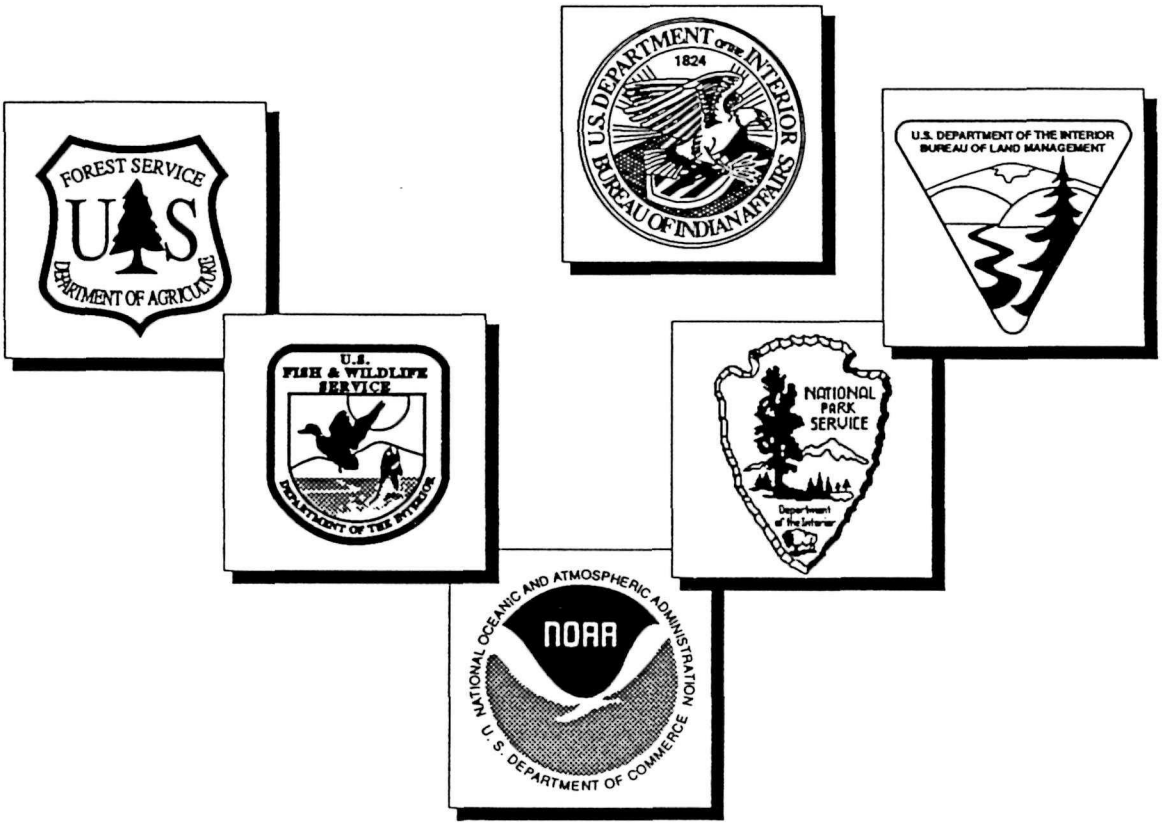
Report of the Interagency Management Review Team

South Canyon Fire

October 17, 1994



Report of the Interagency Management Review Team
South Canyon Fire
October 17, 1994

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Report Accepted:

Mike Dombeck — OCT 18 1994

Director
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Date

for Jack Ward Thomas — October 19, 1994

Chief
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Date

Concurrence:

OCT 18 1994

Director
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Date

Lottie W. Butler — 17 October 94

Director
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Date

for Hilda A. Manuel — OCT 18 1994

Assistant Secretary
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Date

Corrective Action Plan Accepted:

OCT 19 1994

Designated Agency Safety & Health Official
Department of the Interior

Date

Waddell C. Townsend Jr. — OCT 19 1994

Designated Agency Safety & Health Official
Department of Agriculture

Date

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EXECUTIVE SUMMARY

On July 2, 1994, during a year of drought and at a time of low humidity and record high temperatures, lightning ignited a fire seven (7) miles west of Glenwood Springs, Colorado. The fire was reported to the Bureau of Land Management on July 3, as being in South Canyon, but later reports placed it near the base of Storm King Mountain.

Dry lightning storms had started 40 new fires in BLM's Grand Junction District in the two days before the South Canyon Fire started, requiring the District to set priorities for initial attack. Highest priority was given to fires threatening life, residences, structures, and utilities and to fires with the greatest potential for spread. All initial resources on the Grand Junction District were committed to highest priority fires.

Over the next two days the South Canyon fire increased in size, the public expressed more concern about it, and initial attack resources were assigned on July 4.

On July 6, a mixture of helitack, smokejumpers, hot shot crew personnel, and local initial attack forces were assigned to the incident. A dry cold front with very strong winds moved into the fire area, and very strong winds passed over the fire area. All 49 firefighters on the incident at this time were forced to abandon the line and escape the 100-foot flames. Thirty-five firefighters survived; 14 did not.

An interagency team was formed to investigate the fatalities on the South Canyon fire and published a completed investigation report on August 17, 1994. This report provided an overview of the incident, the investigation process, findings, causal factors, follow-up actions, recommendations and conclusions.

The Acting Director, Bureau of Land Management, and Chief, Forest Service, established the Interagency Management Review Team (IMRT) to serve as a steering group to study the findings and conclusions of the Investigation Team, review and refine that team's recommendations, and propose a plan for corrective action.

In the IMRT's Charter, three specific tasks were identified, which are:

1. Identify any immediate corrective actions that will improve safety and minimize the risk to firefighters this fire season which have not already been taken. The IMRT will take appropriate actions to ensure that any such immediate corrective actions are promptly implemented and will reinforce any corrective actions taken since the South Canyon incident.

2. Review the findings and conclusions of the South Canyon Fire Interagency Investigation Team, review and refine that team's recommendations, propose a plan for corrective action (including specific tasks, responsibilities and target dates) and recommend a strategy for ensuring effective oversight of the implementation of the action plan.

3. Identify additional significant issues and concerns related to the interagency wildland fire management program that may include preparedness, mobilization, initial attack capabilities, training and qualifications, interagency coordination, and expanded dispatch and prepare recommended actions for addressing these issues and concerns.

Activities of the IMRT included taking immediate action to improve firefighter safety, developing a corrective action plan, addressing other significant issues and concerns to wildland fire management, and discussing management implications and policy issues. Three immediate actions were taken to improve firefighter safety this year. First, the team took the two safety alerts issued by the investigation team in July and re-issued them as one updated alert to remind all firefighters of the importance of safety.

Second, the team requested that each wildland fire agency director hold a conference call with the next lower level of management using a set of talking points entitled, "Safety is Job #1."

Finally, the team requested the National Multi-Agency Coordinating (MAC) Group take two actions to ensure that critical fire behavior and weather indicators are effectively communicated to firefighters on the firelines.

The IMRT reviewed the findings, conclusions and recommendations of the South Canyon Fire Interagency Investigation team. After careful study and discussion of each recommendation made by the investigation team, the IMRT prepared a detailed corrective action plan, along with a recommended strategy for ensuring that the corrective action plan is implemented in a timely and effective manner. The IMRT identified a number of areas of concern involving the operational capabilities of the interagency wildland fire management program. Recommended actions to address each of these issues and concerns are included in the proposed corrective action plan.

In conducting its activities, the IMRT has considered the interests and concerns of all of the federal wildland fire agencies as well as those of traditional partners in the program, including the National Weather Service, the U.S. Fire Administration and the state foresters. The IMRT has recommended task groups to address specific recommendations and issues and anticipates membership for those groups from all of the partner agencies.

INTRODUCTION AND BACKGROUND

On August 22, 1994, the Director of the Bureau of Land Management and the Chief of the U.S.D.A. Forest Service released the results of the investigation of the South Canyon Fire, which claimed the lives of 14 firefighters near Storm King Mountain, Colorado. The interagency team that investigated the circumstances surrounding that incident identified a number of findings and causal factors and made several recommendations to address those findings and causal factors.

The Director and the Chief established an Interagency Management Review Team (IMRT) to prepare a corrective action plan to address recommendations of the investigation team and other related issues. This report to the Director and the Chief presents the IMRT's conclusions and recommendations regarding issues related to the South Canyon incident, a proposed corrective action plan, and recommended actions on other wildland fire management issues and concerns.

INTERAGENCY MANAGEMENT REVIEW TEAM

The IMRT appointed by the Director and the Chief includes personnel from the Forest Service, the Bureau of Land Management, the National Park Service, the Fish and Wildlife Service, and the Department of the Interior. A representative of the National Weather Service joined the team in its work; representatives from the National Association of State Foresters assisted the team at various times. The original team membership included a representative from the National Federation of Federal Employees. The union representative elected to provide written input to the IMRT but was unable to participate as a team member. In addition, the IMRT had the benefit of input from and discussion with members of the investigation team, the national federal wildland fire directors, and other experts in wildland fire management operations.

The IMRT received a number of unsolicited comments and suggestions from employees, fire managers, and the public. In some cases the team asked for specific information from individuals in order to better understand an issue or to develop an approach to addressing a recommendation. Every item submitted to the team was carefully reviewed and considered by the IMRT in reaching its conclusions and developing its recommended corrective action plan.

IMRT CHARTER

The charter of the IMRT lays out three principal tasks: (1) take any immediate actions to improve firefighter safety this year, (2) develop a corrective action plan that addresses the recommendations of the Interagency Investigation Team and recommend a strategy for implementation of that action plan, and (3) identify other significant issues and concerns related to the interagency

wildland fire management program and prepare recommended actions to address those issues and concerns. The full text of the charter is included as Appendix 1 of this report.

Occupational Safety and Health Administration Investigation

The charter for the IMRT directs that the corrective action plan developed by the IMRT address findings, conclusions, and recommendations of the Occupational Safety and Health Administration (OSHA). The IMRT contacted members of the team conducting the OSHA investigation and learned that the results of their investigation would not be available prior to completion of this report. Once the OSHA investigation is completed, the IMRT will address the results of that investigation as appropriate and necessary.

Acknowledgments

The IMRT would like to acknowledge the support it received from fire management staff within the wildland fire agencies and the National Weather Service in providing information, insight, and reviews of various aspects of this report. In particular, Bill Ward of the National Interagency Fire Center served as the team's Executive Secretary, providing logistical support and tracking all of our documents. Support staff from the Washington Office of the Bureau of Land Management and from the BLM Division of Training at NIFC were invaluable in their efforts to produce this report. And Ken Palmrose of the Stanislaus National Forest coordinated the considerable effort required to distribute the final product to all of the families, survivors, employees, and managers in the wildland fire agencies. Thanks to all of you.

Thanks also to the National Association of State Foresters who assisted the team in understanding how the recommendations from the investigation team and this team affect state and local wildland fire organizations. The wildland fire program is truly an interagency and intergovernmental operation; we must never forget the critical role that state and local organizations play.

Finally, the IMRT wishes to thank in advance all of the individuals who will serve on the teams, groups, and committees charged with following up on the recommendations. Before this effort is completed, scores of individuals, from senior agency managers to firefighters, will be involved in turning our concepts and directions into tangible, workable improvements to wildland fire management. The willingness of these individuals to help with this effort should be honored by all.

ACTIVITIES OF THE IMRT

In response to its charter, the IMRT took three types of actions: 1) completed immediate corrective actions; 2) developed a corrective action plan addressing the results of the South Canyon Fire investigation report; and 3) developed recommendations on other issues and concerns in the wildland fire management program.

IMMEDIATE ACTIONS

The IMRT took three immediate actions to improve firefighter safety this year. First, the team took the two safety alerts sponsored by the investigation team in July and re-issued them as one updated alert to remind all firefighters of the importance of safety.

Second, the team requested that each wildland fire agency director hold a conference call with the next lower level of management using a set of talking points entitled "Safety is Job #1," in order to convey personally the importance of agency management involvement in wildland fire suppression. The team requested that each successively lower level of management convey the message to the next level until all employees in leadership and other fire suppression roles receive the message. See Appendix 2. To date the Bureau of Land Management, the Forest Service, and the Fish and Wildlife Service have each conducted those "cascading" phone calls. The National Park Service and the Bureau of Indian Affairs are planning to conduct the calls shortly.

Finally, the team requested the National Multi-Agency Coordinating (MAC) Group take two actions related to fire weather and fire behavior analysts. The MAC Group was requested to direct that all geographic area coordination centers, or other appropriate locations, include a fire behavior analyst on their staff at all times when the area preparedness level is 4 or higher and to require all Type I incident management teams to utilize a fire weather meteorologist on Type I wildfire incidents. Both of these recommendations were included in the report of the investigation team. The National MAC Group took the requested action in both cases. See Appendix 3.

CORRECTIVE ACTION PLAN

The IMRT reviewed the findings, conclusions, and recommendations of the South Canyon Fire Interagency Investigation team. In doing these reviews the IMRT met with the investigation team co-leaders, reviewed the complete set of witness statements from the investigation, and examined other documents provided by various persons. The IMRT concludes that the recommendations of the investigation team are reasonable. The IMRT carefully reviewed and discussed each recommendation made by the investigation team and prepared a detailed corrective action plan, along with a recommended strategy for assuring that the corrective action plan is

implemented in a timely and effective manner, which are contained in this report. In some cases the recommendations of the investigation team were revised to sharpen or better focus them, a process anticipated by the investigation team

Additional Significant Issues and Concerns

The IMRT identified a number of areas of concern involving the operational capabilities of the interagency wildland fire management program. As it explored these issues the IMRT focused its attention on how these issues and concerns could affect the ability to provide a safe environment for firefighters, as well as the ability of wildland agencies to conduct efficient and effective wildland fire suppression. Recommended actions to address each of these issues and concerns are included in the proposed corrective action plan submitted by the IMRT.

MANAGEMENT IMPLICATIONS

This section presents issues and concerns that have implications for management. These were developed by the Interagency Management Review Team, based on its review of the investigation team's report, review of witness statements gathered by the investigation team, comments and suggestions from employees and the public, and meetings with agency fire management officials.

