland, 146th Wing Commander, that set up time for pump and retardant pit setup is approximately 3 hours if all goes well. Two aircraft were ready to go. There were some problems with set up.

1400 HRS. Dennis Orrick called Charlie McDonald.

1425 HRS. Stan Lake will call Monsanto and give order number so that Monsanto can mix retardant at Channel Islands.

1500 HRS. TIME APPROXIMATE

Confirmation of Federal activation. MLOs McDonald and Orrick dispatched.

1505 HRS. Retardant mixing, personnel enroute from Santa Barbara, ETA 1600 hrs. for two personnel and 1645 for third person.

1520 HRS. Charlie McDonald, Federal MAFFS Liaison Officer (MLO) from Angeles National Forest enroute from Pasadena, ETA 1730 hours.

1530 HRS. Dennis Orrick advised of request for State MLO. Assigned himself and proceeded to ANG Channel Islands.

1600 HRS. TIME APPROXIMATE

Contract mix crew from Santa Barbara arrived.

1625 HRS. (1725 HRS. Mountain Daylight Time)

National Interagency Coordination Center request went to U.S. Air Force for four MAFFS.

1700-1800 HRS. TIME APPROXIMATE

National Guard Bureau, Washington, D.C. inquired if ANG Channel Islands could support Cheyenne in transporting personnel and equipment. Support aircraft came from Charlotte, North Carolina.

1715 HRS. Charlie McDonald, Federal MLO arrived. Note: Draft MAFFS Operations Report states McDonald's arrival at 1545 hrs.

1745 HRS. Called John Bryant to decide who to order support personnel from. Will probably order from the Los Padres National Forest.

1800 HRS. Requested radios, mechanics and DALOs from NICC.

1817 HRS. Requested support personnel from Los Padres dispatch.

2145 HRS. 78 bins of retardant on the ground at ANG Channel Islands (10 were there, 68 delivered).

2200 - 2230 HRS. TIME APPROXIMATE

Mix plant pretty well set up.

THURSDAY, OCTOBER 28, 1993

0011 HRS. Ventura County Dispatch ordered two MAFFS for the Steckle Fire. This order was filled with two S-2s as the only two MAFFS ready were committed to the Green Meadow Fire.

0030 HRS. Dennis Orrick, State MLO, arrived area.

0545 HRS. Mike Miller, San Bernardino National Forest enroute.

0600 HRS. John Moore returned to ANG Channel Islands.

0610 HRS. Charlie McDonald believes six MAFFS have been Federally activated: two - 146th, two - 153rd, 2 - 302nd and one

support aircraft from 145th to assist Cheyenne in moving their equipment.

0700 HRS. Mixing retardant by 0700 hrs.

South Zone advised of request for two aircraft. South Zone will call back to advise when to launch. MAFFS 6 out of service approximately 2.5 hrs due to bad brake.

0705 HRS. ETA 153rd from Cheyenne is 1200 hrs. with two MAFFS plus one support-aircraft from North Carolina, ETA 1400 hrs.

0715 HRS. State MLO on base, ANG Channel Islands.

0715 HRS. TIME APPROXIMATE

Sun came up over ridge east of ANG Channel Islands.

0755 HRS. Call from ANG Wyoming, 1st aircraft is expected to arrive ANG Channel Islands at 1300 hrs. The second aircraft is being worked on, hope to arrive before dark.

0805 HRS. Colorado MAFFS ETA 1215 hrs. and 1345 hrs.

0810 HRS. South Zone called. Launch both aircraft to the Green Meadow Fire. Advised would launch MAFFS 4. MAFFS 6 would be about one hour behind.

0900 HRS. MAFFS 6 fixed and being loaded for launch to Green Meadow Fire.

0902 HRS. MAFFS 4 took off.

0930 HRS. MAFFS 6 took off. Flew total of 12 sorties between 0930 hrs. and 1745 hrs.

0944 HRS. MAFFS 4 took off, second sortie. Flew total of twelve sorties between 0920 hrs. and 1743 hrs.

1107 HRS. California ANG Condor aircraft will be used for MAFFS support. This was coordinated through the State Emergency Operations Center.

1314 HRS. MAFFS 3 (Wyoming) arrived.

1315 HRS. MAFFS 3 nozzles will not retract and the #5 tank will not arm.

1408 HRS. MAFFS 2 (Colorado) arrived.

1410 HRS. South Zone advised of MAFFS 3 and 2 arrival. They are to go to Green Meadow Fire with MAFFS 4 and 6. Advise South Zone when MAFFS 3 and 2 are launched.

