

United States
Department of
Agriculture

Forest
Service

White River
National
Forest

P.O. Box 948
Glenwood Springs,
Colorado 81602

Reply to: 5130/6700

Date: July 2, 1996

Subject: Clark Peak Fire, R-3
Safety Concerns

To: Director, State and Private Forestry

Enclosed is a narrative entailing some safety concerns prepared by Tom Johnston of my staff who was assigned to the Clark Peak incident as a Safety Officer. I believe this narrative contains an important message to be shared with firefighters at all levels.

I share Tom's concern that this narrative not be viewed as an attempt to point fingers or place blame, but in a more positive light to illustrate that "it's OK to say NO" where appropriate under the circumstances.

At your discretion, I recommend sharing this information with all personnel who may find themselves in a similar situation as encouragement to redeem their responsibilities as active participants in ensuring the safety not only of themselves, but of their subordinates as well.

Please contact Tom Johnston at ~~(970) 226-2225~~, if you have any questions regarding the situation outlined in this narrative.

/s/ Ben L. del Villar (for)

VETO J. LASALLE
Forest Supervisor

Enclosures

cc:
T.Johnston
S.Pedigo
M.Spencer
B.Leighty

"IT'S OK TO SAY NO"

CLARK PEAK INCIDENT

Safety Concern(s) and Narrative

The Clark Peak Incident was located on the Safford Ranger District, USDA-Forest Service, at Safford Arizona. The wildfire was on Mount Graham, the home of a federally listed squirrel and two telescopes (Optical and Radio). The incident occurred from April 25, 1996 through May 14+, 1996. This narrative describes a safety concern that happened during the evening of May 28, 1996, night shift and some information on a briefing that occurred the following day.

This narrative is not intended to criticize, demean or single out any specific person on the Region III, South West Type II Incident Management Team. This narrative describes a situation, the circumstances, pressures and direction that "could" have killed or seriously injured an entire Division (C) of firefighting personnel.

The wildfire started in the Riggs Lake Area (April 24, 1996), and for the next ten days moved downhill and laterally through spotting and rolling material, and was making short runs uphill. Since the start, firefighting personnel had been trying to burnout and hold mid-slope lines (Swift Trail-Road). The fire was moving from the west to the east. (Map Available). The fuel types consisted of shrub, grass and pinyon-juniper near the desert floor to mixed conifer old growth at mid-mountain to the top of the mountain. The fire would move down, east, build intensity and then make short hard runs uphill.

Operationally, firefighters were trying to hold a mid-slope line on the top (Swift Trail) and build lines down the east and west flanks to the desert floor. If the fire kept moving east, it would eventually be in the drainages below critical red squirrel habitat, two telescopes, Soldier Creek Campground and the Forest Service Work Center.

There are five major drainages within the fire perimeter, from west to east--Jesus Canyon, Goudy Canyon, Soldier Creek, Post Creek and Moonshine Creek.

The situation and concern occurred when a downhill ridgetop line was ordered constructed between Goudy Canyon and Soldier Creek. The fire was in Goudy Canyon and the strategy was to prevent it from moving into Soldier Creek. (Note the old Division C line going south from Soldier Campground past Hill 9402.)

April 28, 1996, Day Shift. The assignment was to prep, construct a downhill fireline, burn out and hold the line on the ridgetop between Goudy Canyon and Soldier Creek. The handline was indirect, in front and to the side of very active fire behavior (periodic). The line went from the Soldier Creek Campground to the desert floor. The fire was a quarter to a half mile away.

Fuels on the upper slope on the ridge were mixed conifer, with 75 to 100 tons/acre of dead and down material on the ground. Handcrews worked on the line most of the day.

April 28, 1996, Night Shift. An Interagency Hot Shot Crew, a Type 2 Regular Handcrew, a Safety Officer and Division Group Supervisor were to continue the line downhill and hold. Earlier during day (afternoon and early evening), the fire made a couple of moderate runs and slopped over the ridge in three locations. The crews caught two of the sloppers. The third was below Hill 9402, (and the constructed handline) and appeared to be from 25 to 80 acres in size. From the top of Hill 9402, the ridge narrowed, and fell off both sides with 60 to 85 percent slopes. The area of the slopper was in continuous timber fuels with brush below and was approximately 500 yards from the top of Hill 9402. The third slopper was also in an area that had not been worked by the crews during the day shift.

The two crews (Hot Shot and Type 2) were making slow progress on line construction, because of the two sloppers, heavy smoke and torching near the ridgetop. At approximately 2200, the Supt. of the HS Crew, Safety Officer, Type 2 Handcrew Crewboss met and discussed going down hill and catching the third slopper. They decided that due to:

- 60%+ Slopes
- Downhill line construction
- Fire above and below them
- No location for a lookout
- No natural safety OR deployment zones
- No escape routes except for a hour chug uphill to hill 9402
- Moderate to high erratic winds
- Downslope and side slope torching and spotting
- Falling snags and rolling rocks
- Night conditions, plus not seeing the area during the day,

that they would hold what they had and not commit to going down into the hole until conditions calmed down a bit. The Supt. called Division C and informed him of the decision. Division C and an adjacent division line Safety Officer came down to Hill 9402 and looked the situation over and immediately agreed that was a good decision.

At approximately 2300, Operations and the Assistant Operations came to Hill 9402 to assess the slowdown, progress and previous radio communication (they heard to Division C). They were a tad unhappy that line work had slowed down. Personnel on Division C explained the concerns listed above. Operations said that the fire had to be caught here or the Team (his Team) would be replaced by a Type I Team and that wouldn't be good.

After a considerable amount of discussion between Operation(s), Division Personnel and the Safety Officer (Division C) stating that personnel were "Not" going into the hole to catch the slopover, an agreement was reached that the existing line would be widened and held. (Day-shift personnel during the next operational period would be given the assignment to continue past Hill 9402 to the desert floor).

April 29, 1996. The morning briefing was held at 0530 for all Divisions except Division C. The Division C briefing was held later. Personnel at the meeting (Divs. C) were the Team Safety Officer, Night Operations, Assistant Operations, Day Operations, Day Division C, Night Division C, five Hotshot Supts. and Division C day Safety Officer.

Operations for the day were to continue down the line, construct line to the bottom, catch the slopover, burn out and hold. The crews refused because of no safety zones, steep slopes, continuous fuels, past history of erratic fire behavior, no escape routes, and to fire below and above them. It was a stalemate...sort of. There was still a fear by Operations that too much ground would be given up if the fire wasn't stopped on that ridge. The Team didn't want to be replaced. Operations did agree with the decision of the previous, but was disappointed that the work could have continued. There was a lot of political pressure to keep the fire out of Soldier Creek drainage (below the telescopes and critical red squirrel habitat).

I suggested that a couple of the Supts. fly the Division and a couple walk down to Hill 9402 to assess the situation and IF:

- They could post adequate lookouts,
- Establish two escape routes, (to)
- Safety Zones,
- Had good Communications (on the Division, with adjacent forces and Command),
- and Not violate any of the Fire Orders, then

they reconsider the refusal and continue the assignment.