Suppressing wildfire has inherent risks. Through effective organization, training, equipment, planning, and management, those risks to firefighters, to property, and to natural resources can be mitigated. Many of the specific recommendations of the accident investigation team, addressed in the proposed corrective action plan, are designed to minimize risk by ensuring better information is available to firefighters and firefighting organizations, by improving training and leadership, by improving program management, and by better planning for above-average fire seasons.

The federal wildland fire management agencies and their partners in state and local government must understand the importance of managing risk. Beginning with the highest levels of management in each agency and continuing down through the organizations, managers, supervisors, and employees must understand risks and must be accountable for taking all appropriate measures to mitigate those risks.

What follows are general guidance and recommendations to agency leaders regarding the direction and future of wildland fire management and the role that management must be willing to play if significant improvements in wildland fire safety and effectiveness are to be realized. Specific recommendations and actions are presented in the proposed Corrective Action Plan.

CREATING A PASSION FOR SAFETY -- Attitudes and leadership set the tone for safety in the wildland fire program. The IMRT concurs with and strongly supports the finding of the investigation team that there is a dire need to create a passion for compliance with the basics of safe fire suppression, which will occur only if leadership sets an example and demonstrates a clear commitment to safety. The IMRT fully concurs with the conclusion of the investigation team that training is not the core issue; rather it is a commitment to implementing the training programs already in place in the wildland fire community.

INVOLVEMENT OF AGENCY ADMINISTRATORS -- Agency administrators must become and remain actively involved in the management of wildland fire. These officials, from the heads of the agencies on down to managers in forests, parks, districts, and so on, have a duty and responsibility to understand, interpret, and implement fire management policies and processes. Knowledge of fire policy, organization, effects, and operations, as well as the context of fire suppression in natural resource and land management activities, is critical to ensure that fire management organizations are properly organized and staffed and to make appropriate decisions about suppression strategies and priorities that provide for maximum safety. Many agency administrators have surrendered their responsibility for fire management direction and oversight, relying instead upon fire management officials for all aspects of the program. Agency administrators must take the responsibility for strategic management, including obtaining the necessary training in wildland fire management and ensuring that personnel under their jurisdiction also receive that training.

MONITORING PERFORMANCE AND ACCOUNTABILITY -- Agency administrators and fire management personnel at all levels of wildland fire agencies and organizations must be held accountable for their performance. Poor performance jeopardizes lives, property, and natural resources and can cost the taxpayer millions of dollars. Managers must be encouraged to assess risks and make their best judgments, and those informed decisions must be supported by upper management. Yet, too often agency administrators lack the training in basic wildland fire concepts; personnel without appropriate training and skills are placed in fire management positions; incident management teams are given perfunctory appraisals; and those who perform poorly in various positions are given satisfactory performance ratings.

Improvements in training, in information provided to firefighters and fire managers, in equipment, and in the amount of resources available to fight fires will not overcome poor performance and lack of accountability for that performance. Throughout the wildland fire organizations we must have the courage to hold personnel accountable for their actions. Inherent in that accountability at all levels is the willingness to take calculated, informed risks, as well as to challenge conventional wisdom.

POLICY ISSUES

Most of the issues that the investigation team and the IMRT addressed relate to the details of *how* to operate wildland fire programs as safely and efficiently as possible. Recommendations for change stress improvements in communication, training, and management involvement. The wildland fire management program also faces enormous challenges in other arenas. The changing character of the West has placed increased demands on fire protection organizations. Years of drought and generations of aggressive fire suppression policies have left many areas loaded with fuels, creating serious problems for the long-term health of those natural areas as well as creating increased risks for firefighters.

Just as the enormous fires in 1988 spawned a major review of fire suppression policies, the length, breadth, and tragedies of the 1994 fire season will likely generate a similar review. Many of the important issues are already addressed by the corrective action plan proposed by the IMRT. However, three major areas of fire management policy are not addressed in detail in that plan. Those areas, preparedness, fuels management, and wildland/urban interface, have ramifications beyond the scope of this report. Nevertheless, the manner in which those issues are addressed in coming years will have great implications for firefighter safety and the ability of wildland fire agencies to meet public and management expectations. Finally, current guidelines, procedures, and responsibilities for response to, and investigation of, accidents do not adequately address accidents of the magnitude and complexity that took place on the South Canyon Fire. Although addressing those issues is beyond the scope of the IMRT and the wildland fire program, the IMRT believes both departments must take actions to improve catastrophic accident response procedures.

ENSURING ADEQUATE LEVELS OF PREPAREDNESS -- Preparedness provides the basis for safe, cost-effective wildland fire protection. Adequate preparedness involves deploying trained, well qualified personnel based on historical fire occurrence and values (resources, adjacent properties, and so on) at risk, supported by equipment, aircraft, and coordination centers. Appropriate preparedness levels are fundamentally a matter of risk management: investing in staffing and other resources in order to reduce risks to life, property, and natural resources and to reduce overall public expenditures for wildland fire operations. Investment in management of fuels, discussed below, further reduces costs in the long term by reducing fire severity.

The 1994 fire season highlighted a number of long-standing issues related to the ability of individual agencies and the overall interagency community to be well prepared to provide fire protection, both in anticipation of each fire season and during the season itself. Among the key issues are the adequacy of

funding to provide an optimal level of organization, the adequacy of Full Time Equivalents (FTEs) available to agency administrators to staff an optimal organization, the ability of agency fire management organizations to effectively manage FTEs associated with fire management, and the availability of non-fire agency personnel for fire assignments, particularly in overhead positions.

A commitment by senior management of the wildland fire management agencies and the two departments to address barriers and obstacles to adequate preparedness is a necessary prerequisite to an efficient, safe, and cost-effective wildland fire program.

Fuels Management -- The tremendous build-up of fuels in many parts of the country poses a significant risk to the safety of firefighters as well as to the well being of forests and other vegetation. Fire behavior in such situations can be expected to be extreme. Reduction of fuel loads and the re-introduction of fire into the ongoing management of these lands is critical for assuring that risks to firefighters are minimized. Management of fuels, especially by use of prescribed fire, faces significant obstacles, including public and agency management reluctance to pro-active use of fire and significant restrictions on smoke emissions from prescribed fire.

Fuels management, especially through the reintroduction of fire as an integral part of natural resource management, must be a high priority of the Departments of the Interior and Agriculture. The IMRT strongly recommends that both Departments begin taking immediate steps to reduce fuel loads and actively pursue the reintroduction of fire into all aspects of land management.

Wildland/Urban Interface & Intermix -- The interface between wildlands and settlement, whether it be second homes, subdivisions, or entire communities, creates a particularly dangerous and risky environment for wildland firefighters. Personnel trained and equipped to handle fire in natural settings and fuels are increasingly being asked to protect structures. This not only diverts firefighting resources from the protection of natural resources, it exposes firefighters to conditions and situations for which they are not well equipped and not well trained.

Much of the national, regional, and local debate on the wildland/urban interface issue has focused on the importance of land use planning, zoning, landscaping, and building materials. However, the mere presence of more and more homes and communities in the wildland increases the pressure on wildland fire agencies to provide assistance and protection. The safety and well-being of firefighters must be considered as well, regardless of how well planned and built the homes and communities are.

The federal government lacks a cohesive, consistent strategy for addressing the interaction between wildland fire protection and protecting adjacent and intermixed settlement. This lack of strategy has resulted in ad hoc and varying approaches by different agencies in various locations around the country. It is incumbent upon senior management in the two departments, working with partners in state and local government where appropriate, to design and implement consistent, long-term strategies and policies for wildland fire management in the wildland/urban interface.

Accident Investigations/Search and Rescue -- The conduct of the initial search and rescue efforts regarding the two missing helitack crew members and the conduct of the subsequent accident investigation on the South Canyon fire highlighted issues and procedural problems that should be addressed. Agency accident investigation procedures generally contemplate relatively minor accidents. The complexity and prominence of the South Canyon incident and investigation revealed various shortcomings. Resolving these and other issues is critical for the conduct of effective and efficient accident investigations in order to improve safety for firefighters by learning from the accidents.

The Departments of Agriculture and Interior should take steps to develop standing, interagency, interdisciplinary teams, based on the incident command system approach, to conduct fire accident investigations. If successful, these teams could be expanded to include non-fire investigations as well. Further, the roles and responsibilities regarding search and rescue for unaccounted-for personnel must be clearly defined. Finally, the Departments of Agriculture and Interior should take steps to develop a closer working relationship with OSHA, with the goal of conducting joint, or complementary, investigations of wildland fire accidents.

CORRECTIVE ACTION PLAN

The following pages contain the IMRT's proposed corrective action plan, addressing each of the recommendations of the investigation team as well as other issues and concerns related to wildland fire management. Each recommendation is re-stated, along with a further discussion of issues, the IMRT recommendation for action, the group(s) responsible for taking further action, desired products, and target completion dates. Appendix 4 contains a summary chart of the plan.

The corrective action plan relies largely on existing working teams, groups, and committees to address the recommendations and issues. The wildland fire community has a well established system of interagency groups designed to provide bottom-up development of policies and procedures. Rather than create new teams and groups, the IMRT chose to rely on those existing groups as a foundation. In many cases more than one group or committee is identified in the "Responsible Group" section. No one of these is solely responsible for developing the desired products, unless specifically noted. Rather, the various groups are expected to work together as a team, with representation from all of the groups listed.

The IMRT expects that the assigned groups will be diverse in skills and background. Groups should include agency administrators from different organizational levels and specialists from various aspects of firefighting and fire management. Special attention should be given to including users or "customers."

Target dates for each recommendation have been assigned. The recommended oversight strategy, presented below, calls for detailed action plans from each responsible group. Those action plans may recommend adjustments to some of the dates based on availability of personnel and workload involved.

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.1
"A national interagency review should be conducted on the National Weather Service's Red Flag Program, with emphasis on the number of watches and warnings issued. Distinguish clearly between red flags for cold fronts and high winds and red flags for lightning."

DISCUSSION/ISSUES:
Red flag watches and warnings are issued to alert wildland fire personnel to weather conditions which, in conjunction with critically dry or volatile fuels, could lead to extensive wildfire occurrence and/or extreme fire behavior. Key issues concern the possible decreased effectiveness through "over" alerting, terminology and determination of red flag criteria (i.e., local fire weather district versus Geographic Coordination Area).

IMRT RECOMMENDATIONS:

THE IMRT concurs with the need for a thorough review of the NWS Red Flag Program.

RESPONSIBLE GROUP:
National Wildfire Coordinating Group's National Fire Weather Advisory Group and Fire Behavior Committee (Bill Clark, NPS), Incident Commander Type 4 to provide field-level perspective; Agency Administrator.

COMPLETION DATE:
January 1, 1995

DESIRED PRODUCTS:
1. Comprehensive evaluation of NWS Red Flag Program.
2. Recommendations to improve the effectiveness of the program.
3. Action plan and timetable to implement recommendations.

IMRT CONTACT:
Rick Ochoa

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.2
"A fire behavior analyst should be available or requested whenever a fire weather meteorologist is requested for a fire coordination center. A fire behavior analyst can relate the weather forecast to how fires burn in terms of rate of spread, flame length, and fireline intensity. These are terms that firefighters understand. An alternative is establishing regional centers for consolidating and interpreting fire behavior and weather information during periods of high fire activity."

DISCUSSION/ISSUES:
Critical fire behavior and weather indicators of rapidly escalating conditions must be recognized by both managers and firefighters. Fire weather and fire behavior forecasts are two of the tools available to assist managers and firefighters in their development of strategy, tactical operations, and other decisions critical to firefighter safety. Fire behavior and weather intelligence are also of value to Geographic Area Multi-Agency Coordinating (MAC) Groups in providing an overview of the regional fire behavior situation to assist in establishing priorities.

These tools must be utilized to their fullest extent possible to ensure that decisions are based on the best available information. A fire behavior analyst (FBAN) can work with a fire weather meteorologist via telephones and fax machines to obtain up-to-date weather information and spot forecasts. These can be applied to the development of fire behavior forecasts and transmitted to appropriate personnel. A fire weather meteorologist located in a coordination center or field site, however, cannot provide fire behavior information in the absence of a fire behavior analyst. The IMRT believes that when considering use of these positions, either both should be available to complement each other or, if consideration is being given to use of only one of these positions in a coordination center or other centralized service center, it is more important to request a fire behavior analyst than to request a fire weather meteorologist.

Since individual administrative units may not have fire behavior analyst capability on their staffs, it is not always possible to rapidly access fire behavior intelligence on units experiencing heavy initial and extended attack activity. It is also unlikely that sufficient resources exist to provide a qualified fire behavior analyst to both units having heavy fire activity and to Incident Management Teams assigned to large fires. The concept of regional or centralized centers is one method of dealing with this situation. The Northern Rockies Geographic Area established a Fire Behavior Service Center and has utilized this concept for the last ten years. The Northern Rockies Fire Behavior Service Center is activated if multiple project fires are occurring or high spread rates and fire intensities pose distinct threats to life, property, and natural resources. The purpose of the Fire Behavior Service Center is not to duplicate or replace the role of fire behavior analysts on

specific incidents. The specific purpose of the center as described by Bushey and Mutch (1990) is to:

1. Gather, interpret, and disperse regional and inter-regional fire weather, fire danger indices, and fuel moisture data in terms of expected and potential fire behavior.

2. Conduct special briefings as necessary.

3. Issue Fire Behavior Reports, advisories, alerts, watches, and warnings concerning regional trends or local phenomena. Fire Behavior Reports are transmitted to all administrative unit offices, fire dispatch offices, and incident command centers having computer or fax facilities. These reports summarize current fire behavior and weather situations on a synoptic scale generally larger than available to an incident FBAN. These reports include updated fire behavior trends, prescribed natural fire status, fire behavior safety precautions, fire behavior advisories, alerts, watches, and warnings. Short historical summaries are also included about pertinent severe fire seasons comparable to current situations.

   Fire Behavior Alerts are transmitted to fire dispatch offices and provide advanced notices of potential ignitions along storm tracks and potential escalation of fire behavior of ongoing fires. Timely notification of fire crews on fire incidents with confirmed data of approaching changes in weather and fire behavior has proven very effective in maintaining firefighter safety. Bushey and Mutch (1990) have documented one such case: Fire crews consisting of both smokejumpers and hand crews on the 1988 Combination Fire on the Deerlodge National Forest were engaged in suppression activities on a recently ignited lightning-caused fire. After receiving a 45-minute advance warning from the Fire Behavior Service Center through the local dispatch office of impending thunderstorm and strong wind activity, all crews were able to retreat to safety zones. The storm did cross the fire and caused growth to over 5700 acres. No injuries were reported and no fire shelters were deployed.

