

Part 5: Fire Suppression Activities

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Introduction

The purpose of this report is to document the suppression actions taken during the Hayman Fire. The long duration of suppression activities (June 8 through July 18), and multiple incident management teams assigned to the fire, makes this a challenging task. Original records and reports produced independently by the various teams assigned to different portions of the Hayman Fire had different reference locations and time frames. Nevertheless, this report reviews the success of those crews in achieving their planned tactics but did not attempt to equate this performance to their overall effectiveness on suppressing the fire or in producing changes in fire growth and behavior.

Suppression actions taken on the Hayman Fire are outlined from a number of sources:

- Narratives from Fire Behavior, Operations, Air Operations, and Planning Sections from Martin's Type 1 Incident Management Team, Frye's Type 1 Incident Management Team, and Raley's Type 1 Incident Management Team.
- National Interagency Fire Center (NIFC) Situation Report Narratives.
- Review of daily Incident Action Plans (IAP's) prepared for the incident.
- Review of daily unit logs.
- Historical Incident ICS-209 Reports.

ICS 209 reports were filed for the Hayman Fire starting June 8, 2002, with the final report filed on August 11, 2002. Based on information contained in the Historical Incident ICS-209, the Hayman Fire was

initially attacked on the afternoon of June 8, 2002, was declared 100 percent contained on the evening of July 2, 2002, and declared controlled on the evening of July 18, 2002.

Incident Management Teams (IMT) Assigned to the Hayman Fire

During the period of June 8, 2002, through August 11, 2002, that Incident Status Summary forms (ICS-209) were filed, five Type 1 Incident Management Teams, three Type 2 Incident Management Teams and one Type 3 Incident Management Team were assigned to the Hayman Fire (http://famweb.nwcg.gov/pls/hist_209/) (table 27).

Initially a local Type 3 team managed the fire and then transitioned to a Type 1 IMT (Martin) on June 10. Due to the complexity of the assignment, the potential number of structures threatened and numbers of evacuations, a second Type 1 IMT (Raley) was ordered on June 10 with the fire being split into Hayman North, under Raley's Team and Hayman South under Martin's team. Administration of the fire with two Type 1 IMT continued under various combinations (Martin - Hayman South/Raley - Hayman North [June 12 through 16]; Frye - Hayman South/Raley - Hayman North [June 17 through 25]). Frye's Type 1 IMT took sole control of the incident on June 26 through 28 followed by Lohrey's Type 1 team. Lohrey's Type 1 IMT administered the fire until July 3 at which time the fire transitioned to Type 2 Incident Management Teams Koehler and Sisk. On August 11 responsibility for management actions on the fire were assumed by the Burned Area and Emergency Rehabilitation (BAER) Team.

During the time period June 19 through 22, three Type 1 IMT (Frye, Raley, Vail) were assigned to the fire. Frye - Hayman South/Raley - Hayman North had operational control of the incident. Vail's Incident

Table 27— Incident Management Teams assigned to the Hayman Fire.

IMT Incident Commander	IMT type	Dates assigned	Number days assigned
Mike Hessler	3	6/8 – 6/9	2
Kim Martin	1	6/10 – 6/16	7
Ron Raley	1	6/12 – 6/25	14
Steve Frye	1	6/17 – 6/28	12
Scott Vail	1	6/19 – 6/22	4
Mike Lohrey	1	6/29 – 7/3	5
Tom Speaks	2	7/4 – 7/19	16
John Koehler	2	7/20 – 8/5	17
Mike Hessler	3	8/6	1
David Sisk	2	8/7 – 8/10	4

Management Team was assigned to work with local officials in the development of contingency and structural protection plans for potentially affected communities in El Paso County. Once the plan was completed Vail's team was released from the incident.

Personnel and Equipment

On June 16 approximately 2,564 people were identified as assigned to the Hayman Fire based on an analysis of the historical ICS-209 database (appendix E), and was the maximum number of people assigned to the Hayman Fire (fig. 102a). However, this number should be considered an approximate. First, and most importantly, data entered in the ICS-209 database were found to contain a number of irregularities, for example, numbers of crews were entered instead of numbers of persons. Secondly, only those resources with an "Official" Resource Order Number are tracked, ignoring individuals working in support of the fire located offsite, such as Multi-Agency Coordinating Groups (MAC), Area Command teams, buying teams, air tanker pilots, air tanker base support personnel, and so forth.

On June 15 and 16 and again June 22 and 23, a total of 12 Type 1 handcrews (Hotshots) were assigned to the fire (fig. 102b). This was 19 percent of all available Type 1 crews during the period of June 12 to 25. The number of Type 2 handcrews assigned to the fire varied from 21 to 51 with the peak of 51 reached on June 22 (fig. 102b). Appendix E contains the entire dataset used in this analysis.

From June 14 through 22, the number of dozers assigned to the fire ranged from eight to 12, with the maximum number of dozers assigned to the fire occurring on June 19 (appendix E). The number of engines assigned to the fire ranged from 0 to 156 (fig. 103a), with the maximum number of engines assigned (156) occurring on June 21 (appendix E). Dozer numbers and number of engines by classification of their size or type were not identified in the ICS-209 database.

Air Resources

During the period of June 10 through 28, 2002, all air resources (fixed-wing and helicopters) dropped 4,669,108 gallons of water, 1,064,820 gallons of foam, and 552,032 gallons of retardant, transported 42,443 pounds of cargo, and flew 402 passengers on various missions. The combined flight hours for air tankers, helicopters, lead planes, and air attack was 1,512 hours, the vast majority of which were flown by helicopters.

