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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.

Mission-Centered Solutions, Inc., a small business enterprise located in the Denver metro area, provides training development and delivery services for government, military, and corporate clients. Our areas of training and expertise focus on disciplines that enhance crew or team resiliency and effectiveness, including leadership, error reduction and management, communication, and crew resource management. We also provide specific training and consulting to assist management of high-risk organizations to bring about and support targeted changes.

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Guidance Group provides strategic services to fire service organizations; and specializes in leadership, strategy and organizational improvement. The Guidance Group provides a unique blend of real world fire management experience as well as facilitative and consulting skills that may not be available within the client organization. The result is a practical, professional and experienced approach to fire service strategy, leadership and organizational needs including strategic planning; professional development; goal setting; collaborative problem solving; program evaluation; and support to field studies and field research.

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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.

Command and Control

This section describes lessons learned regarding command and control.

Establishing Command in Chaotic Conditions

> *We need to be doing a better job recognizing the size of the crises. We were already behind the curve once the fires started.*
> **- Division Chief**

Leaders at all levels described major challenges in establishing effective command and control during the high tempo conditions the fires presented. Fires were threatening communities in the mountains as well as becoming urban conflagrations in cities. Several incidents were occurring at once. The situation was unfolding at a rate that far outpaced the tempo at which the system could operate. Respondents reported that perimeter control was impossible, and the suppression effort was purely defensive. The values at risk dictated that many incoming resources report directly to their assignment, bypassing normal check in and staging processes.

Incident leaders said they had to start out in a purely reactionary mode. Shift changes, team handoffs, and organizational development had to occur during the worst possible incident conditions. Problems between the 800 MHz and VHF communications systems exacerbated these issues because municipal and county firefighters could not talk to state and federal firefighters.

Incident commanders responded that during this reactive phase, strong, centralized command and control was impossible to achieve, reporting that, given the available resources, they could not possibly accomplish all the things requiring attention. Incident commanders found that it was more successful to set a limited number of critical priorities and work with what was available to accomplish them. They made sure those critical objectives were communicated to the tactical level.

As incidents escalated and the system became overloaded, respondents reported that pre-existing relationships based on previous interagency cooperation proved essential. There were periods when common sense and collaboration was the only effective way to respond to the escalating nature of what was occurring and cooperators had to jointly determine and execute initial strategies and tactics with other cooperators.

Leaders at all levels reported that they had to delegate responsibilities by providing leader's intent, constraints, and zones of responsibility by functional group and then letting subordinates exercise individual initiative to control actions and resources within that area. This approach allowed resources to continue to function in ways that supported incident objectives during periods of command transition, loss of communications, and rapidly changing ground situations.

In some cases, division and group leaders made sure incoming resources received briefings and mitigated communications incompatibility issues by reporting directly to informal staging areas at the division or group level before proceeding to their assignment. A division supervisor or battalion chief staffed this small-scale collection

point. Other overhead resources were out in the fire area to determine where incoming resources would be best used.

After the initial influx of resources and as the command systems overcame the initial reactionary postures and gained the initiative, they began to send out "wranglers" to tie in with divisions, groups, and strike teams to verify units and numbers of people and to ensure that documentation was complete and accurate.

Summary of Lessons Learned—Establishing Command in Chaotic Conditions

- Incidents overwhelmed established systems during the initial response, forcing incident managers into a reactionary mode and resources to have to be committed directly to the fire ground. Strong, centralized command and control was not possible.

- It was most effective for commanders to determine the top three or four priority objectives, communicating their intent, objectives, and risk criteria to all resources. They delegated tactical decision-making down to functional group level and gave the authority to adapt as the situation developed.

- Leaders thought it was effective to route all incoming resources in a way that ensured they got a quality briefing; understood intent, objectives, and risk guidance; and had the capability to establish LCES.

- As IMTs started getting established, some IC's sent *wranglers* out to tie in with subordinate leaders and verify documentation to make sure everyone was accounted for and the IMT had situation awareness on assigned resources.

Exercising Individual Initiative

> *Using the ICS framework and commanders intent while we were protecting structures in groups worked very well. The plan arrived about 10 AM, and we were already doing it.*
> **- IHC Superintendent**

Almost every respondent, regardless of position, validated that individual initiative, exercised by single resources, crew leaders, strike teams, division supervisors, and battalion chiefs, was paramount to success during the initial response phase of these incidents (up to 36 hours). However, all cautioned that there is a difference between independent action and freelancing. Independent action is empowered and focused effort that furthered the accomplishment of leader's intent. Freelancing is unguided effort that is possibly counterproductive or even dangerous.

All respondents acknowledged that at no time should any firefighter unilaterally ignore orders or independently reassign themselves when effective command and control is in place. However, in this case, firefighters described responding to multiple, emerging catastrophes. Effective command and control and common communications were unavailable. The values at risk were so great that firefighters felt disengagement was not a viable option.

