



Southern California Firestorm 2003
**Report for the Wildland Fire
Lessons Learned Center**

For:
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8 December 2003

This report was prepared by two private consulting firms with the input of federal agency employees assisting the Wildland Fire Lessons Learned Center.



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The following is an excerpt from the entire report. It is suggested that the reader also view the Introduction to the report to put this section into context.

Incident Resource Management

This section describes lessons learned in incident resource management.

Pre-Incident Planning and Resource Positioning

The Southern California fires grew in size and complexity to Type 1 incidents overnight. Most agencies responded using standard doctrine and protocol for the notification, dispatch, and staging of firefighting resources.

ICs and IMTs usually place resource orders as they assume control, although often these orders are coordinated and planned before the commanders and teams arrive on site. However, in this situation, delays in the dispatching process meant that it often took 36 hours to order and get a Type 1 IMT emplaced. In that time, the fire grew dramatically and burned into highly populated urban interface zones. Consequently, agencies were not able to respond with resources adequate to meet the tactical or logistical requirements of the situation: they were overwhelmed both tactically and logistically.

Most respondents indicated that dispatching delays severely impacted effectiveness because, although adequate planning had taken place, management resources were not available to implement those plans. Respondents indicated that planned trigger points for pre-positioning resources had been reached, based on the severity of fire conditions, but the plans did not include pre-positioning of IMTs or Area Command Teams. Nearly universally, people indicated that they felt far behind the power curve in ordering resources early enough to affect the outcome. With incident dynamics expanding faster than command and control could be effectively established, getting Type 2 and Type 1 IMTs in place earlier would have been beneficial.

As reported elsewhere, some of the mountain communities had completed extensive planning, which saved many homes in those communities. Although planners said they felt prepared to handle their portion of the incident, they didn't plan on the other incidents being so big, nor did they plan for what they would do when available resources are taken away to respond to higher priority incidents.

For example, in one community the plan called for seven additional strike teams to protect certain areas. When the fire actually occurred, they ordered seven strike teams as planned, but three of the strike teams were diverted to other areas before reaching the mountain top communities. This left the community in a position of "making things up as we went along."

Respondents also felt that added resources would have contributed significantly to saving neighborhoods. It was common to have one engine defending an entire block or street simply because no other resources were available. Additional resources would have allowed more tactical flexibility during defensive operations and provided more effective coverage to patrol, which would have prevented situations in which homes were lost to residual fire.

Respondents indicated a need to order and pre-position IMTs, Area Command, and other resources when conditions indicated dangerous fire potential, in areas of large WUI, for fires to quickly escalate and exceed the ability of the system to deliver resources in a timely manner. Respondents also identified the need to overcome delays in the dispatch

system by allowing teams to get on the road and start preparation and movement concurrently while the ordering and processing systems catch up and assign resource numbers after the fact.

Summary of Lessons Learned—Pre-Incident Planning and Resource Positioning

- The increase in size and complexity of these fires quickly exceeded the capability of the system to order IMTs in a timely manner. This placed initial attack resources in the position of managing incidents far beyond their span of control.
- Fire severity trigger points associated with positioning other resources were not applied to IMTs and area command. Teams constantly felt behind the power curve because they arrived after the incident had exceeded complexity thresholds.
- The shortage of resources impacted the effectiveness of pre-incident plans because adequate resources were not always available to implement them.
- IMTs identified the need for teams to initiate movement earlier and not have to wait for the system to complete the ordering process and issue resource numbers.

Dispatch Organization

We thought we knew how to prepare for the worst. We weren't even close. We processed over 4,000 requests in five days and dealt with incredible stresses.
- Dispatch Center Coordinator

Dispatch center respondents said the same requirement to make the mental shift from normal wildfire to a series of disasters applied to them as well. One interagency center had to contend with the impending evacuation of the center itself while continuing to function.

Respondents reported that the ability to expand and task organizing the dispatch staff was critical. Noise levels and crowding quickly reached unmanageable levels at dispatch centers. These conditions threatened to cause significant delays and inefficiency, but, more importantly, the chaos and distractions were potential causes of safety issues for air and ground resources.

One illustration of the distractions involved contractors: large numbers of contractors called to get their equipment dispatched and as a result blocked incoming phone lines. To mitigate this problem, 25 people were brought in and set up in a trailer to screen calls. In addition, a deluge of volunteers overloaded the system. Law enforcement had to provide security at the center to prevent anyone from walking in.

One center established expanded dispatch in trailers, where two or three people could focus on processing overhead orders, two or three handled equipment orders, and so on. This arrangement separated them from the 911 calls, the aircraft dispatcher, the initial attack dispatcher, and so on. Dispatchers set up noise screens around the aircraft dispatcher to increase clarity of radio traffic and minimize outside distractions.

Large maps were placed on the walls for additional staff that were not familiar with the areas where they were sending resources. Respondents reported these measures made

everyone more confident that they were providing accurate information to incoming resources.