1500 HRS. MAFFS 5 (Colorado) arrived. MAFFS 1 arrived by this time, log does not show its arrival.

1630 HRS. MAFFS 2 took off. Flew two sorties at 1630 hrs. and 1732 hrs.

1714 HRS. MAFFS 1 (Wyoming) took off on its only sortie of day.

1745 HRS. Last take off of MAFFS for the day.

1750 HRS. Latest allowable launch time for airtankers to Green Meadow Fire.

1800 HRS. Airtanker cut off time.

1930 HRS. MAFFS operations closed.

FRIDAY, OCTOBER 29, 1993

0600 HRS. ANG Channel Islands operations open.

0625 HRS. South Zone advised Charlie McDonald to have all six MAFFS ready by 0700 hrs. for the Green Meadow Fire.

0703 HRS. Pt. Magu NAS Operations contacted, requested tower personnel give MAFFS aircraft priority.

0840 HRS. South Zone gave launch order for all six MAFFS. Aircraft to be launched on eight minute intervals.

0900 HRS. MAFFS 5 took off on first of seven sorties.

1555 HRS. MAFFS 5 landing with one engine shut down. Emergency equipment dispatched.

1600 HRS. MAFFS 5 arrived safely. Engine bogged down.

1612 HRS. MAFFS 4 took off on last sortie of the day. Forty-one MAFFS sorties flown for the day.

1900 HRS. South Zone requested all six MAFFS ready for 0700 launch to Green Meadow Fire Saturday, October 30.

TUESDAY, NOVEMBER 2, 1993

- 0500 HRS. MAFFS Operations open. Crews scheduled to arrive at 0600 hrs. for briefing.
- 0600 HRS. High Wind Warning for the Pt. Magu, Pt. Hueneme area. Northwest winds, 18 to 25 knots with gusts to 35. Warning in effect 0500-1600 hrs.
- 0630 HRS. Crews briefed and requested to stand-by in area.
- 0856 HRS. Two airtankers requested for Green Meadow Fire. Airtankers 01 and 15 from Fox assigned.
- 0910 HRS. Charlie McDonald advised South Zone of MAFFS availability.
- 0920 HRS. Charlie McDonald contacted South Zone offering ANG Channel Islands as a reload base for the contract airtankers flying the Green Meadow Fire. LTC Woolsey is coordinating with Pt. Magu NAS Operations for them to land at ANG Channel Islands.
- 0945 HRS. Coordination and approval complete for contract airtankers to land at Pt. Magu NAS and use ANG Channel Islands as a reload base.
- 1100 HRS. Airtanker 15 landed ANG Channel Islands for reload.
- 1115 HRS. Airtanker 01 landed ANG Channel Islands for reload.
- 1120 HRS. Airtanker 15 departed ANG Channel Islands.
- 1145 HRS. Airtanker 01 departed ANG Channel Islands.
- 1150 HRS. Airtanker 15 landed at ANG Channel Islands for reload.
- 1223 HRS. South Zone received request from the Angeles National Forest for six airtankers for the Topanga Fire. Airtankers 127, 23, and 60 and MAFFS 2, 3, and 4 assigned.
- 1230 HRS. South Zone advised Charlie McDonald of launch order for three MAFFS to Topanga Fire.
- 1250 HRS. South Zone advised ANG Channel Islands that launch request for the other three MAFFS is being worked on.
- 1251 HRS. MAFFS 2 took off.
- 1255 HRS. MAFFS 3 took off.

1307 HRS. MAFFS 4 took off.

1320 HRS. Launch order for other three MAFFS to Topanga Fire is received.

1338 HRS. MAFFS 5 took off.

1350 HRS. MAFFS 1 took off.

 North Carolina ANG advised ANG Channel Islands that North Carolina has been activated. ETA 1400 hrs., 11/3/1993.

1515 HRS. MAFFS 5 returning with #1 engine shut down, engine pitch locked.

1603 HRS. MAFFS spare (826) is pre-flighted.

1700 HRS. Charlie McDonald talked to Dick Stauber and requested he come to Channel Islands to assist with media inquiries.

1800 HRS. Dick Stauber enroute, ETA 0800 hrs., 11/3/93.

1830 HRS. Crews briefed to report at 0600 hrs. 11/3/93.

1900 HRS. MAFFS Operations closed.

WEDNESDAY, NOVEMBER 3, 1993

0530 HRS. MAFFS Operations open.

0600 HRS. MAFFS 4 has flat tire.

0650 HRS. MAFFS 4 tire change complete.

 MAFFS 3 took off.

