



Initial Impressions from the Northern California 2008 Lightning Siege

A report by a Wildland Fire Lessons Learned Center Information Collection Team

The photo on the front of this report was taken by Redding Hotshots crew member Amy L. Reid while the crew worked on the Lime Complex in early July. The Redding Hotshots are a Type 1 training crew based in Redding, CA. During the 2008 fire season they worked on several fires in northern California including Bear Wallow, the Cub Complex, the Miller Fire and the Yolla Bolly Complex.

Information for this initial impressions report was compiled and edited by a Lessons Learned Center Information Collection Team. Team members were: Jonetta Trued Holt, David Christenson, Anne Black, Brett Fay and Kim Round.

Table of Contents

I. Introduction	<u>5</u>
II. Setting the Stage	<u>7</u>
A history of multiple ignition events	
Pre-Planning Documents and Discussions	
III. The Situation	<u>9</u>
Up against an early fire season	
Dry fuels, hot weather in some places	
At first, there were too many fires to count	
IV. Initial Response and Priority Setting	<u>12</u>
Ignition on a landscape scale	
Oversimplification vs. real understanding of complexity	
Thinking BIG and Bigger	
Working relationships vs. arrangements	
Thinking BIG ... and Bigger	
Prioritizing fires on a statewide scale	
Using decision support tools	
Summary of Key Lessons from Initial Response and Priority Setting	<u>18</u>
V. Managing the Siege.....	<u>20</u>
Testing new strategies	
Theater of Operations	
First impressions of 'Theater' command in the field	
Finance and cost accountability	
Key Decision Logs	
Implementing new approaches to old strategies	
Supersized Wildland Fire Situation Analyses (WFSAs)	
Using 'Task Forces'	
How ROSS saw Task Forces	
Aviation	
Smoke effects limited air missions	
FEMA resources and 84 Base Camp	
An evolving role for the camp	

Summary of Key Lessons from Managing the Siege

VI. Incidents within the siege[36](#)

Incident management and team assignments

- Multiple transitions

- Discussions about tactics

- Issues among land management neighbors

- Layers of oversight

- Lacking suppression rehabilitation guidelines

- Ordering and tracking resources

Facilitating relationships with the public

- Team Information Officers

- Public understanding

Summary of Key Lessons from Incidents within the siege[33](#)

VII. Issues for Organizational Leaders[46](#)

I. Introduction

“This event in NorCal is another of the major events we have experienced in fire management. In line with our desire to learn, we ought to line up a team to help us capture lessons learned from this event.”

Delegation and Intent

This statement, and a regional delegation, was the impetus for an information collection team from the Wildland Fire Lessons Learned Center to visit with agency administrators, local unit and fire management personnel during October 2008. Information collection teams from the Lessons Learned Center are not dispatched to evaluate, review or assess performance. The team is only interested in collecting and synthesizing thoughts, insights and reflections that may be of value to other firefighters. The overall intent is to help fire management personnel reproduce success and avoid repeating mistakes.

In collecting information from those who participated in the response to northern California’s lightning event, we were asked to look specifically at several areas that seemed to present new and emerging issues, ideas, responses and thought patterns. Some of those included:

- Priority setting processes (resources, components at the Geographic Area Coordination Center, the California Multi-Agency Coordinating Group and the National Multi-Agency Coordinating Group levels)
- The use of Incident Management Teams in unique roles (National Incident Management Organization Support and Command, Area Command, T1, T2 and T3 organizations)
- The Theater of Operations concept
- The use of Task Forces which were also called “Surge Forces” and “Force Multipliers.”

Process

Our conversations and interviews are strictly confidential. The Lessons Learned Center does not identify people by name, unit, or other identifier in final notes or in the combined and condensed final report unless they have given us express permission to do so and only because identifying them provides context for the reader. The Center is interested in the “what” not the “who.”

During Action Learning

There were many spontaneous innovations in response to the conditions prompted by the dry lightning siege in June, some of which worked, or started to work and others which did not. This report is a snapshot in time of individual and organizational reactions to this event and how individuals were thinking about their reactions even as some of the fires were still active. Many said ‘we’ve not even had our *own* AAR yet.’ We have noticed that the wildland

fire community's response to this event was part training, part innovation and part adjustment to new circumstances.

This report is based on the premise that by reflecting on and analyzing past performances we can improve both personally and organizationally. Reflections, and documented reflections such as this report, can be used to help us distinguish between mental models that lead into decision traps and those that guide us out, or those that have the potential to guide us out.

Being a Learning Organization

A Learning Organization, as discussed by David A. Garvin in "Learning in Action," provides an environment that is conducive to learning. It is an atmosphere where by leading learning individuals create opportunities, share knowledge and set the proper tone and shape to the discussion process.

As Garvin notes, "Learning is not always an event that is planned or takes place through systematic analysis. We also learn through unexpected events or connections." In moments of reflection, we can ponder methods that will improve our techniques and increase our abilities to adapt in rapidly changing environments.

Learning organizations perform six critical tasks:

- They collect information, using inquiry and observation
- They benchmark with others looking for innovation that will lead to better performance
- They examine past experiences and record them
- They experiment with new knowledge applications
- They practice problem solving in a systematic way
- They transfer knowledge through multiple venues.

Certainly the wildland fire community's response to Northern California's 2008 Lightning Siege, is one of those learning opportunities. We learned while we were in response mode and we are still learning about our response long after. While sometimes the written word is insufficient in capturing and sharing the true essence of our discoveries and revelations, we are able to use it to spur discussion. Each individual's own unique paradigms will enable them to interpret the following report just a little differently. The wildland fire community values diversity of thought, experience and opinion. This report – a living document – may begin an important discussion among peers. This is certainly the spirit it is offered in.

II. Setting the stage

A history of multiple ignition events

The 2008 lightning siege was a “surprise” due to its size and duration. However, we need look no further than the historical fire regime in northern California to realize that the lightning event last summer may happen again, even within a few years.

This region is known for having a high frequency of fire, both on CalFire and National Forest administered areas. CalFire statistics from 1933 to 2006 show that the five-year average for fire frequency is 5,685 fires a year. Typically, lightning causes less than 10 percent of fires within CalFire’s jurisdiction. However, in 1987, when California had 13,476 fires, “Most of them were due to dry lightning which occurred between August 29 and Sept. 11,” according to the department’s report, which also noted that the majority of the fires and acreage were on national forests. In the National Interagency Fire Center’s (NIFC) list of “Historically Significant Wildland Fires,” the California fire season of 1987 is called the “Siege of ‘87” when 640,000 acres were burned.

"We're used to having a lot of fires here in a year. We're just not used to having them all at the same time." ~ Redding, CA resident

Another year for historic lightning-caused fires was 1999. During this season, California had two of the nation’s top 10 fires: The Big Bar Complex on the Shasta-Trinity National Forest that began Aug. 23 and burned until Nov. 3; and the Kirk Complex on the Los Padres NF that began Sept. 8 and burned until Nov. 18. Both of these incidents are classified as being significant because they amounted to hundreds of fires initiated by lightning. A combined total of 227,647 acres burned in these two complexes.

Although 1987 and 1999 were historically significant for both the number of fires initiated by lightning in the northern part of this state and the number of acres burned, the potential for mass ignition is not so unusual. Other years also had a high number of lightning fires. In 2001, for example, NIFC’s statistics show that northern California had 2,238 lightning-caused fires that burned 185,212 acres.

In one archival report that was shared with the Lessons Learned Center recently, California is depicted as having experienced an 18-day period with 436 wildland fires during August 27 to September 13, 1955. Of those, 59 fires are said to have originated from lightning strikes. Management response included 12,700 firefighters employed by the Forest Service and California Division of Forestry, 2,700 volunteers and 3,000 military personnel. Bulldozers numbered 529, and aircraft totaled 57 including 10 helicopters. Go to this link to see the report written by the Forest Service in 1955.

[California A-Flame 1955.](#)

Pre-Planning Documents and Discussions

Californians are aware they live and work in a fire prone environment. Their process for implementing strategic planning is addressed in several documents that have been in place for years, beginning with the FireScope California’s Multi-Agency Coordination System Publication.

NorthOps GACC also uses the Northern California Multi-Agency Coordination Group (NorCal MAC) Operations. See [NorCal MAC Ops Guide](#).

Some respondents credited ‘the process’ for their operational success early on. One referenced the recently developed Regional Preparedness Plan completed in 2007 with lessons learned during southern California’s large fire event in October of that year. However, one element which appears to be unaddressed in pre-planning documents, is what to do when the magnitude of the event overpowers the processes and procedures in place. In 2008, northern California’s fire season got supersized and fast-tracked. Although regional pre-planning documents include the concept for managing fires as complexes, they never could have imagined an organization for managing numerous complexes of fires burning simultaneously.

Forest Management Plans, which are comprehensive land management plans for each national forest, are in place on all of the northern California forests. Fire Management Plans, which guide fire management responses, are in place on all but two of the forests. Forest officials reported the documents were helpful, especially in conveying values and priorities to Incident Management Teams, but the element that many forest officials said they noticed missing from their plans this year, was a protocol for when fire crossed their forest boundary onto another forest or vice versa. The absence of pre-planning for extra-boundary events often prompted forest personnel in 2008 to remain committed to keeping their fires on their forests even though wilderness areas overlay the forest boundaries.

*"Can we sandtable an event
of this magnitude?"*

On several northern California forests, Agency Administrators and staff officers regularly participate in pre-planning meetings for the upcoming fire seasons. Additionally, many local unit personnel said they meet twice a year or more with personnel from other agencies for roundtable discussions on issues and concerns. However, forest personnel said the gaps in their pre-fire season discussions became obvious during 2008 when they suddenly found they had no protocol in place for handling “fires on the edge.” Local fire managers said they defined these fires as not currently on their jurisdiction, but soon could be. Tracking on fires that might move onto their jurisdiction was difficult because they did not think about them and their neighbors did not tell them about them.

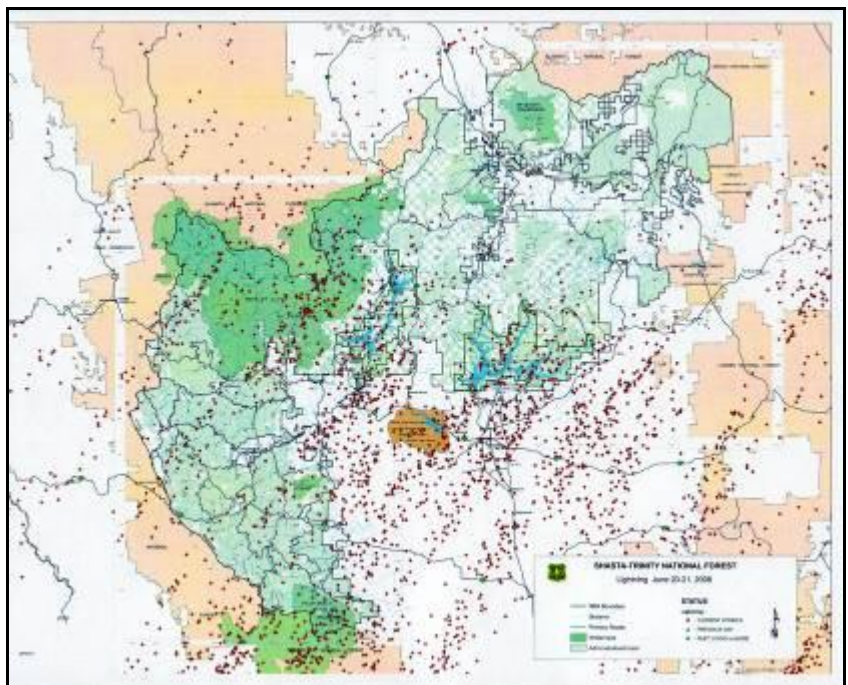
III. The Situation

Up against an early fire season

Fire season in California started early in 2008, regional officials said. The first large fire, the Indians Fire, began June 8 in the southern portion of the state on the Los Padres National Forest. Four days later, the Whiskey Fire started on the Mendocino National Forest in northern California. These fires were closely followed by lightning storms that crisscrossed the state from June 20 through June 23. Normally, the fire season in northern California and Oregon begins in mid-July. Forests have geared their hiring and training programs to coincide with preparing for a normal fire season start just as many forests across the country do. Many fire crews were scheduled to begin working on northern California forests at the end of June. Ordinarily, fires begin in the lower elevations – generally state jurisdiction – and only later move into the forests. This allows federal resources to assist the state, then the reverse. The 2008 lightning siege struck 10 of the 11 state response units in northern California and 11 of the 20 federal units. All resources were immediately engaged on their local units, with none to spare for neighbors. Because the storm was unpredicted, no extra resources had been staged for ready reserves.

Dry fuels, hot weather... in some places

Some respondents said they believed there had been a widespread illusion that 100 percent snow pack would translate into a low fire season in the upper elevations. However, much of northern California experienced the usual dry spring characterized by high winds which were of longer duration than normal. By early June, the approaching risks of fire season were an estimated three to four weeks ahead of schedule, particularly in low elevations experiencing high daytime temperatures. A seasonal assessment indicated early curing of lowland grasses. Some areas in northern California and Oregon had experienced their driest spring on record. As a result, fuel moistures were at near record lows by June and on the day of the event, the average Energy Release Components (ERC) had exceeded the average August values and were closing in on the 90th percentile numbers. Certainly another contributing factor was the weeklong dry winds that occurred in some areas immediately preceding the first lightning storms, local authorities said.