Based on information contained in the Incident Action Plans (IAP) Air Operations Summary forms (ICS-220) for the Hayman Fire the number of air

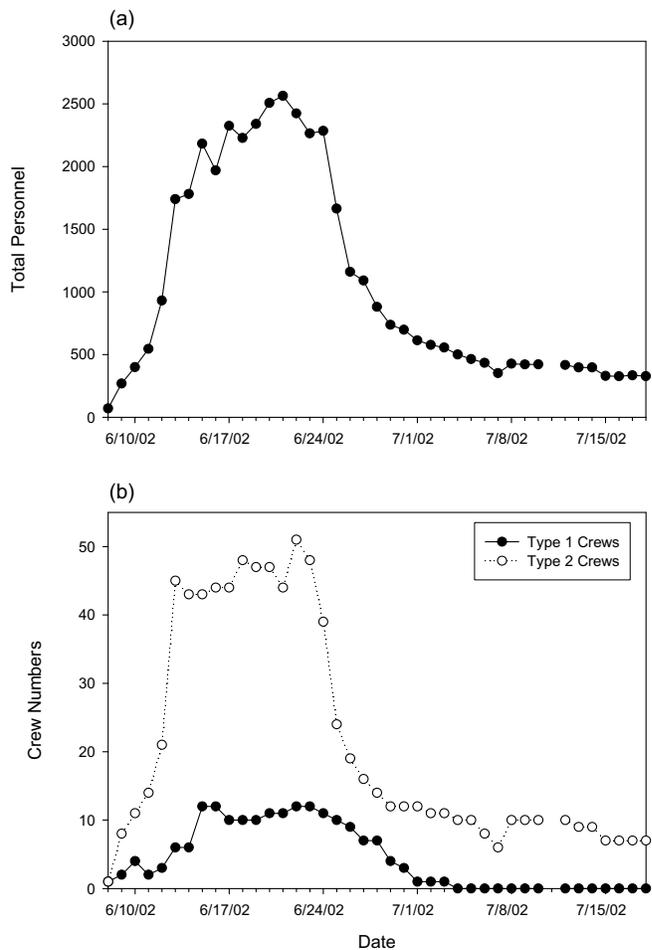


Figure 102—Total personnel (a) and numbers of Type 1 (Hotshot Crews) and Type 2 handcrews (b) on the Hayman Fire for the period of July 8 through July 18, 2002. Data are from historical ICS-209 database (appendix D). ICS-209 data were unavailable for July 11.

tankers available to the incident varied from four to six (appendix F). However, these resources were also available to be diverted to other fires and initial attack demands within the Rocky Mountain Geographic Area. On several occasions during the Hayman Fire air tankers were diverted to the Missionary Ridge Fire (06/09, 06/17, 06/18). On June 18, commercial contract air tankers were not available until the afternoon due to a mandatory stand-down following the crash of a C-130 air tanker on the Cannon Fire on the Humboldt Toyabee National Forest on June 17, 2002 (Paul Linse, personal communication). During this stand-down, Air National Guard Modular Airborne Firefighting Systems (MAFFS) were available for use.

One Single Engine Air Tanker (SEAT), four MAFFS, and a combination of other national commercial contract Type 1 and Type 2 Air Tankers were used during

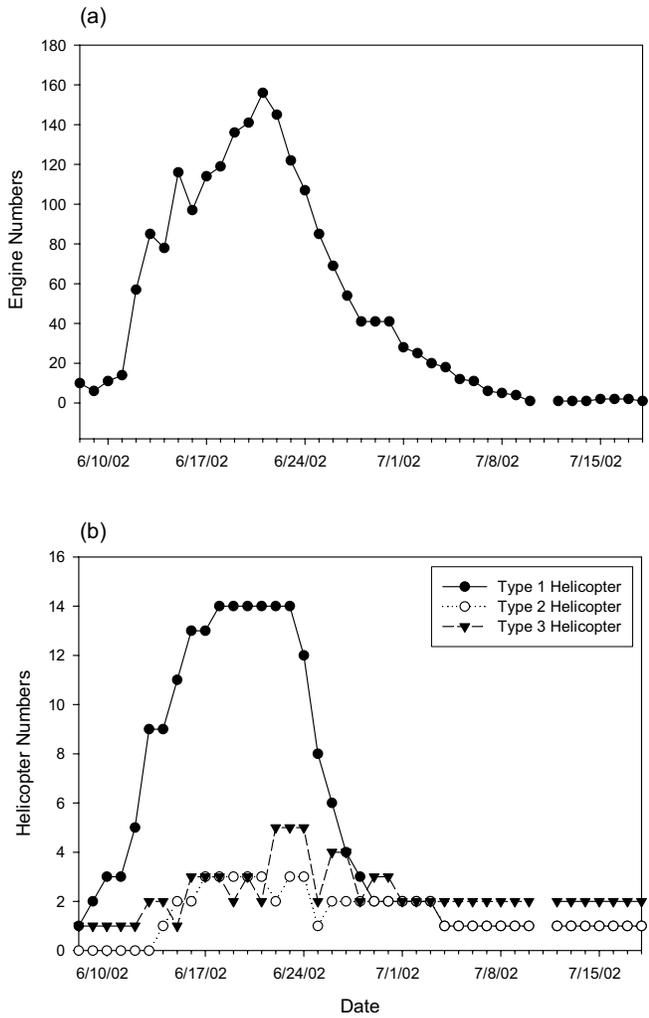


Figure 103—Number of engines (a) and numbers of helicopter by type (b) assigned to the Hayman Fire for the period of June 8 through July 18, 2002. Data are from historical ICS-209 database (appendix D). ICS-209 data were unavailable for July 11.

the Hayman Fire. Air tanker operations were conducted out of the JEFFCO Tanker base located 9 miles southwest of Denver, CO, and from Pueblo Memorial Airport, located 5 miles east of Pueblo, CO.

During the period June 10 to 28, air tankers (fixed-wing only) dropped a total of 373,836 gallons of retardant of which 113,000 gallons (30 percent) were dropped by MAFFS units (table 28). Flight hours of air tankers could only be determined for the Frye and Raley teams and do not include the hours of air tanker time for Martin’s team. Of the total air tanker flight hours in table 28, 22 hours of flight time were by MAFFS units.

A single SEAT (Single Engine Air Tanker) was used on June 17 to make drops on the south zone of the Hayman Fire. This tanker dropped 13,000 gallons of retardant (3.5 percent) for 2.5 hours of flight time and was based out of the Pueblo Tanker Base. These figures are included in the totals in table 28.

The number of lead planes and air attack assigned to the fire varied, but during the heavy suppression period a minimum of one lead plane and two air attacks were available (appendix F). These aircraft accounted for 241 hours of flight time excluding the time which could not be determined for Martin’s team (table 28).