IMRT RECOMMENDATIONS:

After careful review of the South Canyon Fire Investigation Report recommendation, the IMRT finds that two recommendations are actually present. The first recommends that a fire behavior analyst should be available when a fire weather meteorologist is requested for a fire coordination center. The presence of the FBAN will complement the meteorologist's skills and ensure the translation of fire weather information into fire behavior intelligence for use by firefighters. The second statement, although listed as an alternative, recommends the establishment of regional centers for consolidating and interpreting fire behavior and weather information during periods of high fire activity, rather than only when meteorologists are ordered for fire coordination centers.

The IMRT feels that both of these statements are important and recommends implementation as follows:

A.2.a. Whenever a fire weather meteorologist is ordered for a fire coordination center, a fire behavior analyst will also be ordered.

A.2.b. Evaluate the use of Fire Behavior Service Centers for consolidating and interpreting fire behavior and weather information during periods of high fire activity.

RESPONSIBLE GROUPS:

A.2.a. .....Geographic Area Coordinating Groups - ensure that this procedure is defined in Geographic Area Mobilization Guides.

A.2.b.; A.2.b.1; and A.2.b.2 a-c....Training Working Team Fire Behavior Committee, Bill Clark

A.2.b.2.d.....National MAC, (Doug Erskine, NIFC)

A.2.b.2.e.....Geographic Area Coordinating Groups

COMPLETION DATE:

February 1, 1995

DESIRED PRODUCTS:

A.2.a:

Amended Area Mobilization Guides to reflect that a fire behavior analyst will be requested whenever a fire weather meteorologist is requested for a coordination center.

A.2.b:

1. Evaluation of Fire Behavior Service Center concept, listing limitations and advantages, and review of program in Northern Rockies Area.
2. Recommendation regarding whether service center concept is feasible and practical. If recommended for development:
   a. Recommendation regarding appropriate staffing for service center and desired qualifications of personnel (i.e., FBAN, Prescribed Fire Behavior Analyst, graduate of S-490, etc.).
   b. Description of specific role, responsibilities, products produced, and necessary customers of fire behavior service centers.
   c. Recommendation regarding guidelines for establishment of service centers (i.e., when necessary, area fire situation, in conjunction with other groups, etc.).
   d. Direction to Geographic Areas to establish procedures for implementing fire behavior service center concept or equivalent.
   e. Amended Area Mobilization Guides revised to reflect the above information.

IMRT CONTACT:

Tom Zimmerman

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.3
"Fire weather forecasts must be communicated to firefighters on initial attack and extended attack incidents."

DISCUSSION/ISSUES:
Fire weather forecasts are issued twice daily during the fire season and are broadcast over some fire agency network radios. However, most agencies do not routinely broadcast these forecasts.

Additionally, all fire personnel have a personal responsibility to make sure they have the current fire weather forecast.

IMRT RECOMMENDATIONS:
The IMRT strongly advocates that all wildland fire agencies broadcast fire weather forecasts over the radio and undertake other measures to ensure widespread dissemination of fire weather forecasts to all fire personnel.

RESPONSIBLE GROUP(S):
A.3.a National Multi-Agency Coordinating Group (Doug Erskine, NPS); Agency Administrator
A.3.b NWCG Incident Command System Working Team (John Roberts - USFS); Agency Administrator

COMPLETION DATE:
December 1, 1994

DESIRED PRODUCTS:
A.3.a Incorporation of IMRT recommendation into National Mobilization Guide. Memorandum on this recommendation to all agency administrators.
A.3.b Revise Incident Commander Type 3 and 4 position task books to list specific fire weather information which must be obtained during initial and extended attack assignments.

IMRT CONTACT:
Rick Ochoa

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.4
"Spot weather forecasts should be requested for fires that have potential for extreme fire behavior or exceed initial attack or are located in areas for which red flag warnings have been issued."

DISCUSSION/ISSUES:
The IMRT is in general agreement with the requirement for spot weather forecasts for fires exceeding initial attack. However, a study is needed on the expected increase in spot forecast requests and ability of NWS forecasters to handle the additional workload. The study must also determine if spot forecasts are available nationwide by NWS forecasters trained in fire weather. The issue of several spot forecasts issued for fires in a small area versus one spot for those incidents must be addressed.

See also IMRT Topic 3. 2 on standardized spot fire weather forecasts.

IMRT RECOMMENDATIONS:
South Canyon recommendation A.4 needs further refinement. Based on the results of the study, the responsible group should develop an amendment, if needed, to the Fireline Handbook.

RESPONSIBLE GROUP:
National Wildfire Coordinating Group's Incident Command System Working Team (John Philbin - BIA); NWS; Agency Administrator.

COMPLETION DATE:
January 1, 1995

DESIRED PRODUCT:
Proposed amendment, if needed, to Fireline Handbook.

IMRT CONTACT:
Rick Ochoa

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.5
"NOAA Weather Radio forecasts should not be substituted for fire weather forecasts. NOAA Weather Radio does not broadcast fire weather forecasts, but forecasts directed to the general public."

DISCUSSION/ISSUES:
The IMRT agrees with this recommendation. NOAA Weather Radio should be encouraged only as a supplement to a fire weather forecast.

IMRT RECOMMENDATIONS:
Amend Fireline Handbook to incorporate this recommendation.

RESPONSIBLE GROUP:
National Wildfire Coordinating Group's Incident Command System Working Team; (John Roberts, USFS); Agency Administrator.

COMPLETION DATE:
January 1, 1995

DESIRED PRODUCT:
Amendment to Fireline Handbook.

IMRT CONTACT:
Rick Ochoa

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.6
"A national interagency strategy and implementation plan should be developed to improve technical transfer of fire danger and fire behavior technology."

DISCUSSION/ISSUES:
Assessments of fire danger are prerequisite to successful planning for fire suppression needs. As conditions worsen in terms of increasing fire danger, wildland fire management agencies must prepare for increased activity. All agencies need an understandable and easy-to-use system for assessing fire danger. Prediction of the behavior of individual fires in terms of spread rates and burning intensity can be a useful aid in determining strategies and tactics and can be strongly influential in on-the-ground personnel assignments. Available technology concerning fire behavior prediction has made significant advances in the last 20 years. It is now possible to predict rates of spread, flame length, perimeter and area increases, maximum spot fire distance, and probability of ignition of spot fires and to assess control needs of various fires with hand-held calculators in field situations. Training courses to transfer fire behavior technology and skill in application to agency employees have been revised/developed as needed over the past four years and are currently being implemented.

IMRT RECOMMENDATION:
After careful review of the South Canyon Investigation Report Recommendation, the IMRT recommends that the portion of this statement dealing with fire danger rating be implemented. The IMRT also recommends that the portion of this statement related to fire behavior technology be tabled until the current fire behavior curriculum implementation is complete and an evaluation of the effectiveness of these courses can be completed. The refined recommendation will read as, "A national interagency group develop an implementation plan to improve technical transfer of fire danger technology."

RESPONSIBLE GROUP:
Wayne Mitchell, National Advisory Group on Fire Danger Rating (NAGFDR).

COMPLETION DATE:
March 1, 1995

DESIRED PRODUCTS:
Implementation Plan identifying means of technology transfer, necessary training courses/workshops, responsible groups for course development, time frames, and evaluation procedure and delivered to the IMRT.

IMRT CONTACT:
Tom Zimmerman

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.7
"The National Weather Service fire weather forecast program is a critical part of the Interagency Fire Management Program. It is essential that it be maintained at present levels to ensure firefighter safety."

DISCUSSION/ISSUES:
NWS fire weather support to firefighting agencies is expected to significantly increase due to escalating forecast demands (more spots, all-risk activities) and greater training requirements. NWCG agencies and the NWS must work closely together to ensure these needs will be fulfilled by the modernized NWS.

Statistics on current and future fire weather needs were gathered by the NWS and presented at the 1994 NWCG-sponsored Intergovernmental Fire Weather Users Summit. Also, there is an ongoing pilot study (National Fire Weather Risk Reduction Project) of modernized fire weather forecasts and services. The results of both the Summit and Risk Reduction Project must be carefully studied.

IMRT RECOMMENDATIONS:
The IMRT agrees with the position stated in the recommendation.

RESPONSIBLE GROUP:
National Fire Weather Advisory Group (Gardner Ferry BLM); Agency Administrator.

COMPLETION DATE:
February 1, 1995

DESIRED PRODUCT:
Report on how the NWS fire weather modernization program expects to meet the current and expected future needs of wildland firefighting agencies.

IMRT CONTACT:
Rick Ochoa

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: A.8
"An organized live fuel moisture sampling network should be established for Gambel Oak. Strategy and tactics should be adjusted on the basis of this information."

DISCUSSION/ISSUES:
In order to predict expected fire behavior, it is necessary to gather data from many sources and to utilize that data in analyses that have been determined to be scientifically based. Predicted fire behavior is essential in developing strategies and tactics. Currently, there is no required process to measure and include live fuel moisture of fuel types on wildlands for use in predicting fire behaviors.

Certain individual units collect live fuel moisture in selected fuel types and use that information to assist them with fire behavior predictions. This work is not currently required nor are there uniform processes for collecting, utilizing and distributing the data and subsequent analyses.

IMRT RECOMMENDATIONS:
Identify wildland fuel types in which predicted fire behavior can be strengthened through the collection and management of live fuel moisture data. For each of these fuel types, identify that portion of the fuel type (i.e. foliage, stems, boles, blades) on which live fuel moisture data can provide data for analyses.

Determine the timing, method and location of data collection; the frequency of data collection; the distribution of the data analyses and inclusion of the data in fire behavior predictions.

RESPONSIBLE GROUP:
A team chaired by Jim Saveland, USFS Research Scientist, and composed of members of NWCG's Fire Behavior Subcommittee, one field-level fuel management specialist, ecologist, botanist and one agency administrator.

COMPLETION DATE:
February 1, 1995

DESIRED PRODUCT:
A report which provides a proposal to meet the IMRT recommendations, including the estimated resources needed to carry out the proposal and including personnel and financial needs. This proposal will include identification of the magnitude of improvement that will result from use of this data. This report will include a cost/benefit analysis of implementing such a program.

IMRT CONTACT:
Bob Joslin

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: B.1
"Attitudes and leadership are universal factors that influence safe fire suppression. The Interagency Management Review Team should explore actions that will strengthen sensitivity to basic safety standards so they permeate every fiber of our strategy, tactics, and basic fire operations."

DISCUSSION/ISSUES:
There is a dire need to create a passion for compliance with the basics of safe fire suppression at all levels of wildland fire agencies.

Attitudes of leadership at all levels must support excellent and safe fire management. Wildland fire agency administrators' expectations for safe fire operations need to be defined and shared with all agency personnel. Agency administrators must show their support of safe fire management by making sure the best qualified people are available and that agency people are helped to be the best.

Positive attitudes that are set by leadership for safe fire management must be institutionalized to become part of our core beliefs and values. Fire safety policy, rules and procedures have evolved over the years. These all need to be looked at with the help of people outside the wildland fire community to see if new approaches and methods are needed.

Sensitivity to basic safety standards needs to be strengthened so it permeates every fiber of our strategy, tactics, and basic fire operations.

IMRT RECOMMENDATIONS:
Follow South Canyon Investigation Report recommendation. Develop contract Request for Proposals (RFP) designed to secure both short- and long-term strategies for institutionalizing a strengthened fire-safety sensitivity throughout the leadership and among employees in all agencies associated with wildland firefighting.

RESPONSIBLE GROUP:
Outside consultants, with oversight from E.K. James, BLM; Jerry Williams, USFS-WO; Mark Boche, USFS; Steve Frye, NPS.

COMPLETION DATE:
Develop RFP: January 1, 1995
Select Contractor by: April 15, 1995

DESIRED PRODUCTS:
1. RFP: The process developed should focus on ways to strengthen sensitivity to safe fire suppression and methods to create a passion for safety through agency administrators to all levels of wildland fire agencies. The process should have both long- and short-term actions to help meet the issue.

2. Acceptable contractor-developed product.
3. Leadership at all levels of all wildland fire service agencies set and demonstrate a clear commitment to excellent fire safety and fire management. The standards, policies and orders are understood by fire personnel and fire agency administrators along with their roles, responsibility and accountability.

IMRT CONTACTS:
Mike Edrington
José Cruz

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: B.2
"The Interagency Management Review Team needs to evaluate current training to assure emphasis is placed on the basics of fire behavior, firefighting strategies and tactics, the 10 standard Fire Orders, and the 18 Watch Out Situations."

DISCUSSION/ISSUES:
The interagency community has, in response to numerous incidents over the last few years, developed a high-quality fire behavior, strategy, tactics, and safety training curriculum. Refinements in the curriculum are under way continuously. A careful review of all critical course work is necessary to ensure that proper emphasis is placed on the basics of fire behavior, firefighting strategies and tactics, the 10 Standard Fire Orders, and the 18 Watch Out Situations. The "Look Up Look Down, Look Around" training materials should also be included in this review.

Many firefighters at squad boss and firefighter levels are placed in situations where they have to make decisions concerning strategy and tactics. There may be a need for increased strategy and tactics training at squad boss and lower qualification levels.

IMRT RECOMMENDATIONS:
Review adequacy of material currently presented in Basic Firefighting (S-130), Introduction to Fire Behavior (S-190), Intermediate Fire Behavior (S-290), Basic Wildland Fire Behavior Calculations (S-390), and Crew Boss (S-230).

The review will:

- Examine each course with the 10 Standard Firefighting Orders, 18 Watchout Situations and "Look Up, Look Down, Look Around," and determine if adequate attention to the basics of firefighter safety is addressed in course contents.
- Provide recommendations how material may be presented to trainees.
- Explore whether a basic strategy and tactics course should be presented prior to crew boss training.

RESPONSIBLE GROUP:
NWCG Training Working Team (George Martin, USFS) to charter an independent group, to include field-level personnel with extensive experience in initial attack and extended attack and an Agency Administrator.