The Incident Commander was contacted by Day Operations while Division personnel were doing the assessment. Within two hours, the new tactical plan was to move to the ridge east of Moonshine Creek and start building a handline downhill, indirect to the desert.

I chatted with Assistant Operations later that morning and he commented that the previous nights decision to not go past Hill 9402 was poor and that the Crews "could" have caught the slopover. He also said that the Hotshot Crew was not that good of a crew. I explained that I thought the decision was still a good one that was based on the Fire Orders and numerous 18 Situations that would have been violated. I also stated that coercion, threats and not listening to line personnel were going to get someone killed or seriously injured.

SUMMARY

Federal agencies (Agriculture and Interior) have been given specific direction (Zero Tolerance) to firefighters since the 1994 fire season. That direction is the adoption of the firefighting's code of Safe Practices. It states that every firefighter has a right to a safe assignment and that we don't break OR bend the Ten Standard Fire Orders. That commitment to and accountability for safety is the joint responsibility of firefighters, managers and administrators.

Personnel assigned to overhead are in positions of trust, responsibility and are accountable for given orders. We, firefighters have the responsibility and authority to say "No, I will not take that assignment because of." We, firefighters can/will/should discuss the assignment with the appropriate overhead, come to a base/sound understanding and make our decision(s) based on our experience, knowledge, skill level, predicted fire behavior, LCES etc., etc. We have a right to disagree, discuss, mitigate, compromise and go ahead with the order IF we can follow the Code of Safe Fire Practices.

What bothers me greatly about the directions and discussion is that overhead personnel tried to coerce personnel into going into a place that they didn't feel comfortable going into, that was dangerous and that there was NO WAY to provide for LCES or not break the TEN STANDARD FIRE ORDERS. The fact that Misc. Overhead and two hand crews refused an assignment, were able to explain why and it was accepted indicates that the fire organization is changing for the better. It still disappoints me that fire personnel in positions of responsibility and trust tried to send people (after they refused) into a potentially dangerous place where serious injury and/or death was evident.

I applaud the decision not to take the assignment and again state that "IT'S OK TO SAY NO" and that there will not (shouldn't be) be any future threats or ramifications to the people involved. Secondly, it needs to be brought up at the District, Forest and Regional level that firefighting is still a risky business and that assignments being given to line personnel should be based on LCES, Fire Orders etc. as per Washington Office Direction for firefighter safety. Third, this narrative is being written up because of my commitment to providing for a safer environment for folks that are being placed in harms way.

Tom Johnston is currently Forest Service red carded as a Type I Safety Officer and a type II Operations Section Chief. He spent seven years as a Type II, Region II, Team Safety Officer. He is currently an Alternate SOFR (1) For Richer's Rocky Basin National Team and serves at the pleasure of the Region and Inter-Agency Coordination Center.

/s/ James T. Johnston
USDA-Forest Service, Holy Cross Ranger District
P.O. Box 190
Minturn, CO 81645
~~() or ()~~
R02F15A

MAY 14 1996

**Clark Peak Fire
Coronado National Forest, Safford, AZ
Aerial Ignition Incident**

Enclosed please find your copy of the incident report outlining the details and recommendations pertaining to and resulting from an incident that occurred during an aerial ignition operation on the Clark Peak Fire, Safford, Arizona.

Comments or questions regarding this report and/or the incident should be addressed to:

Steve Frye
Chief Park Ranger
Glacier National Park
West Glacier, MT 59936

or

Jeff Jahnke
Area Manager
Montana Department of Natural Resources
1401 27th Avenue
Missoula, MT 59801

Clark Peak Fire
Coronado National Forest, Safford, AZ
Aerial Ignition Incident
Northern Rockies National Incident Management Team
Steve Frye, Incident Commander

Introduction:

At approximately 0920 on May 3, 1996, an incident occurred on the Clark Peak Fire involving hand crews and a helicopter executing an aerial ignition operation. On initiating the aerial firing operation, the helicopter, 4HC carrying a Primo Mark III aerial ignition device, dropped plastic spheres on and/or in the midst of 1 hand crew working adjacent to the control line. There were no injuries associated with this incident. All available evidence indicates that the hand crew was not notified by the ignition specialist, riding in the helicopter, that ignition was about to commence, nor was there any effort to confirm that the area was secure prior to commencing the aerial ignition operation. Statements concerning the incident are attached.

Details:

The instructions for firefighting operations in this division (Division D) were identified in the incident action plan for May 3, 1996 (attached). Control operations were to "use ping/pong ball machine to widen blackline in coordination with hand ignition. Begin at 0900." The attached Firing Plan (also included in the incident action plan) identified two sections of firing operations. The first section, listed as hand ignition, states that firing should commence as soon as possible at the ridge from division D/E break. The second section listed as aerial ignition, states that ignition was to commence "as soon as any smoke from the night inversion lifts". (See attached map) It appears clear from those interviewed that while they knew the first portion of line was to have hand and aerial ignition, the firing sequence (relationship between hand and aerial ignition) and location of the aerial ignition was not clearly explained in the firing plan.

A briefing was held with firing crews immediately following the general morning briefing at Columbine Spike Camp. This briefing was conducted by the Division D Supervisor Fred Jones and Burn Boss Bill Burhof, based on their understanding of the plan. However, the Firing Boss (Fire Behavior Analyst), Rick Carlson, who would be in the helicopter and implement the aerial ignition operation, was not able to attend the briefing due to vehicle trouble on the trip to the Columbine Spike Camp from Safford Incident Command Post. Carlson did coordinate with Division Supervisor (DIVS) Jones upon his arrival at Columbine Spike Camp, but not with any of the other hand firing crew members.

Carlson and Operations Section Chief (T) Phil Perkins took a recon flight of the area shortly after 0830 to be sure the area to be ignited was known to the air operations personnel. Perkins was dropped off and the ping pong ball machine was readied around 0920 (approx). The helicopter departed from Columbine Spike Camp and took one simulated ignition run over the area. Carlson then contacted the Air Tactical Group Supervisor, Ron Melcher, over a dedicated radio frequency assigned to the aerial ignition operation, and informed him that they were about to begin ignition. During this time period, ground crews did not notice and were not specifically informed of the simulated ignition run due to extensive helicopter activity in the area.

Aerial ignition began and plastic spheres were dropped in and around the Silver City Hotshot Crew, who were conducting the hand ignition. The Ignition Specialist did not see the personnel on the ground below him. The Safety Officer for Division D, Tom Johnston, was standing on the road when the aerial ignition began. Bill Burhof (Burn Boss) immediately called Clark Peak air attack and the helicopter coordinator on the air to ground and the command frequencies with no response. DIVS Jones also tried to contact air attack and the helicopter coordinator with no response. Safety Officer Johnston then called Northern Rockies Type 1 I.C. Team Safety Officer Jim Cafferty on the command repeater frequency, made contact and informed Cafferty of the situation. Cafferty was standing with Operations Section Chief Jack Kirkendall, who heard Johnston's message and immediately contacted the helicopter coordinator over the dedicated frequency, shut down aerial ignition operations and had the helicopter return to Columbine Spike Camp. Kirkendall, Cafferty and others met with the aerial ignition crew when they landed at Columbine Spike Camp, to determine what had occurred and how to correct the situation.