At one center, interagency cooperation was a decisive factor in the success of operations. Dispatchers had cross-trained in other agency dispatchers' duties on previous fires. They had become knowledgeable on agency similarities and differences to minimize agency specific problems. One respondent said, "Our goal is to be seamless. They hear one voice no matter who answers the phone." Respondents indicated that this level of interagency cooperation took many years to develop before they could begin to work on the functional design of the center and possible plans and contingencies for mega fires and other disasters. The center found ways to organize more efficiently. "Now an IA dispatcher just looks up, and there's the person she needs to talk to right in front of her, instead of across the room looking in the wrong direction."

This center had conducted contingency planning for power requirements, phones, and computer networks so that when expanded dispatch was required, everything could be set up and ready to go in modular units. This planning was particularly valuable when the center was faced with the unexpected requirement that they themselves might have to evacuate because of fire. Terrorism and bomb threats had been considered, but not an entire center re-location.

This center created a plan to select a new location and set up laptops over a virtual private network set up to run Multi-Agency Incident Resource Processing System (MIRPS). Portable radios were in short supply, and the center decided to rely on vehicle-mounted radios. Again, interagency cooperation was crucial to the plan's success. A center manager declared, "We shared everything [between us], vehicles, radios, everything, no boundaries, and no agency lines." Ultimately, the dispatch center did not need to be relocated, but respondents said the experience taught them some valuable lessons for future contingency planning.

Summary of Lessons Learned—Dispatch Organization

- The huge increase in activity and distractions at dispatch centers posed a safety threat to resources (due to dispatcher distraction) and delays in ordering. Dispatchers compartmentalized key functions to minimize distractions.
- Interagency cooperation significantly increases the ability to adapt and respond to a crisis. Conflicts had already been worked through and improvements implemented by the time the crisis occurred. Dispatchers had cross-trained in other agency dispatchers' duties on previous fires.
- The large number of dispatchers coming in to assist from outside the area made it important that that staff from outside the area has an adequate orientation and access to local maps and information.
- One center had conducted contingency planning for power requirements, phones, and computer networks so that when expanded dispatch was required, everything could be set up and ready to go in modular units.
- Dispatchers said a lesson learned was that their center's contingency planning should include total evacuation and temporary operations at a remote location.

Resource Management Systems

The following two resource management systems were in place:

- Resource Ordering Status System (ROSS)
- Multi-Agency Incident Resource Processing System (MIRPS)

Many respondents reported that the scope of the fires and the urgency required in getting resources to the scene in this series of WUI fires was far more than what the resource systems were designed to meet. A *blitz package* is a pre-established resource order that provides everything needed to set-up a finished fire camp. One dispatch center ordered six *blitz packages* in five days.

Dispatchers said the magnitude of the situation created two problems. First was the delay and inaccuracy of information transferred between MIRPS (the older, California system) and ROSS (the national system). Second, resource-ordering delays were caused by not moving resources until resource numbers were assigned.

MIRPS and ROSS do not communicate with each other. Ordering information had to be manually transcribed from one system to the other. Managers said that with the huge volume of ordering, data entry mistakes caused resources to go to the wrong locations with the wrong resource numbers. Since some of these incidents had three or four different reporting locations, this problem caused delays of up to 24 hours before resources arrived at locations where they were needed.

Moreover, out-of-region staff did not know MIRPS (a California specific system.). Many of the dispatchers that came from out of state did catch and correct many of the translation errors, but many others got through. When people realized that the data transfer was a source of problems, dispatch centers had to assign additional staff to translate and transfer data as error checkers. Respondents indicated that although the ROSS needs serious overhauling, using one system would speed and simplify the ordering process.

Respondents indicated that ordering delays caused resources to wait for resource numbers before initiating movement toward an assignment, resulting in unnecessary and unreasonable delays in getting resources to fires, especially considering the critical need for speed. Dispatchers expressed frustration at processing 120 “E” numbers for individual engines instead of 20 strike team E numbers or entering 100 “O” numbers for resources that everyone knew were not available.

Respondents assigned to functional areas throughout the organization also expressed frustration at not being able to *lean forward in the saddle* and get things in motion. An air tanker would taxi to the ramp in anticipation of a dispatch only to sit and wait. IMTs wanted to get on the road to get in place but had to stay at their home units.

The most effective mitigation to these delays happened when dispatch and an IMT worked collaboratively to determine needs and find and order resources. As one respondent reported, “One IC sat down and worked with us and had good ideas, contacts, and suggestions. I really appreciated that.” Since jurisdictional boundaries have a tendency to mask the reality of resource availability, in this case the IMT provided important ideas about where and how to get resources.

Summary of Lessons Learned—Resource Management Systems

- The large demand for resources placed a strain on the ordering system. Manual translation of data from MIRPS to ROSS caused mistakes and delays in resource ordering. Additional people had to be assigned to check for translation errors.
- Delays in movement of resources caused by having to wait for resource order numbers were perceived as unnecessary and unacceptable. They prevented IMTs from being able to initiate movement.
- When dispatchers and IMTs worked collaboratively to resolve resource problems they were able to find and order resources more quickly.