During early phases of the WUI fires and urban conflagration, respondents reported some crews were waiting for orders while nearby units were being overwhelmed. As some resources arrived in the area, the systems and processes normally used to move resources to assignments could not keep up, due to confusion, rapid rate of spread, fire intensity, communication overloads, and supervisory personnel shortages. When unable to contact supervisors, some units simply waited; others took action.

Leaders reported that both of these alternatives created some problems and solved others. In some cases homes burned while engines stood by within sight. In other cases, supervisory personnel were temporarily unable to account for units. The latter occurred in one area that was burned over, causing, until control was reestablished, several hours of considerable concern about units that may have been lost.

Leaders said that effective independent action was enabled in different ways. Some incident management teams delegated authority to divisions and functional groups, provided intent, laid out risk criteria and any constraints, and received updates as the situation allowed. As things rapidly changed on the ground, strike team leaders or group supervisors stated they could make decisions based on values at risk, reposition resources, and initiate actions, then tie in with overhead and provide updates. Leaders felt this strategy led to several successful decisions to prep, treat, or conduct burnouts that were critical in saving neighborhoods.

Other respondents reported that effective independent action was a more collaborative effort. An air attack supervisor worked with interagency dispatchers and air tankers to take action to protect subdivisions where no ground resources were available until air ground operations could be planned and tankers ordered.

The most commonly reported type of effective independent action occurred in the WUI. Both structural and wildland resources had responded, and the incident was escalating at a phenomenal rate. Respondents said that limited available resources were fully committed, and few reinforcements were on the way. Communications presented a serious problem. Leaders said they just started forming strike teams or functional groups from available resources. They assessed the situation and started taking action where they believed they could do the most good, forming their own incident organizations: exercising command, creating staff positions where needed, and starting to document the resources assigned. They described functioning in this manner until they could tie-in with the emerging incident management organization.

Another reported aspect of exercising initiative was leading upward. Many leaders mentioned the importance of leading upward to offer ideas and alternatives to senior leaders. Under the stressful conditions, most leaders said they were susceptible to the natural tendency to "tunnel in" and focus on one thing. Many times people said they were unsure whether or not to speak-up, either because everyone was under tremendous stress or because they wanted to let leaders do their jobs. Those who did speak-up said they were glad they did because it usually broke a chain of errors. That same message was validated by successful senior leaders interviewed, who perceived this as "keeping me honest" or as having lookouts and personal safety officers while they were operating under high stress conditions.

> **Summary of Lessons Learned—Exercising Individual Initiative**
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> - Individual initiative and independent action at the tactical level was critical to success in the first 36 hours of the incidents. Respondents made a distinction between this and *freelancing*.
>
> - Respondents felt independent action had pros and cons, but taking action that was in the best interest of their leaders had a far better outcome than when resources took no action and waited for further guidance.
>
> - From the top, leaders enabled safe and effective independent action by giving leader's intent, objectives, risk criteria and limitations, and delegated responsibility to act within that guidance.
>
> - From the bottom, leaders at the tactical level established ICS, exercised command, and began documenting resources assigned when no guidance was available.
>
> - Speaking-up to offer alternatives or break error chains contributed to the overall ability of senior leaders to make better decisions under stress and prevents accidents.

Size Up and Intelligence

Almost all respondents, whether engine operator, hotshot superintendent, or battalion chief, reported that a proper and deliberate size-up was essential to success and survival. In such extreme circumstances, with values at risk so high, there was a great temptation to just get at it and engage.

At such times, leaders said taking that tactical pause—to really look around, "feel the winds", "smell the smoke" as some respondents put it, and consider *what-if* scenarios, establish trigger points and contingency plans—paid off time and again because they said they were better prepared when conditions radically changed.

At command levels, leaders stated that intelligence was a critical factor with fast moving fires in the WUI. With all firefighting resources fully committed, it was difficult to maintain a big picture of the fire's activity as it moved so quickly and in many different directions. Some of these fires were unusually large, so the sheer size of the flame front and perimeter made it hard for leaders to maintain complete situation awareness.

Where air assets were used, leaders reported a significant improvement in the ability to effectively commit or reposition resources and brief incoming resources on the actual fire situation, status of evacuees, and ingress and egress routes. Confidence also rose as firefighters felt that air resources provided another layer of lookout safety beyond their own lookouts.

To provide ground resources situation awareness as early as possible, some commanders adjusted flying schedules to get air resources airborne as early as 0600 or 0700. This effort enabled ground resources to engage fires earlier in the morning, during the low points in the burning period. Several people reported that these adjusted flying schedules allowed them to start getting ahead of their fire because they could start perimeter control during low fire activity.