Lightning strikes mapped on the Shasta-Trinity National Forest, one of the northern California forests that experienced multiple fire ignitions from a fierce lightning storm.

By the time summer arrived in 2008, fuel and soil conditions differed dramatically between areas in northern California that received about the same number of lightning strikes when the electrical storm came through. Fire management officers who noted the differences said this made a difference in how many of the lightning strikes started fires. For example, the Shasta-Trinity National Forest's (SHF) map showing the frequency of lightning strikes in the picture on page nine, is comparable to the number of strikes received by the Klamath National Forest (KNF) to the north. However, the Klamath received an above normal snow pack in the winter of 2007/2008. The snow there lasted well into early summer at the high elevations. When the lightning occurred on June 20, there was still quite a bit of snow at higher elevations and fairly moist soils at all, except the lowest, levels on the forest. The Klamath saw 24 lightning ignitions from the storm and "Some of those fires didn't go anywhere, pretty much because of fuel and soil moistures or because they were surrounded by snow," one forest management officer said. Throughout most of the fire season, on this forest, "The fires we did have rarely exhibited fire behavior above moderate," one interviewee said. Late in the season, when the fuel moistures were low and curing, is when the Klamath saw higher intensity and severe fire behavior. The Shasta-Trinity National Forest's experience was quite a bit different.



Inciweb Photo by Mike Johnson

Fire activity July 7, 2008 on the Trinity River

The Shasta-Trinity National Forest did not have the snow pack their forest neighbors to the north had. By May, snow pack surveys on the forest reflected an overall 57.8 percent of normal for snow depth, and 64 percent of normal for water content. The Mt. Shasta area stood at about 50 percent of normal. However, forest personnel said that despite the deficit, live fuel moistures across the forest were only in the lower range of average variability expected for June. The mid to lower elevations were dry but fuel moistures were not extremely low and lightning ignited fires in June did not immediately exhibit extreme fire behavior characteristics. Forest personnel said they counted 136 ignitions from the

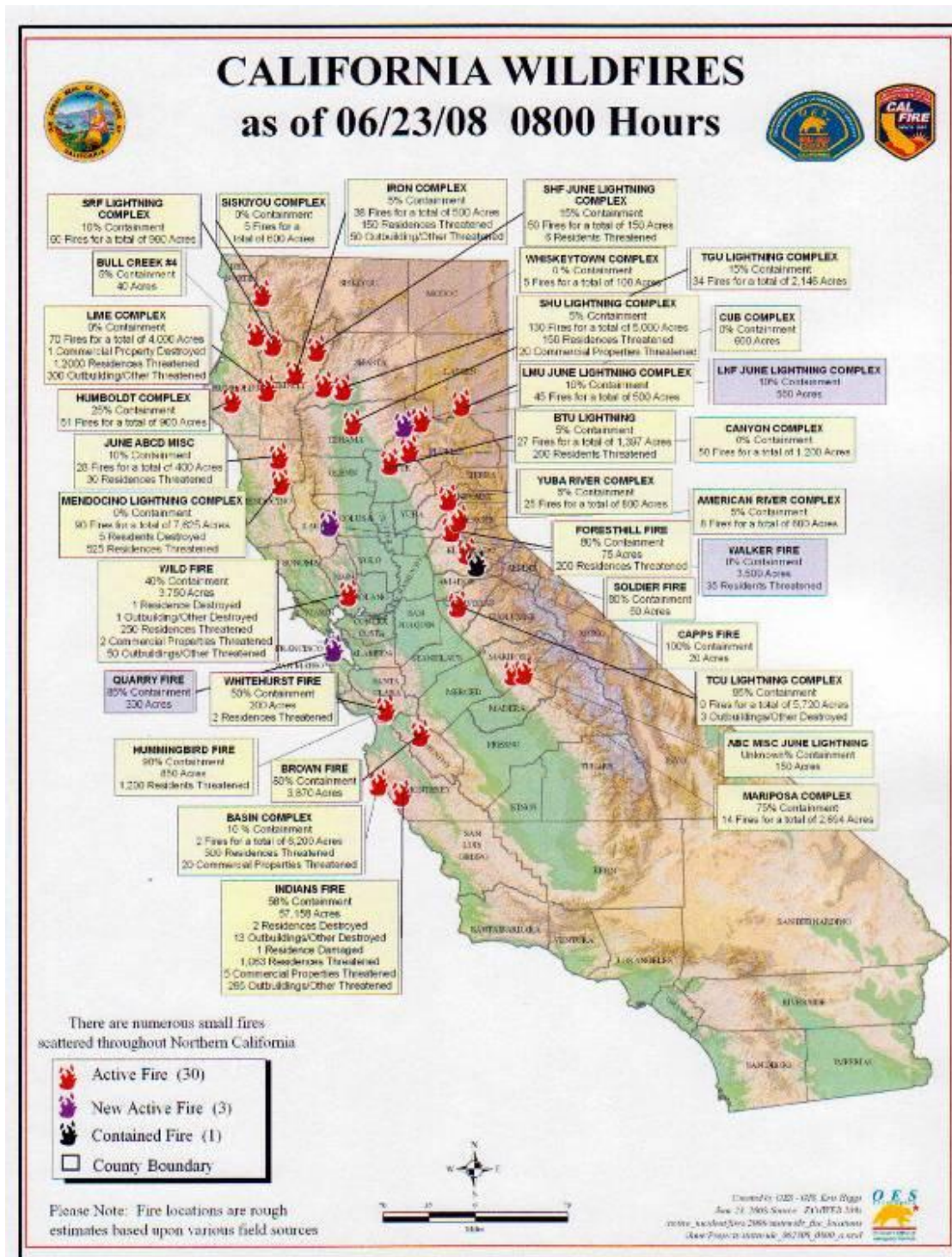
lightning event. The greatest number of those fires, 119, were contained at less than 99 acres. Nine of the fires were contained at less than 5,000 acres. Only eight of the original 136 ignitions became large fires.

At first, there were too many fires to count

For many fire management officials in northern California, working through the effects of the unpredicted and uncommon 33-hour lightning siege in June 2008 was a career distinguishing event. The storms produced 5,146 lightning strikes, igniting 1,010 fires. The fires in federal responsibility areas totaled 643 and in state responsibility areas it was 361. Tribally administered lands had six ignitions.

Lightning also ignited fires in middle and southern California. For the entire Region (5), on June 28, there were 1,217 uncontained fires reported between the responding agencies. These numbers bring to light one of the issues agency officials had in trying to level reportable

information across multiple agencies. While Forest Service firefighters “Might see three trees within a few yards of each other on fire and call it one fire, CalFire or local fire department personnel might call that three fires,” one agency official said. National Incident Management Teams hesitated to attempt reporting the number of individual fires within a complex, while state and local agencies required their teams to do so. By July 7, when federal and non-federal fires were broken out, there were still 132 uncontained fires listed in federal jurisdiction.



IV. Initial Response and Priority Setting

Ignition on a landscape scale

Landscape fire events are fundamentally different in northern California, compared to, for example, multiple fires burning during Santa Ana wind events in the southern part of the state. In southern California, the extensive and increasing wildland-urban interface dominates the landscape. Driven by fluctuating onshore and offshore winds, fires can and do move from neighborhood to neighborhood causing evacuations of hundreds of thousands of people in a short period of time, potentially burning hundreds of homes and businesses. However, northern California is characterized by expansive forests containing large tracts of wilderness. The topography in some of the area is extremely inaccessible to firefighters, and some privately owned forests are inholdings within national forest system lands, often making them a concern for protection because of their ownership. The area also features a much smaller wildland-urban interface population where communities are widely scattered over a vast terrain.

When more than 2,000 lightning fires ignited in Region 5, fire managers on duty at NorthOps, the Geographic Area Coordination Center, said orders for resources flooded in. As soon as they saw the number of fire starts being reported, respondents said they knew that they would be overwhelmed, especially

considering that many firefighters were already assigned to one of the three large fires currently going on in the geographic area (Humboldt, Whiskey and Martin) in addition to other fires in the state. These incidents and their resource support led to a level of drawdown which is by all accounts a normal situation that occurs throughout the season. "The first set of forces we sent out was just pure survival," said one interviewee. Tempo and magnitude were the key differences between this and other fire seasons. Immediate priorities of 1) Life, 2) Property, and 3) Values at risk were established, and firefighters were assigned to fires according to those criteria. But the event was too big to continue using only survival techniques. As fires grew and resources became stretched, a more strategic response became necessary.

"We knew on June 21 that we would be battling these until a season-ending event, which is generally mid-November."



Photo courtesy Scott Wetmore
Cub Complex July 15, 2008

Initial priority setting and resource allocation

Fire suppression resources initially had been allocated to the interagency units. This allowed unit personnel to set priorities for which fires needed to be handled first. By June 24, however, the NorCal Multi-Agency Coordinating Group began to identify where the fire concentrations were going to be and develop a mitigation strategy for the GACC:

- Initial Attack
- Opportunities for Containment: those incidents likely to be 14 days or less, or where significant

change in resource needs could be mitigated.

- Extended Duration Incidents: multiple 14-day Incident Management Team (IMT) commitments.
- Long Term Incidents: these incidents will need long-term strategic planning and resource needs and are likely to burn until a season-ending event.

This was a key decision and the basis for the strategy for the GACC through the duration of the event. It led to the use of “Theater opportunities,” with the area, an idea which was pulled from a draft Accountable Cost Management Guide that had become available to NorthOps a week before the lightning bust. Organizing in this manner helped coordinators simplify the priority setting process for resource allocation. In one week, coordinators moved from collecting intelligence and sending resources to “hundreds of fires,” to planning and responding to multiple incidents collected into 29 Incident Status Summary (ICS-209) forms. To view the fire behavior report see: [Northern California Fire Behavior Assessment ONC Support 2008](#)

Oversimplification vs. real understanding of complexity

Coordinators, as part of their normal intel gathering process, augmented the standard ICS-209 reporting process to help them prioritize fires and allocate fire suppression resources because that form did not provide them with the level of situation awareness they needed. The form itself was 1) Not formatted to support multiple fires or less-than-perimeter-control objectives. It lacks the room to report the incident’s situation accurately and does not supply the correct options for listing incident-specific objectives. There is also no place to list unstaffed fires; 2) Because the form does not allow for complete information sharing, it presents a misleading situation.

Missing information becomes confusing to regional, state and national coordinators who are accessing the ICS-209 forms in the national database and depending on it to provide information that will help them prioritize resource allocations at multiple levels.

To overcome the gaps in knowledge from the formal reporting process, NorCal MAC Group members sustained a daily practice of gathering intelligence through direct incident personnel conference calls. Talking to the Incident Commanders (ICs) provided coordinators with the best information, they said, because they listened to how the ICs sounded when they talked, not just what they said. The group also added a form to the standard ICS-209 giving incident personnel the room to complete a more accurate report, shared a list of items they used for priority setting with the teams, and provided a web site for the teams to submit additional information for priority setting consideration. NorthOps personnel collected the information and, based on the ICS-209s and the morning conference call with the ICs,



*Photo courtesy Amy L Reid
July 1, 2008 on the Lime Complex.*

produced a daily briefing for operational prioritizations. For an example of the extensive intelligence gathered on those documents, see: [7-12-08 MAC Incident Briefing With Detail](#).

Priority setting at the geographic level revolved around “Which town was in danger or what power line would be affected,” interviewees said. Assigning resources was guided by a tiered approach identifying 1) threats to human life, 2) threats to property, 3) other resources at risk, and 4) timely containment potential. Assignments for Incident Management Teams and the resources sent to support them were made on these values and driven by the idea that fires that could be contained right away were in a higher category than the fires they expected to become ‘campaign’ or long-duration management events.

Coordinators said they looked at the fires with the purpose of locating the ones they could contain immediately with enough resources. After picking up the fire, teams and crews would be reassigned to the next highest opportunity for containment. This option, made the most sense because there simply were not enough resources to adequately staff every incident. The small wins had a positive effect on morale of the crews and removed some incidents from the map.

Thinking BIG... and Bigger

Faced with the real-time situation of active fires on a landscape scale, fire managers on all levels, from local forests to regional and state, said an emerging awareness led them to believe “thinking big” was critical to successful management. On forests, this was manifested in comprehensive Wildland Fire Situation Analysis (WFSA) documents instead of the traditional single-fire WFSAs. At the geographic area coordination level, “thinking big” resulted in implementing a ‘Theater of Operations’ concept.

The NorCal Multi-Agency Coordinating Group (NorCal MAC) and GACC personnel at NorthOps decided the magnitude of the lightning event required a more in-depth look at strategic response. As a result, a National Incident Management Organization (NIMO) Team was tasked to develop concepts, review processes and assist with support and coordination to the incidents in northern California. The team produced an Operational Support Strategic Planning document provided here: [ONC Op Support Strategic Planning](#).