During the period of June 8 to 28, 2002, for the Hayman Fire, Type 1, 2, and 3 helicopters were used to transport cargo and passengers, drop foam, water and retardant, and to conduct aerial reconnaissance, infrared mapping, and Global Positioning (GPS) mapping of fire perimeters (table 29). Use of helicopters for crew transport was not needed due to the extensive road network that provided adequate egress into the fire area. During the course of the fire, the maximum number of Type 1 helicopters assigned to the fire was 14 (appendix E). The maximum numbers of Type 2 and Type 3 helicopters assigned to the fire were three and five respectively (fig. 103b).

Table 28—Flight hours, retardant (gallons) for fixed-wing aircraft by Type 1 Incident Management Team for the period June 10 to June 28, 2002. Information for Initial Attack (IA) is not included in this table. Data are from the individual team’s air operations narrative and supporting data.

Type 1 Incident Management Team	Air tanker flight hours	Retardant (gal) ¹	Lead planes/air attack (flight hours)
Martin (6/10-6/16)	**	194,650 ²	**
Frye (6/14-6/28)	64	144,086	132
Raley (6/12-6/25)	7	35,100 ³	109
Totals	71	373,836	241

¹ Includes retardant dropped by all fixed wing aircraft (SEAT, MAFFS, and other air tankers).
² MAFFS or SEATS were not used by this team.
³ 100% of the retardant and flight hours were by MAFFS units.
 ** Information for this team was reported only as the total flight hours for all fixed wing aircraft (air tankers, lead planes, and air attack) and helicopter for a total of 171 hours.

Table 29—Flight hours, gallons of water, foam, and retardant, pounds of cargo and number of passengers transported, for helicopters by Type 1 Incident Management Team for the period June 10 to June 28, 2002. Information for Initial Attack (IA) is not included in this table. Data are from the individual team’s air operations summary narrative and supporting data.

Type 1 Incident Management Team	Flight hours	Water (gal)	Foam (gal)	Retardant (gal)	Cargo (lb)	Passenger (number)
Martin (6/10-6/16)	**	903,047	0	0	3,685	87
Frye (6/14-6/28)	579	2,139,296	524,800	118,000	32,358	244
Raley (6/12-6/25)	450	1,626,765	540,020	60,196	6,400	71
Totals	1029	4,669,108	1,064,820	178,196	42,443	402

** Information for this team was reported only as the total flight hours for all fixed wing aircraft (air tankers, lead planes, and air attack) and helicopter for a total of 171 hours.

Helicopters accounted for the majority of flight time during the period analyzed (table 29). The ability to drop foam and retardant from helicopters became feasible after the establishment of a portable retardant base at Wellington Lake on June 21, located 8 miles northwest of Deckers. The limited number of passengers and transported cargo are due to the fact that crews did not require transport or support due to the road system in the fire area.

Initial and Extended Attack Actions

Saturday, June 8, 2002: Despite the fact that the fire was subjected to an extremely aggressive initial attack with four air tankers, a Type 1 heli-tanker, two Type 3 helicopters, seven engines, two water tenders, a Type 1 handcrew, two Type 2 handcrews, and two five-person handcrews, the weather and forest fuel conditions were beyond control (see appendix C and appendix D). On this day ambient air temperature was 85 °F, relative humidity was 5 percent, and wind speeds were sustained at about 15 mph and gusting to 36 mph out of the south-southwest. These conditions contributed to prolific spotting, both short and long range (see appendix A).

During this time, values at risk trigger points for evacuations based on current fire behavior and forecasted weather conditions were developed. Suppression actions were to keep the main fire to the west of State Highway 77 using crews and air support through flanking actions and establishing a defensible anchor point at the heel. Air tankers and helicopters were used to attack and control spotfires until the cessation of air operations at dark.

Sunday, June 9, 2002: Weather conditions the morning of June 9 were more severe than on the previous day. A National Weather Service Red Flag Warning was in place for high winds and low relative humidity, and by 0900 hours wind speeds were reported at 25 to 30 mph, and relative humidity was 5

percent. By 1330 winds gusted to 60 mph. Trigger points identified the previous day were being met quickly, and while anchoring at the back of the fire and holding the main fire were still being accomplished, firefighter and public safety, evacuations, and structure protection became the first priority.

By the end of the day evacuation orders were in place for over 600 homes for the following areas: Goose Creek, Molly Gulch, Lost Valley Ranch, Flying G Girl Scout Camp, Wildhorn Ranch, for homes along County Road 77, Y Camp, South Platte River, and Turkey Peak. It was anticipated that more than 3,700 homes could potentially be affected. On this day the local Type 3 Team started its transition with Martin’s Type 1 Incident Management Team (IMT).

Ron Hivzdak, Fire Behavior Analyst with Frye’s Type 1 Incident Management Team noted that there were few treatments or natural fuel breaks to slow down the fire or to work from (appendix G). He noted that the recent prescribed fire, the Polhemus burn, conducted in the fall of 2001 and recent wildfire (Schoonover 2002) significantly slowed the fire spread of the northeast head of the fire (appendix G). Rich Hawkins, Planning Section Chief, Raley’s Type 1 Incident Management Team, noted that a recent prescribed burn (Polhemus 2001) and a recent wildfire (Schoonover 2002) were effective in stopping the head of the fire and allowed them to concentrate their suppression efforts along the west flank of the fire in the North Hayman zone (personal communication, November 2002).

Martin’s IMT Team Operations Section Narrative

The following excerpt is from the Incident Narrative prepared by Martin’s Type 1 Incident Management Team and includes portions from the Incident summary, Planning and Operations Section narratives prepared and edited by Steve Raddatz, Planning

Section Chief, Martin's Type 1 Incident Management Team. This report was edited to retain comments only pertaining to suppression activities. In addition, acronyms, and jargon were defined when appropriate as well as minor spelling and grammar changes when needed.

Saturday, June 8, 2002: Martin's Team Type 1 Incident Management Team (IMT) received notification before 2200 hours that they were assigned to the Hayman Fire. At the time of the notice they were assigned to the Iron Mountain fire and had a scheduled debriefing for Saturday morning. The Hayman Fire at the time was being managed by the Jefferson County Type 3 IMT. Basic information indicated it was 60 acres in size with a 40 acre spot fire. The fire was burning in Ponderosa pine with ladder fuels.