Conclusion:

1. Communications between the air and ground resources assigned to the aerial ignition operation were not established prior to commencing the firing operation.
2. Use of the dedicated frequency to minimize radio interruption during the firing operation was a sound idea, however, not informing the ground crews, Burn Boss or DIVS of this frequency was an error.
3. While basic procedures for the firing operation were generally understood by all participants, the written burn plan should have been more specific regarding the timing and communications for the operation.
4. Plastic spheres were dropped on and/or in the midst of hand crew personnel for a period of approximately one minute creating a potentially dangerous situation.
5. The aerial firing operation was halted immediately by the Firing Boss upon warning that there were people on the ground in the same area in which the spheres were being dropped.
6. Communications between the hand crews and the aerial ignition crew were established prior to continuing the aerial ignition operation.

Recommendations:

Develop standard protocols for aerial ignition operations that include a requirement that communications be established between all personnel assigned to the operation including, but not limited to, a clear confirmation that the area is clear and secure prior to initiating the aerial ignition operation. Procedures similar to those used in Fire Line Blasting could be considered. The draft "Interagency Aerial Ignition Guide" should be expanded to include a section specific to wildfire operations. The communication requirement recommended above could be included in this section.

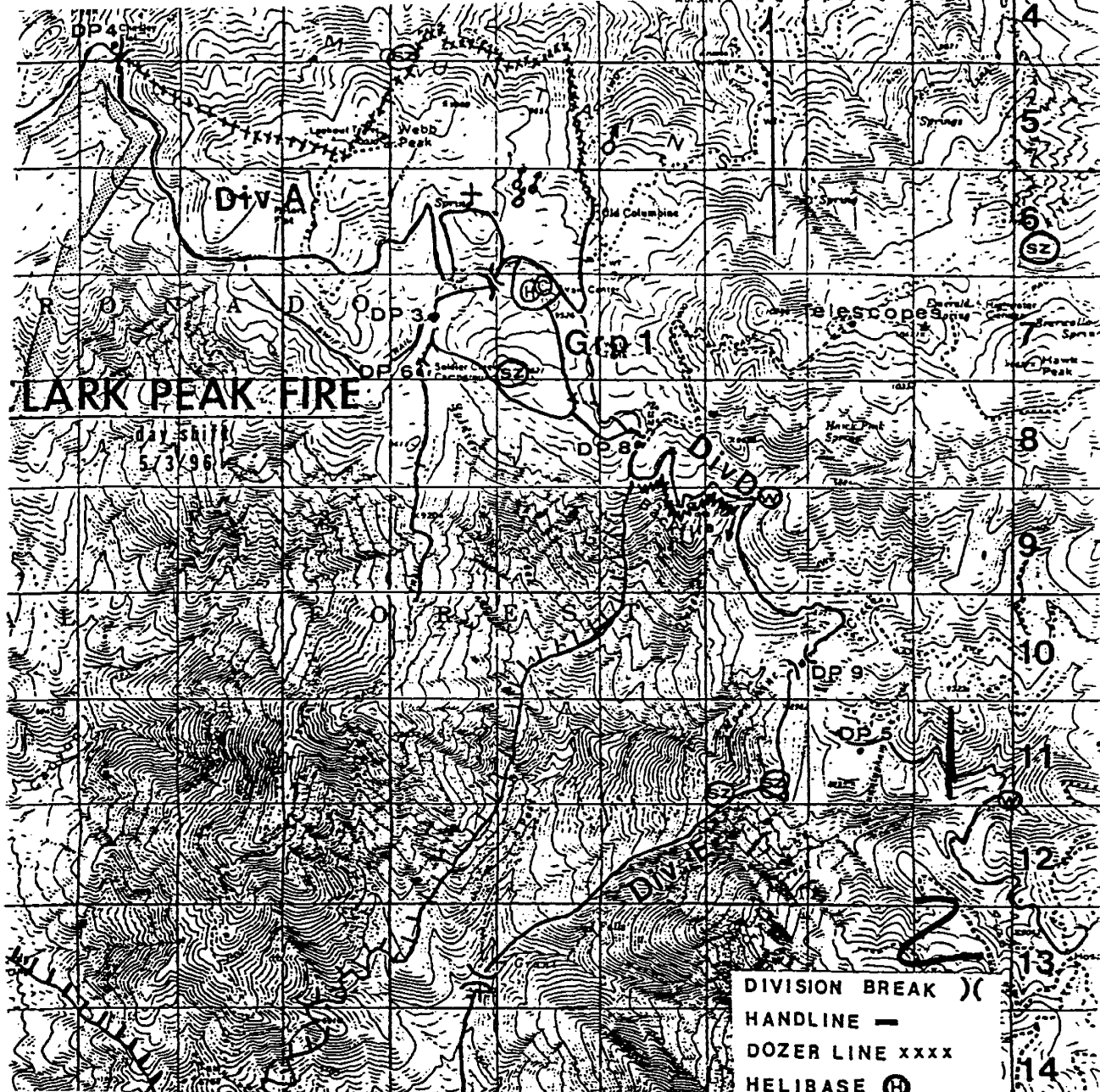
The elements identified for prescribed fire operations should be reviewed from a wildfire perspective and included, with modification as necessary, in the wildfire operations section mentioned above.

Attachments:

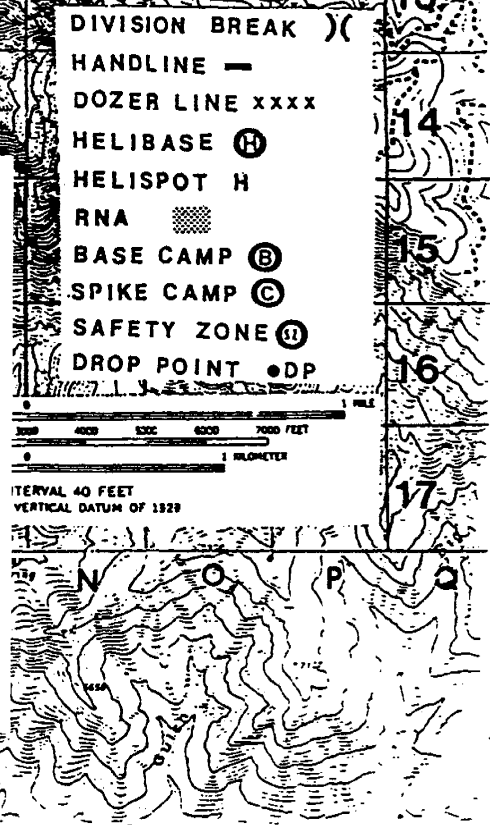
Statements from:

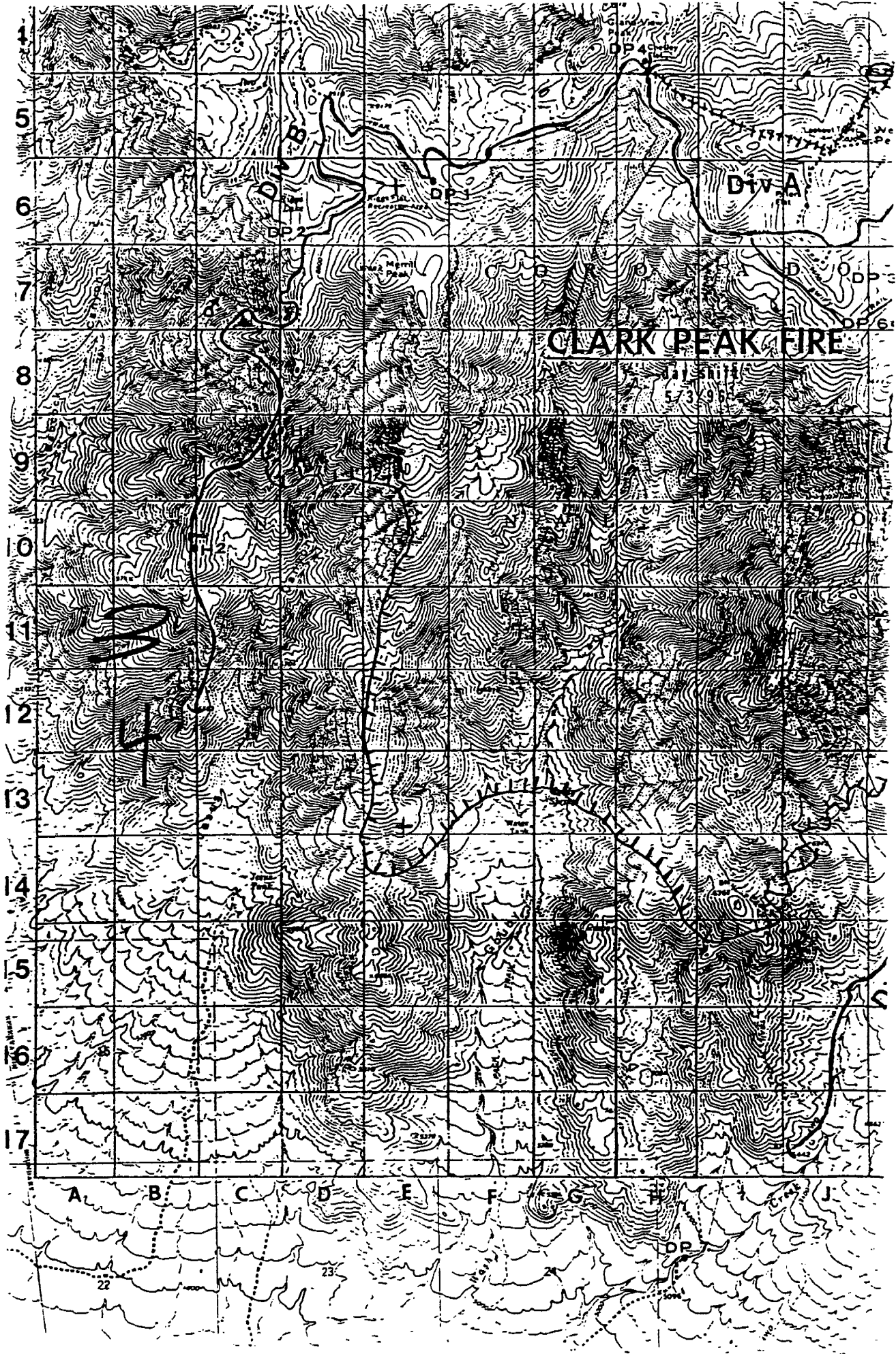
Jim Cafferty.	SOFR T-1
Phil Perkins	OSC T-1(T)
Rick Carlson	FBA
Bill Burhof	DIVS
John Trejo	Foreman/Superintendent, Carson IHC
Dan Key	Superintendent, Silver City IHC

Incident Action Plan, Clark Peak Fire, Day Operational Period, 3 May, 1996



Helited is Ping-Pong Ball #2 5/3/96
 1230[±] @ 137° RH
 1800 BALLS, 100 YARDS DOWN-HILL
 BEGINNING @ "SZ" AND THEN
 NORTH WITH 3-4 PASSES IN
 GRID N-9, NW 1/4 - WHERE DO
 YOU THINK THE 400-ACRE SLOPOVER
 OCCURRED?





The Southwest Regional Office, Fire and Aviation Management, assembled a team to perform a formal evaluation of the Clark Peak Fire as required by FSM 5194.12.

The objectives of the review were:

Evaluate the transition and operations of all the Incident Management Teams (IMT) assigned to the incident, including:

EFSA Development and Implementation

- a. Fiscal/Property accountability
- b. Cost Reduction Actions
- c. Safety
- d. Personnel Management
- e. Aviation Management

Evaluate the decision process for management level changes compared to the complexity of the incident.

Evaluate the accountability, management, and reporting procedures of "incidents within an incident".

Review strategy and tactics in relation to fuel conditions, fire behavior, terrain, and crew capability.

This review methodology consisted of interviewing Coronado Forest and District personnel, members of the Southeast Area Zone Type II IMT, members of Steve Frye's National IMT, and various assigned overhead (see Appendix A). Interviews were conducted in person and by telephone. Relevant plans, reports, records, and the final fire package were reviewed. In addition, the Regional Office provided additional documentation.

SCOPE: This review is limited to an overall management review of the Clark Peak Fire. It is not the intent to investigate any continuing personnel action, perform a detailed on-site critique of tactics or individual performance. Strategy and Tactics are evaluated within the context of the LUP Direction and do they fit within a broad range of acceptable actions given fuel conditions, terrain, and weather. Further, it is not our intent to question decisions resulting from completed investigations or reports.

EXECUTIVE SUMMARY:

Background

The Clark Peak Fire was reported at 1652 on April 24, 1996. The fire was 5 - 10 acres at initial attack and was spreading uphill toward Biggs Lake. The fire reached 100 acres by 1923 hours. The fire escaped initial attack around 0200 on April 25. The fire was estimated to be 200 acres. The Southeast Area Zone (SEAZ) IMT was assigned incident management on the morning of April 25. The SEAZ IMT managed the fire through 2 EFSA revisions. On April 26, the Coronado NF ordered a T1 IMT. Northern Rockies National IMT, under the leadership of Stephen Frye's team was transitioned with the SEAZ IMT and assumed management on May 1. The approximate fire size was 3,000 acres. The fire was declared contained on May 8 at 6,317 acres. The fire primarily burned in fuel model 10. Further management complexities were Threatened and Endangered Species habitat, close proximity to the University of Arizona telescope project, rugged, steep terrain. The final fire cost is estimated at \$7.9 million.