COMPLETION DATE:
February 1, 1995 - Independent group completes review of required courses and reports back to Training Working Team.

DESIRED PRODUCTS:

1. Updated versions of S-130, S-190, S-290, S-390, S-230. Emphasis within the training courses placed on the basics of firefighter safety.
2. If necessary, a basic strategy and tactics course with a target audience of squad boss and below. The course should present strategy and tactics, with the emphasis on the basics of firefighter safety.

IMRT CONTACT:

Edy Petrick

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: B.3
"The South Canyon Fire incident should be used in the development of a training exercise for use by agency administrators, fire managers, dispatchers, and firefighters. The training exercise should be developed by field-level firefighters."

DISCUSSION/ISSUES:
A stand-alone course is not needed, as emphasis items can be incorporated into existing training as appropriate.

There are several opportunities to use scenarios based upon the South Canyon Fire incident for all levels of fire managers and firefighting personnel. Lessons learned may be used where appropriate to advance knowledge and reduce possibility of recurrence. Lessons learned must be presented in a variety of wildland situations/scenarios, not specifying the South Canyon incident, since similar conditions can occur in a variety of situations.

Incorporation of some material has already begun for courses scheduled for presentation during FY95.

IMRT RECOMMENDATIONS:
Incorporate lessons learned into course curriculums as appropriate.

RESPONSIBLE GROUP:
NWCG/Training Working Team (George Martin, USFS), including Agency Administrator.

COMPLETION DATE:
January 1, 1996 - Lessons learned incorporated into existing coursework where appropriate.

DESIRED PRODUCT:
Courses to be refined and lessons learned included as appropriate.

IMRT CONTACT:
Edy Petrick

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATIONS: B.4 AND B.7

B.4 - "The Investigation Team recommends that the National Wildfire Coordinating Group develop mandatory fire shelter training courses and implement them prior to the 1995 fire season. The main course should be required every 2-4 years with yearly refresher training. Courses should emphasize timed practice deployments, proper deployment practices, deployment in high winds, and site selection."

B.7 - "'Standards for Survival' and 'Look Up, Look Down, Look Around' training materials were developed in response to previous entrapment investigations. The Team recommends that all firefighters be required to take these subjects and review them every two years to maintain firefighting qualifications."

DISCUSSION/ISSUES:

The current fire shelter training course is adequate in relation to information and technology available for presentations. Improvements in deployment practices and timing, deployment in high winds and site selection can be easily incorporated into the existing course. Once completed, recommendation B.5 and B.8 improvements should be incorporated into the existing course.

There is no interagency standard for wildfire suppression safety and fire shelter training. Course presentations must emphasize that the only successful shelter deployment is the one that was *prevented*. Prevention is best accomplished by following the training provided in "Standards for Survival" and "Look Up, Look Down, Look Around."

It is imperative that all agencies institute mandatory fire safety training which covers the information presented in "Standards for Survival," "Look Up, Look Down, Look Around" and fire shelter training. The frequency of the training needs to be determined.

IMRT RECOMMENDATIONS:

1. Design a wildfire suppression safety training package to include information provided in "Standards for Survival," "Look Up, Look Down, Look Around," fire shelter deployment, and any other relevant fireline safety information. Incorporate results and research from B.5/B.8 into upgrading fire shelter training as soon as it becomes available.
2. Determine an appropriate frequency for initial wildfire suppression safety and refresher training. Standards for initial and follow-up refresher training will be included as part of PMS 310-1, Wildland Fire Qualification Subsystem Guide.

RESPONSIBLE GROUP(S):
1, NWCG Training Working Team, George Martin, Chair
2, NWCG ICS Working Team, John Philbin, Chair
3. Agency Administrator

COMPLETION DATE:
March 1, 1995

DESIRED PRODUCTS:
1. Wildfire suppression safety training package that includes available fireline safety training materials. The package will be designed to easily accept new information as it becomes available.

2. National Wildfire Coordinating Group requirements for frequency of mandatory initial and refresher wildfire suppression safety training.

IMRT CONTACT:
Mike Benscoter

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: B.5 AND B.8

B.5 - "The Interagency Management Review Team should charter a group to develop guidelines for adequate deployment sites and safety zones in different heat and flame scenarios to show the value and the limitations of the fire shelters. Follow-up training should include recognition of survivable shelter deployment sites and safety zones."

B.8 - "Fire shelter training materials should be revised to stress discarding packs and equipment when escape is questionable and that it is no longer acceptable to take packs and equipment into fire shelters."

DISCUSSION/ISSUES:

Work is currently ongoing regarding deployment sites and safety zones. Recommendation B.8 refers to the fact that fusees inside a firefighter's pack in one deployed shelter ignited. The presence of field packs as beneficial to firefighter comfort/safety in the shelter has been demonstrated. Before making a decision concerning the issue, subject-matter experts must look at all parameters of the issue, including time frames necessary for a successful deployment, and whether fusees should be carried inside a firefighter pack, etc.

IMRT RECOMMENDATIONS:

1. Provide information regarding Fire Shelter Deployment Guidelines to NWCG Training Working Team for inclusion into wildfire suppression safety training package.
2. Integrate appropriate information into current fire shelter training module.

RESPONSIBLE GROUP:

1. Missoula Technology Development Center (Dick Mangan, USFS)
2. NWCG Training Working Team (George Martin, USFS)

COMPLETION DATE:

1. March 1, 1995 - Complete Research and provide usable information to Training Working Team for inclusion into fire shelter training course.
2. May 1, 1995 - Information integrated into fire shelter training course and ready for presentations.

DESIRED PRODUCT:

Fire Shelter Training Course (and/or unit for Wildfire Suppression Safety) with information concerning selection of survivable deployment sites, i.e., guidelines that are easy to use for firefighters under extremely stressful situations.

IMRT CONTACT:

Mike Barry

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: B.6
"Fire behavior and fire weather concepts should be reviewed in training each year for all fire managers."

DISCUSSION/ISSUES:
The IMRT determined that the term "fire managers" in this recommendation means fire management officers at the field level, defined as those serving as fire management officers at the ranger district, forest, and regional levels of the Forest Service and their counterparts in the other wildland fire agencies.

Fire managers must be proficient in critical aspects of their assigned duties, including but not limited to fire behavior and fire weather concepts. Fire managers must have an operational understanding of fuels, weather and topography as they relate to fire weather, fire danger and fire behavior and how these apply to pre-attack planning, prioritization of fires, allocation of resources, etc.

Any decision concerning annual training or refresher training for fire managers is contingent upon agency acceptance of a basic set of standards that define performance objectives for fire managers at every level. Such standards do not exist.

A "Fire Program Management" training course is currently under development by an interagency group headed by the National Advanced Resource and Technology Center. The course will provide fire managers with increased knowledge, skills and abilities in using available tools to evaluate fire behavior and fire danger at the ranger district/area/park/refuge level. Information from this course will be suitable for development of a refresher training exercise which would meet the investigation team recommendation.

IMRT RECOMMENDATIONS:
1. Insure that appropriate fire weather, fire behavior, and fire danger material is included as part of the "Fire Program Management" training course.

2. Develop mandatory refresher training for fire management officers to annually supplement the "Fire Program Management" training course.

3. "Fire Program Management" or an agency determined equivalent, and refresher training, will become mandatory training for all unit level fire management officers.

RESPONSIBLE GROUPS:
1. and 2. "Fire Program Management" Development Group, Bonnee Turner, USFS
3. Agency Heads

COMPLETION DATE:
The following dates correspond to recommendations above.
1. March 1, 1995
2. January 1, 1996
3. January 1, 1996

DESIRED PRODUCTS:
1. "Fire Program Management" training will include critical elements of fire weather, fire danger and fire behavior as they apply to pre-suppression/pre-attack planning.
2. Annual refresher training to supplement "Fire Program Management."
3. The "Fire Program Management" and annual refresher training will be required for fire management officers for all agencies.

IMRT CONTACT:
Mike Benscoter

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: C.1
"We recommend a management review of the Fire and Aviation Programs for the BLM State of Colorado to address policy direction; accountability mechanisms; training and qualifications of personnel; and staffing including budget, workload, and FTE controls."

DISCUSSION/ISSUES:
This recommendation has been approved for implementation through concurrence with the IMRT's request to the Director and Chief that work begin on it immediately. See Appendix 5.

Input received during the course of the IMRT's deliberations suggests there may be a variety of problems outside of Colorado that could be identified and corrected on a BLM-wide basis. Forest Service Region 2 has a close working relationship with the Colorado BLM and has had to deal with many of the same complexities and management situations in 1994 as the BLM. Suggestions have been made to the IMRT that it would be useful to conduct a review of Region 2 fire and aviation management programs.

In addition to the specific items mentioned in Investigation Report Recommendation C.1., the following should be considered in any management reviews that may occur:

-Interagency cooperation/coordination
-Role of Coordination Centers
-Extended initial attack IC skills/complexity of incident

IMRT RECOMMENDATIONS:
1. Complete the management review in Colorado that was previously approved.
2. Conduct a single BLM-wide management review of the fire and aviation programs that includes all of the states. Coordinate information with the review that is being conducted separately in Colorado.
3. Conduct a management review of the fire and aviation programs in Forest Service Region 2.

The BLM Colorado and Forest Service Region 2 reviews should occur concurrently, looking toward comparing results at the respective close-outs.

RESPONSIBLE GROUPS:
1. Ed Spang, BLM
2. BLM Assistant Director Nina Hatfield
3. Forest Service Director of Fire and Aviation Management Mary Jo Lavin

The review groups are expected to include interagency and State Forester representation.

COMPLETION DATES:
1. February 28, 1995
2. March 31, 1995
3. February 28, 1995

DESIRED PRODUCTS:
Program review reports, including recommendations for improvements as necessary.

IMRT CONTACTS:
1. Tom Allen
2. Tom Allen
3. Bob Joslin

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: C.2
"The review should also address the implementation of National Wildfire Coordinating Group's work, rest, and rotation guidelines."

DISCUSSION/ISSUES:
The Forest Service has issued Service-wide guidance on work-rest, rotation, and rest and recuperation (R&R) that, in some cases, has not been adopted by all wildland firefighting agencies. Forest Service guidance on work-rest provides for one hour of rest/sleep for every two hours of work/travel. The Interagency Fire Business Management Handbook allows for unlimited hours of work on the first day of an incident, sixteen hours a day until the incident is contained, and twelve hours a day after containment.

The Forest Service length-of-fire-assignment guidelines require fourteen day minimum and twenty-one-day maximum on "lower 48" fire and twenty one days minimum on Alaska assignments. All federal agencies have adopted this guidance.

Forest Service guidance on R&R requires one full day of rest for each fourteen- day assignment and two days rest for each twenty-one-day assignment. R&R at the employee's home unit after the fire is allowed. Not all federal agencies have adopted this guidance. The Interagency Fire Business Management Handbook does not guarantee a specific number of days of R&R but gives Incident Commanders and agency officials full authority to use R&R as they deem necessary.

IMRT RECOMMENDATIONS:
Develop and implement work-rest, rotation and R&R guidelines that are accepted by all federal wildland firefighting organizations.

RESPONSIBLE GROUP:
An ad hoc NWCG working group, chaired by Bill Ward.

COMPLETION DATE:
March 1, 1995

DESIRED PRODUCT:
Include guidelines in the updated Interagency Fire Business Handbook.

IMRT CONTACT:
Tom Zimmerman

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: D.1
"As part of the management review, special attention should be given to analysis of how all federal, state, and local firefighting organizations plan and conduct fire operations to respond to wide variations in fire severity from season to season."

DISCUSSION/ISSUES:
Do all wildland fire agencies plan and conduct fire operations to respond to the wide variations in fire severity from season to season? Are there common standards and criteria used to plan and accomplish needed actions responding to fire severity? Who is responsible for these plans and actions?

IMRT RECOMMENDATIONS:
Follow South Canyon Investigation Report recommendation. The analysis must also address who is responsible to plan, coordinate and implement operations in response to season severity.

RESPONSIBLE GROUP:
National MAC Group (Doug Erskine, NPS) and agency administrator coordinate and direct the analysis of each geographic board area. Each geographic team conducting an analysis will include a local agency administrator.

COMPLETION DATE:
February 1, 1995

DESIRED PRODUCTS:
Criteria and standards will be developed so processes are developed for the review. Review will be conducted of all agencies' plans and interagency geographic coordination centers. The plans and processes that have been successful should be shared with all agencies and geographic areas. The role and responsibility will be defined for National Interagency Coordination Center, geographic boards, and geographic area MAC Groups.

IMRT CONTACT:
Mike Edrington

SOUTH CANYON INVESTIGATION REPORT RECOMMENDATION: D.2
"Procedures should be established to monitor the level of drought at representative fire weather stations. Present fire danger levels should be compared to historic averages and worst case conditions, and the selection of appropriate suppression response should be adjusted on the basis of this information."

DISCUSSION/ISSUES:
The IMRT agrees with this recommendation. It is anticipated that National and Geographic Multi-Agency Coordinating Groups will utilize drought information to compare current fire danger levels with historic averages and do needed projections and actions.

IMRT RECOMMENDATIONS:
1. Survey agencies for current procedures and ongoing study groups relating to drought.
2. Establish procedures for monitoring the level of drought at representative fire weather stations.

RESPONSIBLE GROUP:
NWCG Fire Behavior Committee and National Fire Weather Advisory Group (Bill Sommers - USFS); Agency Administrator.

COMPLETION DATE:
March 1, 1995, and continuing

DESIRED PRODUCTS:
1. Procedures to monitor drought
2. Guidelines on the correct application of drought indices and usage with other parameters
3. Methods for effective utilization of drought indices in Geographic Area MAC projections

IMRT CONTACT:
Rick Ochoa

IMRT Topic 3.1: Incident Meteorologist Required For All Type I Wildfire Incidents

Discussion/Issues:
NWS Incident Meteorologists (IMET) should be ordered as part of each Type I team's standard order during wildfire incident mobilization. Certain scenarios could develop where teams may not need a meteorologist on each incident, such as when two or more IMETs are located in close proximity to one another. In that case, one or more IMETS could be shared by the teams. In these instances, Incident Commanders can take appropriate measures, but must ensure that sufficient weather information is available to improve safety and minimize risk to firefighters.