In those areas where air assets were not available, retired firefighters, citizens, and police officers went out as mobile field observers. These observers also were sent to high ground vantage points such as towers, tanks. Law enforcement information was also included; however, most law enforcement officers were totally committed to evacuations and route clearance.

Summary of Lessons Learned—Size Up and Intelligence

- The extreme conditions made everyone feel a sense of urgency to commit and take action. It was even more important under those circumstances to do a proper and deliberate size-up and make contingency plans.

- It was very difficult to maintain situation awareness of the fire activity as it moved through urban areas and split into multiple heads. Air resources were most effective to overcome this problem.

- Retired firefighters, law enforcement, and citizens were used as field observers to provide leaders situation awareness of the fire behavior in urban areas. Observers were mobile or placed on high ground, towers, or tanks.

Planning Cycles and IAPs

During situations where fast-moving fires entered the WUI and urban conflagrations started, respondents reported that the customary 12-hour planning cycle proved ineffective. The situation was so dynamic that it was difficult to plan operations more than six hours into the future. In many cases, fires were doubling or tripling their size every hour, going from a few hundred acres to 50,000 in four or five hours. Leaders said that the rapid development created a situation that made normal planning documents (like IAPs) obsolete by the time they were distributed.

For this kind of incident, commanders reported feeling way behind the power curve. They said they had had to adjust their contingency planning miles ahead of the fire, to determine alternative courses of action and places where resources could make successful defensive stands or begin perimeter control. Respondents indicated a need to focus planning beyond 12 hours from the immediate fire threat to the fire's potential impact. This need involves developing contingencies with associated trigger points and coordinated planning for each trigger point. This strategy was effective but difficult because it forced people into non-traditional or unconventional planning modes.

Some respondents used a less detailed IAP that focused on the big objectives and then followed up with detailed and more frequent briefings down through the chain of command to adjust strategy and tactical operations.

One IMT formatted their IAP in folded and stapled booklet form that is small enough to carry in the cargo pocket of fire pants. Part of the IAP is a "mini-communications plan" that can be clipped-out of the IAP booklet and conveniently taped onto a radio.

Role of Area Command

> *The incident was a catastrophe of biblical proportions and more than any one team could handle.*
> **- Type 1 Incident Commander**

Respondents explained that area command is rarely used in Southern California - not because of specific resistance- but because California has several available Type 1 and Type 2 Incident Management Teams. Historically, area command teams have not been needed to handle multiple fire situations in Southern California because FIRESCOPE Multi-Agency Coordination assumes this role.

Area command was established for one of the large fire situations and was widely regarded as a success. (A coordinating group that performed some area command functions was requested for another large fire situation.) Area command added value by helping prioritize limited resources and making adjustments based on current and projected incident activity. Area command was also able to interface with line officers and administrators on larger issues, allowing the IMT focus on accomplishing their objectives.

Many respondents indicated that they would want Area Command ordered and established sooner in a similar, future situation. They stated that when the agencies recognized the need to pre-position resources, they should have used that same trigger point to pre-position IMTs and an Area Command Team. "The writing was on the wall," as one respondent put it.

The area commander said he tried to look ahead 24 to 36 hours, share information among IMTs, and communicate what conditions might look like on a larger scale. He could begin to project requirements and extend the decisional space of engaged and incoming IMTs. The area command team contacted incoming IMTs and pre-briefed them on their intent and objectives so their staffs could start planning, even before their departure from their home units. Area command tried to help get resources pre-positioned and briefed to help IMTs take advantage of the predicted weather change when it arrived.

Realizing the very complex nature of this incident, area command augmented their staff heavily with trainees. In this situation, the deputy area commander took over the Joint Information Center and fed information back to area command from there. The trainee

area commander went to the county emergency operations center and began to coordinate with local governments and resources there.

Summary of Lessons Learned—Role of Area Command

- Southern California has many available IMTs and does not traditionally use area command. This created a delay in ordering area command. Once area command was established it performed its function well.

- Area command augmented heavily with trainees because of the complexity of the incidents. They task organized to provide liaison to county EOCs and assumed command of the JIC.

Community Protection Incident Management Teams

We've evolved from the structure protection group to the structure protection branch now to community protection teams.
- Type 1 Incident Commander

On one incident, the fire had extended beyond what is typically considered the urban interface and developed into urban conflagration. At the same time, the fire was moving up into the mountains. The extreme nature of the fire behavior and the fuel load created by dead trees led incident planners to believe that several large WUI communities in the mountains could be threatened. Anticipating the lead-time necessary to prepare, evacuate, and defend the community, an entire Type I IMT was assigned the functional role of community protection. The IMT was staffed with a minimum of firefighting resources.