The strategic planning document reflected the expectations of local coordinators that this event could go on for months. Based on this premise, geographic area coordinators established a ‘Theater or Zone of Operations’ management organization concept to the extent possible; staffed an aviation operations officer to handle the allocation and reallocation of critical air resources; implemented ‘Task Force’ strategies; used the Key Decision Log to capture decisions and recommendations; and continued an off-site mobilization center to support, and process ESF4 resources.



Inciweb Photo

A view of the Blue 2 Fire, taken from Red Mountain Lookout on July 31, 2008

GACCs in California have full-time aviation coordination operations. During events like 2008, the Regional Aviation Group assists the GACCS with setting up an aviation coordination package based on the amount of aircraft activities associated with incident management across the geographic area. The NIMO team was able to locate a specific aircraft coordinator in order to support the existing organization enabling the coordinators to get up to speed quicker. Coordinators said the team's support allowed the GACC to shake off the impacts of the early stages of the siege and to re-establish standard operating practices. "They allowed the GACC to operate at a strategic level, and not get overwhelmed with the enormity of the situation," one respondent said.

'Theater of Operations' was a new command concept for many personnel, although it had been included in an April 2008 draft Accountable Cost Management document. A basic explanation of the concept is included in the Operational Support Strategic Planning document. It states: "The goal of the theater of operations is to have in place the coordination, command and control organizations providing a strategic management framework. The framework will include direction from line officers of all the agencies involved; a unified command authority for each theater; strategies developed based on a priority system utilizing the same criteria for comparisons of fires or complexes; plans for allocations and reallocations of resources within a theater and between theaters; a plan for sustainability of resources and the ability to maintain the appropriate management organization."



Inciweb Photo

Burning snag near containment line on the Ukonom Complex.

Two main factors that justified a theater of operations concept for the use in strategic planning, area coordinators said, were the *magnitude* of the event currently ongoing and the expectation that some fires would *continue to burn for months*, only ending at the occurrence of a season-ending event. Implementing the concept would require a coordinated effort from all of the jurisdictional agencies through a set of tasks outlined in an interagency agreement or memorandum of understanding and a delegation of authority, according to the planning document. Geographically, that resulted in two proposed options that divided nine national forests into either two or three zones and paired them with neighboring CalFire Units.

Working relationships vs. arrangements

The amount of fire activity as a result of the event, in certain areas may have precluded what would have been normal interagency activities; as fires were shared, exchanged and managed as the units needed. In some cases, decisions were made to allow one or the other agency to handle multi-jurisdictional fires with minor agency representation because there wasn't enough command and control capability to go around. This was a result of relationships developed over

the years which enabled a sharing of the responsibilities between the large wildland fire agencies.

CalFire is directed by state governing authorities to retain command and control on state jurisdiction lands at their regional level – not unlike the GACC level for federal agencies.

CalFire and the U.S. Forest Service do have agreements in place, respondents noted, “CalFire provides engines and the Forest Service provides handcrews on large fires that cross jurisdictional boundaries.” One interviewee said they thought that the prior cooperative agreements that existed between the agencies at the geographic area coordination level were one of their keys to success and that these pre-incident established agreements should be expanded in the future.

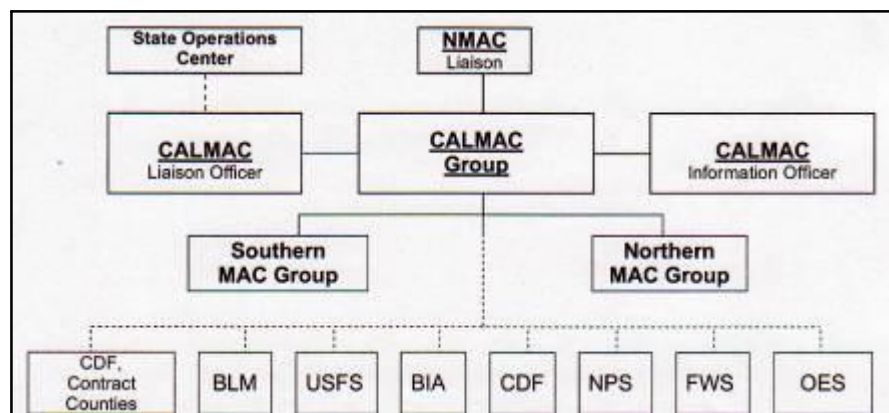
CalFire is also mandated by state law to suppress all fires on State Protected Areas immediately, if not sooner. The U.S. Forest Service’s approach prioritizes life and property and incorporates a best-for-the-land perspective. Sometimes that includes monitoring a fire’s progress instead of taking direct action to suppress it. Respondents said the differences become critical when a fire on Forest Service land has the potential to threaten state areas of responsibility.

This situation can present opportunities for conflict, fire managers said, because priority setting and resource allocation are performed in a cooperative interagency environment and sometimes it is unclear whose definition of “priority” will predominate. Respondents noted that where solid working relationships had been established among counterparts of agencies, issues were quickly resolved. Working arrangements or agreements, however, showed themselves to be more fragile.

Prioritizing fires on a statewide scale

Two GACCs implement fire management resource ordering and allocation in California: NorthOps and SouthOps. Each of the geographic areas also maintains standing Multi-Agency Coordinating groups to assist in the process. For the past several years, these two MAC groups have communicated directly with the national MAC Group. However, when northern California’s lightning siege occurred, the state’s oversight Multi-Agency Coordinating Group (CalMAC) became activated for the first time in nine years, adding an unpracticed layer into the standard system of requesting resources.

Several interviewees noted that CalMAC had experienced a high turnover in the intervening years and when it became activated in 2008 it operated with several new members who had not previously worked together. Some new members were unfamiliar with the group’s guiding document when the lightning event occurred, and lacked a working knowledge of the



agreements that were already in place.

Prioritizing fires on a statewide scale became a concern for fire managers in the northern area of the state because system in place was too “simple,” to address the complexities of the situation. The prioritization system is a component of the MAC 410-1 process, which is a FIREScope product. Several respondents said the current numerical point system for prioritizing fires is not deep enough to truly show need. Respondents said the difficulty was that as issues were recognized, the process has little built-in resilience for adaptations. Changes can be difficult to adopt in a timely manner and take time for implementation in the complex interagency environment, although a local MAC group can adopt a change as the situation dictates. To attempt changes in the process in the middle of a statewide firefighting effort on the scope and scale that occurred in California in 2008 did not make sense.

Both GACCs prioritize within their respective areas. When CalMAC is stood up, both GACCs meet and coordinate their incidents between them and present the final product to CalMAC, who is responsible for and makes the final decision on prioritization of incidents and can apply rules for allocation of resources. Respondents say it is a complex activity requiring all who are involved to approach their responsibilities with sensitivity to the potential danger and/or opportunities at different points. The complexity of the system requires constant oversight since California is made up of a number of complex fire environments and requires both GACCs to provide review.

Some respondents said they were concerned because the response to the northern California fire event to them was not just a northern area issue. To them, it was a state issue. “But it wasn’t treated like that,” noted one respondent. Some interviewees said the larger issues related to interagency management and transcended geographic coordination area boundaries. However, instead of coordinating resources between them, each GACC made their own prioritization lists for resources. Between two GACCs that were dealing with different situations, NorCal had complexes while SoCal had single incidents, choices became even more difficult to make. However, to support a new approach to prioritizing incidents on a statewide scale, California fire leaders are creating 410-1, which will be available soon.

Using decision support tools

One interviewee said that although there was some use of the new decision support tools initially on the geographic and local unit levels, coordinated analysis at higher levels would have provided better situational awareness for everyone.

Immediate and continual use of tools such as Fire Spread Probability (FSPro) and Rapid Assessment of Values at Risk (RAVAR) at all levels would have assisted forest personnel in recognizing that the situation would quickly, or had already,

exceeded the decision space of local Agency Administrators. Instead, it seemed to take two or three weeks for this recognition to set in, they said. By that time, thousands of firefighters and support personnel were assigned to manage multiple complexes of fires.

13-Jul-08				
Resource	Federal	State	Other	Total
Total Personnel	6,288	7,099	8,060	21,447
Helicopters	67	4	55	126
Hand Crews	160	164	149	473
Engines	214	364	1,015	1,593
Dozers	41	34	218	293
Water Tenders	12	20	374	406
Overhead	1,735	1,064	1,168	3,967
Note: Total personnel includes all personnel assigned. Individuals assigned to resources such as engines, dozers, overhead, etc. are included in the "total personnel" category. The "Other" category includes contractors, military, and local government.				

It should be noted that Wildland Fire Decision Support tools became available, through the posting of a website, only recently. The tools were mainly considered a prototype in 2008 and training to use them was not widely available. A limited number of personnel who had been trained in their use, were quickly assigned.

At the NorCal GACC, the tools were in heavy use. At the beginning of the siege, 703 FSPRO runs were done in addition to 115 RAVAR runs and 45 SCI analyses. Daily reviews of the WFDSS products were completed during the morning IC conference calls. The packages were made available on the WFDSS website and large fire ftp sites. However, not all units were fortunate enough to have the technical support personnel who could extract and interpret all of the information the tools provide.

One respondent said the strategic use of the support tools early and on every unit, may have helped Agency Administrators get a clearer picture of probable outcomes when hundreds of firefighters are engaged for multiple weeks. “When such a bust happens, we need to have ICs look at the landscape without administrative boundaries and draw strategic lines based on logistics,” noted one interviewee. See [WFDSS](#).

“Decision support is needed at multiple levels during events of this size,” noted one respondent. Providing decision support became complicated during the lightning siege because national, state and regional level coordinators, along with Incident Management Teams (IMT), all needed and asked for support, but they needed different kinds of material because of the scope and scale of events those individual groups were responding to. At the top, information that would assist with highly strategic decision-making was needed, but IMTs needed information that would help them plan operations during the next two or three operational periods.

Summary of Key Lessons from Initial Response and Priority Setting

- Local units responded initially to multiple ignitions within their jurisdictions in a triage fashion – sending out all of the available personnel they had. The GACC supported this effort, filling orders for resources as quickly as possible.
- Unit triage efforts also included identification of fires that would require extended attack or were fires that personnel expected would be of long duration. By June 24, the NorCal MAC Group began to group individual fires into complexes. Grouping fires allowed coordinators to simplify the priority setting process for resource allocation.
- To overcome the gaps in knowledge from the formal reporting process, NorCal MAC Group members sustained a daily practice of gathering intelligence through direct incident personnel conference calls. Talking to the Incident Commanders (ICs) provided coordinators with the best information, they said, because they listened to how the ICs sounded when they talked, not just what they said.
- As a part of their standard process, GACC coordinators gathered intelligence daily through conference calls, formalized a detailed Incident Briefing paper and distributed it widely to multi-agency coordinators on multiple levels. The more detailed reports increased situation awareness among inter-agency personnel who participated in priority setting and resource allocation.

- On forests, some personnel quickly developed a sense that “thinking big” was essential to successfully managing the fires. As a result, they constructed large-area, multiple fire WFSAs. Large-area WFSAs, however, required higher levels of authority and more time to approve them.
- The infrequency of the need for the state’s Multi-Agency Coordination Group, has provided limited experience for these individuals to establish a solid working relationship. In the absence of experiential working conditions, decision-making among groups with complex responsibilities can become difficult and time consuming.
- The current numerical point system for prioritizing fires on a statewide scope was identified by respondents as not deep enough to truly show need. Each GACC prioritizes their needs and presents these to CalMAC, who is then responsible for weighing and balancing the needs on a statewide scale. A new system has been approved and will be in place for the 2009 season. http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml
- Decision support tools such as FSPro and RAVAR received some use during the 2008 lightning siege, but respondents said they may have been misunderstood or that technical specialists capable of extracting and interpreting the information from the tools correctly were in such short supply, the tools may not have been fully utilized. Additional personnel trained as Long Term Analysts will be needed.

V. Managing the siege:

Testing New Strategies

Theater of Operations

Local authorities said the ‘Theater of Operations’ concept was not new to CalFire personnel who have regularly used it. CalFire, they said, uses the concept, calling it a Lightning Control Area (LCA) for priority setting instead of in a geographic area setting. However, the ‘Theater’ concept was introduced for fires on national forests this year, and tested by geographic area coordinators at NorthOps and on at least two forests. Many forest Agency Administrators and staff officers said the concept was confusing for them and they felt like its introduction during an event of this magnitude amounted to bad timing.

Several Agency Administrators and forest staff officers said they were uncertain what the term meant for groupings of multiple fire complexes. Several respondents said their understanding of a ‘Theater of Operations’ was something that they would expect an Area Command Team (ACT) to lead and that the difference between the ‘Theater’ concept and how an ACT functions, was never clearly communicated to them. One line officer said they felt like they were exposed to “a lot of new terminology without a lot of good explanation.” Several respondents said their confusion about the use of the term translated into a negative reaction to its use because the complexity of the situation seemed to increase exponentially.