Most Type I wildfire incidents do eventually order an IMET. This proposal would ensure the fastest IMET response time and would therefore add an increased measure of safety during the early stages of the Type I team deployment.

IMRT Recommendations:
The IMRT asked the National MAC Group to implement this recommendation for the 1994 fire season. The IMRT requests that the National MAC Group incorporate this recommendation into the National Mobilization Guide for the upcoming fire seasons.

Responsible Group(s):
National MAC Group (Doug Erskine, NPS)

Completion Date:
December 1, 1995

Desired Product:
Incorporate in the National Mobilization Guide.

IMRT Contact:
Rick Ochoa

IMRT Topic 3.2: Standardized Spot Fire Weather Forecasts

Discussion/Issues:
While there are standard formats for fire weather and fire behavior forecasts issued on incidents, no such standard format exists for spot fire weather forecasts. Since spot forecasts are often received verbally by field personnel, filling out a standard form would reduce errors and allow for faster and easier transcription.

See also item A.4 on spot weather forecasts.

IMRT Recommendations:
3.2.a: A standard format for spot fire weather forecasts will be developed by the National Weather Service.

3.2.b Format will be reviewed by the National Wildfire Coordinating Group's Fire Behavior Committee and National Fire Weather Advisory Group.

Responsible Groups:
3. 2. a National Weather Service (Rick Ochoa)
3. 2. b NWCG Fire Behavior Committee (Greg Zschaechner, BLM); NFWAG; Incident Commander Type 3; Agency Administrator

Completion Date:
January 1, 1995

Desired Product:
Standard format for spot fire weather forecasts.

IMRT Contact:
Rick Ochoa

IMRT TOPIC 3.3: SHARED RESOURCES (SMOKEJUMPERS AND HOTSHOTS)

DISCUSSION/ISSUES:

The 1994 fire season had a major impact on firefighting resources, especially shared resources. The Smokejumpers and Hotshots received extensive use and frequently were in short supply. The severity of the fire season caused the wildland firefighting agencies to utilize these resources in different combinations and situations than is normally intended. This use has highlighted the need to review these programs. Several areas need to be addressed:

1. Mission Compatibility - Are these programs operating within their original mission or has the mission been expanded to include other activities?
2. Operational Procedures - This deals with the manner in which these crews/jumpers conduct their business and whether these operations lead to effective/efficient procedures. Relating to the Hotshots, a frequent practice is to utilize the foremen as overhead on large fire assignments. Is this the best thing to do and still ensure highly qualified supervision for the crew and fire?
3. Training - Are we conducting the training which ensures mission accomplishment or an expanded mission? Is the agency providing the training which helps determine best qualified on fire incidents as these incidents escalate. Is fire behavior training adequate to deal with the most complex of incidents in which we frequently put these crews?
4. Safety - These crews, as mentioned, are usually used in some of the most difficult fire assignments, which requires the strictest adherence to safety procedures. Is the emphasis on safety what it should be? What can be done to ensure the programs reflect a strong safety ethic?
5. Agency Direction - Are the agencies providing the direction and oversight for these programs? Is agency direction on such things as workforce diversity and personnel management practices, detailer hotshot programs, and so on appropriate for mission success of these programs?

IMRT RECOMMENDATIONS:

The IMRT recommends that program reviews be conducted of both the Smokejumper and Hotshot programs. The reviews need to be interagency and will provide immediate remedial actions which can be implemented for next fire season. The review will also identify areas which require more extensive review.

RESPONSIBLE GROUPS:

Jumpers: John Twiss - Interagency team leader/USFS
Hotshots: Roy Montgomery - Interagency team leader/BLM

COMPLETION DATE:
February 15, 1995

DESIRED PRODUCTS:
Recommendations for each program area that identify issues/concerns and action items for resolution.

IMRT CONTACTS:
José Cruz
Edy Petrick

IMRT Topic 3.4: Training for Agency Administrators and Senior Incident Management Personnel

Discussion/Issues:

Interagency fire courses for agency administrators and senior incident management personnel must be developed, adjusted, and attended to ensure that those personnel have the training and knowledge necessary to effectively manage and oversee wildland fire programs. Lessons from South Canyon and other recent incidents need to be incorporated in these courses.

At this time not all federal agencies participate in the same agency administrator training due to timing, logistics, and course content concerns.

IMRT Recommendations:

1. All Federal wildland fire agencies will require agency administrators attend the same Fire Management for Agency Administrators (FMAA) courses. Two interagency courses should be developed for all federal wildland fire agencies. The courses should be targeted to the two agency administrator levels below the State Director, Regional Director, Regional Forester level. An example of the two levels would be District Manager, and Area Manager in BLM. It is understood that all fire agencies do not have two levels of agency administrators below the state/regional level.

2. The FMAA National Steering Committee needs to be expanded to include all five federal wildland fire agencies. The steering committee should address the issue of location and number of the courses offered to meet the targeted group of Parks, BLM District, National Forest, Refuge and reservation administrator. The steering committee also should look at avenues to re-emphasize "The dire need to create a passion for compliance with the basics of safe fire suppression".

3. Complete the Interagency "Fire Program Management" course which is targeted for current and future fire program managers.

4. The S-520/620 Steering Committee review and adjust courses to include needed changes to address South Canyon findings. The Training Working Team of NWCG review and adjust S-420 to include needed changes to address South Canyon findings.

Responsible Group:

1. Agency administrators for #1
2. Course steering committees for #2 through #4 and agency administrator.
   a. FMAA Steering Committee (Jim Lawrence, USFS)
   b. Fire Program Management course (Bonnee Turner), NARTC course coordinator.

c. Training Working Team (George Martin, USFS)
d. S520/S620 Steering Committee (Rick Gale, NPS)
3. Training Working Team of NWCG S-420 for part of #4

COMPLETION DATE:
1. #1 - on going
2. #2 - course date 1995
3. #3 - March 1995
4. #4 - by course date 1995

DESIRED PRODUCTS:
1. All agency administrators attend the common course for their level in a location as agreed upon by FMAA National Steering Committee.
2. National steering committee is established to have oversight of both levels of the FMAA course. This will include all items discussed in item 2 of IMRT recommendations.
3. Course completed on schedule.
4. Course adjusted on schedule.

IMRT CONTACT:
Mike Edrington

IMRT Topic 3.5: Matching Qualified Incident Commanders with the Complexity of Incidents

Discussion/Issues:

Matching the qualifications of Incident Commanders with the complexity of fires during all phases of suppression operations is mandatory, based on management capability and safety considerations. This message was reinforced through a "cascading" conference call throughout agencies involved in wildland fire suppression activities.

Concerns were expressed to the IMRT that the South Canyon Fire was a more complex incident than was identified. In reviewing the existing direction, it appears guidelines to make this determination at the local level are vague and allow the utmost discretion by management.

In fact, a standard definition used by the various wildland fire management agencies to describe incident complexity does not exist. This has led to confusion and inconsistency in assigning management personnel and assessing needs. Four types of wildland fire incidents are recognized, with a Type IV incident being the least complex and a Type I incident being the most complex. General guidance is given concerning many factors that determine complexity in the Wildland Fire Qualification Subsystem Guide, NWCG 310-1 and in the Fireline Handbook. But it is left up to the individual agency administrators to determine fire complexity based on the factors they feel are important. Qualifications of Incident Commanders for all levels of incidents have been established and are used by all agencies. In addition to an incident complexity definition, a need exists to have a standard description for escaped fires and initial attack. Currently, this varies widely among agencies. The definition of escaped fires and a determination of the value and use of Escaped Fire Situation Analysis are being developed as another action item in this report.

IMRT Recommendations:

1. Develop set of criteria that define the complexity of incidents and a procedure for analyzing individual incident complexity for use by all agencies.
2. Develop standards for use of Incident Commanders on each type of incident for use by all agencies.
3. Develop standard definitions of initial attack, extended attack, and escaped fires. Also, clarify guidelines for transition from one level of complexity to another.

Responsible Group:

ICS Working Team (John Philbin, BIA)

Completion Date:

March 15, 1995

DESIRED PRODUCTS:
Incident Complexity Analysis
Standard definitions for incorporation into Fireline Handbook and Agency Manuals

IMRT CONTACT:
Bob Joslin

IMRT TOPIC 3.6: QUALIFICATIONS OF FIRE MANAGERS AND AGENCY ADMINISTRATORS IN FIRE MANAGEMENT

DISCUSSION/ISSUES

At present, fire managers and agency administrators are not required to possess minimum qualifications in the area of fire management. Agency Administrators and fire managers are faced with decisions in fire suppression which can have major effects on funds spent and puts at risk the public and firefighters' lives. These decisions also affect the protection of private and public resources from wildland fires. The effects of these decisions are not only major and long-term but also happen during a period when decision-makers are under abnormal stress and must often make decisions in a compressed time frame. In order to ensure that fire managers and agency administrators are capable of executing their responsibilities, they must have basic knowledge, skills, and abilities that relate to their role in fire management.

For the purposes of this discussion, fire managers are those serving as Fire Management Officers at the District, Forest and Regional levels in the U.S. Forest Service and their counterparts in the other wildland fire agencies. Agency administrators are District Rangers, Forest Supervisors, and Regional Foresters in the U.S. Forest Service and their counterparts in other wildland fire agencies.

IMRT RECOMMENDATIONS:

The IMRT strongly believes that all personnel involved in wildland fire management activities, from basic firefighter through agency administrators, must be trained and qualified to carry out their responsibilities. The IMRT recommends that:

1. Establish minimum qualifications for fire managers and agency administrators who are required to make fire management decisions.

2. Agency Administrators should ensure that personnel holding, or selected for, fire management or agency administrator positions are qualified for the level of wildland fire complexity involved in the position or are able to obtain these qualifications within an acceptable time period.

RESPONSIBLE GROUP:

Working group of agency administrators (Bill Palleck, NPS), fire managers (Rick Gale, NPS; Mike DaLuz, USFS), representative from the NWCG ICS Working Team, and human resources specialists.

COMPLETION DATE:

February 15, 1995

DESIRED PRODUCT:
Minimum qualifications in fire management for fire managers and agency administrators.

IMRT CONTACT:
Mike Edrington
José Cruz

IMRT Topic 3.7: Decision-Making Process in Establishing Strategy for Suppression

Discussion/Issues:

Among the various policies and tools used in making decisions when determining the cost-effective and safe strategy to use in suppression, the Escaped Fire Situation Analysis (EFSA) provides means to analyze alternatives and to document the Agency Administrator's decision on how a fire will be suppressed.

The EFSA is the foundation for actions taken in response to escaped fires. Over the last few years there has been considerable concern and debate about how effective EFSAs have been as an analytical tool and how realistic some of the alternatives examined have actually been. Among the questions raised have been: is the EFSA the best analytical tool to determine suppression strategy? has it been developed and used correctly? have alternatives selected actually been followed? are the alternatives examined realistic and achievable, based on available suppression resources? is the agency administrator adequately involved in the process? and have differences in agency implementation of EFSAs resulted in variations in fire management policy and outcome?

IMRT Recommendations:

The IMRT recommends a comprehensive review of whether the EFSA tool, and the procedures to implement it, provide the best analytical approach to examining suppression alternatives, consider values at risk, and guide suppression strategy. This review should include how the EFSA and other processes can allow adjustments of suppression strategies to be made in light of resources actually available.

Responsible Group:

The National Multi-Agency Coordinating Group (Doug Erskine, NPS) is chartered to establish an interagency group that examines the use of the EFSA tool, addressing the issues and questions raised above.

Completion Date:

December 15, 1994

Desired Product:

Recommendations to the IMRT addressing improvements, modifications, or replacement of the EFSA, including the manner in which it should be used.

IMRT Contact:

Jim Douglas

IMRT TOPIC 3.8: EVALUATION OF THE COORDINATION/DISPATCH SYSTEM

DISCUSSION/ISSUES:

The coordination/dispatch system evolved over the previous ten years into an interagency, intergovernmental, three-tiered support structure that provides all resources to incidents, enabling land managers to meet management objectives. Differing views abound on how effectively the current system meets these needs. During periods of high fire activity, such as the 1994 fire season, the system becomes stretched to the limits of its capability. The dispatch system at all levels did not work well to fill orders and identify available resources. In many cases state resources were not identified or used in a timely manner, which may be due to the lack of a permanent state forester representative on the national multi-agency coordinating (MAC) group.

Factors contributing to the effectiveness of the coordination/dispatch system include: (1) staffing on each coordination/dispatch level, (2) access to multi-agency coordinating groups and input into those groups, (3) the consistency of the three-tiered approach in all areas, (4) the adjudication of resources orders, (5) the timing and content of intelligence, and (6) the performance of individuals and organizations within established guidelines.

The geographic-area level of the system is inconsistently organized, with some centers (such as Pacific Northwest and Eastern Great Basin) functioning as independent, interagency, fully functional entities, while others (such as Rocky Mountain) operate as extensions of regional or state offices and are staffed by personnel from a single agency. This situation results in coordination/dispatch personnel devoting substantial amounts of time to non-fire agency activities. The Rocky Mountain situation is further complicated by the presence of "zones."

Intelligence about fire conditions, status, and outlook is the primary factor upon which the Coordination/Dispatch system bases resource allocation decisions. Sound, timely intelligence is, critical for an effective Coordination/Dispatch system and MAC groups ability to effectively establish priorities.

The coordination/dispatch system has been subject to additional pressures and requirements since its inception ten years ago. A number of private-sector sources have been providing increasing numbers of firefighting resources, including equipment and crews. The integration of these resources into the interagency system in the same manner that each agency provides resources (so that training and other standards are met) will ensure a continued effective and efficient system. Clear procedures to integrate those resources are needed.

Intelligence about wildland fires is in great demand by public affairs staffs and in headquarters, particularly during active fire periods. Both the Department of the Interior and the U.S. Forest Service have been routinely operating information centers in Washington, D,C., to provide information about fire conditions, status, and other issues to senior agency and departmental officials, the White House, and the Congress. Frequently the type and level of detail of information required for those operations is different than that used for allocating resources and setting priorities.