0655 HRS. MAFFS 6 took off.

0659 HRS. MAFFS I took off.

0700 HRS. MAFFS 2 returning with blown starter on #4 engine.

0715 HRS. MAFFS 5 took off.

0723 HRS. MAFFS 4 took off.

0807 HRS. MAFFS 2 took off.

0810 HRS. Dick Stauber arrived at ANG Channel Islands.

0845 HRS. ETA MAFFS 7 and 8 from North Carolina at 1625 hrs. and 1630 hrs. respectively.

1120 HRS. ETA North Carolina support aircraft is 1840 hrs.

1430 HRS. MAFFS 4 returning, advises all aircraft are returning "on hold".

14?? HRS. All MAFFS aircraft on ground.

1700 HRS. All MAFFS crews released. Crews to return at 0600 hrs. 11/4/93.

1830 HRS. North Carolina support aircraft arrived.

MISCELLANEOUS NOTES

CONVERSION OF AIRCRAFT

The conversion of C-130 aircraft from U.S. Air Force configuration to MAFFS configuration takes about four hours per aircraft. The following must be accomplished.

1. Remove external fuel tanks (pylons).
2. Tape seams on aircraft floor to prevent retardant leaking from MAFFS units getting underfloor of aircraft.
3. Paint large day-glow orange identification numbers on aircraft.
4. Defuel aircraft to 24,000 pounds of fuel due to wingloading restriction, etc.
5. Load MAFFS units into aircraft.
6. Test MAFFS units: fill with water and discharge.
7. Install FM radio for communications with forestry aircraft. Aircraft being configured for MAFFS must have wiring harness for FM radio.
8. Note: ANG Channel Islands converted three C-130 so a spare would be available.
9. Average time between landing and takeoff on next sortie for MAFFS 4 on 10/28/93 was 30.7 minutes. Average time for MAFFS 6 was 29.5 minutes. Average time for MAFFS 2 was 40 minutes. The average for all three MAFFS for the day was 30.5 minutes. The average time on 10/29/93 with six MAFFS operating was 37.7 minutes. Note: These times include aircraft taxi times, refueling if necessary, engine start up as MAFFS are not loaded hot, etc.

RETARDANT PITS AND PUMP

1. Ten bins of retardant are stored at ANG Channel Islands. There was no shortage of retardant at base. Seventy-eight bins were available at ANG Channel Islands by the end of the day.
2. The number of fires and the demand for retardant from all air attack bases resulted in retardant orders exceeding Monsanto's ability to supply from Ontario.
3. Pump and retardant mixing are Monsanto's responsibility.

4. Retardant mixing and pumping capabilities must be in place before aircraft can be used.
5. Setup time is about three hours if all goes well.
6. Pit set up is Forest Service responsibility.
7. Portable unit is pre-positioned at ANG Channel Islands. It is stored outside so there are usually a few glitches during assembly.

RETARDANT SUPPLY

1. All estimates for retardant needs to support operations were worst case.
2. Estimated need at 100 bins per day.
3. USDA Forest Service Region 5 and CDF developed a plan to obtain sufficient retardant.
4. Supplies were brought in from Sierra Vista, Arizona; Indian Springs, Nevada; Alamogordo and Silver City, New Mexico; Bishop, California and McCall, Idaho.
5. Retardant for MAFFS arrived in a timely manner.
6. The line on last page of Document #6 is the point at which Monsanto could no longer supply.
7. There were 78 bins of retardant at ANG Channel Islands by the end of day on 10/27/93.

OTHER COMMENTS

1. MAFFS must have a lead plane on fire to drop. Lead plane does not have to be assigned specifically to the MAFFS. orders indicate at least one lead plane was on the fire.
2. Charlie McDonald advises that on State activation, CDF needs to remind Forest Service to order lead plane.
3. LTC Doug Woolsey, Mission Commander, states that plan allows 24 hours from time called to be ready.
4. It is clear that there were numerous "heads up" phone calls between Charlie McDonald, Dennis Orrick, John Moore, Air National Guard before official notification came through.

Airtanker cutoff time at Channel Islands was 1800 hrs. Flying time to fire was 10 minutes so airtankers were launched until 1750 hrs. unless visibility, shadow conditions, etc. on fire prohibited dropping this late.