Sunday, June 9, 2002: Members of Martin's IMT began to arrive at approximately 1400 hours and started to transition with the Type 3 team. An Agency Administrator's briefing with Martin's IMT was scheduled for 1800 hours at the Lake George community Center. This meeting eventually took place at 1920 hours. The fire at this time was driven by strong south-southwest winds and low relative humidity and spread quickly across a swath 19 miles long through forest fuels and urban interface. During the afternoon of June 9 the Type 3 Team in conjunction with the Park and Teller County Sheriff Department's focused on the evacuation of civilians. By late evening the fire was estimated to be between 50,000 to 60,000 acres.

During the Agency Administrator's briefing it was decided that under the current weather and fire behavior that the following strategy would be used:

continue evacuations, suppression actions would be to establish a defensible and secure anchor at the heel with line construction proceeding north on the east and west flanks of the fire. In addition, a unified command would be established and due to the complexity of the incident a second Type 1 IMT would be ordered and the fire be split on a north south basis.

Monday, June 10, 2002: Martin's IMT assumed command of the incident at 0600. The initial strategy established the previous day was initiated. This strategy primarily focused on public safety through assisting and supervising in the development of a safe and organized evacuation of areas in immediate threat. Provide for firefighter safety and start with the basics; secure the heel of the fire then start flanking. This strategy was necessary due to a number of factors: extreme fire behavior, heavy fuel loading, difficult terrain, limited resources and limited access.

The fire involved urban interface, so major areas of concern were threats to additional structures outside the fire area, unburned fuels adjacent to structures and continued fire spread to the north-northeast. There were numerous local fire departments and agencies participating in the initial attack and extended attack, so the status of resources involved was uncertain.

During the operational period line construction and burn out of line was initiated in Divisions A, B, Z and Y (see fig.104 for approximate division locations). Some limited success occurred with the limited resources on hand and the shifting and at times gusty winds. In Division X the limited resources available only allowed for a defensive effort of preparing structures to make

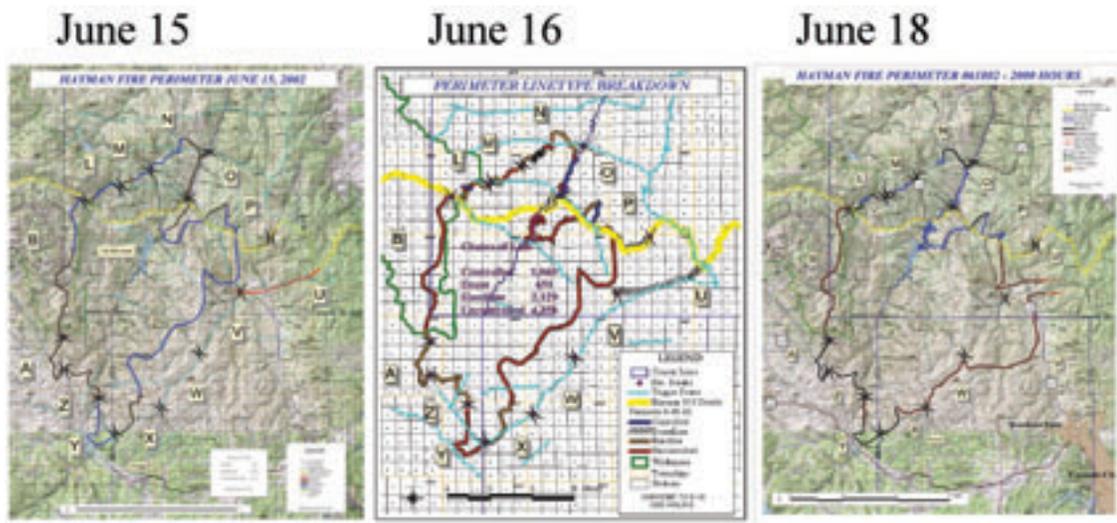


Figure 104—Maps of operational divisions on Hayman Fire for June 15, 16, and 18, 2002.

them more defensible. The fire made a major run to the north - northeast at about 1500 hours when winds picked up with gusts to 35mph. The fire grew to approximately 75,000 acres.

During this period, plans for evacuating a total of 6,000 homes and over 40,000 people were being implemented with evacuation centers being established at numerous locations in Park, Jefferson, and Douglas Counties (ICS-209, June 10, 2002).

Tuesday, June 11, 2002: Raley's Type 1 IMT arrives and begins to meet with members of Martin's IMT and Chesley's Area Command. The fire is divided into two sections, Hayman North with Raley's IMT assuming command, and Hayman South with Martin's IMT in command.

The primary objectives for the operational period were to start working toward containment keeping the fire north and east of County Road 77 and west of Highway 67 and the Manitou Experimental Forest. These objectives were met for the operational period. During the operational period Division A (see fig. 104 for approximate division locations) continued efforts to line the fire edge and burn out. Good progress was made. In Division B the effort focused on holding established line and assessing line location to tie into an anchor point in the wilderness. During the afternoon the wind picked up and changed direction for a while, so firefighters were able to hold established line but were unable to anchor into the wilderness. Division Z was successfully held by established line but was unable to connect to the Division Y line. Division Y was to hold established line and reassess line location to provide an anchor point for Divisions Z and X. Divisions Z and X to start line construction from where the line tied-in to anchors. Construction of line was started after a location was scouted, but afternoon winds pushed the fire across the line. In Division X primary efforts were confined to structure protection and preparation with some scouting for possible line location.

Personnel were assigned to work the fire during the night shift were limited to two Division Supervisors, a Type 2 crew and six engines. The primary mission was to patrol around structures in Divisions Z and Y. Emphasis was placed in areas where burnout operations had occurred around structures.

Wednesday, June 12, 2002: At 0600 Raley's IMT assumed command of Hayman North. For Hayman South, objectives for the day operational period were the same as for June 11 and were met. Good progress was made in Division A in patrolling line and the start of mop up 300 feet in from the line. Division B was to hold established line and locate line to construct to anchor in the wilderness (see fig. 104 for approximate division locations for June 12). They too, made good progress. The wind picked up in the afternoon and

Division B had a spot fire outside the line and pulled off to a safety zone. The main objective for Division Z was to hold established line and provide protection to structures at Sportsman's Paradise. The division was successful in meeting this objective. In Division Y the main objective was to protect structures in Sportsman's Paradise and construct and hold line. The Division was partially successful. They protected the structures and held some line. The objective for division X was to protect structures around Cedar Mountain, Turkey Rock, and along Turkey Creek. The Division was successful in this effort. In Division W the main effort was to construct a dozer line from Highway 67, above West Creek, east to Long Hollow. The Division made good progress in this effort with about three-quarters of the line being completed.