Also, the amount of time and communication required to operate in a ‘Theater’ was steeply increased. Respondents at the regional and state levels said the ‘Theater’ concept may have spurred forest line officers into believing they would be relinquishing control over the fires on their forests or that they would be forced to share fire resources with other forests, even though a pre-signed blanket delegation of authority was already in place. Other forest officers said the new terminology mid-season (i.e. Theater of Operations, Surge Packages, and Force Multiplier) added to confusion and slowed response

"The term 'theater of operations' was defined in the American field manuals as the land and sea areas to be invaded or defended, including areas necessary for administrative activities incident to the military operations.... it was usually conceived of as a large land mass over which continuous operations would take place and was divided into two chief areas - the combat zone, or the area of active fighting, and the communications zone, or area required for administration of the theater. As the armies advanced, both these zones and the areas into which they were divided would shift forward to new geographic areas of control."

*~War Dept. Field Manual, Dec. 1940
as quoted by Wikipedia*

For more information also see:

<http://www.ibiblio.org/hyperwar/USA/USA-WD-Ops/index.html>

times because they did not know what to expect and how to order what they needed within a new command concept.

Some IMT members indicated that incident resources felt unaffected by the newly introduced command concept. “Theater Operations was something the IMTs didn’t even know was in existence. It was more something that NorthOps was aware of,” said one review. Many IMTs were aware of the Task Forces they interacted with as a result of mission specific assignments prioritized within the ‘Theater’ environment at the GACC. Some incident personnel who did realize the concept was in use, said its introduction was late and not well communicated even though flyers were available explaining it. What was missing, they said, was the verbal element which helps them understand the Incident Commander’s vision and new strategy. One IMT’s After Action Review stated that some confusion about the new term persisted among personnel despite briefings and flyers on the subject. Several different documents were produced to help explain the new command structure:

[Developing Clear Intent for Theater of Operations,](#)
[Klamath Theater of Operations,](#)
[Klamath Theater of Operations Concepts,](#) and
[Klamath Theater of Operations End State.](#)

CalMAC respondents also reported feeling unsure about the use of the term ‘Theater.’ They believed that the ‘Theater’ command concept works well when state-to-state agreements are established enabling most responding resources to circumvent the National Interagency Coordination Center (NICC). They recommended that national forests could do more to establish local interagency agreements signing up local contract resources ahead of a crisis event. They noted the ‘Theater’ concept also works well for moving aviation resources to priority situations instead of allowing them to sit inactive on a fire if the incident is smoked in. Several interviewees said they thought ‘Theater’ was a good idea but that its main drawback is the fiscal accountability factor. “Theatre Ops is a good idea, but who pays is the one thing we just can’t seem to get past,” one interviewee said. Forest officials echoed this concern verbatim. They thought the concept seemed to work well, except from the incident business management standpoint. [Implementing Theater of Operations Lessons Learned PowerPoint.](#)



Photo courtesy Scott Wetmore, Redding Hotshot
Scratching line September 9, 2008 on the Bear Wallow Complex.

the incident is smoked in. Several interviewees said they thought ‘Theater’ was a good idea but that its main drawback is the fiscal accountability factor. “Theatre Ops is a good idea, but who pays is the one thing we just can’t seem to get past,” one interviewee said. Forest officials echoed this concern verbatim. They thought the concept seemed to work well, except from the incident business management standpoint. [Implementing Theater of Operations Lessons Learned PowerPoint.](#)

First impressions of ‘Theater’ command in the field

Incident Management Team members assigned to the Klamath Theater said using the new command concept provided a test bed for piloting new ways of doing business, especially in the Planning Section. Operational briefings were facilitated by Operations Section members instead of Planning Section members. Incident Action Plans were constructed in several locations and merged together. Multiple ICS-209s were merged into a single status summary that included data from five I-Suite databases and decentralized base/branch locations. The Incident Meteorologist and Fire Behavior Analyst provided forecasts for a 50 x 50 mile fire footprint. Two demobilization plans and processes were needed to deal with resources originally mobilized through Klamath and Six Rivers dispatch centers.

Complexity, they noted, was increased due to the volume of documentation inherited when multiple complexes were transferred to the command of one NIMO Team. Team members found they were tracking eight fires, six I-Suite databases, two forests, ten WFSAs, 70+ Delegations of Authority, 13 IMTs, and multiple Strategic Implementation Plans during a 99-day period.



*Photo courtesy Scott Wetmore,
Redding Hotshot*

**Checking PPE September 14, 2009
on the Bear Wallow Complex.**

One of the challenging portions of the mission, they noted, was ensuring that resources coming and going at decentralized bases all received the same briefing and understood the Theater command concept. Some misunderstanding that occurred between Branch Directors and other functions, they said, caused confusion about approval processes for some items. However, this could have been corrected with the use of updated organization and additional briefing of incoming resources, they noted.

Team members also said fire suppression repair planning was delayed due to the enormous size of the event and because it continued over a long period of time. Repair work, they noted, continued without a complete plan.

Initial feedback gathered from command and general staff members identified several challenges to ‘Theater’ command implementation: Not everyone understood what a ‘Theater’ should look like at *all* levels. Opportunities for face-to-face briefings and debriefings were often limited due to the distances between individuals. Information from the field sometimes did not make it back to the Incident Command Post in a timely manner. And maintaining a clear chain of command for operational people became problematic when the operational supervisor was not available on scene.

Finance and cost accountability

Personnel involved with finance and cost accountability for incidents, complexes and Theaters, found that the agency’s core financial tools were not as adaptable to the new command concept of Theater of Operations as they are to incident specific events. As a result, finance units continued to track resources and pay structures using incident and complex ‘P’ codes, instead of rolling them all into a Theater code.

One of the main difficulties surfaced in instances where resources were being shared among incidents. Incident commanders, who were interested in keeping scarce resources working, “shared” hand crews and aviation assets across incident and sometimes forest boundaries. However, job codes and incident codes could not follow the resources.

Finance personnel explained that while I-Suite tracks non-contract costs, the program is not designed as a cost accountability and review tool. The two tools used in fiscal accountability are I-Suite and the ICS-209 system. Some personnel found that the systems were so different in their structures, there were significant differences between the estimated costs of an incident calculated in each. In one example, a review of estimated incident costs in each of the two cost accounting tools came out to an approximately \$20 million difference.

When IMT members tried to separate out costs for each incident within a complex, they found that it could not properly track shared resources. This became a problem when teams were providing cost apportionment values. Since the agency’s cost recovery is based on actual costs, separation and accurate tracking was critical. Costs associated with complexes became even more confusing when the fires within the complexes changed.

Despite the difficulties, finance personnel also reported several successes. On the Klamath Theater, finance personnel received approval from Albuquerque Service Center to combine finance packages from the Slinkard Fire, Blue2, Siskiyou Complex, Ukonom Complex, Bear Wallow and Panther fires for audit purposes. A review of the documentation with the goal of combining it, allowed personnel to remove duplications, collate original documents and organize important vendor information for payment.

At the end of the Theater, all databases for the individual incidents involved were closed out. Finance personnel reported that this meant closing out all resources, finalizing payments and then reassigning the remaining resources to the Blue2 incident which would then become a forest responsibility. Once all the resources were reassigned, a new small database was created for resources that were remaining. This allowed a simple process for the districts to continue.

Klamath Theater finance section personnel reported that one of their most difficult challenges involved managing multiple events with their accompanying ‘P’ codes. The codes had been assigned when the fires started. When those fires grew together, costs were divided based on the operational reach of each incident. As more incidents started, more codes were also added. When it was time to downsize the incidents into a Type 3 organization which would be assigned to one team, finance personnel thought about recommending that one incident number and ‘P’ code be used which would mean only one I-Suite database would be needed. However, based on the need to have multiple locations for the finance unit, the recommendation became impossible to implement.

Key Decision Logs

Although the Forest Service’s Accountable Cost Management (ACM) Strategy had not been formally introduced in the U.S. Forest Service California (Region 5), many of the personnel at NorthOps GACC were aware of its concepts. ACM strategy included a tool to help personnel understand how key fire management decisions affect fire outcomes, such as costs and

operational effectiveness. Called a Key Decision Log (KDL), the tool was designed to facilitate transparency and organizational learning. The use of Key Decision Logs was also expected to improve the agency's ability to communicate the rationale behind fire management strategies. The version used in California focused attention on

Key Decision Log Northern California 2008			
Key Decision	Alternatives Considered	Rationale for Decision	Cost Implications

strategic and tactical decisions that were expected to have significant influence on resource allocation and final costs. The tool was included in the Strategic Planning document used by the geographic area coordinators and several operational units used KDLs. Coordinators said KDLs provided a “real-time” documentation package, captured key business decisions (what and why), and key business interactions (how).

Forest personnel reported using the new Key Decision Logs and finding that the tool provided them with a documentation method that helped portray their rationale for decisions made. One forest line officer said the main benefit of the KDL for them was that it provided a form of transparency which enabled them to clearly communicate the “whys” of fire suppression decisions to the local public – a feature the public is demanding more of, they said. Other forest officials said the KDL established a map of the decisions made by Incident Management Teams, and this was helpful because as IMTs transitioned, the KDL became a living record even as the prior decision-makers had departed. One forest officer said they were in favor of the concept but thought that the personnel who were using the tool needed clearer leader's intent because the log often ended up “becoming a diary.” Other forest personnel also recommended the KDLs be monitored for content and have guidelines set up to establish consistency when they will be used by multiple IMTs during a lengthy incident. See the linked documents, [Key Decision Log Blank Form](#), and [Key Decision Log Example Extended Staffing](#).

Incident Management Team personnel who used the KDL said it was useful. The KDL provided a method to measure overall organizational performance including business goals, working relationships, financial management, innovation and learning. Honest and thoughtful inputs were critical for the success of the log, they noted. Incident personnel recommended implementing use of the KDL model at multiple organizational levels. The model, they said, provides a more diverse view of the subtle signals that will assist us in understanding how our system actually works.

One IMT Command and General Staff member who embraced using the new tool also noted that some forest leaders need more guidance on effective cost management ideas. Forest personnel who believe they are being pressured to meet nationally identified goals respond in a variety of ways. Extreme preoccupation with the issue of cost management can establish an arena where the language in cost management programs is easily misinterpreted, they said. When that misinterpretation begins to drive tactics and affect command's situation awareness, it creates new levels of frustration between forests and the IMTs who are working for them.

Implementing new approaches to old strategies

Supersized Wildland Fire Situation Analyses (WFSAs)

The 2008 fire season was the last official use for a decades-old Wildland Fire Situation Analysis (WFSAs). In 2009, the agency's new Wildland Fire Decision Support System (WFDSS) will be rolled out nationwide. For more than 30 years, the WFSAs has been one of the two primary documents every Incident Management Team requests from a hosting unit. WFSAs have been guiding documents for IMTs in both strategy and tactics. In a normal fire season, the document is done on an individual incident scale. They are labor intensive, take a multi-disciplinary land management approach, and include an estimated cost for alternatives in containing the fire.

However, forest personnel with 24, 27, or even 136 fires going simultaneously during the summer of 2008 in northern California immediately saw the impossibility of completing a situation analysis for every individual fire. Many forest officials reported feeling a key to success managing multiple fires on their unit would be in using one comprehensive and consistent strategy. Forests that were in a position to utilize Wildland Fire Use, evaluated fires for this management option. Several interviewees said they "tried to go large" when defining WFSAs boundaries, but revisions became necessary when costs or WFSAs boundaries were exceeded.

Uncommonly large-area boundaries outlined in WFSAs caught the attention of both Regional leadership and the public. On the Shasta-Trinity National Forest, personnel decided to do what they called a "Big Gulp" WFSAs that reflected the landscape nature of containing 136 fires. "We tried to be more foresightful and less reactive," one officer at the unit said. The comprehensive nature of the document allowed personnel to estimate fire costs over an area that exceeded forest boundaries. However, they soon discovered that large area boundaries become political in nature, particularly when the estimated boundaries crossed over into other jurisdictions including other forests and state protected lands.

Personnel on several other forests also said they suggested developing one comprehensive WFSAs document that would include all fires currently going on their units. However, the large boundaries initially proposed, "frightened people." As a result, some respondents said numerous WFSAs were completed. One interviewee said it became necessary to help forest personnel identify when a bigger box was necessary. They did this by using Fire Spread Probability (FSPro) and other models and predictive tools. Using these tools, some personnel said they were able to show decision-makers commonalities in how the fires were positioned on the landscape and point out that several fires would burn together. A few local unit personnel said they found when WFSAs were completed for individual fires on their forest, they started to see fragmentation in implementing strategy.

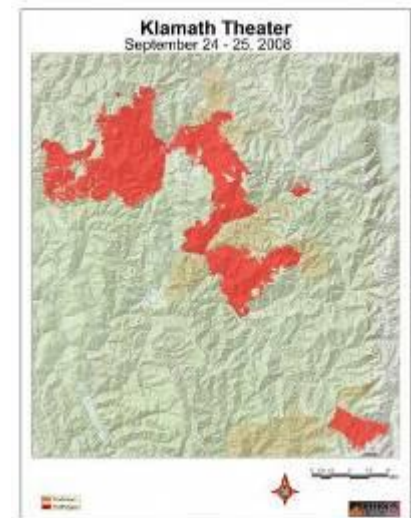


Photo courtesy Redding Hotshots
Smoke column July 19, 2008 on the Soda Complex.