TRANSITION AND OPERATIONS

EFSA

BACKGROUND

The initial EFSA was completed by the "Acting" District Ranger early morning of April 25, 1996. A more detailed EFSA was done on April 26, 1996 and approved by the Forest Supervisor. As conditions changed, the EFSA's were modified and new strategies selected. On April 30, 1996, the Final Strategies (Alt. D) was selected and approved. This strategy was given to the Type I Team upon their arrival.

FINDINGS:

1. Safety - The critical nature of both firefighter and public safety was recognized and maximum efforts were made to protect both. Access to the fire was controlled and the public was not in any danger, with the exception of those at the telescope site. Even with the #1 objective on the fire of safety, there were numerous accidents and conditions that required medical attention. Overall, given the nature of the fire and all its attributes, it was a safe fire!

1. Economic - Non-critical resources were used to meet the objective of stopping the fire. Probably the largest single cost was associated with the air show and support. Without the air show and support this fire probably would not have been contained when and where it was. The air support also provided an aerial platform for safety.

A. Resources and Environment

1. Visual - Critical: As the public begins to visit the area again, the aftermath of the fire will be very visible from a variety of viewing spots along the road and adjacent camping/picnic areas. Fire is a natural force in the eco-system and, due in part to the patchy nature of the burn, there is a good opportunity here for environmental education on fire effects and fire ecology. The visual effects of the actual suppression efforts are being mitigated through rehab. This should lessen the visual impact.

1. Soil and Water - Critical: There have been negative effects to the soil and water source. The magnitude of the effects varies across the fire area, depending on the burn intensity. These effects are being mitigated by rehab work. As the natural process of revegetation occurs the negative effects will lessen.

1. Vegetation - Non-critical: The loss of timber volume, and as a result the loss of revenue from the sale of the timber, has not been accounted for, due to the lack of an active sale program in the area of the fire. The natural process of revegetation will begin. The burned-over areas will grow back in, and there will be a mosaic of forest successional stages.

1. Recreation Facilities - No facilities were totally lost. Rehab work adjacent to public use areas will restore them to acceptable levels.

1. Wildlife - Critical: There was some loss of habitat for threatened and endangered species, specifically the red squirrel and the Mexican spotted owl. The loss of habitat was a result of the fire burning in old growth forest habitat. The impacts would have been greater if the fire had not been suppressed and held where it was. The US Fish and Wildlife Service and the Forest Service will monitor the effects over time.

1. Fish - There have probably been some short term effects to water quality. Riggs Lake has not been effected by the short term loss in water quality.

1. Recreational Opportunities - No loss in opportunities. There is a possibility for increased recreational opportunities, as a result of the fire, in the form of public education (i.e. fire ecology).

8. Additional Consideration - No facilities were lost although all were threatened at some time. The fire will provide a buffer to future incidents (fuel reduction). Pre-treatment was accomplished in the vicinity of the telescopes. Further treatments would help reduce fire danger in the area, specifically at Old Columbine and the Bible Camp.

SAFETY:

There were only two injuries of significance during the Clark Peak Fire. Both injuries involved hand crew personnel and resulted in short term hospitalization. The injuries were a tibia/fibula leg fracture and cervical contusion. Other injuries were minor in nature and were treated through the medical unit.

One of the major safety concerns was the issue if shelters had been deployed at anytime during the Clark Peak Fire. Utilizing the NWCG definition for shelter deployment, there was no shelter deployment on this incident. Reports were received on two occasions of possible shelter deployments and were investigated by the Type I Safety officer each time. Supporting documentation exists within the incident's documentation package to support this finding.

Incident Safety Analysis (ICES) was used by both the Type I and Type II Teams during their respective planning sessions. However the documentation supporting this analysis is limited in nature.

Recommendation: The 215 A be completed after each planning session and submitted for inclusion within the incident's documentation package.

Rest and Rotation: The Type I team audited shifts worked by the incident personnel and made the appropriate adjustments.

The fire was located approximately two hours from the ICP in Safford. There is only one narrow mountain dirt road which leads to the incident's location. In order to reduce travel time and the possibility a vehicular accident a spike camp was established at Columbine adjunct to the fire. This significantly reduced travel time, traffic accident potential, and reduced overall incident costs.

Line Safety: Both teams due to fire behavior and terrain took additional steps for fire line safety. During most day operational periods safety officers, fire behavior officers and field observers were assigned to divisions. At a minimum those divisions experiencing the most active burning received these resources.

AVIATION OPERATIONS

BACKGROUND

The Clark Peak Fire had a significant amount of aviation activity. Due to the limited access, rugged terrain and burning conditions, aviation support played a key role in the overall suppression effort. Heavy airtankers, lead planes, Type I, II and III helicopters, and light fixed wing aircraft were utilized throughout the incident.

The Forest and incident management teams were very cognoscente of the need to closely monitor and continually evaluate the need for all aviation resources assigned.

- Cost was considered on a daily basis.
- Competition for aviation resources was a concern.
- Appeared that appropriate numbers and types of aviation resources were ordered and used.
- Staffing of Aviation Management personnel was adequate and closely monitored by the Incident Management Teams.

Commendations

Both the Type I and II incident management teams had well qualified and experienced aviation management personnel assigned, and utilized them effectively.

The Forest Fire Staff officer did an outstanding job of recognizing a critical situation, and ordering a type I helicopter on the first day of the incident. There was a high mountain lake within one mile of the fire origin that provided an excellent helicopter dip site. Utilization of this resource was a critical factor in establishing a sound anchor point for the fire and subsequently in providing line construction, burn out and spot fire support.

The Forest recognized the need for additional aviation management support and ordered an aviation management specialist (Larry Bingham) through SWCC. This individual provided invaluable assistance to the Forest Aviation Officer and incident management teams on aviation related issues.

The Regional Aviation Officer had also recognized the need for additional aviation assistance and had ordered aviation Safety and Technical Assistance

Teams (STAT) for the Region as there was significant aviation activity throughout the Region. STAT teams visited the Clark Peak fire on at least two occasions providing assistance and support as needed.

The Forest has a standard aviation briefing packet, and briefing procedure, that were utilized to inbrief aircraft crews when they arrived on the Forest prior to putting these resources to work.

The Forest Aviation Officer provided written and verbal instructions to the Type I team upon their arrival. This process provided for clear direction on operating processes and procedures relating to aviation operations on the Forest.

Plastic Sphere Dispenser (PSD) Incident

There was a significant aviation incident that occurred on the fire on May, 3 involving a PSD operation. There was a burnout planned and executed on Division D using a combination of hand and aerial ignition (PSD). As the aerial ignition began, plastic spheres were dropped on top of several members of a hotshot crew that was conducting some of the hand ignition. The operation was quickly stopped and action was taken to assure this did not occur again.