First involvement with media at ANG Channel Islands was after 1300 hrs., October 27, 1993. Flight crews were interviewed. KAFFS were loaded with water and ready at the request of the Pt. Magu Naval Air Station (NAS) to make water drops on the Green Meadow Fire which had burned onto the Naval Air Station perimeter. These water drops were never made. PT. Magu NAS fire chief did not want or need the drops. Request had been made by the Commanding Officer Pt. Magu NAS.

LTC Woolsey, Charlie McDonald, and Dennis Orrick were not aware of any problems with a forklift during retardant pump and pit setup.

PERSONS INTERVIEWED

1. Dennis Orrick
State MAFFS Liaison Officer
California Department of Forestry and Fire Protection
Sacramento
2. Charlie McDonald
Federal MAFFS Liaison Officer
Angeles National Forest,
USDA, Forest Service
3. Lt. Colonel Dave Woolsey
MAFFS Mission Commander
146th Air National Guard
Channel Islands
4. John Moore
Technical Services Representative
Monsanto
5. Stan Lake
Deputy Chief Fire Control Operations
Southern Area
California Department of Forestry and Fire Protection
6. John Bryant
Assistant Director for Southern Operations
USDA, Forest Service
South Zone
7. Woody Williams
National Fire Mobilization officer
National Interagency Fire center
USDA, Forest Service
8. Bill Hall
Logistics Coordinator
USDA, Forest Service
South Zone

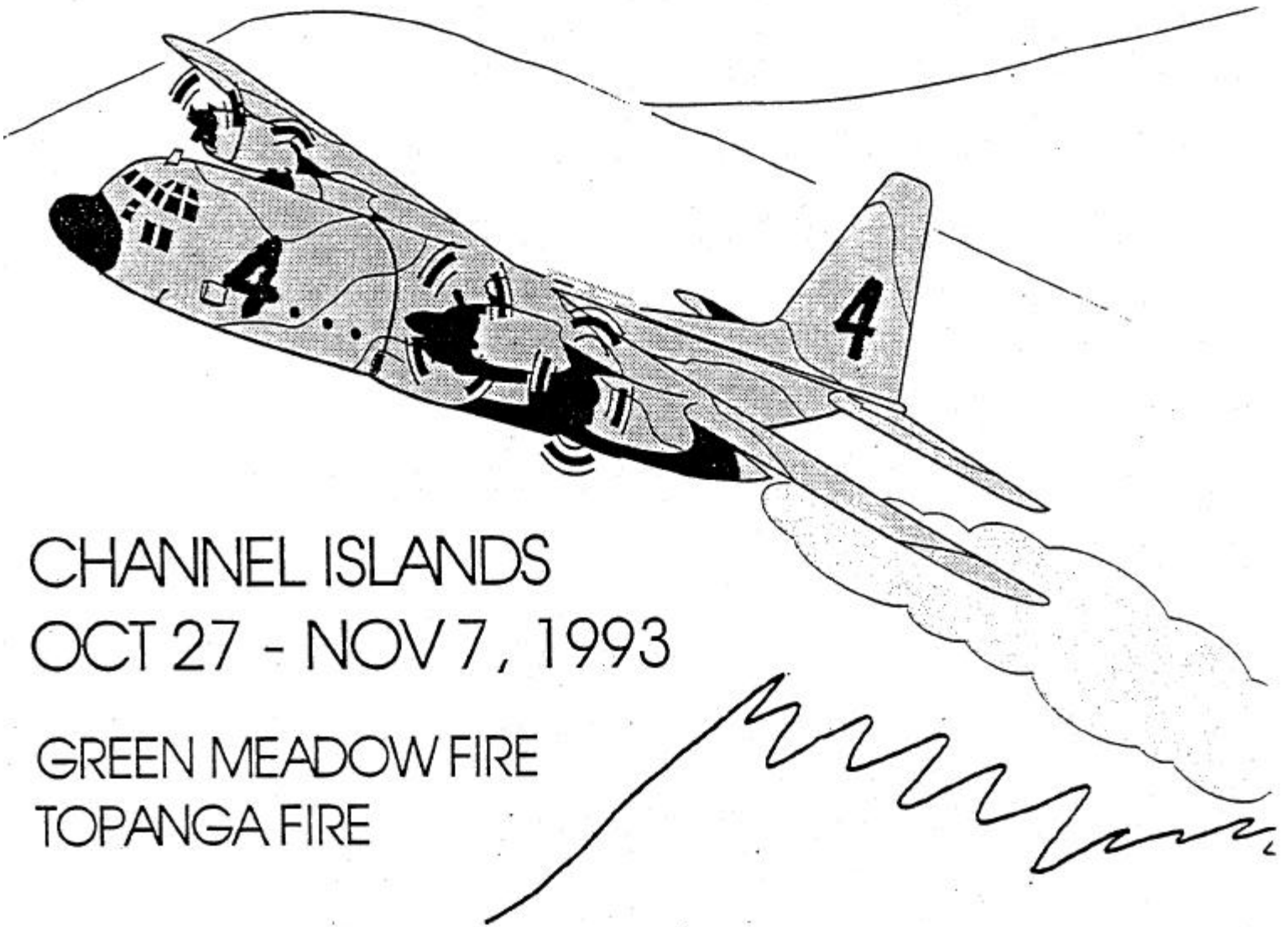
MAFFS "93"