The fire made a run in the afternoon around 1600 hours when the wind picked up from the east-northeast. The fire was active in the southeastern portion of the fire in the vicinity of Sportsman's Paradise. The day shift worked late protecting structures and burning around the structures. This operation was successful.

A night shift was established with two division supervisors, a Type 2 crew and six engines. The main actions for the operational period were to patrol around structures and assist with burn out operations in Division Y. This mission was successfully completed.

Thursday, June 13, 2002: The Team's general objectives were the same as on June 12. The main objective for Division B was to hold existing line and construct line into the wilderness. The personnel working in the division were successful in meeting these objectives. Fire activity in this area was relatively quiet. The main objective for Division A was to patrol and hold the line (see fig. 104 for approximate division locations for June 13). There was little fire activity on this division and the line was held. Division Z primary efforts were to hold established lines and protect structures. They continued efforts to anchor the line to Division Y, but had a short tough stretch to complete. In Division Y the main objective was to protect structures in Sportsman's Paradise and Tom's Ranch while continuing efforts to construct and hold line to the Division Y/Z break. The division was partially successful in protecting structures and in the construction and holding of some new line. The main objective in Division X was to protect structures in the Cedar Mountain area, Turkey Mountain subdivision and along Turkey Creek. The efforts in this division were successful. In Division W the main actions were to hold constructed line and scout line from Highway 67 to the west toward the end of Division X. These actions were successfully completed.

The main fire activity was on the southern portion of the fire above the ICP. The fire increased in activity at about 1400 as an east wind started picking up. At 1700

the wind shifted to the north-northeast gusting to 20 to 25 mph. The fire was moving toward George Lake and the ICP, so a dozer line was constructed and a burn out operation done. This action was successful.

A night shift was in place with the main goal to protect structures in Division Y and support a burn out operation. This effort was successful.

Friday, June 14, 2002: Frye's Type 1 IMT arrives and begins to meet with Area Command and with members of Martin's IMT. Transition of management of Hayman South is to begin on Saturday June 15 with Frye's team scheduled to assume command at 0600 hours on Sunday June 16.

Divisions B and A were in patrol status by air and one engine (see fig. 104 for approximate division locations for June 14). The efforts in Division Z were to hold established line, protect structures and begin mop up from 300 feet in from the line. Fire fighters were successful in meeting the division objectives. The main actions in Division Y were to protect structures in Sportsman's Paradise and Tom's Ranch, hold established line, and finish burn out of constructed line. The division was successful in meeting most of these objectives, but some line was left to burn out at the end of the operational period. Division X protected structures in the Indian Creek subdivision, scouted line locations and start constructing line. The Division was successful in all efforts, but there was still line to construct and hold. Division W's main objectives were to construct dozer line from Division V/W break west towards Division X, protect structures along Trail Creek and line all spots. The division made significant progress in this effort. In Division V the main efforts were to continue structure protection along Trail Creek and construct dozer line from an established anchor point from Division W/V break. The division was successful in this effort and made significant progress in constructing dozer line. The main efforts in Division U were structure protection in Trout Creek area and West Creek area and to construct dozer and hand line from Highway 67 to trail Creek. Line construction was successfully started, which was key to protecting the east flank from future wind events from the southwest.

The fire made no significant runs and acreage increase was primarily due to burn out operations to secure line. The Operation Section had no knowledge of additional structures lost.

A night shift was in place with the primary duty to patrol Divisions Z, Y, X and W to protect structures and hold the line. This effort was successful.

Saturday, June 15, 2002: The formal transition from Martin's Type 1 IMT to Frye's Type 1 IMT begins with incoming Section Chiefs and staffs formally meeting and shadowing their counterparts.

The general control objectives for the incident remained the same as June 14. Divisions A, Z, and Y were to patrol all line, continue working hot spots and mop up (fig. 104). Three crews were assigned to do this with most of the effort concentrated in Division Z where the most recent fire activity has occurred.

Division B was completely within the Lost Creek Wilderness and was unstaffed. Some line had been constructed in this Division from the B/A Division break north. No other actions were being taken in this division due to its low priority and the current prevailing winds and topography were limiting further spread to the west.

Actions on Division Y were focused on protecting structures, improving line, and completing burn out where necessary. Division Y aided Division X by sending resources to help with structure protection.

The southwest portion of Division X is indicated as contained with mop up actions continuing. The remaining half of this division is located in Crystal Creek and uncontained at this time. Objectives for Division X focused on structure protection in Indian Creek, construction of fire line (hand and dozer) to complete the line to Division W and burned out line when completed, and coordinate structure protection with Indian Creek Fire Protection District.

Division's U, V, and W are mostly uncontained with the fire edge in these divisions located in rugged, steep drainages. As such, indirect tactics were being utilized with burnout operations from existing roads and indirect line. Division W objectives were to prepare the road and line for burn out, provide for structure protection and conduct the burn out if weather allowed and all resources were in place. The main efforts in Division V were to construct dozer line from Lutheran Valley Ranch east to Thunder Butte, protect structures, line spots, and send engines assist Division W when burn out started. The main actions for Division U for the day were to continue line construction on the ridge and burn out if completed weather and resources allowing. A limited night shift was assigned to patrolling divisions Y/X and W/V.

High winds developed at approximately 1200 hours, wind gusts up to 40 mph associated with thunderstorms were experienced over the fire area.

Raley's IMT Team Operations Section Narrative

The following excerpt is from the Incident Narrative prepared by Raley's Type 1 Incident Management Team and includes portions from Incident summary, Planning and Operations Section narratives prepared and edited by Rich Hawkins, Planning Section Chief. Raley's IMT was responsible for the North zone of the Hayman Fire, hereafter referred to as North Hayman.

The original document was edited to include only information directly pertaining to suppression activities. In addition, acronyms, and jargon were defined when appropriate as well as minor spelling and grammar changes when needed.