- The Type I team conducted an investigation of the incident and provided a written report of their investigation to the Forest and Regional Office.
- An incident report (safexom) was not immediately filed.
- The incident was verbally reported to the Forest Fire Staff officer and the Regional Fire Staff Officer.
- The incident was discussed at the morning briefing on the morning following the incident.
- One of the Regional STAT teams visited the fire the day after the incident occurred and was made aware of the incident.
- In addition to the Type I team investigation into the incident, the Region requested one of the STAT teams in the region to do a fact finding review of the incident.
- All involved in the aerial ignition operation were NOT aware of the details of the operation.
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CLARK PEAK INCIDENT CHRONOLOGY:

April 24, 1996

- 1652 hours, Fire reported
- 1753 hours, Initial attack by the Catalina Helicopter 320 and Helitack crew
- 1923 hours, fire size 100 acres
- 1930 hours, SEAZ Zone Incident Team ordered

April 25, 1996

- 0130 hours, Line officer briefing and direction
- 0244 hours fire escapes initial attack at 200+ acres
- Moore's IMT controls the spread of the fire by utilizing the Swift Trail to the north and west by utilizing burnout, engine holding forces and Type I helicopters.

An attempt is made to control the eastward spread on the Goudy trail using dozers and hand crews but fails and results in a retreat.

- ESFA is amended to include Soldier Creek Trail for a control line

April 26th

- The fire outflanks burnout operations on the Swift trail
- Stop-over 708 acres

April 27th

- Stop-over contained with fire acreage at 1450
- Secondary dozer line re-constructed from old Columbine north of Webb Peak

April 28th

- Fire spots across Soldier Creek Trail but is held with a type 1 crew and type 3 helicopter
- Crew safety concerns arise
- Control strategy changes from Soldier Creek to Moonshine Ridge to mitigate crew concerns. Success rates decrease due to the fact Swift Trail is now located mid-slope.
- Stop-overs near Webb Peak area totally boxed-in by dozer line
- Fire acreage 2076

April 28th

- Structure protection measures (dozer line, fuel reduction and sprinkler systems) implemented at the astrophysical site, Columbine Summer homes and Administrative Site.
- Fire acreage 2735

April 30th

- Structure protection continues
- Burnout preparations of the Swift Trail from Soldier Creek to Moonshine Ridge
- Fire acreage 2905

May 1st

- Transition to Type I team (Frye)
- Burnout of Swift Trail and Columbine Administrative Site
- Fire acreage 1840

May 2nd

- Burnout operations along Swift Trail into Post Creek
- Handline construction continues down Moonshine Ridge
- Fire acreage 3500

May 3rd

- Fire makes runs towards the Swift Trail and crosses the trail with the telescope threaten. Non-fire fighter personnel evacuated.
- Heavy airtanker and 2 Type 1 helicopters stop the fire run towards the telescope.
- Fire acreage 5877

May 4th

- Line construction (dozer and handline) continue around the 400 acre spot fire near telescopes.
- Burnout of Moonshine ridge continues towards the desert.

May 5th

- Burnout and holding operation along Moonshine Ridge (Division E) completed.
- Telescopes threaten and extensive use of Type 1's required.
- Fire acreage 6317

May 6th

- Telescope spot fires lined
- South flank of the fire cold trailed by hotshot crews

May 7th

- Mop-up begins
- No significant acreage increases

May 8th

- FIRE CONTAINED

May 8th through May 11th

- Mop-up
- Type I team transition to Type II

CONTACT LIST:

- | | |
|---------------------|---|
| 1. John McGee | Forest Supervisor, Coronado |
| 2. Rick Kvale | Coronado Fire Staff |
| 3. Ted Moore | SEAE Type II IC, Coronado |
| 4. Bill Brandau | SAEE OPSC2, BLM Safford |
| 5. Larry Humphrey | SAEE OPSC2, BLM Safford |
| 6. Richard Streemer | Fire, Timber, Lands- Safford District, Coronado |
| 7. Roy Hall | SAEE |
| 8. Steve Freye | Type I IC, NPS-Glacier National Park |
| 9. Sherry Tune | Fire Air Operations, Coronado |
| 10. Tom Harbour | Fire Operations, Region I |
| 11. Dan Bailey | Fire Staff, Lo Lo Forest |
| 12. Fred Schoeffler | Superintendent, Paysons IHC |
| 13. Larry Medlock | Forest Administrative Officer, Coronado |

Strategy and Tactics

The strategies and tactics utilized on the Clark Peak Fire were consistent with the selected alternatives contained within the Escaped Fire Situation Analysis (EFSA). Sound initial attack strategies that burned out around the Riggs Lake and the Swift Trail provided a solid anchor on the western flank. Additionally, advancing handline down the western flank secured that portion of the fire. Effective use of Type I helicopters enabled crews to conduct a successful burnout of the Swift Trail across the north west corner of the fire. The strategy relied upon holding the fire beneath the Swift Trail on the north part of the fire. The plan for the southern edge of the fire was to allow it to run out to the desert and cold trail. The control of the eastern side of the fire presented the greatest challenge. The initial EFSA called for line construction down Jesus Ridge. The next selected alternative for the east perimeter was to construct line down Soldier Ridge. The final and successful alternative for the east fire edge was to line and burnout Moonshine Ridge.

Factors Influencing Strategy:

IHC Incident:

Background: On 4/28 the fire made a run against Soldier ridge, a stop over occurred, during night operations the crews were requested to pick up the stop over. The crews refused due to safety concerns. Everyone was OK with this decision at this point due to valid safety concerns. On 4/29 extensive discussions occurred between IHC sups. and operations relative to continued strategy on soldier ridge. OSC attempted to mitigate safety concerns with crews without success. Crews presented an alternative to back off to Grant Hill, which if accepted would add considerable cost and acreage to the incident.

Finding: Due to IHC not accepting the offered alternatives the incident management team was forced to abandon soldier ridge as a control line strategy.

BACKGROUND

The Clark Peak Fire had a significant amount of aviation activity. Due to the limited access, rugged terrain and burning conditions, aviation support played a key role in the overall suppression effort. Heavy airtankers, lead planes, Type I, II and III helicopters, and light fixed wing aircraft were utilized throughout the incident.

The Forest and incident management teams were very cognoscente of the need to closely monitor and continually evaluate the need for all aviation resources assigned.

Cost was considered on a daily basis.

- Competition for aviation resources was a concern.
- Appeared that appropriate numbers and types of aviation resources were ordered and used.
- Staffing of Aviation Management personnel was adequate and closely monitored by the Incident Management Teams.

• *Commendations*

Both the Type I and II incident management teams had well qualified and experienced aviation management personnel assigned, and utilized them effectively.

The Forest Fire Staff officer did an outstanding job of recognizing a critical situation, and ordering a type I helicopter on the first day of the incident. There was a high mountain lake within one mile of the fire origin that provided an excellent helicopter dip site. Utilization of this resource was a critical factor in establishing a sound anchor point for the fire and subsequently in providing line construction, burn out and spot fire support.

The Forest recognized the need for additional aviation management support and ordered an aviation management specialist (Larry Bingham) through SWICC. This individual provided invaluable assistance to the Forest Aviation Officer and incident management teams on aviation related issues.