145 AW CHARLOTTE

146 AW CHANNEL ISLAND

153 AG CHEYENNE

302 AW COLORADO SPRINGS



CHANNEL ISLANDS

OCT 27 - NOV 7, 1993

GREEN MEADOW FIRE

TOPANGA FIRE

UNITED STATES FOREST SERVICE

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

SUMMARY

MAFFS OPERATIONS Channel Islands, California October 27, 1993 - November 7, 1993

On Tuesday, October 26, a wildfire near Thousand Oaks was burning out of control and assistance had been requested by Ventura County Fire Department of the California Department of Forestry and Fire Protection (CDF) for equipment and personnel. Structures were threatened and strong Santa Ana winds were predicted. Early Wednesday morning, 0400 hours, a fire near Altadena was reported that immediately threatened homes. All air resources were committed and no additional aircraft were immediately available. OCC in South Zone requested additional air resources from the National Interagency Fire Center (NUC) in Boise at approximately 0800 hours. Structures were already being lost. As the morning progressed numerous other fires were reported with wind conditions of 70 MPH experienced on the fireline.

Just after 1200 hours on October 27, CDF had not received confirmation from NIFC of additional available aircraft. Since no commercial aircraft were available within two hours and structures were threatened CDF decided to activate the two Channel Islands National Guard MAFFS according to the agreement between CDF and the USFS allowing activation of aircraft at Channel Islands. The Air Guard at Channel Islands was notified of the activation at approximately 1300 hours. Earlier in the morning Channel Islands had been requested by the Commander of the Naval Air Station at Point Mugu to assist in the firefighting efforts of a wildfire that had burned onto the Base. The MAFFS units had been loaded earlier that morning in anticipation of possible activation. The MAFFS were not used in the firefighting efforts on Point Mugu but their use on the Base would have been permitted under the agreement between the Department of Defense, the Department of Agriculture and the Department of Interior dated 1975. The setup of the retardant plant began immediately after state activation with the assistance of personnel from Monsanto Corporation. Several minor problems were experienced during setup but retardant was available for loading by 2230 hours on the 27th.

Confirmation of Federal activation was received around 1500 hours on October 27. MLOs McDonald (TJSFS) and Orrick (CDF) were dispatched to Channel Islands under the state activation at approximately the same time. Initially only 4 MAYFS were activated in addition to the two state activated Channel Islands units. After discussion between the California National Guard, CDF and the USFS NIFC office it was decided that the Federal Activation would include the two Channel Islands units beginning on the 28th of October, 1993.

MLO McDonald arrived at Channel Islands at 1730 and began ordering MAFFS organization through Los Padres NF expanded dispatch. MLO Orrick arrived at Channel Islands at 2400 hours.

October 28 - Portable tanker base operational and ready to load planes at 0800. The two Channel Islands aircraft (4 and 6) were dispatched to the Green Meadow Fire at 0900. Cheyenne MAFFS (1 and 3) and Colorado Springs MAFFS (2 and 5) arrived between 1300 and 1500 and were dispatched to the Green Meadow Fire. MAFFS 5 was unable to arm and did not fly. Operations continued until sunset. Representatives of the news media were present interviewing both military and agency personnel throughout the day. The requested Fire Information Officer position had not been filled.