Finally, in recent years the wildland fire coordination/dispatch system has played a growing role in supporting non-fire disaster and emergency situations, both in support of Presidential declarations and in support of individual agency needs. However, little effort has been invested in examining how to modify the system to accommodate those needs. The wildland fire intelligence system is also used to gather and analyze non-fire incident information.

IMRT RECOMMENDATIONS:

1. Evaluate the coordination/dispatch system, including (1) staffing on each coordination/dispatch level, (2) access to multi-agency coordinating groups and input into those groups, (3) the consistency of the three-tiered approach in all areas, (4) the adjudication of resources orders, (5) the timing and content of intelligence, and (6) the performance of individuals and organizations within established guidelines.

   In particular, this evaluation needs to address the need for permanent, independent coordination center operations in all geographic areas; the role of "zones" in at least one geographic area (Rocky Mountain); the performance of selected expanded dispatch operations; the need for greater ongoing involvement of state representatives, especially at the national level; the integration of private-sector resources into the coordination/dispatch system; and the content and system of intelligence gathering as it relates to the ability to set priorities.

   The evaluation should consider how the coordination/dispatch system, including intelligence, could or should be modified to ensure that requests for support related to non-fire emergencies can be handled as effectively as possible.

   Finally, in examining intelligence operations, the evaluation should examine the best means of providing information and analyses for use by headquarters staffs to senior officials minimizing impacts on NICC and other operations and to avoid duplication among DOI and FS headquarters information offices.

2. Develop a user-friendly system that allows all levels to easily input and update resource (personnel) status on a regular basis so that dispatchers at

all levels can easily determine the availability of those resources. This system should be able to track individuals in multiple positions.

RESPONSIBLE GROUP:
The National Multi-Agency Coordinating Group (Doug Erskine, NPS) is chartered to establish an interagency group to examine the coordination/dispatch and intelligence systems to ensure that the most cost-effective, timely support is provided to each incident.

COMPLETION DATE:
December 15, 1994

DESIRED PRODUCT:
Recommendations to the IMRT on improvements and modifications to the coordination/dispatch and intelligence systems to ensure timely, cost-effective support for all incidents and customers, including non-fire incidents.

IMRT CONTACT:
Jim Douglas

IMRT TOPIC 3.9: AVIATION ISSUES

DISCUSSION/ISSUES:

The 1994 fire season stretched capabilities of fire-related aviation and highlighted a series of issues related to aviation operations, particularly the use of military aircraft. Four major areas of concern are training, readiness, military aircraft, and standards.

1. Training: The 1994 season showed that training for all personnel involved with aviation operations is needed, including incident management team training on military utilization, the Interagency Military Rotorwing Activation Plan (IMRAP), and training and education of dispatchers in the utilization of aviation expertise and aviation staff available for consultation/use. Incident team utilization of aviation resources varies from team to team, causing problems when aircraft are moved from incident to incident, which tends to lessen effectiveness and cost effectiveness of operations.

2. Readiness: Other demands on private-sector aviation resources, world wide, often affect the ability to adequately equip and staff aviation operations from the private sector. Logging contracts for type I helicopters and oil exploration and world political/disaster assistance for type II helicopters affect the ability of vendors to supply aircraft during periods of high demand. This was particularly true in 1994 as many aircraft were committed overseas.

The capability to provide adequate aviation resources in support of wildland fire operations involves a number of issues, including call-when-needed inspections; pre-season assessments of private sector availability; identification of military units tasked for support; mobilization of helicopter managers and crews; use of aviation technical/safety assistance teams; use of cooperator resources; and staffing levels including management, flight-duty personnel, and competing use of overhead personnel for fire and aviation operations.

3. Use of Military Aircraft: The efficient and cost-effective use of military helicopters to supplement industry assets has been hampered by the lack of military familiarity with firefighting tactics, terminology, and mobilization. Some fire managers lack an understanding of military structure, operations, and the proper tactical utilization of the military resource. The Military Airborne Firefighting Systems (MAFFS) are outdated in design and are aging, requiring high maintenance. Particular areas of concern include: incident management team training and education on military utilization; clarification of military/civilian helicopter integration, utilization, and communication; upgrading MAFFS hardware, timing, and funding; review of the adequacy of the Interagency Military Rotorwing Activation Plan (IMRAP), including appropriate communications packages, long lines, and

buckets; and pre-season training programs for the civilian users and the military.

4. Standards: During periods of high aviation use many geographic areas establish new flight and duty parameters that differ from area to area, or agency to agency. These changes have caused difficulties for interagency operations and have the potential for creating unsafe conditions. Specific standards issues that have arisen include: adequacy of flight and duty limitations; coordination and standardization among geographic areas when making changes to standards or procedures; interagency lead plane standards and operations; and adequacy of general rotorwing operation policies.

IMRT RECOMMENDATIONS:
The National Multi-Agency Coordinating Group (MAC Group) is chartered to establish interagency groups that examine the issues of aviation training, readiness levels, use of military aircraft, and standards. These groups need to include representatives from the military as well as the USDA and DOI aviation programs.

RESPONSIBLE GROUP:
National Fire Aviation Coordinating Group (John Chambers, Forest Service) in conjunction with the National MAC Group and the military.

COMPLETION DATE:
December 15, 1994

DESIRED PRODUCT:
Recommendations to the IMRT addressing how aviation resources from all sources can be used most effectively and efficiently, including improved training, readiness, and greater use of interagency standards and operating procedures.

IMRT CONTACT:
Bob Joslin

IMRT Topic 3.10: Programmatic Review of Area Command

Discussion/Issues:
Several Area Commands (AC) were established during the course of the 1994 season with varying degrees of success. Some ACs were established and functioned differently than others, some appeared to be more successful than others, and in some instances it wasn't clear whether an AC was established in its traditional form. The mixed use of ACs raises a number of questions about whether ACs are the most effective organizational means to manage large numbers of large incidents and whether sufficient training and qualifications standards have been developed for AC teams.

IMRT Recommendations:
The National Multi-Agency Coordinating Group (Doug Erskine, NPS) is chartered to establish an interagency group to conduct a programmatic review of the use of area commands to determine the value and effectiveness of area commands, the need for pre-designated area command teams with a national rotation schedule, the training and qualifications of area command teams and members, and any alternatives to the use of area commands.

Responsible Group:
National MAC Group

Completion Date:
December 15, 1994

Desired Product:
Recommendations to the IMRT on improving management of large fire complexes by use of ACs or some alternative and on improving the training and qualifications of teams managing large fire complexes.

IMRT Contact:
Mike Edrington

IMRT Topic 3.11: Pre-Season and During Season Preparedness Capability

Discussion/Issues:

The 1994 fire season highlighted a number of long-standing issues related to the ability of individual agencies, and the overall interagency community, to be well prepared to provide fire protection, both pre-season planning and during the season activities.

Among the issues that have been raised are:

- the adequacy of funding to provide an optimal level of organization to efficiently and effectively conduct fire protection;
- the adequacy of personnel ceiling available to agency administrators to staff an optimal organization;
- the ability of agency fire management organizations to effectively manage Full Time Equivalents (FTEs) associated with fire management;
- the availability of non-fire agency personnel for fire assignments, particularly in overhead positions;
- the effect that changing standards for hiring and promoting seasonal employees have on the ability of agencies to staff appropriately;
- the effect that requirements for "positive" education have on the ability to attract a highly qualified workforce;
- the ability of agencies to modify fire protection organizations during the season to meet abnormal or changing conditions;
- the ability of agencies to attract and develop a diverse workforce.

Should funding, FTE, or other constraints prevent agencies from establishing organizations that provide for the most efficient and effective level of fire protection, consideration may need to be given to adjusting the standards or levels of protection expected. During incidents, strategies and tactics should be examined to ensure that they are consistent with levels of resources actually available.

IMRT Recommendations:

The issues of preparedness, from the standpoints of (1) pre-season preparation to provide cost-effective fire protection consistent with values and risk and (2) to adjust preparedness capabilities throughout the season should conditions warrant, must be addressed by senior management of the wildland fire management agencies and the two Departments. Preparedness provides the basis for safe, cost-effective wildland fire protection. Appropriate preparedness levels will reduce risks to lives, property, and natural resources as well as reduce overall public expenditures for wildland fire operations.

RESPONSIBLE GROUP:
The IMRT understands that the Departments of the Interior and Agriculture will be chartering a senior-level group to address wildland fire policies. This group should directly address the issues of preparedness.

COMPLETION DATE:
N/A

DESIRED PRODUCT:
Specific recommendations to overcome barriers and obstacles to adequate preparedness capability.

IMRT CONTACT:
Jim Douglas

IMRT Topic 3.12: Fire Management Planning

Discussion/Issues:

The five federal wildland fire agencies have each adopted separate fire management planning systems. These systems fall into two basic categories: (1) optimization models (used by FS, BLM, and BIA) and (2) allocation models (used by NPS and FWS). Each approach has strengths and weaknesses. Three major weaknesses shared by both approaches are the focus on single agency initial attack, the inability to adequately assess the role of non-market or non-commodity values at risk, and the inability to adequately address "non-normal" conditions. Nevertheless, the systems currently provide the principal source of information for budget planning and for organizational configurations in each agency.

The single-agency focus and contrasting approaches of the various systems have precluded effective interagency planning, both for initial and extended attack situations and for geographic-area and national-level resources. The lack of capability to address non-market values has hampered the ability of the fire management programs to provide an organization that accounts for all resources and inhibits cross-agency comparisons.

While each agency has been making modifications and improvements to their own systems over the years, discussion has begun within the interagency fire community to commission a new-generation system that can be used by all agencies (including states) and that addresses the full range of fire management planning issues. In November 1993 the National Wildfire Coordinating Group (NWCG) initiated an exploratory study of developing such a system.

IMRT Recommendations:

A next-generation fire management planning system, usable by all agencies and states, would greatly enhance the ability to analyze the full range of planning issues and provide a more efficient and effective interagency fire protection organization. Fire management planning systems must address the role that fuels management and protection of adjacent lands and structures play in fire protection planning. Efforts to develop such a system should move forward as a priority effort in the interagency community through the NWCG.

Responsible Group:

National Wildfire Coordinating Group
Jim Douglas will monitor actions by NWCG and report to the IMRT and the Director and Chief.

Completion Date:

March 1, 1995 - Submit progress report on developing new-generation planning system.

DESIRED PRODUCT:
Fire management planning system capable of addressing the full range of planning issues, including non-market values at risk, non-normal fire years, fuels management, wildland/urban interface, and geographic-area and national-level resources.

IMRT CONTACT:
Jim Douglas

IMRT Topic 3.13: Catastrophic Accident Investigations/Search and Rescue

Discussion/Issues:

The conduct of the initial search-and-rescue efforts regarding the two missing helitack crew members and the conduct of the subsequent accident investigation on the South Canyon fire highlighted issues and procedural problems that should be addressed. Agency accident investigation procedures generally contemplate relatively minor accidents. The complexity and prominence of the South Canyon incident and investigation revealed various shortcomings.

These include: responsibility for search and rescue of missing personnel; the adequacy of current procedures for catastrophic accidents such as the South Canyon multiple fatalities; the need for greater coordination with OSHA; the need for training of personnel in investigative techniques and procedures; trauma counseling for the investigation team and survivors; the relationship between the accident investigation and any personnel-related or disciplinary reviews or actions; the credibility of investigations conducted "in-house"; and the need for support services for investigation teams, such as public affairs, writer/editors, and technical specialists have all been identified as problems or issues that arose during the South Canyon incident.

Resolving these and other issues is critical for the conduct of effective and efficient accident investigations in order to improve safety for firefighters by learning from the accidents.

The accident investigation guidelines and fatality protocols issued by the National Wildfire Coordinating Group should also be reviewed for compatibility with other agency procedures.

IMRT Recommendations:

The IMRT believes that resolving these and other issues is critical for the conduct of effective and efficient accident investigations in order to improve safety for firefighters by learning from the accidents.

The IMRT recommends that:

1. The Departments of Agriculture and Interior take steps to develop standing, interagency interdisciplinary teams to conduct fire accident investigations. These teams would operate as Type I and Type II incident management teams do, with clear definitions of duties, qualifications, and so on. If successful, these teams could be expanded to include non-fire investigations as well. In implementing this recommendation, the IMRT suggests involving the NWCG Safety and Health Working Team.

2. Roles and responsibilities regarding search and rescue for unaccounted-for personnel must be clearly defined.

3. The Departments of Agriculture and Interior take steps to develop a closer working relationship with OSHA, with the goal of conducting joint, or complementary, investigations of wildland fire accidents.

RESPONSIBLE GROUP:
Designated Agency Safety and Health Officials, Departments of the Interior and Agriculture
Jim Douglas and Bob Joslin will monitor actions by the two departments and report to the IMRT and the Director and Chief.

COMPLETION DATE:
N/A

DESIRED PRODUCTS:
1. Clear roles and responsibilities for incident manager and members of accident investigation teams
2. Improved accident investigation procedures for serious accidents, including the formation of standing teams with appropriate training and qualifications and the inclusion of trained investigators
3. Better understanding by OSHA of the wildland fire management program and complementary approaches to conducting investigations of wildland fire accidents.

IMRT CONTACTS:
Jim Douglas
Bob Joslin

IMRT TOPIC 3.14: FUELS MANAGEMENT

DISCUSSION/ISSUES:

The tremendous build-up of wildland fuels in many parts of the country poses a significant risk to the safety of firefighters. Fire behavior in such situations can be expected to be extreme and have catastrophic results. Reduction of fuel loads and the re-introduction of fire into the ongoing management of these lands is critical for ensuring that risks to firefighters are minimized.

Improved management of wildland fuels will serve three goals:

- Making forests and other wildlands more productive and "healthy"
- Making fire suppression efforts more efficient and effective
- Reducing the risks to firefighters

Management of fuels, especially by use of prescribed fire, faces significant obstacles, including public and agency management resistance to pro-active use of fire and significant restrictions on smoke emissions from prescribed fire.

IMRT RECOMMENDATIONS:

Fuels management, especially through the reintroduction of fire as an integral part of natural resource management, must be a high priority of the Departments of the Interior and Agriculture. The IMRT strongly recommends that both departments begin taking immediate steps to reduce fuel loads and actively pursue the reintroduction of fire into all aspects of land management.