Stage or Reassign Resources

Always take the known catastrophe over the potential, and be flexible enough to adapt again if needed.
- Resource Manager

With several incidents simultaneously reaching catastrophic proportions and so many resources committed, IMTs, resource managers, and dispatchers had the daunting task of determining the priority for resource assignments. Resources, initially dispatched through mutual aid, said they became frustrated at sitting in staging on an incident while their home districts were burning. Most respondents felt that there were times when resources that were being held in staging at one incident could have been assigned to a growing threat or a new incident to greater advantage.

Respondents said that on those incidents where area command was established, that it was an effective method of balancing priorities on multiple incidents. Until the area command was established and in other areas without area command, respondents indicated that a collaborative effort between IMT and dispatch was the only way to determine how to balance needs among incidents.

Summary of Lessons Learned—Stage or Reassign Resources

- Simultaneous incidents created difficulties in deciding whether to hold resources on existing incidents or reassign them to new incidents. In the absence of area command, IMT and dispatch managers had to collaborate to determine how to balance priorities with limited resources.

Recall of Off-Duty Resources

Communications to recall off-shift city or county firefighters presented a challenge in some areas. Those departments with automated systems had an easier time with staffing than those without. In one case, the automated system was backed-up with personal phone calls in order to convey the gravity of the situation to off duty firefighters. One department reported that notifying television and radio stations to recall off-shift firefighters was an effective technique. Several areas lost power, so commercial radio and cell phones were the only way to get the word to off-duty firefighters in those areas.

As all engines became committed and as off-duty firefighters began to report in large numbers, more firefighters were available than engines. Transport relays using trucks and buses were effective to get individual firefighters to staging areas or out to assignments where they could reinforce engine crews already on the line. These transport relays were very effective in overcoming shortages caused by three-person staffing on many structural engines.

Summary of Lessons Learned—Recall of Off-Duty Resources

- Automatic recall systems were effective in getting off duty firefighters to report in. Notifying TV and radio stations to recall firefighters was also effective. Cell phones and radio were used in areas where the power went out.
- As off duty firefighters reported in they were shuttled in buses directly to staging areas or the fire ground to augment short-handed engine crews.

Staffing of Resources to Apparatus

Many municipal and county departments reported that three-person structural engine crews were at a severe disadvantage in urban conflagration conditions compared to four person crews. As fires crossed the interface into urban areas, the high number of involved or threatened structures that one engine crew had to handle at the same time required the engineer of a three-person crew to leave the pump panel and run a hand line. In these conditions, some firefighters found it effective to pair a three-person engine with a four-person engine.

As more people reported in, more firefighters were available than are usually assigned to man the available equipment. Leaders assigned as many as eight firefighters to an engine. In one case, this type of augmented engine crew was able to simultaneously staff the pump panel, use the engine's master stream device on the most involved structure, and stretch several hand lines to protect neighboring structures.

Municipal and county captains and battalion chiefs reported this augmentation allowed engine crews to move equipment quickly from location to location, managed fatigue better and provided better lookouts and situation awareness.

Summary of Lessons Learned—Staffing of Resources to Apparatus

- Three-person engine crews were not sufficient for urban conflagration situations. Pairing three and four-person engines together was an effective technique.
- Assigning off duty resources to augment existing crews (up to 8) enabled maximum use of the engines' equipment, and provided for effective LCES, situation awareness, and aided in mitigating fatigue.

Use of Administratively Determined and Retired Firefighters

Respondents reported that during catastrophic conditions, tapping into local sources of Administratively Determined (AD) firefighters provided a pool of resources that did not have to go through the much overloaded resource ordering and status system. AD firefighters could be immediately and locally hired and sent to an appropriate assignment.

Retired firefighters were used in urban areas to act as mobile observers and assist with logistical and staging efforts.

Logistical Support

According to many respondents, the logistics system was unable to keep up with the initial pace of operations. Normal sources of logistical support were not available during the initial chaos of these incidents. In many cases, initial attack resources could not respond to any centralized location to eat or to draw supplies for 36 hours. In cases where areas were evacuated or places of business ordered closed, there were no sources for fuel, water, or food. Further, it was not practical to disengage to go to a centralized point or a camp.

Several respondents said that the known severe conditions prompted them to make sure there was extra drinking water and Gatorade on their vehicles, but they had not anticipated the difficulty with getting food. This was particularly true for municipal and county fire departments.

One city department overcame this obstacle by coordinating with its purchasing staff to order meals through local sources and restaurants. Other respondents reported that the only other effective ways to feed firefighters during the initial response periods were by getting food from storage (MREs) or by having leaders buy food and drinks from local restaurants and deliver it to crews and engines on the fire ground.

Respondents said they would like to see certain gas stations designated as official re-supply points closer to the fireground.

Summary of Lessons Learned—Logistical Support

- Initial attack resources had to remain self sufficient for up to 36 hours. The logistics system was initially overwhelmed by large, complex, and multiple WUI incidents. Evacuations caused shortages of locations to obtain fuel and food.
- Municipal and county firefighters stocked extra water based on severity conditions, but did not anticipate the need for food. They felt designated fuel and water points should be part of pre-incident planning so that they are in close proximity to the potential fire ground.