October 29 - All six aircraft and the tanker base were operational at 0700. Flights began to the Green Meadow Fire at 0830. Flights continued throughout the day until sunset. A formal news conference was held at the Channel Islands Base at approximately 1030 hours by U.S. Congressmen Gallego and Weldon concerning the timeframes of MAFFS activation and the process the USFS must follow for obtaining their use. It was attended-by most of the major Los Angeles news media. The USFS received considerable criticism from the news media concerning the requirement to utilize all available commercial air tankers prior to activating MAFFS. They charged that available military aircraft were sitting on the ground while homes were being burned only a short distance away. It was explained that the Economy Act of 1932 requires that the Federal Government not be in direct competition with private industry. Congressman Gallego promised that this process would be reviewed and the law changed. Governor Wilson met with Congressmen Gallego and Weldon to discuss the situation at another location later in the day. A considerable amount of time was required of the MLOs to answer questions by the Congressmen and the news media. FIO James Turner arrived and after familiarization with MAFFS began to coordinate contacts with the numerous representatives of the news media present.

October 30 - Weather conditions moderated over the night and predicted East winds did not materialize. Heavy smoke over the Green Meadow Fire precluded air drops and the MAFFS remained in a standby mode throughout the day. MAFFS were released from the Green Meadow Fire at 1730 hours. South Zone notified MAFFS operations at 1900 hours that because of the predicted return of Santa Ana winds the evening of November 1 and the possibility of extreme winds on November 2 and 3 that the MAFFS aircraft would be held at least through Monday, November 1. A review of the actual weather conditions experienced at that time would determine whether MAFFS would be released or retained.

October 31 - Air crews reported 0600 hours, were briefed and stood by throughout the day.

November 1 - Air crews reported 0600 hours, were briefed and stood by throughout the day. The prediction of strong Santa Ana winds was still in effect.

November 2 - Air crews reported 0600 hours and were briefed on the possibility of strong Santa Ana winds. Commercial air tankers were sent to a hot spot on the Green Meadow Fire and Channel Islands obtained clearance from the Naval Air Station at Point Mugu to land and reload them at Channel Islands. The Topanga Fire started approximately 1030 hours and the commercial air tankers were diverted to this fire and reloaded at Channel Islands. At 1230 hours a launch order to the Topanga Fire for three MAFFS was received from South Zone. At 1320 hours a launch order for the other three MAFFS was received. Operations continued until sunset loading the six MAFFS and two commercial tankers at Channel Islands.

November 3 - Crews briefed at 0615. During the briefing the problems with the media was discussed. News media attempted to attend briefing and were eventually allowed to attend the flight information portion. At 0650 hours the first aircraft was launched to the Topanga Fire and missions continued until 1430 when they were stopped due to heavy smoke.

Dick Stauber arrived at Channel Islands approximately 0900 and with General Bozeman diverted much of the heavy media attention away from actual MAFFS operations. MAFFS 7 and 8 from North Carolina had been activated by NIFC on November 2 and arrived at Channel Islands approximately 1630 hours.

November 4 - Crews reported 0600. South Zone requested six MAFFS aircraft to be ready for Topanga Fire. At 1250 hours South Zone ordered six MAFFS to the Topanga Fire. After one mission the MAFFS were returned to standby status and five commercial air tankers were reloaded at Channel Islands.

November 5 - Crews reported 0600. South Zone called with the information that the MAFFS had been released from the Topanga Fire at approximately 1100 hours. They were informed that we had 15,000 gallons of retardant already mixed and would need to fly each of the 8 MAFFS once with a load of water for a total of 13 drops. At 1315 hours the Air Ops Director on the Topanga Fire called and indicated that he understood we needed to fly off retardant. He had a need for some retardant on the fire. He was told of our need to drop 5 loads of retardant and 8 loads of water. He was informed by MLO McDonald that he would have to go through South Zone with a request for aircraft. No launch order was received.

At approximately 1500 hours at the request of South Zone MLO McDonald was released from the incident. MLO Orrick assumed MLO duties.

November 6 - Crews reported 0600 and stood by throughout the day.

November 7 - Crews reported 0600. At approximately 0900 MLO Orrick was informed by OCC that South Zone had released the MAFFS back to NIFC. MLO Orrick reported the possibility of hauling the 15,000 gallons of retardant by truck tanker to a tanker base with liquid storage capabilities. At approximately 0930 OCC notified MLO Orrick that the bases were concerned about possible contamination and that the 5 loads of retardant and 8 loads of water necessary to flush the tanks would be flown off over the Wheel Fire on the Los Padres National Forest. MAFFS aircraft were launched starting at 1150 hours and were finished by 1430 hours. A second water flush was performed on the ramp at Channel Islands on each of the eight MAFFS.

NIFC informed MLO Orrick that the IVIAFFS had been released back to the military at approximately 1200 hours. MLO Orrick informed the MAFFS Mission Commander Lt. Col. Woolsey at 1500 hours that the aircraft were back under military control. The out of state MAFFS aircraft would return to their home bases on November 8.