Wednesday, June 12, 2002: The fire was officially split into two zones at 0600 hours on June 12 with CIIMT#5 assuming command of the northern portion of the Hayman Incident. The fire would now be managed as two connected incidents, North Hayman and South Hayman (fig. 104). An Incident Briefing was conducted with all of the firefighters being assigned to structure protection. These resources were all from local fire districts. As they day progressed 13 additional engines from other Western States arrived to join the structure protection effort. During the prior evening a cabin was lost at Trumbull, this was the first structure lost in the northern portion of the fire that was officially confirmed.

By the end of the operational period seven hand crews had either arrived or were reported to be arriving by 1000 hours the following morning.

The major issues on the Hayman North were evacuations and structure protection over a large geographic area located in Douglas and Jefferson Counties. In Douglas County alone, 19 neighborhoods had been evacuated. Evacuations were planned based on identifying physical lines on the map (trigger points). The fire reaching these predestined locations were intended to trigger a discussion between operational and law enforcement personnel regarding community evacuations. Each trigger point had a written list of communities affected to help guide the discussions and insure that all potential evacuations were considered in a timely manner.

At the Operational Briefing I discussed the requirements of the Thirtymile implementation plan (referring to the Thirtymile fire and firefighter fatalities in Washington State the year before). The "Pocket Guides" and the pocket cards were being made available by the Forest. Agency Representatives were asked to validate by written documentation that each of the respective resources were qualified for the position. All of the Local Engines that were "depicted" on the IAP were strictly use for their own structure protection responsibilities, with the following exception: Division N, Task Force 285 Team with E652, E635, E461, E458, E153, WT 175, WT 371. These resources will be issued ordered numbers and should be compensated for Wildland Firefighting. These departments were asked to ensure that they met the NWCG qualifications for wildland fires.

Thursday, June 13, 2002: The first handline was constructed on Hayman North but less that two miles was completed due to just a few handcrews arriving in time to go to the fireline.

Between 1400 and 1600 hours, the Incident Commander and Deputy met with Region 5 Fire Safety Officer Charlie Gripp to discuss implementation of the Thirtymile action items and implementation plan.

The total lack of any containment along the northern perimeter and record dryness in the vegetation resulted in a huge potential for major fire spread (fig. 104). The Incident Commander, the Jefferson County Sheriff, and the Douglas County Sheriff were unified in their message to public. There would be no re-occupation of evacuated communities until such time that CIIMT5 (Raley's IMT) determined there was no further threat to their communities.

At 2200 hours it was identified that there were problems with the Pike National Forest pocket cards related to the Thirtymile implementation plan. The Fire Behavior Analyst was directed to write a fire behavior prediction based on what was covered on the forest pocket card based on current fuel conditions.

Friday, June 14, 2002: There were now 600 firefighters assigned to the incident. Span of control has become an emerging issue on the divisions. Because resources that were ordered in strike team or task force configuration are being sent as single resources the span of control is being exceed in the individual divisions.

Type 1 Helicopters were used to check the fire's spread as there was now a considerable ground force constructing and holding hand line on the ground. Considerable hand line construction was in Divisions L, M, and P (see fig. 104 for locations of associated divisions). Division O running north and south along the South Platte River continued to back down the hill in an easterly direction.

At approximately 1200 hours, two Greyback Crews disengaged from their assignment due to the fire making a run up a knoll in division N. The Division Supervisor supervised the disengagement. The Safety Officer notified the Incident Commander and directed the Division Supervisor to document the disengagement in their unit logs.

The Fire Behavior Analyst completed his document regarding Pike National Forest fire behavior and fuel conditions. From that day forward, all Incident Briefings were conducting using this information. This provided the firefighters with far more information than any national forest pocket card provides.

Saturday, June 15, 2002: Personnel assigned to suppression action consisted of 750 people, including 31 handcrews. Haines Index was forecasted to reach 6 between 1000 and 1400.

Handcrews constructed line around the top of Division N (fig. 104) in an attempt to keep the fire out of Kelsey Creek. That portion of line was completed but there was still over a mile of open line between that point and the Division N/M boundary to the west. This

was a major area of concern by the Operations Chiefs and the Incident Commander.

The actions of the Lone Peak and Vale Hotshot Crews in picking up two spotfires on the north side of Kelsey Creek in conjunction with air support from Type 1 Helicopters was a critical tactical accomplishment in the future containment of the North Hayman Incident.

The Fire Behavior Analysts (north and south) were tasked with providing a common approach to assessing fuels and fire behavior information. This ensured that the Thirtymile implementation plan was being met on both sides of the incident.

Sunday, June 16, 2002: Actions were delayed during the middle of the day due to unfavorable wind conditions and hazards to firefighters. At approximately 1400 hours, firefighters resumed line construction with the most important accomplishment being the completion of the fire line in Division N. Two Hotshot crews were utilized to complete the final section of line after all other firefighters on the top portion of the fire moved down the line towards Division M while the hotshots finished the line across Gunbarrel Creek and Saloon Gulch. Five Heavy Helicopters and several air tankers were utilized to support this operation.

Burnouts were accomplished along the South Platte River in Division O and spot fires occurred in Division P (fig. 104). Hand line construction was completed on the spot fires by 1200 hours and fire line was now complete in Division P.

While not officially contained, for the first time, a comfort level was developing that the fire would not spot across the South Platte River. This 3 mile long area in Division O on the west side of the river was a critical area for preventing the eastward spread of the fire into an area of heavy fuels and Tussock Moth mortality in the timber stands.

By evening, a spike camp had been set up at Dott Campground, adjacent to the community of Trumbull. Division N and M both had orderly disengagement.

Monday, June 17, 2002: Approximately 850 fire fighters including 32 hand crews were now assigned to the fire.

Martin's IMT had now been replaced by Steve Frye's IMT from the Northern Rockies on the South Hayman Incident and Frye's IMT took command of the southern portion at 0600 hours.

The weather and fire behavior forecast were a significant concern to the Operations Chiefs. Several spot fires and slopovers occurred and were picked up. By 1200 hours, the prediction of a Haines Index of 6 appeared to be realized as significant fire activity was realized. Throughout the afternoon all aircraft were utilized continuously to hold Divisions L, M, N, and

portions of O (fig. 104). Division P was now cooling off and did not require air support.