Forest personnel on one unit said they had conducted an in-house WFSA training during the spring. The training emphasized the value of pre-planning, the thought process involved in developing the document, and the need for having a diverse team that brings multiple views to the table. “We need to talk with neighbors about how big the WFSA box should be, beforehand, while the emotion is out of the picture,” one respondent said. One official said although they did not like the WFSA document, they appreciated the discussion around the information needed in it.

Forest personnel reported multiple barriers to WFSA implementation. Documentation completed at the forest level and sent to the Regional Office for approval, did not get returned to the forest for weeks. Forests that included wildland-fire use management options in their documents did not receive the resource support they needed because those fires were considered a low priority.

Personnel on the Klamath National Forest, which had been appointed a pilot unit for the new Forest Service WFDSS, identified two barriers to successful implementation for the new management approach. First, necessary resources including Long Term Analysts (LTAN), were unavailable to them because the resources were assigned at the geographic area or Regional level where they were supporting WFDSS in those offices. Second, the Regional Forester announced his decision on July 9 “not to approve new or continued wildland-fire use or prescribed fire” management options. This decision was reversed on August 27, however, in the meantime it had the effect of placing all fires on all forests into the full-suppression category. Forest personnel said the decision caused confusion, particularly on forests where Wildland Fire Use (WFU) pre-planning had been completed and personnel were engaged in evaluating fires for these management options. Personnel on forests with WFU support documents in place said despite the regional level decision disapproving WFU and Prescribed fire, the end result on their forest landscapes was “probably not much different than with WFU capability,” because suppression opportunities were limited.



Inciweb Photo
Klamath Theater Map

Late in August, the Klamath and Six Rivers National Forests combined their current incidents including the Ukonom Complex and the Slinkard, Panther, Anthony Milne, Caribou, Blue 2 and Siskiyou fires under the Theater of Operations command concept. Incident Management Team members assigned to the Klamath Theater said the move was a success because by combining all of the incidents under one concept, forest personnel were able to develop and implement a strategy that encompassed the sphere of all of the fires and combine all of the previous WFSA documents under one signature validation cover sheet. A single daily validation process for the four WFSA/WFDSS decision documents covering the incidents was implemented. Team members provided support documentation that displayed daily estimated costs and burned acres as compared to each WFSA, so the Agency Administrator could assess that the selected course of action remained valid for the individual WFSAs.

Using Task Forces

Geographic area coordinators became concerned about a continuing lack of needed operational resources. While incident commanders were identifying critical needs during daily situational briefing calls, the number and kind of resources they needed were not available regionally. When some fire suppression resources eventually started arriving in northern California from outside of the geographic area, coordinators formed them into Task Forces, (also called Surge Forces or Force Multipliers). This enabled two elements of control: 1) As Task Forces, the handcrews stayed together and could be inserted into incident operations temporarily multiplying the number of resources on the incident. 2) They could also be quickly extracted and sent to another incident if the other incident had a greater need. Task Forces had been successfully used before, respondents said, and they thought with few resources available this would be an effective technique to use again. Because the Task Forces were mobilized at the geographic area level, and not attached to incidents, they could be more easily moved around to the areas of greatest need.

Task Forces could be configured in a number of different ways, depending on the mission tasking identified by the incident as its most critical need. The Task Forces included Task Force Leaders and a Division Supervisor and could include a number of handcrews, strike teams or equipment. Coordinators said the first Task Force constructed was called the NorthOps TF#1 and were led by Military Crew Advisors (MCAD). MCADs have qualifications equivalent to Crew Bosses, Strike Team Leaders, Task Force Leaders and Division Group Supervisors. The NorthOps TF#1 was sent to a multi-day assignment at an incident and then reassigned to another high priority task on another incident.

Task Forces that were called “Force Multipliers” or “Surge Forces,” created some confusion. Geographic area personnel said they were frequently explaining that Task Forces were mobile groups of resources that moved together from assignment to assignment between incidents and complexes and were managed by the GACC.

Incident Commanders reported that the Task Forces worked well in meeting objectives. To expedite their use, ICs often moved the units across lines without relying on geographic area personnel to process them through reallocation. During one fire, two Task Forces combining 14 Interagency Hotshot crews, helped contain the incident in three days. Clearly, the Task Forces

"We were part of one of the Task Forces and we loved it. We loved everything about that. It was good firefighting. It was smart. It was a good use of resources and it was effective. We hit three different fires and spent 3 or 4 days on each one taking care of the special part of the puzzle that they wanted us to fix."

formed and managed by the GACC experienced success. However, when area coordinators asked for more resources from the National Interagency Coordination Center (NICC) that could be combined into the mobile units, they found that the resources were becoming even more scarce as wildfire activity had picked up in GACCs across the country. To assist national coordinators in understanding how and why the Task Forces were effective and efficient, fire managers in

northern California developed a briefing paper that explained the mobile units were being used to complete complex burnout operations, construct key containment lines, conduct operations that would expedite timely containment and supplement initial attack efforts. Coordinators said they used the briefing paper to make everyone aware that there was opportunity for successes to be had if the resources were available. The briefing paper served as a common communication device that could be disseminated to multiple points of contact, speaking from one voice. When the use of the Task Forces and their success was communicated to national level coordinators, more resources were dedicated to the effort. See: [Surge Packet \(Force Multiplier\) Proposal](#).



Photo courtesy Amy L Reid
July 4, 2008 on the Lime Complex.

Area Command teams called the Task Forces a good adaptation during a condition of scarce resources. They noted that this model has been used in the past to address Management Action Points on an incident, but in that instance fire managers found the Task Forces' assignments needed to be more localized in order to eliminate travel time between jobs and create the best efficiencies in both mission accomplishment and cost containment. Task Forces, they recommended, should not be managed at the national level, but should come from outside the GACC and be managed by the GACC. With management vested at the geographic coordination level, the unit's mobility for efficient utilization is ensured. One example of a request for Task Forces can be seen in this document NorthOps MAC Force Multiplier Coordination Plan.

Some respondents said they really considered the Task Forces a 'Ready Reserve' type of contingency – pre-identified resources that could be reassigned, if needed, due to expected fire forecast conditions. Incident personnel noted that including a Division Supervisor within the Task Force composition, however, resulted in a situation where there were two individuals with the title 'Division Supervisor' located in the same area on the fireline and that this often caused confusion.

How ROSS saw Task Forces

The Resource Ordering and Support System (ROSS) was not "kind" to the idea of Task Forces, coordinators noted. Initially, dispatch personnel were unable to enter the unit as a Task Force. Eventually, they found the unit could be entered as a Type 2 Strike Team – despite the fact that they were Type 1 resources. Since a Task Force is an Incident Command System entity, geographic area coordinators were surprised to find that the resource ordering system did not recognize it and would not acknowledge it under its correct title. Several respondents said this represented another example of the continuing issue in allowing a computer program to dictate operational methods.

Dispatch personnel also said the amount of documentation required to manage the mobile resources increased significantly because of the number of assignments the Task Forces have in a 14-day period. It becomes difficult to fit travel times and mob/demob time requirements into the 14 days.

Finance personnel also found it difficult to track Task Forces. “Job codes and P-codes don’t cross boundaries even if the resources assigned to them do,” one finance leader described. Sharing resources among fires is not an activity that I-suite and ROSS can follow. Resources go on the books for the incident they were ordered on. For accounting purposes, finance personnel often referred to Incident Action Plans to locate where the resources had moved to. Tracking became impossible for resources that were “borrowed” for a few days here and there. One interviewee suggested that a unique identifier be assigned for each resource (equipment, crews, overhead) that would remain attached to that resource as it moves among incidents.

Aviation

Based on the unfolding multi-jurisdictional fire scene, northern California coordinators said they anticipated that there would be a shortage of aircraft available for interagency initial attack and large fire support. Planning documents said the situation required “centralized command at the area or theater level with decentralized tactical control.”

Incident and Area Command Team members reported that one of the most notable successes under the Theater command concept culminated in securing air medivac capabilities, including a long line hoist and advanced life support, through the use of a dedicated helicopter. Incident leaders said ordering the resource was originally met with opposition from Forest Service Region 5, primarily because of cost and a misperception that non-dedicated providers (such as Life Flight or the Coast Guard) would meet the need. However, medivac helicopters that have all of the necessary characteristics to extract injured personnel were scarce in California. Most of the helicopters with these capabilities are military resources and assigned overseas. To explain the situation, two Area Command teams worked together developing a briefing paper and justification for tasking a National Guard Medivac unit that met all the requirements for Instrument Flight Rules rated flight crew and aircraft, long line hoist capability, night operations, and advanced life support including para-rescue.

As a result, “Jolly 91,” a military resource, was tasked to the Theater, and performed several missions. Team leaders said the need for the ship was critical because at the time nearly 8,000 firefighting personnel were currently working about 128,000 hours a day, often in remote and inaccessible terrain. On at least one complex, crews were working nights in wilderness leaving fire managers with limited methods of extracting them in the case of a medical emergency.



Inciweb Photo by Gavin Lovell
**Water drops on the Caribou Fire within
the Bear Wallow Complex.**

Smoke impacts air missions

Incident aviation personnel credited local aviation operations personnel with handling the increasing problem of extremely poor visibility in a timely manner. Realizing that there had been a number of incidents where airtankers had

"Windows of opportunity for using aircraft were short and immediate."

been dispatched to fires only to find that they did not have adequate visibility to safely operate, coordinators updated the procedure for launching airtankers. The new procedure established a protocol in which all of the points where the airtankers would 1) launch from, 2) perform a drop and 3) land had to be confirmed as having safe visibility standards before any airtankers would be allowed to depart. Incident aviation personnel said the procedure worked well and removed the possibility that airtankers would be sent on "wasted trips." From a safety standpoint, they noted, the procedure significantly reduced exposure and risks to pilots and support personnel.

Incident aviation personnel also reported compensating for the stifling smoky conditions by establishing two helibases, each at significantly different elevations. Personnel said this allowed more continuity in helicopter operations: When one helibase was smoked in, usually the other one was available to operate helicopters. Having the capability to strategically position two helibases, also benefited other nearby incident management teams because when their helibases became unusable due to smoke conditions, adjacent incident management teams would often call for help in supporting their helicopter missions.

Smoke, along with the number and proximity of other incidents, and the long duration of assignments, also prompted one Incident Management Team to conduct pilot briefings differently. One air operations branch director said that instead of the usual pilot briefing that he would normally do for pilots and personnel at helibases, he requested an Incident Commander, an Operations Section Chief and a weather technician to speak at the daily morning briefings. Response to this approach was very positive because pilots and other helibase personnel felt like they received high quality briefings. They complimented the team for making an extra effort for their benefit.

FEMA resources and 84 Base Camp

On June 26, California Governor Arnold Schwarzenegger requested federal assistance for the wildfire emergencies in seven northern California counties. Four more counties were added, shortly after a Presidential Emergency Declaration was announced on June 28.

Based on the lessons learned from the fires in southern California during October 2007, geographic area coordinators knew that resources being requested through the Federal Emergency Management Administration (FEMA) would have to be carefully tracked throughout the duration of their assignments.

One section of the Strategic Planning document developed for the northern geographic area coordinators outlined a procedure for the mobilization and processing of FEMA resources: Emergency Support Function #4 staff positions were defined and assigned according to their roles, and an organization chart was developed to help all personnel understand and use the proper reporting order under wildfire-declared disasters. Additionally, a financial support system was established to ensure that Mission Assignment related costs would be accurately

compiled and tracked. Resources requested through FEMA were then ordered on a Forest Service ESF4 Resource Order. All of the FEMA resources were directed to report to one location, 84 Base Camp, in Redding, California, where they checked in, received a safety briefing and their vehicles inspected. When the vehicles passed inspection, the resources were then re-assigned to one of the CalFire managed incidents.

Once reassigned, IMT Time Unit Leaders at each incident were responsible for entering the ESF4 resources into the incident's I-Suite database and for producing the appropriate pay document at the end of the resource's assignment. Original pay documents were then directed to be sent to the Albuquerque Service Center (ASC), with copies going to the contractor and into the incident finance package. When ESF4 resources were released from assignment, they were directed to return to their home unit.



Photo courtesy Redding Hotshots
A bulldozer July 5, 2008 on the Lime Complex.

Respondents said outlining the procedure was helpful in creating 84 Base Camp's original objectives, even though the objectives were expanded or changed as the facility continued to serve northern California fire operations. In one After Action Review, it was noted that embedding CalFire and FEMA personnel into the IMT managing the camp facilitated the efficient movement of resources. Nearly everyone interviewed for this report said using a single location for the re-assignment of incoming state fire resources was an unqualified success.

An Evolving Role for the Camp

84 Base Camp also provided adequate space to facilitate a number of support and service functions in the logistics arena as well as providing temporary quarters for up to 300 people (or 15 hand crews) who then waited, often overnight, for re-assignment or demobilization. With the location of the 84 Base Camp in an unused lumberyard nearby the NorthOps coordination center, Facilities, Ground Support, Food, Medical and Supply units were moved into an area that no longer conflicted with the space needs of the coordination center and cache personnel. Extra space at the lumberyard provided an opportunity to create a Point of Distribution for rental cars obtained through a national company.