SIGNIFICANT EVENTS

1. In spite of the heavy media criticism the actual activation and fire operations worked very smoothly. The base was in operation and aircraft were ready for assignment well within the 24 hour activation requirement. No significant problem areas developed in the actual operations.

2. A misunderstanding of the actual request for MAFFS developed between South Zone and CDF Sacramento Headquarters on the morning of October 27. While the activation by the State of California proceeded satisfactorily a clearer understanding of the procedures by CDF Sacramento Headquarters and Region Dispatch Centers could prevent misunderstandings. The changeover to a federal activation of the California Guard was also confusing indicating a need for additional clarification in the Agreement between the State of California and the USFS.

3. FM radios continued to be a problem on MAFFS 6 and 2. Replacement radios were flown from Boise and one other was loaned from South Zone radio shop. MAFFS 6 housing was found to be defective but other problems developed intermittently. The FM radio on MAFFS 1 had problems on November 7.

4. The order for the FIO was not filled until October 29. This was significant for the following reasons. Approximately three weeks earlier Congressman Gallegly held a well attended news conference at Channel Islands National Guard Base to announce the introduction by him of a bill to purchase 12 new MAFFS units. On October 23 and 24, just three days prior to the fires, Point Mugu Naval Air Weapons Station held an air show attended by several hundred thousand people from the immediate area at which the MAFFS were demonstrated using water drops. Many of these same people lived in the areas burned. Media presence was heavy and interest in the MAFFS capability was stimulated by the live demonstrations. This interest and knowledge prompted almost instantaneous media inquiries to the Air Guard as to when they were going to respond to the fires. The National Guard is still suffering from intense criticism for not being prepared for the L.A. riots and their almost universal response to the media was that, "We are ready and only awaiting orders from the Forest Service." This was construed by the media to be an indication of a refusal of the fire agencies (USFS and CDF) to use them on the fires. If a well-informed FIO had been present perhaps some of the misperception of the media could have been avoided.

The media problem was compounded by the fact that fires were burning on surrounding hills easily visible from the Base on October 26 and 27. Also, on October 27 a fire burned onto the Naval Base threatening structures and federal facilities. The Naval Commander called the Air Guard Wing Commander requesting use of the M-AFFS on the Navy Base at 0915. Aircraft were prepared and loaded with water for possible launch. However, coordination with the Navy Fire Department resulted in the MAFFS not being used. This was at the same time the Altadena Fire was burning homes and led to media questions of why the MAFFS were sitting on the ground.

Some of the media problems might have been lessened if there had been early coordination between the fire agency FIO and the military Public Affairs personnel. A central media contact point should always be established and no media be allowed at the activation unless they were processed through this location. The FIO and military PA Officer should agree on procedures that ensure mutual control of all media releases concerning the activation. It would be preferable that the FIO assigned be familiar with MAFFS. The possibility of sending several FIOs to the annual training should be considered. This is especially true for Southern California where extreme media interest seems to be the norm.

5. During the second week Congressman Gallegly introduced a bill with 18 cosponsors to change the Economy Act of 1932 to exempt fire emergencies. This added a significant political interest in the entire MAFFS program.

6. Commercial air tankers were loaded without incident at Channel Islands on two occasions during this activation. Acceptance by the military and the commercials of each other appeared to not be a problem.

7. Communications between OCC and the MAFFS operation were sometimes confused and seemed to be strained beyond the normal tensions associated with emergency activities. Use of a person familiar with MAFFS physically located at South Zone might serve to alleviate this problem.

8. Retardant suppliers were taxed beyond their ability at times during the fires. However, at no time did supplies at Channel Islands drop below one days projected need. South Zone through NIFC was able to obtain supplies of USFS owned retardant from other states.

9. The setup of the retardant mixing plant seems to be the activity that takes the longest amount of time during activation. Monsanto Corporation has voluntarily left their portable plant with a startup supply of retardant at Channel Islands, but it must be partially disassembled and stored to prevent deterioration. If there were a trained cadre of National Guard personnel at Channel Islands this could save several hours in the startup time. MAFFS Base Manager Stinson indicated that he could incorporate this training, in his annual visit to the Santa Barbara Airbase each Spring.

10. The two MAFFS slip on units assigned to the Wyoming National Guard were left at Channel Islands for maintenance and storage over the winter. Storage facilities are better at Channel Islands and there is some question of the Wyoming Guard continuing with the MAFFS mission.