At around 1300 hours the fire kicked up in Frye's division W and V and made a 9,000 to 12,000 acre run (fig. 104). Trigger Point 5B was activated and approximately 1,000 people were evacuated from the following Douglas County Communities: Highway 78 northwest to Westcreek, Painted Rocks Road, Quinlan Gulch Ridgewood, Road 339, Skyhigh Ranch, Hotel Gulch, and Road 791.

The fire spreading east in the South Hayman Incident was of great concern to CIIMT5 (Raley IMT) because of the potential for a future end run around the containment lines that were being held in the north.

CIIMT5 (Raley IMT) requested that the forest start considering suppression tactics for the Lost Creek Wilderness. The Incident Management Team specifically requested permission to use fire retardant in the wilderness.

New trigger points for evacuations were discussed at great length during the evening regarding potential evacuations. The formal decision regarding these was made the following morning.

Tuesday, June 18, 2002: The fire spread easterly across State Highway 67 along Divisions V and U (fig. 104) triggered the Contingency planning that was conducted for the community of Perry Park and Perry Park East. Perry Park, with approximately 593 residences identified as the area most at risk in the general vicinity of the Perry Park Ranch. Later in the evening this area was evacuated.

A structure protection branch director assessed the area and determined significant structure losses would occur in the case of crown fire and most of the community could be saved if the fire was on the ground when the fire arrived.

Potential lines of defense were identified to the west of the community utilizing old roads, potential dozer lines, hazard fuel removal, and possible hand line construction. The Branch Director requested resources to begin preparing the community for the arrival of the fire on the following shift.

The infrared film indicated a spot fire had become established in Division L overnight. Type 1 Helicopters and Type 1 Hotshots worked along this portion of the line throughout the day but were not able to contain the spot fire. This was a concern to the Operations Group as this was the only portion of the North Hayman Incident that was not contained. The fire was also active on the south side of Wigwam Creek in the South Hayman portion of the fire.

Divisions M, N, O, P (fig. 104) all held despite the wind pushing against the fire lines. Significant fire activity to the south would represent a continuing

threat to Perry Park based on predicted fire behavior and weather.

A major factor the success of control efforts was the wind speed not reaching the predicted 28 mph wind speeds. Most of the area did not experience wind speeds over 10 mph. Relative humidity (RH) as low as 3 percent were encountered at several locations on the fire.

At 1700 hours, District Ranger Randy Higgenbotham was contacted concerning the team wanting to use retardant in the Lost Creek Wilderness. Randy advised the team that the Forest Leadership Team had discussed and approved this use of retardant.

Wednesday, June 19, 2002: The spot fire in Division L (fig. 105) in the Lost Creek Wilderness advanced upslope from Wigwam Creek northwesterly to the top of Buffalo Peak. This was the only portion of the Hayman North Incident that moved during the shift. The increase in acreage due to the spot in Division L was about 60 acres.

The expansion of the fire in the South Hayman Incident south of Rainbow Falls was a significant concern presenting an opportunity for the fire in the south to outflank containment lines in the north by spreading to the east and then the north.

Relative humidity rose from a low of 3 percent on the prior day to 15 to 20 percent during this shift. Unlike the prior evening, weather was very favorable with high humidity and slight rainfall over most of the incident. This rainfall afforded only a temporary halt to the fire considering that the 1000-hour fuels in the vicinity of the fire were at record dryness levels of just 3 percent.

The Operations Group began contingency planning for structure protection for communities that would be threatened if the fire made a major run to the east or northeast. New trigger points were established for future evacuations.

Thursday, June 20, 2002: Most of the fire area experienced 0.25 to 0.50 inch of rainfall and the fire moved little during this shift. A contingency plan was under development for dealing with the fire that had spread outside of Division L northwest to the Buffalo Peak area. Retardant and water drops were to be used to try and check the future fire spread as an assessment of the area by the Operations Chiefs indicated that the 10 standard orders and 18 situations could not be adhered to if we decided to directly attack the fire at Buffalo Peak.

Substantial progress was made as hand crews from Hayman North entered the Hayman South area at the Division U/P break. The crews were able to construct handline from the division break to Trout Creek in Division U (fig. 105).

Bear Team Leader, Greg Bevenger, met with the Deputy IC and was told the fire was still too hot for ground access by BAER Team members, but helicopter flights for aerial assessments would be considered, based on non-interference with fire suppression activities.

The most significant event of the day was the lifting of mandatory evacuations in the communities some distance to the north of the fire in Jefferson and Douglas Counties. This reduced the number of structures threatened by approximately 1,400 and approximately 3,000 people were able to return to their homes, Fern Creek was reoccupied.

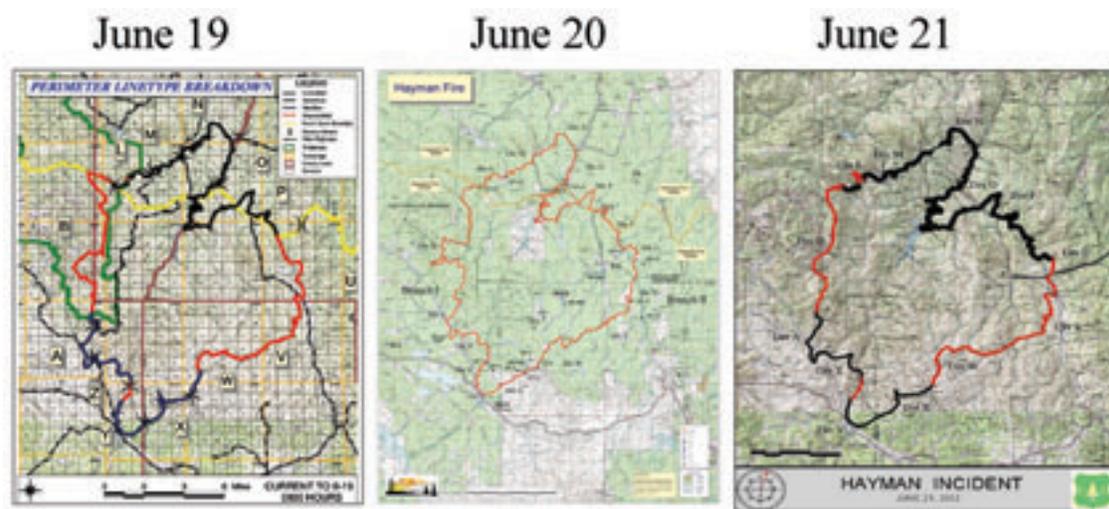


Figure 105—Maps of operational divisions on Hayman Fire for June 19, 20, and 21, 2002.