RESPONSIBLE GROUP:

The IMRT understands that the Departments of the Interior and Agriculture will be chartering a senior-level group to address wildland fire policies. This group should directly address the issues of fuels management and use of prescribed fire.

COMPLETION DATE:

N/A

DESIRED PRODUCTS:

1. A wildland fuels management strategy and program that incorporates fire as a major element.
2. Specific recommendations to overcome barriers and obstacles to implementation of that strategy and program.

IMRT CONTACT:

Jim Douglas

IMRT TOPIC 3.15: WILDLAND/URBAN INTERFACE

DISCUSSION/ISSUES:

The interface between wildlands and settlement, whether it be second homes, subdivisions, or entire communities, creates a particularly dangerous and risky environment for wildland firefighters. Personnel trained and equipped to handle fire in natural settings and fuels are increasingly being asked to protect structures. This not only diverts firefighting resources from the protection of natural resources, it exposes firefighters to conditions and situations for which they are not well equipped or well trained.

Much of the national, regional, and local debate on the wildland/urban interface issue has focused on the importance of land use planning, zoning, landscaping, and building materials. However, the mere presence of more and more homes and communities in the wildland increases the pressure on wildland fire agencies to provide assistance and protection. The safety and well-being of firefighters must be considered as well, regardless of how well planned and built the homes and communities are.

IMRT RECOMMENDATIONS:

The Departments of the Interior and Agriculture, in consultation and coordination with such partners as the National Association of State Foresters, FEMA, and the NFPA, must place a priority on development of policies that define the appropriate role for federal wildland firefighters in protecting adjacent structures and communities. If such protection is important, the necessary resources in the form of equipment, personnel, and training must be provided in order to minimize the risk to firefighter safety.

The FEMA initiative to develop a National Mitigation Strategy to minimize the effects of natural disasters could be an important vehicle in focusing federal attention on this issue.

RESPONSIBLE GROUP:

The IMRT understands that the Departments of the Interior and Agriculture will be chartering a senior-level group to address wildland fire policies. This group should directly address the wildland/urban interface issues.

COMPLETION DATE:

N/A

DESIRED PRODUCTS:

1. A wildland fire strategy for the wildland/urban interface that addresses the appropriate roles and responsibilities of federal, state, local, and private sectors.
2. Specific recommendations to overcome barriers and obstacles to implementing that strategy.

IMRT CONTACT:

Jim Douglas

OVERSIGHT STRATEGY

The IMRT charter directs the team to develop a strategy to ensure oversight and implementation of the recommendations resulting from the work of the South Canyon Investigative Team and of the IMRT.

The following approach is recommended by the IMRT:

- Groups appointed to carry out recommendations will be required to immediately develop plans identifying significant actions, dates and resource needs; these plans will be submitted to the IMRT contact for each group.

- Quarterly progress reports will be submitted; some groups may need to submit more frequent reports if appropriate given the nature of the recommended action and/or the time frame for completion.

- The IMRT contact for each recommendation will monitor activity between progress reports and will review progress reports for accuracy and completeness before submittal.

- Progress reports will be submitted to the IMRT Executive Secretary who will consolidate them, prepare an executive summary, and provide copies to the members of the IMRT, to each wildland fire agency director, and to other appropriate parties.

- The IMRT contact for each group will be responsible for anticipating significant problems in implementing recommendations in a timely manner and for working with the responsible group to develop solutions. Each group will be expected to identify problems in carrying out their action plan and be empowered to develop solutions using the resources available in the various agencies.

APPENDICES

APPENDIX 1:
Charter of Interagency Management Review Team

APPENDIX 2:
IMRT Memorandum Re: Safety is Job #1

APPENDIX 3:
IMRT Memoranda Re: Fire Weather and Fire Behavior Analysts

APPENDIX 4:
Corrective Action Plan Summary Table

APPENDIX 5:
Memorandum Authorizing Immediate Action on C.1

U.S. Department of the Interior

U.S. Department of Agriculture
U.S. Forest Service

CHARTER

Interagency Management Review Team

South Canyon Fire Accident Investigation
and
Interagency Wildland Fire Management

August 18, 1994

The following individuals are designated to serve as an Interagency Management Review Team (Team) to serve as a steering group for the purposes of reviewing the findings and conclusions of the South Canyon Fire Interagency Investigation Team, reviewing and refining that Team's recommendations, and proposing a plan for corrective action. The Team will also examine such other national issues as the Team deems appropriate, such as seasonal preparedness and resource availability, initial attack capabilities, and fireline training:

Tom Allen, Team Leader	Bureau of Land Management
Tom Zimmerman	National Park Service
Jim Douglas	Department of the Interior
Charles Jaynes	Bureau of Indian Affairs
Robert Joslin	U.S. Forest Service
Mike Edrington	U.S. Forest Service
Joe Cruz	U.S. Forest Service
Edy Petrick	U.S. Forest Service
Craig Lechleiter	U.S. Forest Service
Lonnie Lewis	U.S. Forest Service

The Team shall:

1. Identify any immediate corrective actions that will improve safety and minimize the risk to firefighters this fire season which have not already been taken. The Team will take appropriate actions to assure that any such immediate corrective actions are promptly implemented and will reinforce any corrective actions taken since the South Canyon incident;
2. Review the findings and conclusions of the South Canyon Fire Interagency Investigation Team, review and refine that Team's

recommendations, propose a plan for corrective action (including specific tasks, responsibilities, and target dates) and recommend a strategy for assuring effective oversight of the implementation of the action plan;

3. Identify additional significant issues and concerns related to the interagency wildland fire management program that may include preparedness, mobilization, initial attack capabilities, training and qualificiations, interagency coordination, and expanded dispatch, and prepare recommended actions for addressing these issues and concerns.

Within 45 days of the formal release of the reports of the Interagency Investigation Team the Management Review Team will present the Director of the Bureau of Land Management (on behalf of the directors of all wildland fire agencies within the Department of the Interior) and the Chief of the Forest Service with its recommended plan of action. That plan will address the findings, conclusions, and recommendations of the Interagency Investigation Team, as well as any findings and recommendations of the Occupational Safety and Health Administration, and any other issues or concerns identified by the Team, including any immediate corrective actions already taken. This plan will be approved by the Director and the Chief, in consultation with Designated Agency Safety and Health Officials for the two Departments. Responsibility for oversight of the implementation of the action plan will rest with the Director (on behalf of the directors of all wildland fire agencies within the Department of the Interior) and the Chief. Staff responsibility for oversight of the implementation of the plan will be based on the recommendation of the Team.

In conducting its activities, the Team shall consider the interests and concerns of all of the federal wildland fire agencies as well as those of traditional partners in the program, including the National Weather Service, the U.S. Fire Administration, and the state foresters. The Team may appoint working groups to address specific issues as it deems necessary and may draw membership for those groups from any of the partner agencies. The Team shall conduct its business on the basis of consensus whenever possible and shall provide opportunities for formal expression of minority viewpoints, should that be necessary.

Mike Dombeck
Director, Bureau of Land Management

Jack Ward Thomas
Chief, U.S. Forest Service

Appendix 2

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Washington, D.C. 20240

SEP 16 1994

MEMORANDUM

To: Director, National Park Service
Director, Fish & Wildlife Service
Deputy Commissioner, Bureau of Indian Affairs

From: Mike Dombeck *Mike*
Acting Director, Bureau of Land Management

Subject: Wildland Fire Safety

One of the charges given to the Interagency Management Review Team, following up on the South Canyon Accident Investigation Report, was to identify immediate corrective actions to improve safety. The Chief of the Forest Service and I have received the attached recommendations from the Team to (1) transmit an Interagency Safety Alert to all wildland fire employees and (2) hold a cascading series of conference calls on safety, starting with our level and working on down. A set of talking points is part of their recommendation.

I strongly support these two recommendations and am implementing them within the BLM. On Friday, September 16, both the Chief and I will be holding conference calls with our state directors and regional foresters.

I urge each of you to send out the Safety Alert immediately and to hold a conference call with your regions to start the "cascade" within your bureaus. I believe it is critical that each of us personally invest in making our line managers an integral part of the wildland fire suppression effort.

If you have any questions on these actions, please feel free to call me.

Attachment

U.S. Department of the Interior
Bureau of Land Management
Washington, D.C. 20240

U.S. Department of Agriculture
Forest Service
Washington, D.C. 20090

Memorandum

TO: Chief, Forest Service
Director, Bureau of Land Management

From: Interagency Management Review Team

Subject: Safety

One of the charges given to the South Canyon Interagency Wildland Fire Management Review Team was to look at any immediate actions that could be taken to improve safety and to minimize risk to firefighters this season. In this regard, the Team asks that you do the following:

1. Transmit attachment 1, "Interagency Safety Alert", to employees through your distribution system. This alert reiterates the safety alerts sponsored by the Interagency Investigation Team.

2. Hold a conference call with the next lower level of management using attachment 2, "Safety is Job #1", as talking points.

3. Have each successively lower level personally convey the same "Safety is Job #1" message to the next level until all employees in leadership and other key roles receive the message.

A copy of the charter for the Interagency Management Review Team is included for your information (Attachment 3)

Tom Allen
Team Leader

SPECIAL NOTICE TO ALL WILDLAND FIRE EMPLOYEES WITH SPECIAL EMPHASIS TO ALL EMPLOYEES INVOLVED INWILDFIRE SUPPRESSION OPERATIONS

INTERAGENCY SAFETY ALERT

While the 1994 fire season is slowly winding down in some parts of the country, in other areas, it is becoming more active. We must not lose sight of the numerous entrapments and tragic loss of life this season. Conditions continue to be extremely dangerous on the fireline and everyone should continue to exercise extreme caution and care while engaged in wildfire operations. Active fires will continue in many areas for the rest of this calendar year.

MAJOR COMMON DENOMINATORS OF FIRE BEHAVIOR ON TRAGEDY FIRES

1. Most incidents happen on smaller fires or on isolated sections of larger fires.
2. Flare-ups generally occur in deceptively light fuels, such as grass, herbs and light brush.
3. Most fires are innocent in appearance before unexpected shifts in wind direction and/or speed result in flare-ups. In some cases, tragedies occur in the mop-up stage.
4. Fires respond to large and small scale topographic conditions, running uphill surprisingly fast in chimneys, gullies and on steep slopes.

CRITICAL FUEL AND WEATHER FACTORS TO CONSIDER

1. Extreme weather conditions consisting of high temperatures and low relative humidities.
2. Low dead fuel moisture and extremely low live fuel moisture.
3. Strong wind events. Pay attention to "RED FLAG WARNINGS."

FIRE BEHAVIOR IS SO EXTREME THAT THE TIME FRAMES FOR DECISION-MAKING ARE VERY SHORT

STRATEGY AND TACTICAL CONSIDERATIONS:

√ Remember the basics, establish a secure anchor and flank your fire from your anchor. FRONTAL ATTACK IN THESE CONDITIONS IS TOO RISKY!

√ If you can't clearly see the fire edge, assign a lookout who can see all areas of the fire.

√ Communications are critical. You must be able to talk with your crew and adjacent crews. Each crew must have access to operational and fire weather information.

√ Designating your fireline as an escape route is not enough. Factor your travel time into escape situations. Steep slopes and loose soil on many firelines slows your escape. Be sure your escape route will get you out of potential trouble in time.

√ The safety zone you select must offer protection from direct flames and high levels of radiant heat. Be sure it is big enough for everyone who intends to use it. Medium-sized heliports are often not adequate.

√ Consider the potential for reburn in areas that appear black and safe. If an area doesn't have a good safety zone, either build one or don't go in.

REVIEW AND IMPLEMENT:

- 10 FIRE ORDERS
- 18 SITUATIONS THAT SHOUT "WATCH OUT"
- L.C.E.S. = Lookout, Communications, Escape route, Safety zones
- WORK/REST and LENGTH OF ASSIGNMENT GUIDELINES
- PERSONNEL, NUTRITION AND WEATHER REQUIREMENTS

NO WILDLAND FIRE, EVEN THOSE THAT THREATEN STRUCTURES OR IMPROVEMENTS, IS WORTH RISKING DEATH OR INJURY.

September 1994

KEY MESSAGES FOR ALL AGENCY ADMINSTRATORS

SAFETY IS JOB #1

NO WILDLAND FIRE, EVEN THOSE THAT THREATEN STRUCTURES OR IMPROVEMENTS, IS WORTH RISKING DEATH OR INJURY

ACTIONS TO REINFORCE THIS MESSAGE:

1. **REITERATE THIS SAFETY MESSAGE AT EVERY OPPORTUNITY**
   - Staging areas, R&R centers, incident briefings, tailgate sessions

2. **PERSONAL PARTICIPATION IN ON-GOING INCIDENTS**
   - Agency administrators must show involvement
   - Use existing Fire Review process during the event

3. **BRING AN EXPERT WITH YOU!**
   - For large fires, bring a non-assigned safety officer along as a "outside" technical expert when you go to on-going incidents

4. **ASSURANCE THAT FIREFIGHTERS ARE BRIEFED**
   - Don't assume firefighters know
   - include all aspects of necessary safety information (e.g. objectives, long and short term weather, interpretation of weather)

5. **KNOW AND FOLLOW ESCAPED FIRE SITUATION ANALYSIS POLICY (EFSA)**
   - Insure EFSAs have quality involvement by agency administrators
   - Agency administrators should not delegate this responsibility

6. **KNOW YOUR WEATHER FORECAST!!!**
   - All incident personnel are to be made aware of existing fire weather forecasts and the resultant fire behavior
   - A minimum of one daily spot forecast for fires in extended initial attack and all incidents of higher complexity
   - Incident Commanders need to ask for spot forecasts especially when general fire weather forecast is not consistent with observed conditions.
   - NOAA weather radio forecasts should not be substituted for <u>fire weather forecasts</u>.

7. **PARTICIPATE IN INCIDENT MANAGEMENT TEAM BRIEIFNGS!!**
   - Don't delegate YOUR responsibility!

8. **COMMUNICATE SAFETY MESSAGE TO ALL INVOLVED IN SUPPRESSION EFFORT++**
   - Don't be tight with safety information, safety is everyone's responsibility

9. **GET SMART!**
   - Start scheduling all agency administrators for national level training in fire management ...put a date on your Employee Development Plan now!