Although the cost savings that accumulated through the use of a regional agreement with the rental car company were not available for this report, interviewees said they believed that cost savings were significant. Distributing rental vehicles through use of a Ground Support unit at a single point substantially improved the ability to track the vehicles and efficiently re-assign them as the vehicles were turned in. Cost savings attributed to the regional rental car agreement, interviewees said, should also reflect the time incident resources were saved by not having to wait around for 'up to four days' it took some of them to obtain transportation to their assignment. A database was used to track more than 800 rental cars through license number, color, make, model, "E" number and incident name and number. In an After Action Review, it was reported the rental car firm said the tracking system employed by logistics personnel was more efficient than what they could have done in the same time period.

Some tracking systems in place at 84 Base Camp were not as successful as the rental car database, respondents said. Incoming Finance personnel reported that entries were often not up-to-date, and they found several Administratively Determined (AD) employees had been entered into the I-Suite system as federal employees which confused Albuquerque Service Center (ASC) personnel and held up paychecks. They also noted that some people had never had an interim payment submitted, even though they had worked for more than 35 days. Some payment packages had been misfiled in “Demob” instead of being sent to ASC for payment. In some cases, buses coming from the incidents had been paid both the daily rate and the mileage (contracts read one or the other) and had not been paid for their travel back to Redding and home.

Resource Unit personnel reported experiencing problems cleaning up the database on five different incidents in the I-Suite program. Check-in information on some personnel, such as Warehouse Cache managers, Expanded Dispatchers and Buying Team members, should not have been entered into the database at the camp. Ordering managers found that orders placed under the FEMA code were often missing follow-up paperwork that would have shown the orders had been placed and received. It became a labor intensive project to back track the orders and verify their status.

Respondents also noted a need for a standardized vehicle inspection process. They said that vehicle inspectors located at the camp often individually interpreted the inspection standards resulting in delays and re-inspections. Inspectors sometimes disagreed with each other about vehicles that passed inspections in other states but did not pass California standards and as a result resources were delayed while inspectors resolved their differences.

Local personnel and IMT members recognized that team management of a mainly logistical facility may not be the best use of a team. Team members reported difficulty in transitioning from their normal operational mode to an assignment that was mainly logistical. Local personnel characterized the camp as “90 percent Logistics and 10 percent Finance with nothing in between.” Geographic area coordinators said they had initially requested the logistics teams similar to those used during the Katrina-Rita Hurricane event, but none were available. As a result, the decision was made to go with All-Hazard IMTs to avoid impact on the traditional wildland fire incident management teams being assigned to the siege. After two attempts at using All-Hazard IMTs to manage the camp, local personnel said they created their own team by handpicking individuals with strong skills in the necessary areas. Team members noted that making the camp function like a staging area without having an onsite caterer and shower unit proved difficult. They also noted that the use of local private security officers presented unique challenges because contracted security personnel need more supervision than agency law enforcement officers.

After having served as a check-in and temporary quarters for arriving personnel requested through ESF4, and a single-point distribution center for rental vehicles, 84 Base Camp’s final mission was to serve as a cache refurbishment center which recovered an estimated \$18 million worth of equipment back into the system.

Summary of Key Lessons from Managing the siege

Theater of Operations

- Several Agency Administrators and forest staff officers said they were uncertain what the term ‘Theater of Operations’ meant for groupings of multiple fire complexes. Several respondents said a theater was something they would expect an Area Command Team (ACT) to lead and that the difference between the ‘Theater’ concept and how an ACT functions, was never clearly communicated to them.
- Late timing on the rollout of the Accountable Cost Management Strategy for 2008 nationally and in California precipitated confusion and lack of consistency with terms and supporting activities in the wildland fire community. Preparing a new and comprehensive change in a specific agency policy should allow for lead time in education, information and preparation to allow for success at all program levels.
- Forest personnel said their confusion about the use of several new terms translated into a negative reaction to them because the complexity of the situation seemed to increase exponentially and the amount of time and communication required to operate in a ‘Theater’ was steeply increased.
- Newly introduced terminology such as ‘Surge Forces, Force Multipliers and Theater of Operations’ slowed response times for unit personnel because they did not know what to expect and how to order what they needed within a new command concept.
- Several interviewees said they thought the ‘Theater’ was a good idea but noted that its main drawback is the fiscal accountability factor.
- Complexity was increased exponentially due to the volume of documentation inherited when multiple complexes were transferred to the command of one NIMO team. NIMO Team members found they were tracking eight fires, six I-Suite databases, two forests, ten WFSAs, 70+ Delegations of Authority, 13 IMTs, and multiple Strategic Implementation Plans.
- Fire suppression repair planning was delayed due to the enormous size of the event and because it continued over a long period of time. Lack of available local Resource Advisors was noted as being a main stumbling block for completing Suppression Rehabilitation plans.

Key Decision Logs

- Key Decision Logs provided a method to measure overall organizational performance including business goals, working relationships, financial management, innovation and learning.
- One respondent noted that some forest leaders need more guidance on effective cost management ideas because they may feel pressured to meet nationally identified goals and misinterpret the language introduced in cost management practices.
- Key Decision Logs provided forest personnel with a documentation method that helped portray their rationale for decisions made, especially to the local public.
- In some cases, KDLs established a map of the decisions made by Incident Management Teams. This was helpful because as IMTs transitioned, the KDL became a living record even as the prior decision-makers had departed.

- Some administrators, who concluded that the KDL concept was useful, also expressed frustration and concern as they tried to interpret instructions for the new tool and determine how to fill one out. The use of KDLs lacked clear leader's intent and often ended up "becoming a diary."

Finance and Cost Accountability

- Tracking resources that were being shared between incidents and forest boundaries became problematic because job codes and incident codes could not follow the resources.
- The I-Suite and ICS-209 incident cost programs were not designed as cost accountability and review tools. Additionally, the two programs are structured so differently that finance personnel find that on complex incidents the two tools can come up with significantly different final costs.
- The need to have multiple locations for a finance section on one incident, made it impossible to downsize them into one 'P' code and one I-Suite database.

Supersized WFSAs

- Uncommonly large-area boundaries outlined in Wildland Fire Situation Analyses caught the attention of both Regional leadership and the public. Large area boundaries became political in nature, particularly when the estimated boundaries crossed over into other jurisdictions including other forests and state protected lands. Agency Administrators who had not had previous experience with similar events were somewhat unprepared to engage in extra-boundary discussions.
- Using Fire Spread Probability (FSPro), Rapid Assessment of Values at Risk (RAVAR) and other models, helped some unit personnel in showing decision-makers commonalities of how the fires were positioned on the landscape and to illustrate that several fires would burn together. Better situational awareness helped decision-makers identify when a larger WFSa was an appropriate tool.
- Local units noted that Long Term Analysts, who are trained to work with the Wildland Fire Decision Support System (WFDSS) tools, were in short supply. In order to work with the newly available WFDSS tools in the 2009 fire season, local unit personnel will need either the training to use the tools or support from Long Term Analysts.
- The Regional decision to suspend Wildland Fire Use (WFU) as a management option, caused confusion especially on the forest that had been designated a "pilot" for the new Wildland Fire Decision Support System.
- Two forests that combined their current incidents (which included several individual fires and complexes) under one command concept were able to develop and implement a strategy that encompassed the sphere of all of the fires and combine all of the previous WFSa documents under one signature validation cover sheet.

Using 'Task Forces'

- Task Forces worked well in meeting operational objectives and were seen by Incident Commanders as a good method to manage and utilize scarce resources.
- The term "Force Multiplier" applied to the task forces created some confusion. GACC personnel said they were frequently explaining that this type of Task Force was a mobile group of resources that moved together from assignment to assignment between

incidents and complexes and was managed by the GACC. A more comprehensive rollout of terminology for the incident would readily transfer needed information.

- Firefighters approved of the Task Force method to best use their time and expertise.
- The use of a briefing paper to communicate the success of Task Forces to national level coordinators provided needed information delivered in one voice to those who were in positions to support using those resources.
- Including a Division Supervisor within the Task Force composition resulted in a situation where there were two individuals with the title 'Division Supervisor' located in the same area on the fireline. This caused some confusion.
- The Resource Ordering and Support System was not configured to recognize or accept resources assigned under a Task Force concept. The work around that resulted created the entity as a 'Type 2 Strike Team,' which did not adequately describe the resource.
- Dispatch personnel found that it required a significant increase in documentation to manage the Task Forces.

Aviation Direction and Use

- Securing the large medivac helicopter as a dedicated resource to the 'Theater' was considered a success. The need for the ship was critical because at the time nearly 8,000 firefighting personnel were currently working about 128,000 hours a day, often in remote and inaccessible terrain.
- When airtankers had been dispatched to fires only to find that they did not have adequate visibility to safely operate, coordinators updated the procedure for launching them. The new procedure established a protocol in which all of the points where the airtankers would 1) launch from 2) perform a drop and 3) land had to be confirmed as having safe visibility standards before any airtankers would be allowed to depart.
- To mitigate smoky conditions, some incidents established two helibases, each at significantly different elevations. Personnel said this allowed more continuity in helicopter operations in conditions where one helibase was smoked in.
- IMT personnel including the Incident Commander, an Operations Section Chief and a weather technician attended daily morning briefings with helibase personnel. Pilots and other helibase personnel strongly approved of the team's attention to their needs.

84 Base Camp

- Using a single location for the check-in and re-assignment of incoming state fire resources was noted as a significant success. Embedding CalFire and FEMA personnel into the team managing this facility aided in the efficient movement of resources.
- The base camp provided adequate space to facilitate a number of support and service functions in the logistics function as well as providing temporary quarters for up to 330 people (or 15 handcrews) who then waited for re-assignment or demobilization.
- Obtaining rental vehicles through a region wide agreement with a rental car firm, and then distributing the vehicles through the use of a Ground Support unit at the base camp, substantially improved the ability to track the vehicles and efficiently re-assign them as they were turned in.
- Respondents noted that there is a significant need for a standardized vehicle inspection process. Inspectors sometimes disagreed with each other about vehicles that passed

inspections in other states but did not pass California standards and as a result resources were delayed while inspectors resolved their differences.

- Using All-Hazard or Incident Management Teams to manage a camp that was “90 percent Logistics and 10 percent Finance with nothing in between,” proved inefficient. Development of a logistics group with financial capabilities for similar opportunities in the future would meet a significant need.

VI. Incidents within the siege

Incident management and team assignments

Respondents at forest and geographic area levels reported they experienced some confusion about how Area Command and National Incident Management Organization (NIMO) teams were assigned and had misconceptions about what their roles were. Several times forest personnel said they identified their needs and requested the type of team they thought fit those needs, only to have another type of team assigned to them. Forest personnel, who said they looked at the limitations of 14-day assignments and wanted to avoid a series of transitions, often requested NIMO teams. In many cases, they received an Area Command Team instead. To view an After Action Review (AAR) conducted by Nor Cal Agency Administrators and Area Command Team leaders see: [Agency Administrator/Area Command Team Lessons Learned](#)



*Inciweb Photo by Dan Leavitt
Siskiyou Fire 2008.*

One forest ordered a NIMO team early on to help develop and execute a long-term plan. They expected the team to remain in place for 90 days to ensure a consistent management structure. Upon the forest learning that the NIMO team was unable to remain in place all summer, they changed their initial order for a NIMO team to geographic area coordinators and requested an Area Command Team (ACT) instead. Forests who worked with NIMO teams at one time or another during the summer reported that the main advantage the team offered was its ability to remain for 30 days. Several respondents saw the strategic use of a NIMO team to assist geographic area coordinators as one of its best uses. One forest official said it was unclear to him how using a short Type 1 Team, essentially a NIMO Team, over another Incident Management Team amounted to an advantage because NIMO teams, usually needed to add personnel to their organization because of span of control issues due to the size of the incident under their management.

Multiple transitions

Team transitions were hard on everyone. Forest personnel, Incident Management Team members and geographic area coordinators said transition periods between Incident Management Teams developed into near critical situations because established relationships between the departing IMTs and the local land managers were severed at demob. Forest personnel needed time to establish new relationships with incoming IMT members and agree on fire management strategies. Decisions in place with existing IMTs sometimes did not get passed onto incoming team members. Forest personnel said they were concerned that written documents passed between teams did not get read thoroughly, if at all. Corporate knowledge evaporated and it took time for new teams to develop a working knowledge of the landscape. Teams that had established their own support member and contractor networks often took these personnel with them, leaving huge gaps in consistent competency for incoming teams.

Transitions were time-consuming events, forest personnel said, taking at least four to five days at the beginning of a team's assignment. The last two days of a team's assignment was spent wrapping up and transitioning with the next team. This resulted, they said, in a 14-day detail that may actually have seven to eight days of productive work.

Several forest personnel noted that by virtue of the unique terrain and topography of northern California, federal rules regarding team use should have been revisited. Fires in southern California are large scale and intense but usually shorter in duration. Fires in the northern part of the state usually burn for more than two weeks and often for months. They also compared the northern California lightning siege with the interagency response to hurricanes Katrina and Rita where teams remained in place, managed their own work/rest cycles and individual team members were swapped out as it became necessary.