The Regional Aviation Officer had also recognized the need for additional aviation assistance and had ordered aviation Safety and Technical Assistance Teams (STAT) for the Region as there was significant aviation activity throughout the Region. STAT teams visited the Clark Peak fire on at least two occasions providing assistance and support as needed.

The Forest has a standard aviation briefing packet, and briefing procedure, that were utilized to inbrief aircraft crews when they arrived on the Forest prior to putting these resources to work.

The Forest Aviation Officer provided written and verbal instructions to the Type I team upon their arrival. This process provided for clear direction on operating processes and procedures relating to aviation operations on the Forest.

Plastic Sphere Dispenser (PSD) Incident

There was a significant aviation incident that occurred on the fire on May, 3 involving a PSD operation. There was a burnout planned and executed on Division D using a combination of hand and aerial ignition (PSD). As the aerial ignition began, plastic spheres were dropped on top of several members of a hotshot crew that was conducting some of the hand ignition. The operation was quickly stopped and action was taken to assure this did not occur again.

- The Type I team conducted an investigation of the incident and provided a written report of their investigation to the Forest and Regional Office.
 - An incident report (safecom) was not immediately filed.
 - The incident was verbally reported to the Forest Fire Staff officer and the Regional Fire Staff Officer.
 - The incident was discussed at the morning briefing on the morning following the incident.
 - One of the Regional STAT teams visited the fire the day after the incident occurred and was made aware of the incident.
 - In addition to the Type I team investigation into the incident, the Region requested one of the STAT teams in the region to do a fact finding review of the incident.
 - All involved in the aerial ignition operation were NOT aware of the details of the operation.
- Positive radio communication was not established with all involved in the operation prior to beginning the aerial ignition operation.

• *Aviation Findings*

The Forest Aviation Management Plan was updated in March of this year.

Section VII of the plan addresses aerial ignition operations under the Special Projects section. No specific reference is made to aerial ignition operations on wildfires.

Section IX, Records and Reports, states "The Forest Aviation Officer will be notified immediately of ANY incident or accident".

Recommendation: Region should assure there is clear direction on policy and procedures for WILDFIRE aerial ignition operations within the region and this is known. In addition, we recommend that the Regional Aviation group review existing national interagency policy in this regard and, if it is found to be inadequate, provide recommended language changes to the policy through normal channels.

CLARK PEAK INCIDENT CHRONOLOGY:

April 24, 1996

- 1652 hours, Fire reported
- 1753 hours, Initial attack by the Catalina Helicopter 320 and Helitack crew
- 1923 hours, fire size 100 acres
- 1930 hours, SEAZ Zone Incident Team ordered

April 25, 1996

- 0130 hours, Line officer briefing and direction
- 0244 hours fire escapes initial attack at 200+ acres
- Moore's IMT controls the spread of the fire by utilizing the Swift Trail to the north and west by utilizing burnout, engine holding forces and Type I helicopters.

An attempt is made to control the eastward spread on the Goudy trail using dozers and hand crews but fails and results in a retreat.

- ESFA is amended to include Soldier Creek Trail for a control line

• April 26th

- The fire outflanks burnout operations on the Swift trail
- Slop-over 708 acres

• April 27th

- Slop-over contained with fire acreage at 1450
- Secondary dozer line re-constructed from old Columbine north of Webb Peak

• April 28th

- Fire spots across Soldier Creek Trail but is held with a type I crew and type 3 helicopter
- Crew safety concerns arise
- Control strategy changes from Soldier Creek to Moonshine Ridge to mitigate crew concerns. Success rates decreases due to the fact Swift Trail is

- now located mid-slope.
- Slop-overs near Webb Peak area totally boxed-in by dozer line
- Fire acreage 2076

- **April 29th**
 - Structure protection measures (dozer line, fuel reduction and sprinkler systems) implemented at the astrophysical site, Columbine Summer homes and Administrative Site.
 - Fire acreage 2735

- **April 30th**
 - Structure protection continues
 - Burnout preparations of the Swift Trail from Soldier Creek to Moonshine Ridge
 - Fire acreage 2905

- **May 1st**
 - Transition to Type I team (Frye)
 - Burnout of Swift Trail and Columbine Administrative Site
 - Fire acreage 1840

- **May 2nd**
 - Burnout operations along Swift Trail into Post Creek
 - Handline construction continues down Moonshine Ridge
 - Fire acreage 3500

- **May 3rd**
 - Fire makes runs towards the Swift Trail and crosses the trail with the telescope threaten. Non-fire fighter personnel evacuated.
 - Heavy air tanker and 2 Type I helicopters stop the fire run towards the telescope.
 - Fire acreage 5877

- **May 4th**
 - Line construction (dozer and handline) continue around the 400 acre spot fire near telescopes.
 - Burnout of Moonshine ridge continues towards the desert.

- **May 5th**
 - Burnout and holding operation along Moonshine Ridge (Division E) completed.
 - Telescopes threaten and extensive use of Type I's required.
 - Fire acreage 6317

- **May 6th**
 - Telescope spot fires lined
 - South flank of the fire cold trailed by hotshot crews

- May 7th
- Mop-up begins
- No significant acreage increases

- May 8th
- FIRE CONTAINED

- May 8th through May 11th
- Mop-up
- Type I team transition to Type II

CONTACT LIST:

- | | |
|---------------------|---|
| 1. John McGee | Forest Supervisor, Coronado |
| 2. Rick Kvale | Coronado Fire Staff |
| 3. Ted Moore | SEAZ Type II IC, Coronado |
| 4. Bill Brandau | SAEZ GPSC2, BLM Safford |
| 5. Larry Humphrey | SAEZ OPSC2, BLM Safford |
| 6. Richard Streemer | Fire, Timber, Lands- Safford District, Coronado |
| 7. Roy Hall | SAEZ |
| 8. Steve Freye | Type I IC, NPS-Glacier National Park |
| 9. Sherry Tune | Fire Air Operations, Coronado |
| 10. Tom Harbour | Fire Operations, Region 1 |
| 11. Dan Bailey | Fire Staff, LoLo Forest |
| 12. Fred Schoeffler | Superintendent, Paysons IHC |
| 13. Larry Medlock | Forest Administrative Officer, Coronado |
| 14. Mike Hopf | R-1 Helicopter Operations Specialist |

Commendations:

- Fmo initial order of Type I helicopter
- Forest ordered aviation specialist
- Region had STAT available, used it twice
- IA crew actions to establish anchor
- Use of decision tree in EFSA
- Use of additional FBA's and SOFR's by IMT's
- Use of Comptroller
- Community relations and involvement
- Region had Staged type I teams in PHX due to severe conditions.

Findings:

L. Transitions and Operations:

EFSA

- Lack of Maps
- No fire growth calculations
- Initial EFSA did not clearly state objectives or overall strategy
- Appropriate level of line officer involvement in preparation and review
- Appropriate daily review

FISCAL and Property Acceptability

- No significant issues

Cost reduction activities

- Early assignment of comptroller
- Prudent release of "big ticket" items

Safety

- No entrapments occurred by NWCG definitions.
- Good overall safety record given incident complexity, fuels, terrain, and elevation.
- Use of LCES worksheet

Personnel Management

- IMT exchange of key team members (OPS, PLANS, AIR OPS).