10. **MATCH THE INCIDENT MANAGER WITH THE COMPLEXITY OF THE FIRE**
    - The qualifications of the Incident Commander must match the complexity of the fire
    - Be alert for this alignment during transition in mobilization and demobilization

U.S. Department of the Interior
Bureau of Land Management
Washington, D.C. 20240

U.S. Department of Agriculture
Forest Service
Washington, D.C. 20090

September 15, 1994

Memorandum

To: Doug Erskine, Chair, National Multi-Agency Coordinating (MAC) Group

From: Tom Allen, Team Leader, Interagency Management Review Team (IMRT)

Subject: Corrective Actions for the National MAC Group to Implement Immediately

The Chief, U.S. Forest Service, and Director, Bureau of Land Management have established the Interagency Management Review Team to serve as a steering group to review the findings and conclusions of the South Canyon Fire Investigation Team, to review and refine the Team's recommendations, and propose a plan for corrective action. The approved IMRT Charter calls for this group to complete three main tasks. Of these, one is to:

> "Identify any immediate corrective actions that will improve safety and minimize the risk to firefighters this fire season which have not already been taken. The Team will take appropriate actions to assure that any such immediate corrective actions are promptly implemented and will reinforce any corrective actions taken since the South Canyon incident."

During the course of the IMRT meeting in Washington, D.C. this week, the value and importance of Fire Behavior Analysts (FBAN) and Fire Weather Meteorologists to successful and safe suppression activities have been discussed. The team recommends that an immediate corrective action needs to be implemented to ensure that adequate fire behavior fire weather forecasts exist and are made available to all personnel involved in fire suppression activities.

Action to be taken includes the following:

1. National MAC notify all Geographic Area MAC Groups that all Geographic Area Coordination Centers (GACCs) will order and augment their staff with a Fire Behavior Analyst at all times when the Area Preparedness Level for that particular

geographic area is at 4 and above. The on-site FBAN will work with Fire Weather Forecasters to ensure weather forecasts are transmitted to local units, develop fire behavior trend information for the geographic area, develop fire behavior forecasts for particular local units as possible, assist in obtaining spot weather forecasts as needed, and provide assistance as needed/requested to Type III and IV incident organizations. By monitoring local weather station information through Weather Information Management System (WIMS), the FBAN can provide information regarding fuel moisture content trends, precipitation amounts or deficits, etc., and assist local units and geographic areas in assessing overall fire danger conditions, and increase awareness of suppression personnel to conditions.

2. National MAC notify the National Interagency Coordination Center (NICC) that all Type I Incident Management Teams be required to utilize a fire weather meteorologist on Type I incidents. These meteorologists should be ordered as part of each team's standard order during incident mobilization. Certain scenarios could develop where all teams may not need a meteorologist on each incident, such as when more than one Type I IMT are located in close proximity to one another, one or more meteorologists could be shared by more than one team providing satisfactory service can be maintained. In these instances, Incident Commanders can take the appropriate measures, but must ensure that sufficient weather information is available to improve safety and minimize risk to firefighters.

Please implement these recommendations as soon as possible and advise us of your progress. If you have any questions regarding this issue, you may contact Tom Zimmerman at (208) 387-5215.

Tom Allen

Tom Allen
Team Leader, Interagency Management Review Team

U.S. Department of the Interior
Bureau of Land Management
Washington, D.C. 20240

U.S. Department of Agriculture
Forest Service
Washington, D.C. 20090

September 16, 1994

Memorandum

To: Doug Erskine, Chair, National Multi-Agency Coordinating (MAC) Group

From: Tom Allen, Team Leader, Interagency Management Review Team (IMRT)

Subject: Corrective Actions for the National MAC Group to Implement Immediately - Clarification

Purpose of this memorandum is to clarify the guidance given under item one of my memorandum to you dated September 15, 1994. After discussion, it is clear that the FBAN will be located at GACC or another appropriate location within that geographic area.

Tom Allen

SUMMARY TABLE
CORRECTIVE ACTION PLAN

A. Weather, Fire Danger, and Fire Behavior

Rec. #	Topic	Responsible Group	Agency Adm. Rep.*	IMRT Contact(s)	Completion Date(s)	Page #
A.1	Red Flag Program	Bill Clark/NWCG NFWAG and Fire Behavior Committee	AZ DM/AM	Rick Ochoa	January 1, 1995	14
A.2	Fire Weather and Behavior Availability	Bill Clark/Fire Behavior Committee	NPS	Tom Zimmerman	February 1, 1995	15
A.3	Communicating Fire Weather Forecasts	Doug Erskine/National MAC Group John Roberts/NWCG ICS Working Team	R-3 FS/ DFS/DR	Rick Ochoa	December 1, 1994	18
A.4	Requests for Spot Weather Forecasts; see also 3-1	John Philbin/NWCG ICS Working Team National Weather Service	ID DM/AM	Rick Ochoa	January 1, 1995	19
A.5	Fire Weather Forecasts	John Roberts/NWCG ICS Working Team	FWS	Rick Ochoa	January 1, 1995	20
A.6	Fire Danger	Wayne Mitchell/NAGFDR	NPS	Tom Zimmerman	March 1, 1995	21
A.7	NWS Role in Fire Management Program	Gardner Ferry/NWCG NFWAG	R-4 FS/ DFS/DR	Rick Ochoa	February 1, 1995	22
A.8	Live Fuel Moisture Sampling	Jim Saveland/Ad Hoc Team	CO DM/AM	Bob Joslin	February 1, 1995	23

* See code explanations following this table.

SUMMARY TABLE
CORRECTIVE ACTION PLAN
(CONT.)

B. Leadership, Attitudes, and Training

Rec. #	Topic	Responsible Group	Agency Adm. Rep.*	IMRT Contact(s)	Completion Date(s)	Page #
B.1	Attitudes and Leadership	Consultant w/ Ad Hoc Group Oversight (Mark Boche, Jerry Williams, Steve Frye, E.K. James)	R-6 FS; NPS; ESO-DM	Mike Edrington	January 1, 1995	24
B.2	Training Emphasis on Basics	George Martin/NWCG Training Working Team	R-8 FS/ DFS/DR; MT DM/AM	Edy Petrick	January 1, 1995 January 14, 1995 May 1, 1995 January 1, 1996	26
B.3	Development of Training Exercise Based on South Canyon Fire	George Martin/NWCG Training Working Team and Interagency Steering Committees	BIA R-10 FS/DFS	Edy Petrick	January 1, 1995	28
B.4/ B.7	Fire Shelter Courses Entrapment Courses	George Martin/NWCG Training Working Team and NWCG ICS Working Team	R-9 FS/ DFS/DR CA DM/AM	Mike Benscoter	March 1, 1995	29
B.5/ B.8	Guidelines for Shelter Deployment and Safety Zones	Dick Mangan/Missoula Technology Development Center	R-5 FS/ DFS/DR; MT DM/AM	Mike Barry	March 1, 1995 May 1, 1995	31
B.6	Fire Behavior & Fire Weather Training	Bonnee Turner/"Fire Program Management" Development Group	FWS	Mike Benscoter	January 1, 1995	32
B.7	see above	--	--	--	--	--
B.8	see above	--	--	--	--	--

* See code explanations following this table.

SUMMARY TABLE
CORRECTIVE ACTION PLAN
(CONT.)

C. Management Support and Dispatch Coordination

Rec. #	Topic	Responsible Group	Agency Adm. Rep.*	IMRT Contact(s)	Completion Date(s)	Page #
C.1	Management Reviews of Fire Management Programs	Ed Spang – BLM Nina Hatfield - BLM Mary Jo Lavin - FS	BLM/FS	Tom Allen Tom Allen Bob Joslin	February 28, 1995 March 31, 1995 February 28, 1995	34
C.2	Implementation of NWCG Work, Rest, and Rotation Guidelines	Bill Ward/Fire Business Management Handbook team	ID DM/AM; R-3 FS/ DFS/DR	Tom Zimmerman	March 1, 1995	36

D. Mobilization Planning for Above-Average Fire Seasons

Rec. #	Topic	Responsible Group	Agency Adm. Rep.*	IMRT Contact(s)	Completion Date(s)	Page #
D.1	Analysis of Planning/ Operations for Fire Severity Variation	Doug Erskine/National MAC Group to coordinate Geographic Area reviews	R-2 FS/ DFS/DR; CO DM	Mike Edrington	February 1, 1995	37
D.2	Drought Monitoring	Bill Sommers/NWCG Fire Behavior Committee and NFWAG	NV DM/AM	Rick Ochoa	March 1, 1995	38

* See code explanations following this table.

SUMMARY TABLE
CORRECTIVE ACTION PLAN
(CONT.)

Additional Issues & Concerns

Rec. #	Topic	Responsible Group	Agency Adm. Rep.*	IMRT Contact(s)	Completion Date(s)	Page #
3.1	Incident Meteorologist for Type I Incidents	Doug Erskine/National Multi-Agency Coordinating Group	See note below	Rick Ochoa	December 1, 1995	39
3.2	Standardized Spot Fire Weather Forecasts; see also A.4	Greg Zschaechner/NWCG Fire Behavior Committee and NFWAG Rick Ochoa/National Weather Service	see A.4	Rick Ochoa	January 1, 1995	40
3.3	Shared Resources (Smokejumpers and Hotshots)	John Twiss/Smokejumpers Interagency Review Team Roy Montgomery/Hotshots Interagency Review Team	AK DM; R-1 FS/ DFS/DR; R-5 FS/ DFS/DR	José Cruz	February 15, 1995	41
3.4	Training for Agency Administrators and Senior Incident Management Personnel	Jim Lawrence/FMAA Steering Committee Bonnee Turner/Fire Program Mgt. Rick Gale/S520-S620 Steering Committee George Martin/NWCG TWT	BLM ASD; R-4 FS/DFS; FWS ARD	Mike Edrington	Ongoing; Course date, 1995 March 1995	43
3.5	Matching Qualified Incident Commanders with the Complexity of Incidents	John Philbin/NWCG ICS Working Team	R-8 FS/DFS; NM DM/AM	Bob Joslin	March 15, 1995	45
3.6	Qualifications of Fire Managers and Agency Administrators in Fire Management	John Philbin, Rick Gale, Mike Daluz, Bill Palleck with NWCG ICS Working Team	NPS; UT DM; R-5 FS/DFS	Mike Edrington	February 17, 1995	47
3.7	Decision Making Process in Establishing Strategy for Suppression	Doug Erskine/National MAC Group	NV DM/AM; R-3 FS/DFS	Jim Douglas	December 15, 1995	49

* See code explanations following this table.

SUMMARY TABLE
CORRECTIVE ACTION PLAN
(CONT.)

Additional Issues & Concerns						
Rec. #	**Topic**	**Responsible Group**	**Agency Adm. Rep.***	**IMRT Contact(s)**	**Completion Date(s)**	**Page #**
3.8	Evaluation of Coordination/ Dispatch System	Doug Erskine/National MAC Group	CA DM/AM; R-1 FS/DFS; NPS	Jim Douglas	December 15, 1994	50
3.9	Aviation Issues	Doug Erskine/National MAC Group	NPS; OR DM	Bob Joslin	December 15, 1994	53
3.10	Programmatic Review of Area Commands	Doug Erskine/National MAC Group	OR DM/AM; R-6 FS/DFS	Mike Edrington	December 15, 1994	55
3.11	Preparedness	Interagency Policy Review Group	See note below	Jim Douglas	N/A	56
3.12	Fire Management Planning	Bill Sommers/NWCG	FWS; BIA; DRF/R-2 FS/DFS; ASD/DM	Jim Douglas	March 1, 1995	58
3.13	Accident Investigations	Claudia Schechter/DOI Wardell Townsend/USDA	See note below	Jim Douglas - DOI Bob Joslin - USDA	N/A	60
3.14	Fuels Management	Interagency Policy Review Group	See note below	Jim Douglas	N/A	62
3.15	Wildland/Urban Interface	Interagency Policy Review Group	See note below	Jim Douglas	N/A	63

* See code explanations following this table.

Notes:

- Agency administrator not required for 3.1; this task involves incorporating existing directives in the National Mobilization Guide.
- Agency administrators not required for 3.11, 3.13, 3.14, and 3.15; these tasks are being addressed through the IMRT.

SUMMARY TABLE
CORRECTIVE ACTION PLAN
(CONT.)

Key to Agency Administrator Representative Column

Forest Service
R# = Region number
DRF = Deputy Regional Forester
FS = Forest Supervisor
DFS = Deputy Forest Supervisor
DR = District Ranger

Bureau of Land Management
XX = Two letter state designation
ASD = Associate State Director
DM = District Manager
AM = Area Manager

Fish and Wildlife Service
ARD = Assistant Regional Director

Appendix 5

U.S. Department of the Interior
Bureau of Land Management
Washington, D.C. 20240

U.S. Department of Agriculture
Forest Service
Washington, D.C. 20090

3 Oct 1994

To: Director, Bureau of Land Management
Chief, Forest Service

From: Interagency Management Review Team (IMRT)

Subject: South Canyon Investigative Team (IT) Recommendation C.1.

The IT's recommendation, C.1.,states, "We recommend a management review of the Fire and Aviation Programs for the BLM State of Colorado to address policy direction; accountability mechanisms; training and qualifications of personnel; and staffing, including budget, workload, and FTE controls." At its meeting in Boise, Idaho, on September 30, 1994, the IMRT concluded that it is essential that this recommendation be implemented immediately. The Team asks that Director Dombeck obtain verbal concurrence with Chief Thomas or his designee, and indicate his concurrence with our request by signing the approval space provided below.

The report that the IMRT will be sending to you later this month is expected to include a section relative to C.1. However, we believe it is imperative to begin work on C.1. immediately so that relevant information that has not already been reduced to writing may be obtained while its freshness remains. It is also considered to be important that any actions that may emerge, be initiated as soon as possible. We expect that work on this recommendation will begin a new era of performance accountability that will be a cornerstone in further improving wildland fire fighter safety.

The IMRT stands ready to provide whatever additional information and advice you may desire to assist implementing C.1.

/s/ Tom Allen

/s/ Mike Dombeck	10/4/94	/s/ Lamar Beasley	10/3/94
Approved, Mike Dombeck	Date	Concur	Date