Respondents reported that it was essential for the protection and suppression effort to work collaboratively with line officers, their natural and cultural resource specialists, and city and county government. Fire suppression and resource management goals are often in natural conflict with one another, and it is important that the land management agency line officer, resource specialists, and the incident organizations all have the same goals and that those common goals translate into planning and are communicated to the community with a unified voice.

Transportation, road, and public utilities departments represented another key group of non-traditional cooperators. These agencies were vital for assuring protection of critical community infrastructure, local information, evacuation planning, clearing access and egress roads, and planning to restore services prior to residents returning. Local fire departments also proved valuable to the planning effort because of their extensive knowledge of the local area.

Summary of Lessons Learned—Community Protection Incident Management Teams

- Fire potential was so large that a Type 1 IMT was assigned the role of community protection for a mountain area far ahead of the fire. The IMT was to create a fuel break and coordinate preparation and evacuation.

- The natural conflict between damage caused by suppression activities and protection of natural resource values required better coordination between fire managers, line officers, and natural resource specialists earlier in the planning process for community protection projects during the incident.
- The IMT worked with infrastructure and utilities people to coordinate activities: planning evacuation routes, assuring access and egress, and restoring services. They brought local fire departments into the planning process, incorporating their extensive knowledge of the area.

ICP Planning

> *Historic fires are the rule now, not the exception.*
> **- Type 1 Incident Commander**

Respondents felt that planning ought to be done in local jurisdictions to select likely ICP and support locations ahead of time. They suggested selecting likely places where tree mortality, severity, or historic conditions point to potentially large fires; and designating multiple infrastructure locations such as ICPs, staging areas, and helibases in that area.

Many felt a need to discuss severity and season conditions at joint IMT meetings and training sessions and talk through possible scenarios together.

Almost all respondents expressed two worries: first, even with all the extensive planning and interagency cooperation in place in Southern California, it wasn't enough for a series of incidents like this; second, incidents like these would undoubtedly occur again, not just in Southern California, but all over the western United States, as fuel loads and urban interface areas increase.

Summary of Lessons Learned—ICP Planning

- Pre determining sites for use as potential ICPs and key support facilities was noted as a lesson learned. Analyze local areas and visualize possible large or multiple incident scenarios in advance. Make the large or multiple incident scenarios part of discussion and training provided at IMT meetings.

Team Transitions and Shift Changes

Respondents reported that team transitions and shift changes posed unique challenges during these fires. Operations always remained at a high tempo, and structures were always threatened. Firefighters reported that on incidents without good shift change planning, structures burned as one shift returned to the ICP while another shift headed out to the line.

The most effective team transitions occurred when incoming IMTs could be pre-briefed as early as possible by the current IMT or area command. One incoming IMT asked line overhead (division and group supervisors) to remain for an extra shift to provide continuity on the ground.

The most effective shift changes occurred when the IMT planned for overlap between operational periods. This ensured a continuity of operations and allowed an exchange of current information to occur between resources.

Summary of Lessons Learned—Team Transitions and Shift Changes

- Poorly planned team transitions and shift changes caused a loss of effectiveness and increased property damage. The most effective occurred when overlaps allowed a continuity of operations.

Safety Officers

> *It turns people off to the "message" when you sweat the small stuff.*
> **- Type 1 Safety Officer**

From area command down to division and group, safety officers had a key role in helping to affect positive command and control. Safety officers who received high marks from firefighters and overhead stated that they see their role as an extension of the eyes, ears, voice, and conscience of the incident commander, rather than that of an enforcer.

Respondents said they found applying influence a far more effective process than demanding compliance. Safety officers accomplished this by trying to invoke critical thinking about a firefighter's situation awareness, LCES, and decision making processes by asking questions and trying to help crews or engines see how their efforts tied in to the big picture. They also tried to encourage firefighters to anticipate possible outcomes, make contingencies, and set appropriate trigger points.

Safety officers indicated they were most effective when they were proactive and highly mobile: communicating often with residents, law enforcement, and the media, making sure these people understood risks, and giving advice on how to manage it. Some respondents said they tried to use these opportunities to influence media perceptions and communicate key forest management and defensible space themes to the media.

Civilians who decided not to evacuate posed an ethical dilemma for safety officers. Safety officers encouraged firefighters to adapt to higher levels of risk but set realistic disengagement trigger points because the residents who remained had made a conscious choice to do so. They would stop and communicate with these residents and explain the rules of engagement the firefighters were under and how to best survive when the flame front passed through.

Summary of Lessons Learned—Safety Officers

- Exerting influence through asking questions that required firefighters to think about the impacts of their decisions was an effective method of encouraging risk assessment and situation awareness.

- Taking the opportunity to communicate key themes with residents and media while helping them to make their own risk decisions was an effective way to influence the public.

- Safety officers had to help firefighters interpret rules of engagement and values at risk in extreme circumstances, especially concerning acceptable risk in helping citizens who refused to evacuate.