One CalFire coordinator compared the use of national and state Incident Management Teams, noting that CalFire's 10 All-Risk Management Teams are configured and trained to support Type 1 incidents, so there is no need to change IMTs when fire complexity increases. CalFire's Management Teams usually remain for the duration of an incident, although most incidents are completed within 30 days. For just the second time in their history, CalFire transitioned to a second team on the same incident during this siege.

Several respondents were concerned that national Type 2 IMTs seemed to be constrained by nationally imposed limits of 14-day assignments. National management of teams should be more flexible, they said, to allow Type 2 IMTs to remain in place for 21 days or more because most Command and General Staff team members do not perform in the same physically demanding environment as other operations personnel on the fireline do. Forest personnel echoed the need for more flexibility in national and regional management team use, specifically requesting that teams be allowed to take assignments for more than 21 days. One respondent voiced concern for lengthier assignments for federal teams, noting that CalFire's suppression teams have hotel housing while federal teams subsist in rugged camp environments.

Discussions about tactics

Team members and regional coordinators noticed that Agency Administrators had a more engaged role in fire suppression strategies during the last season. This engagement, however, has not come with knowledge of fire management. "We continue to see less experience with

fire,” one team member said. Because Agency Administrators have less fire experience than their predecessors had, team members say they are spending more time explaining fire suppression tactics and strategies and their cost effectiveness. Their involvement is a good thing, team members said, but it was not always easy. Agency Administrators, they say, still want to get indirect line around everything. “Which raises the question, ‘Do we need to put line around (every fire)?’ We want to show we’re taking action, but in many cases it’s not necessary” for containment.

Frustration developed occasionally between some IMT members and forest personnel when they were not communicating well. In these cases, forest officials said sometimes teams did not take advantage of the local and current fire management knowledge and continued to use strategies that local unit personnel insisted would not have desirable outcomes. If teams tried to go direct in their strategies, they experienced increased fatigue and created more suppression rehabilitation issues which eventually raised the cost of the incident. Sometimes teams would attempt strategies involving large-area burnouts, which local forest officials say rarely work in the area because if the fuels are not already burning they are not ready to burn. Forcing the fuels to burn through aggressive burnout strategies either results in a dirty burn, which is then subject to re-burn, or the area burns too well. Intense burnouts caused concern because high severity burns have negative hydrological effects long afterward.

Teams that elected to use major burnouts, said that at times they were driven by concerns that the landscape offered few to no escape routes over vast areas of terrain. They also noted that as the summer wore on, weather patterns became hotter and drier and opportunities for direct tactics were often eliminated. Still, some team members said they were concerned about the impacts from the large burnout operations because they recognized the dangers left intact in areas where re-burn was possible.



Inciweb Photo

Felling along the fireline on the Lime Complex.

Issues among land management neighbors

At the local level, Incident Management Team members said they noticed that pre-existing relationship issues between neighboring forests and CalFire units initially made their assignments more difficult. Multiple jurisdictional rules required Operations personnel to sort out what tactics could be used where and which personnel would be allowed to implement them. Liaison Officers who were able to assist in sorting out the jurisdictional rules for Operations were invaluable, team members said. Other IMT members reported overcoming the initial distrust between neighboring jurisdictional agencies was accomplished through personal contacts with each of the responsible agency administrators, along with periodic meetings and phone calls.

IMT members on several forests said interactions with forest personnel and jurisdictional neighbors were supportive and collaborative. On these units, agency personnel had a history of working together and shared a unified vision of success. It was especially helpful when delegations of authority and WFSAs provided clear expectations. Forest personnel on these units

said they usually met with representatives from all of the agencies in the area including CalFire, Bureau of Land Management and the National Park Service in pre-season meetings. During the fires, they said, “We had some Forest Service folks be liaisons with the IMTs and at the CalFire units.”

Forest personnel, Incident Management and Area Command Teams all reported that “border” fires presented local units and fire managers with unexpected levels of complexity. Many forest personnel said they had not anticipated extra-boundary fires either coming onto their unit or burning onto a neighboring forest and frequently had not discussed the possibility with their neighbors prior to the event. When Area Command and Incident Management team members realized these events had not been planned for, they tried to coordinate with the Agency Administrators for the units that would be involved.

One IMT’s After Action Review said IMTs managing the border fires were able to assess immediate needs, find effective methods to manage air space concerns and share resources among the incidents. Noon conference calls facilitated coordination between the Incident Commanders, included forest personnel and another agency representative who was in charge of coordinating aviation assets for both a local unit and a state IMT managing another nearby complex.

Another forest, threatened by fires on two neighboring units, reported a high level of concern about their neighbors’ fires because they were unable to gather intelligence that would help them plan. With coordination from an Area Command Team, the forest’s Agency Administrator was included in a daily conference call with Agency Administrators from adjacent units and assigned Incident Commanders. This led to sharing of resources between incidents and assisted Area Command in obtaining additional Task Forces to eliminate a potential threat to one forest.

Layers of oversight

Some IMTs reported feeling layers of oversight in existence during their assignments stalled suppression activity and reduced their level of effectiveness. Several times, they said, the delegation of authority provided instruction to do one thing, but then the team would receive informal direction from the district office that conflicted with the document. Forest personnel, they noticed, had an unusually strong desire for information and spent most of their time with IMT leadership and participating in conference calls. “They were asking us to justify everything we were doing there on a daily basis instead of giving us the direction that we needed to work.”



Photo courtesy of the Redding Hotshots
Firefighters frequently reported coming across marijuana farms in the forests. This farm was found July 20, 2008 on the Soda Complex.

The number of meetings and conference calls also climbed to a new level, team members noted. After the morning briefing, IMT Command and General Staff would meet. Then there would be a stakeholders meeting followed by the NorthOps-IC conference call. “We’d be done with meetings and calls at noon, have three or four hours and then the meetings and calls would start up again.” Ultimately, the short time periods between meetings disrupt planning to the point that a strategic and methodical approach to managing the incident is jeopardized, team members said. “IMTs need uninterrupted quality face time to complete strategic planning. This situation was locking us up.”

Other IMTs said local unit personnel were sometimes confused about the role of the Incident Management Team. The confusion increased the volume of information needed to develop and implement strategies and narrowed IMT decision space. They also noted that multiple layers of oversight implemented at the forest, geographic and regional levels were operating without clear definitions on roles and responsibilities causing IMT members to focus on unraveling conflicting direction.



Photo courtesy Esteban Tenorio, Redding Hotshot
The Redding Hotshots pause to brief September 9, 2008 on the Bear Wallow Complex.

Lacking suppression rehabilitation guidelines

Teams noted for weeks they had no suppression rehabilitation guidelines and continually submitted requests for them from host units. Several team members said forests simply lacked the number of trained Resource Advisors they needed and suggested they use out-of-area Resource Advisors who could provide the host agency the skill set they needed to evaluate fire suppression repair activities. One local unit recognized their need for more Resource Advisors and planned to implement training to augment their need.

On one incident, it was noted that firefighters received conflicting direction on mop-up and

tree felling standards. Direction for their efforts came from several local unit personnel and it was all different. This resulted in the crews going back in several times on the same ground to meet the new directional standards. Incident Management Team members prompted hosting unit personnel to form a protocol that would eliminate the confusion about what standards needed to be met. See [Lessons Learned in Snag Falling and Mop-Up](#).

Ordering and tracking resources

IMT leaders widely reported using a system of lending resources between them without involving tracking systems like I-Suite and ROSS. Team members said they worked around the bottleneck by “loaning” people to nearby fires, and that the efficiency of this system was accomplished because Incident Management Team leaders were talking.

Demobbing these resources became difficult however. Where resources were lent between fires, the demob process was complicated because the resource often ended an assignment in a location other than where they checked in. One Demob Unit Leader recommended that in order to reduce the need for reassigning resources from one fire to another, demobbing them through the closest coordination center with a refresh/update feature will provide this information to the originating dispatch ordering point. Affected dispatch centers may need to provide access to each other for the recommendation to succeed.

One Incident Management Team noted that resource orders went unfilled for most of their assignment. New orders were placed on a routine basis to attempt to fill them, and it appeared that multiple orders were in process. Eventually, it was discovered that ROSS and Cognos®, a software program that enables IMT personnel to print a report listing the status of resource orders that have been processed, were not communicating. This meant that when a report was run, ROSS would not “tell” Cognos® that the resource request was UTF. Unaware of the issue, a report generated by Cognos® would appear to a user that multiple orders were pending when in fact they were UTF. Only a portion of the orders on the report were actually pending. When ROSS was updated on July 2, 2008, the ROSS-Cognos® issue appeared to be resolved.

California’s Multi-Agency Coordination Group looked to the Emergency Management Assistance Compact (EMAC) for assistance. This Governor’s interstate mutual aid compact facilitates the sharing of resources, personnel and equipment across state lines. An inherent limitation in the program, however, is that all EMAC resources must be from state to state and these personnel can only work on state protected lands.

Facilitating relationships with the public

Developing efficient methods to meet the information needs of public officials, area residents and agency personnel was a continuing challenge during the summer-long lightning fires suppression. Local units that had established interagency fire information centers could depend on the relationships already in place to support proactive outreach to communities. However, local units where information dissemination roles were either unidentified or left in the hands of individuals who were untrained widely reported that Joint Information Center leadership fell short of meeting the needs of the public.

Respondents said the volume of information and the speed at which it is currently possible to disseminate it, created a huge need for information. Some Joint Information Centers (JICs) were not used effectively they said. “We need to agree that the JIC is the one voice,” one interviewee said. “You say it and we’ll all swear to it. Different sources create confusion and mistaken impressions like we’re withholding information.” Respondents said their strongest impressions of JICs were that they were mainly used to feed agency personnel higher up the ladder, or were places where turf wars among multi-agency personnel were openly fought.

Dysfunctional Joint Information Centers prompted many forest personnel to depend mainly on their own staff to meet the needs of media. They said they often requested Incident Management Team Public Information Officers to focus on building relationships with the surrounding local communities. In other areas, respondents said the centers were not working correctly because

untrained individuals were directing their operation. In one case, an Area Command Team established a chain of command for the JIC and re-directed it to represent all three of the forests in the area instead of just one. Incident Management Team members, who were working with JIC staff on one complex, said they discovered that not all of the staff was able to locate critical information provided to them through Incident Action Plans, ICS-209s, or Internet sites such as the one for the National Interagency Fire Center. As a result they continued to call the IMT for information that had already been provided to them.

In one case, after a JIC had become fully functional, its rapid shut down created challenges in delivering information to the media and public. Respondents said they recommended the JIC adhere to a glide path that would have allowed for public and media notification and provided for a smooth transition. The rapid shut down left a gap in communication and information for both the media and the public, and became an even bigger problem when a fatality accident occurred two days later. PIOs were gathered from different incidents and used as a short-term solution, until resource orders could be processed bringing in additional personnel to re-staff the JIC.



Inciweb Photo
Community meeting July 16, 2008 on the Lime Complex.

On July 27, a request was sent to PIER Systems to establish an interactive Joint Information Center website. The virtual JIC created a platform where information from each complex was made available. It displayed a continuous flow of releases including evacuation advisories, aircraft deployments, and photos. Information officers were able to use it to communicate with media and site visitors were able to submit questions or comments and register to receive email updates. PIER Media Tools was also used to track media coverage and collect clips of that coverage to JIC coordinators. Using this web-based platform, a more coordinated approach to community outreach was achieved.

Team Information Officers

Incident Management Teams that reported working closely with surrounding local communities, said they had several successes. Community meetings were often well attended. As news of the meetings spread, audiences grew. Respondents said they also took advantage of opportunities to host “Open Houses.” One team’s open house event was held at a helibase in conjunction with another local event and brought an estimated 200 town residents out. That number of people represented 10 percent of the town’s population.

Some IMT information officers said they were exceptionally sensitive to the long duration of these events and how community members were dealing with long-term smoke issues. To enable the information function to remain highly performing, they overlapped information officers ensuring “institutional memory,” was retained within the function and staggered assignment endings and beginnings so that someone with experience would remain with the function through team transitions.

Several respondents noted that many public information officers start on their first fire with no experience at all on a fireline. Basic training, they said, is a beginning, but it does not prepare PIOs adequately. Several Incident Management Team leaders noted that their experiences with poorly or untrained Public Information Officers during the northern California lightning response created frustration and hampered the team's relationship with forest personnel. Trained and competent PIOs, they said, benefited team-forest relationships and team management objectives.

Public understanding

Respondents said they noticed the public understanding of wildland fire suppression strategies and tactics had been heightened during the summer by their long exposure to the many wildfires burning in the northern California forests. Strong local opinions surfaced about the best methods for suppression and containment of the fires. Many viewpoints were expressed about the strategies and tactics used by fire managers last summer and whether these actions were appropriate or not. From their experiences this summer, it either reinforced their understanding of fire management and policy or it supported their biases, interviewees noted.



Inciweb Photo

Signs tell firefighters the house accessed by this road has been prepared for defense in a wildfire event.

The continuing challenge for fire managers, may be to involve the local communities in post-fire recovery, and help them understand policy regarding fire management, respondents said.