MAFFS 93
CHANNEL ISLANDS
SUMMARY DATA TABLE

Date	Fire	Sorties	Drops	Gallons	Pounds	Fit. Hrs
Oct. 27		0	0	0	0	0
Oct. 28	Green Meadow	28	26	78,000	702,000	8.5
Oct. 29	Green Meadow	41	40	120,000	1,080,000	18.4
Oct. 30		0	0	0	0	0
Oct. 31		0	0	0	0	0
Nov. 1		0	0	0	0	0
Nov. 2	Topanga	20	20	60,000	540,000	10.7
Nov. 3	Topanga	51	50	150,000	1,350,000	24.2
Nov. 4	Topanga	6	6	18,000	162,000	3.7
Nov. 5				0	0	0
Nov. 6,				0		
Nov. 7	Wheel*	13	13	39,000	351,000	6.1
Totals		159	155	465,000	4,185,000	71.6

SUMMARY BY FIRE

Green Meadow	69	66	198,000	1,782,000	26.9
Topanga	77	76	228,000	2,052,000	38.6
Wheel*	13	13	39,000	351,000	6.1

*Wheel Fire was used to fly off mixed retardant and water

MAFFS 93
CHANNEL ISLANDS

SUPPORT PERSONNEL
ROSTER

Name	Position
Charlie McDonald	MLO
Ron Bassett	MLO
Mike Miller	MLO
Dennis Orrick	MLO
Jim Turner	FIO
Thomas Shores	FIO
Cecil Stinson	Base Manager
Bob Reed	Assist. Base Manager
Ed Booker	Assist. Base Manager
Dan French	Assist. Base Manager
Robert Juhola	Assist. Base Manager
Joe Pasinato	Assist. Base Manager
Jim Carter	Assist. Base Manager
Wayne Hance	Logistics Chief
Jim McBride	Supply Unit Leader
Tammy Jennings	PTR
Georgette Aquilar	Purchase Agent
Chris Shaw	Resource Clerk
Chuck Harper	Driver
Mike Huckaby	Driver
Howard Gibson	Mechanic - private
John Lemmons	Mechanic - private
Robert Quinn	Mechanic - private
William Allen	Mechanic - private
John Moore	Monsanto
Monsanto Crew	4 members
USPS Crew	5 members
CCC Crew	17 members

Report from the Fireline

Terry Barretta
Public Affairs
Officer
302nd Airlift
Wing

Saturday,
10/30/93

I drove out to the fire area where the crews were doing their drops on Thursday and Friday. The entire area was charred.

I stopped at a residence where a woman was standing. Her entire house had been destroyed. One wall and some plumbing remained. It had been a three tier house on the side of the mountain. She seemed numb and unemotional. I asked if she had seen any of our aircraft making drops in the area. She asked if I saw the ridge in front of us, pointing to a ridge about half a mile above us. She said, "See the houses up there? They're still there because of them. They dropped several times along that ridge." Still unemotional she said, "I wish they had been just a little closer over here."

The next place I stopped at had a large family who had lived on the property. The father was in his 80's, his 4 children in their 40's - 60's, and his sister, in her 70's. They said they had stayed as long as they could until the fire had surrounded them on three sides, and until their guest house, a mobile home, a couple of barns, and several sheds had caught fire. It was over 30 hours before they could get back and find out if they had anything left. The main house was untouched. They were so happy to still have a home. Even though it was charred all around them you could see that it must have been a beautiful place. When I asked if they had seen any of our aircraft making drops, they said there had been drops made on all three sides above them. As I began to leave, one of the daughters hugged me, trembling, and with tears in her eyes. She said, "We're so glad you're here. Will you tell your crews how glad we are that they are here and thank them for us? And please thank their families, too. I know they must be concerned for their safety out here. Please thank them all for us." ... Done!

SUMMARY
 COMMERCIAL TANKER RELOADS
 CHANNEL ISLANDS
 1993

DATE	FIRE	AIR TANKER	LOADS	GALLONS
November 2	Topanga	01	6	12,000
	Topanga	15	6	12,000
Day Total			12	24,000
November 4	Topanga	01	1	2,000
	Topanga	27	1	3,000
	Topanga	127	1	2,200
	Topanga	131	1	3,000
	Topanga	139	1	2,450
Day Total			5	12,650
Operation			17	3
Total				

Legend

Tanker 01 SP2H
 Tanker 15 DC4
 Tanker 27 P3
 Tanker 127 Super
 Tanker 131 PB4Y2
 Tanker 139 C-130