Aviation Management

- Forest Aviation plan current, updated, complete (reference sec. IV, "FAO notified immediately of any incident or accident").
- FAO not notified of PSD incident
- Use of Foam was sporadic
- Portable retardant plants were established
- Aerial ignition policy and procedures were not followed
- PSD incident occurred

II. Decision Process for determining Complexity

- Quick recognition for need for DMT
- Written Complexity analysis was not utilized
- Forest personnel showed reluctance to order Type I team (lack of local knowledge, and concern for time delay).
- Impacts to Local Zone Protection level due to commitment of key personnel

III. Reporting incidents within incidents

- Reports of shelter deployments were reported and investigated by team, proper follow up occurred.
- PSD incident notification protocol was not followed, but Forest and Regional personnel were notified.
- Complete investigation of PSD incident completed by Fry's team.
- RO fact-finding team also conducted follow-up investigated PSD incident.
- Only one PSD occurrence.

IV. Strategy and Tactics

- In accordance with LMP and FMAP.
- Appropriate to situation
- IHC refusal to continue on soldier ridge forces strategy shift.

Post fire incident electronic critique.

FINDINGS:

The District quickly recognized that initial attack would not succeed and ordered a Type II Team.

A "complexity analysis" was not completed to determine if transitioning to a Type I Team was appropriate.

Forest personnel expressed a reluctance to order a Type I Team, preferring to give the local team a "chance" to catch the fire.

Complexity.

There is obvious concern of the lack of "local knowledge" an out of Region Team would have concerning fuel types and local conditions.

Overall Zone protection level was obviously impacted by commitment of key management personnel from throughout the zone to this one incident.

RECOMMENDATION:

The Regional Office should provide direction on use of a Fire Complexity Analysis (refer to Wildland Fire Qualification Subsystem Guide PMS 310-1 for suggested criteria) to guide the responsible line officer in determining the appropriate level of management.

The Forest/Zone should consider the potential impacts of committing key personnel to a local incident.

Initial EFSA did not clearly state objectives or overall strategy;

EFSA's lacked maps and the initial EFSA lacked any evidence of involvement of Fire Behavior predictions.

Cost estimates were extremely low in comparison of actual cost.

1. There was consistent line officer involvement in preparation and review of the EFSA's.

There was daily review of the EFSA by the Forest Fire Staff up until the Type I Team assumed management of the fire. The Type I Team documented daily review by the IC.

RECOMMENDATIONS:

The Regional Office should provide guidance and inclusion of Fire Behavior predictions in the development of EFSA's and reemphasize the need for maps for each alternative.

The Regional Office shall consider the adoption of the R-6 automated EFSA to improve cost projections.

DECISION PROCESS FOR COMPLEXITY

BACKGROUND

the Clark Peak Fire was initially reported at 1652 on April 24, 1996. By 0300 on April 25, it was over 200 acres and had escaped initial attack. The fire was burning in rugged terrain, heavy fuels, with stands of bug kill pine and with very high values at risk (summer homes, T&E species, Telescopes). Access to the site was extremely limited which dictated a heavy use of aviation resources. Due to the T&E species and Telescope project, it could be expected that there would be a high degree of public interest. All the characteristics of a complex fire situation were present.

SAFETY:

There were only two injuries of significance during the Clark Peak Fire. Both injuries involved hand crew personnel and resulted in short term hospitalization. The injuries were a tibia/fibula leg fracture and cervical contusion. Other injuries were minor in nature and were treated through the medical unit.

One of the major safety concerns was the issue if shelters had been deployed at anytime during the Clark Peak Fire. Utilizing the NWCG definition for shelter deployment, there was no shelter deployment on this incident. Reports were received on two occasions of possible shelter deployments and were investigated by the Type I Safety officer each time. Supporting documentation exists within the incident's documentation package to support this finding.

Incident Safety Analysis (LCES) was used by both the Type I and Type II Teams during their respective planning sessions. However the documentation supporting this analysis is limited in nature.

Recommendation: The 215 A be completed after each planning session and submitted for inclusion within the incident's documentation package.

Rest and Rotation: The Type I team audited shifts worked by the incident personnel and made the appropriate adjustments.

The fire was located approximately two hours from the ICP in Safford. There is only one narrow mountain dirt road which leads to the incident's location. In order to reduce travel time and the possibility a vehicular accident a spike camp was established at Columbine adjunct to the fire. This significantly reduced travel time, traffic accident potential, and reduced overall incident costs.

Line Safety: Both teams due to fire behavior and terrain took additional steps for fire line safety. During most day operational periods safety officers, fire behavior officers and field observers were assigned to divisions. At a minimum those divisions experiencing the most active burning received these resources.

AVIATION OPERATIONS

Attachment #1

EFSA SUMMARY
CLARK PEAK INCIDENT

Alternative D in the EFSA was the alternative given the Type I Team when they assumed management of the Clark Peak Fire. Strategic Control Planning was completed that developed alternatives E, F, G, and H as backups if efforts to meet the selected alternative failed. This is on file in the fire record. The following is a comparison between Alternative D planned and Alternative D completed.

A. Strategy:

The fire was kept east of Babcock Creek, held on the ridge between Post and Grant Creek. The fire was contained higher up on the slope than predicted in Divisions F and G. The strategy to keep the fire south of the Swift Creek Road was not totally met as stop-overs occurred at the head of Soldier Creek and a large run threatened the telescopes and Old Columbine in the Emerald Springs area.

Control objectives could not have been met and additional fire loss would have occurred without well planned, slow burnouts along the northeast and eastern edges of the fire.

A. Suppression Forces: For Alternative D

<u>Resource</u>	<u>Planned</u>	<u>Actual</u>
<u>Crew</u>	<u>10</u>	<u>31</u>
<u>Engines</u>	<u>10</u>	<u>25</u>
<u>Type I</u>	<u>2</u>	<u>4</u>
<u>Type II</u>		<u>4</u>
<u>Type III</u>	<u>4</u>	<u>3</u>

As can be seen, the estimated resources were far less than the actual amount required to contain the fire. Steep terrain, heavy fuels, erratic fire behavior, logistical support of two camps, heavy and prolonged mop-up, rehabilitation, and large air support show were factors in both the number of resources needed and the duration of the incident.

A. Estimate of Success

The estimate of success was given at about 75%. The Team felt this was a little high at onset, but once the stop-overs were contained and the burnouts completed, 100% success was obtained.

A. Estimated Date of Containment

May 4th versus May 8 - For the reasons identified above, it took a few days longer.

A. Estimated Size at Containment

12,000 acres vs. A final acreage of 6,314 acres. The difference is probably the fact that the fire was held further up the hill on the south flank than was originally expected.

A. Estimated Suppression Costs

\$1,496,000 vs. \$7,000,000 + Size of the organization, large air show and duration caused the higher than projected costs.

ANALYSIS OF EFFECTS

A. Social