In Redding, California, townspeople convened at a Forest Management Forum hosted by the local newspaper to discuss their perceptions of “good fire, bad fire” and how those perceptions related to current forest management goals. To watch this eight-minute presentation, click on the link provided here.

<http://www.redding.com/news/2008/nov/23/burning-question-how-to-best-manage-our-forests/>

Two events in particular captured and held the public's attention: the Regional Forester's announcement on July 9 that approval for wildland-fire use fires was discontinued, and the fatal helicopter crash that claimed the lives of nine firefighters on Aug. 5, 2008. The loss of two more firefighters in separate incidents also focused the public's attention on the dangers and risks of managing fire.

Summary of Key Lessons from Incidents within the siege

Incident Management and team assignments

- Forest personnel experienced some confusion about how different teams were assigned and reported several misconceptions regarding the teams' roles and capabilities. They said a better understanding about the types of teams available and what their capabilities were would have enabled them to take a more sensitive approach to requesting the teams and managing them better once they had arrived and were in place.

- Multiple team transitions were difficult and time-consuming. Established relationships between departing IMTs and the local land managers were severed and sometimes decisions in place with existing IMTs did not get passed on to incoming team members. Corporate knowledge evaporated and it took more time for new teams to develop a working knowledge of the landscape.
- Several respondents expressed a concern that national IMTs seem to be unduly constrained by the requirements of transition due to increased complexity or the 14-day assignment sanction. They recommended that national and regional management teams should be allowed to be more flexible allowing them to remain in place for 21 days or longer.

Discussions about tactics

- Although Agency Administrators have a more engaged role in fire management decisions, some of them do not have knowledge of fire management. Team members say they are spending more time with line officers explaining fire suppression tactics and strategies.
- Tactics that caused concern among Agency Administrators were often large-area burnouts. Forest personnel said they felt that teams sometimes did not take advantage of the local and current fire management knowledge and continued to use strategies that local unit personnel insisted would not have desirable outcomes.

Issues among land management neighbors

- Some team members reported experiences where pre-existing relationship issues between neighboring forests and CalFire units initially made their assignments more difficult. Where conflicts existed between land management neighbors, team members spent more time facilitating discussions between the units and collecting clear instructions on how each land management unit was to be handled.
- At units where land-management neighbors had already established supportive and collaborative working environments prior to the fire season, teams reported that they were given clear directions and expectations and were able to carry those out immediately.
- Fires that crossed unit boundaries presented local units and fire managers with unexpected levels of complexity. Many of these units had not anticipated extra-boundary fires either coming onto their unit or burning onto a neighboring forest and had not discussed the possibility with their neighbors. When pre-season fire management discussions had not taken place, fire management activities stalled until the appropriate agreements about actions were in place.

Layers of oversight

- Some IMTs reported that multiple meetings and layers of oversight in existence during their assignments stalled suppression activity by limiting the amount of time for IMT personnel to develop effective strategies. IMTs recommended local units use the appropriate tools to deliver clear direction.
- The lack of Suppression Rehabilitation guidelines was often traced to a shortage of local personnel trained as Resource Advisors. In cases where suppression rehabilitation guidelines remained elusive, teams were sometimes unable to complete the requirements before the end of their assignments.

Facilitating relationships with the public

- It was widely reported that JICs fell short of meeting the needs of the public. Dysfunctional JICs prompted many local units to depend mainly on their own staff to meet the needs of media and widescale public reporting processes.
- Respondents said untrained Public Information Officers in Joint Information Centers were often unable to locate important information provided to them through Incident Action Plans or ICS-209 forms and as a result they continued to call the IMTs for information that had already been provided to them.
- Some IMT PIOs who were sensitive to the long duration of the events, overlapped information officers to ensure institutional memory within their functions. They staggered assignment beginnings and endings so that someone with experience would remain with the function through team transitions.
- Several respondents noted that many PIOs start on their first fire with no experience at all on a fireline. Untrained or poorly trained PIOs hampered the team relationships with local unit personnel. Trained and experienced PIOs enhanced and strengthened relationships between teams and host unit personnel.
- The public's understanding of fire management was heightened during the summer by long exposure to many wildfires burning in the northern California forests. Local agency administrators need to recognize that the public's heightened awareness may result in a need for continuing public education activities.

VII. Issues for Organizational Leaders

from the Northern California 2008 Lightning Siege

Initial Response and Priority Setting

- To overcome the gaps in knowledge from the formal reporting process (ICS-209), NorCal MAC Group members sustained a daily practice of gathering intelligence through direct incident personnel conference calls.
- As a part of their standard process, GACC coordinators gathered intelligence daily through conference calls, formalized a detailed Incident Briefing paper and distributed it widely to multi-agency coordinators on multiple levels. The more detailed reports increased situation awareness among inter-agency personnel who participated in priority setting and resource allocation.
- On forests, some personnel quickly developed a sense that “thinking big” was essential to successfully managing the fires. As a result, they constructed large-area, multiple fire WFSAs. Large-area WFSAs, however, required higher levels of authority and more time to approve them.
- The infrequency of the need for the state’s Multi-Agency Coordination Group, has provided limited experience for these individuals to establish a solid working relationship. In the absence of experiential working conditions, decision-making among groups with complex responsibilities can become difficult and time consuming.
- Decision support tools such as FSPro and RAVAR received some use during the 2008 lightning siege, but respondents said they may have been misunderstood or that technical specialists capable of extracting and interpreting the information from the tools correctly were in such short supply, the tools may not have been fully utilized. Additional personnel trained as Long Term Analysts will be needed.

Managing the Siege

Theater of Operations

- Several Agency Administrators and forest staff officers said they were uncertain what the term ‘Theater of Operations’ meant for groupings of multiple fire complexes. Several respondents said a theater was something they would expect an Area Command Team (ACT) to lead and that the difference between the ‘Theater’ concept and how an ACT functions, was never clearly communicated to them.

- Late timing on the rollout of the Accountable Cost Management Strategy for 2008 nationally and in California precipitated confusion and lack of consistency with terms and supporting activities in the wildland fire community. Preparing a new and comprehensive change in a specific agency policy should allow for lead time in education, information and preparation to allow for success at all program levels.
- Forest personnel said their confusion about the use of several new terms translated into a negative reaction to them because the complexity of the situation seemed to increase exponentially and the amount of time and communication required to operate in a 'Theater' was steeply increased.
- Newly introduced terminology such as 'Surge Forces, Force Multipliers and Theater of Operations' slowed response times for unit personnel because they did not know what to expect and how to order what they needed within a new command concept.
- Several interviewees said they thought the 'Theater' was a good idea but noted that its main drawback is the fiscal accountability factor.
- Complexity was increased exponentially due to the volume of documentation inherited when multiple complexes were transferred to the command of one NIMO team. NIMO Team members found they were tracking eight fires, six I-Suite databases, two forests, ten WFSAs, 70+ Delegations of Authority, 13 IMTs, and multiple Strategic Implementation Plans.
- Fire suppression repair planning was delayed due to the enormous size of the event and because it continued over a long period of time. Lack of available local Resource Advisors was noted as being a main stumbling block for completing Suppression Rehabilitation plans.

Key Decision Logs

- Key Decision Logs provided a method to measure overall organizational performance including business goals, working relationships, financial management, innovation and learning.
- One respondent noted that some forest leaders need more guidance on effective cost management ideas because they may feel pressured to meet nationally identified goals and misinterpret the language introduced in cost management practices.
- Some administrators, who concluded that the KDL concept was useful, also expressed frustration and concern as they tried to interpret instructions for the new tool and determine how to fill one out. The use of KDLs lacked clear leader's intent and often ended up "becoming a diary."

Finance and Cost Accountability

- Tracking resources that were being shared between incidents and forest boundaries became problematic because job codes and incident codes could not follow the resources.
- The I-Suite and ICS-209 incident cost programs were not designed as cost accountability and review tools. Additionally, the two programs are structured so differently that finance personnel find that on complex incidents the two tools can come up with significantly different final costs.

Supersized WFSAs

- Uncommonly large-area boundaries outlined in Wildland Fire Situation Analyses became political in nature, particularly when the estimated boundaries crossed over into other jurisdictions including other forests and state protected lands. Agency Administrators who had not had previous experience with similar events were somewhat unprepared to engage in extra-boundary discussions.
- Local units noted that Long Term Analysts, who are trained to work with the Wildland Fire Decision Support System (WFDSS) tools, were in short supply. In order to work with the newly available WFDSS tools in the 2009 fire season, local unit personnel will need either the training to use the tools or support from Long Term Analysts.

Using ‘Task Forces’

- Task Forces worked well in meeting operational objectives and were seen by Incident Commanders as a good method to manage and utilize scarce resources.
- The term “Force Multiplier” applied to the task forces created some confusion. GACC personnel said they were frequently explaining that this type of Task Force was a mobile group of resources that moved together from assignment to assignment between incidents and complexes and was managed by the GACC. A more comprehensive rollout of terminology for the incident would readily transfer needed information.
- Including a Division Supervisor within the Task Force composition resulted in a situation where there were two individuals with the title ‘Division Supervisor’ located in the same area on the fireline. This caused some confusion.
- The Resource Ordering and Support System was not configured to recognize or accept resources assigned under a Task Force concept. The work around that resulted created the entity as a ‘Type 2 Strike Team,’ which did not adequately describe the resource.
- Dispatch personnel found that it required a significant increase in documentation to manage the Task Forces.

Aviation

- Securing the large medivac helicopter as a dedicated resource to the ‘Theater’ was considered a success. The need for the ship was critical because at the time nearly 8,000 firefighting personnel were currently working about 128,000 hours a day, often in remote

and inaccessible terrain.

84 Base Camp

- Obtaining rental vehicles through a region wide agreement with a rental car firm, and then distributing the vehicles through the use of a Ground Support unit at the base camp, substantially improved the ability to track the vehicles and efficiently re-assign them as they were turned in.
- Respondents noted that there is a significant need for a standardized vehicle inspection process. Inspectors sometimes disagreed with each other about vehicles that passed inspections in other states but did not pass California standards and as a result resources were delayed while inspectors resolved their differences.
- Using All-Hazard or Incident Management Teams to manage a camp that was “90 percent Logistics and 10 percent Finance with nothing in between,” proved inefficient. Development of a logistics group with financial capabilities for similar opportunities in the future would meet a significant need.



Photo courtesy Redding Hotshots

Scott Wetmore, Redding Hotshots sawyer on the Whiskey Fire, June 13, 2008.

Incidents within the siege Incident Management and team assignments

- Forest personnel experienced some confusion about how different teams were assigned and reported several misconceptions regarding the teams' roles and capabilities. They said a better understanding about the types of teams available and what their capabilities were would have enabled them to take a more sensitive approach to requesting the teams and managing them better once they had arrived and were in place.
- Multiple team transitions were difficult and time-consuming. Established relationships between departing IMTs and the local land managers were severed and sometimes decisions in place with existing IMTs did not get passed on to incoming team members. Corporate knowledge evaporated and it took more time for new teams to develop a working knowledge of the landscape.
- Several respondents expressed a concern that national IMTs seem to be unduly constrained by the requirements of transition due to increased complexity or the 14-day assignment sanction. They recommended that national and regional management teams

should be allowed to be more flexible allowing them to remain in place for 21 days or longer.

Discussions about tactics

- Although Agency Administrators have a more engaged role in fire management decisions, some of them do not have knowledge of fire management. Team members say they are spending more time with line officers explaining fire suppression tactics and strategies.
- Tactics that caused concern among Agency Administrators were often large-area burnouts. Forest personnel said they felt that teams sometimes did not take advantage of the local and current fire management knowledge and continued to use strategies that local unit personnel insisted would not have desirable outcomes.

Issues among land management neighbors

- Some team members reported experiences where pre-existing relationship issues between neighboring forests and CalFire units initially made their assignments more difficult. Where conflicts existed between land management neighbors, team members spent more time facilitating discussions between the units and collecting clear instructions on how each land management unit was to be handled.
- Fires that crossed unit boundaries presented local units and fire managers with unexpected levels of complexity. Many of these units had not anticipated extra-boundary fires either coming onto their unit or burning onto a neighboring forest and had not discussed the possibility with their neighbors. When pre-season fire management discussions had not taken place, fire management activities stalled until the appropriate agreements about actions were in place.

Layers of oversight

- Some IMTs reported that multiple meetings and layers of oversight in existence during their assignments stalled suppression activity by limiting the amount of time for IMT personnel to develop effective strategies. IMTs recommended local units use the appropriate tools to deliver clear direction.

Facilitating relationships with the public

- It was widely reported that JICs fell short of meeting the needs of the public. Dysfunctional JICs prompted many local units to depend mainly on their own staff to meet the needs of media and wide scale public reporting processes.
- Several respondents noted that many PIOs start on their first fire with no experience at all on a fireline. Untrained or poorly trained PIOs hampered the team relationships with local unit personnel. Trained and experienced PIOs enhanced and strengthened relationships between teams and host unit personnel.
- The public's understanding of fire management was heightened during the summer by long exposure to many wildfires burning in the northern California forests. Local agency

administrators need to recognize that the public's heightened awareness may result in a need for continuing public education activities.