The following communities were reoccupied with it publicly stated that evacuations could occur again in the future

Douglas County

Sedalia	Indian Creek Ranch	Roxborough Park
Moon Ridge	Spruce Wood	Roxborough Village
Sprucewood	Pine Creek Road	Night Hawk
Sugar Creek Road		Scraggy View

Jefferson County

Buffalo Creek		
Mountain	Valley Acres	Buffalo Creek Park
Pine	Christmas Hill	Pine Grove
Cliffdale	Pine Valley North	Crossons
Riverview	Crystal Lake	South Platte
Dome Roick	Sphinx Lodge	Ferndale
Sphinx Park	Foxton	Longview
Indian Springs Village		

Friday, June 21, 2002: Fire activity was minimal on the North Hayman Incident. Light showers and high humidity assisted firefighters in preventing additional spread. Coordination between the two Incident Management Teams was excellent as a joint effort was made to complete a fireline on the east perimeter between Westcreek northerly to Trout Creek. By the end of the shift, most of the line was completed.

There had been many spot fires in the Long Hollow Creek drainage and the intelligence group was concerned there was still a significant chance of the fire spreading easterly towards Perry Park, which had been evacuated a few days prior.

A portable retardant plant was used for the first time in the vicinity of Wellington Lake, which allowed the firefighters to check the spread of the fire southwest of Buffalo Peak in the Lost Creek Wilderness.

Lightning adjacent to the northern portion of the Hayman perimeter resulted in one initial attack fire for 0.50 acre. Pike National Forest ground forces contained the fire after Type 1 Helicopters from the North Hayman suppressed the fire. As night fell a second lightning fire was located and was knocked down with a helicopter bucket drop by a pilot returning to base.

Two communities, Oxyoke and Fern Creek were reoccupied

Saturday, June 22, 2002: There was no movement of the fire on this date, and suppression rehabilitation and mop up operation continued. Some of the water bar work on cool divisions was nearing completion. Work assignments were now based in large part on the aerial GPS/IR Mapping Unit being provided on the North Hayman Incident by a private contractor.

The most significant event of the day was the work of the Vale, Alpine, and Lone Peak Hotshots, in completing a line up the northeast flank of the slopover on

Buffalo Peak. The crews concurred with a prior decision by the Operations Chief and Safety Officer that the hazards associated with the southwest flank of the slopover and the spotfires above that were could not be mitigated.

Sunday, June 23, 2002: Reoccupation of all communities except Decker and Rainbow Falls had now occurred on the North Hayman. Less than 100 people remained in evacuation status associated with the northern end of the fire.

One issue surfaced regarding the reoccupation of communities and homes. The perception was that this opened the areas up to the public when in actuality the areas are still closed to the public due the danger associated with the fire fighting effort.

Mop up was now based on looking for hotspots with the infrared map from the helicopter mounted IR unit.

A decision was made to transition from two Type I IMT's to Frye's Incident Management Team, effective June 26 at 0600.

Monday, June 24, 2002: The infrared indicated that even the slopover on Buffalo Peak was cooling rapidly. This supported the plan to transition to a single Type 1 Incident Management Team.

One of the team's Logistics and Operations Section Chiefs attended a planning meeting at the South Hayman Incident Base to support Frye's IMT in developing an IAP for the entire incident for day shift on June 25. The plan was for Raley's IMT to continue managing the North Hayman until 0600 on June 26.

Frye's IMT Team Operations Section Narrative

The following excerpt is from the Incident Narrative prepared by Frye's Type 1 Incident Management Team and includes portions from Incident summary, Planning and Operations Section narratives prepared and edited by Jeff Scussel; Planning Section Chief and Rick Floch and Phil Perkins; Operations Section Chief. This report was edited to retain references only to suppression activities. In addition, acronyms, and jargon were defined when appropriate as well as minor spelling and grammar changes when needed.

Sunday, June 16, 2002: To facilitate proper span of control, the Operations Section divided the fire into two branches with Divisions B, A, Z and Y in Branch I and Divisions U, V, W, and X in Branch II (fig. 104). The focus of work this day was on completing the construction of indirect line in Branch II and completing burnout as weather conditions allowed. Continuing an anchor from drop point (DP) 4 in X was critical to the success of tying in these divisions. Conditions along Road 360 in W were favorable during the afternoon and that Division was successful in burning out

along approximately half of its line. Division X finished preparation for the burnout but never had favorable conditions before the shift ended. Division V continued indirect line construction from the W/V break towards Highway 67 and managed to reach the Sheep Nose area of the division by the end of the shift. Some burnout was also done in the Turkey Rocks area. Division U anchored at the fire edge along the road into the Trout Creek subdivision and flanked the fire to the south up along the ridge between West Creek and Trout Creek. The fire did not spread appreciable on any division.

A structure protection group was also formed to coordinate the activities of several local Rural Fire Departments. Their work focused on performing structure protection measures mainly in the Indian Creek subdivision. Other work included mopping up around structures burned over in the Turkey Rocks area and other subdivisions nearby.

A nightshift was operated and their function was confined to the patrolling of subdivisions and areas that were burned out during the day. Higher relative humidity prevented effective burnout during the night.

Monday, June 17, 2002: On this day, the weather forecast predicted continued warming with the potential for increased west winds. Planned work included a continuation of burning out and further construction of indirect line (fig. 104).

Division W was unable to continue burnout where they left off the day before because of unfavorable winds. There was a need to widen the previous day's burnout but during the morning, this tactic was considered too dangerous considering the potential for west winds. In Division X, unfavorable winds prevented any burnout and direct line was constructed in an attempt to corral a series of burning spots on the south side of Crystal Creek. In Division V, burnout continued to the east of Turkey Rock and Division U improved their line on the ridge between West and Trout Creeks.

During the early afternoon, increasing west winds and single digit relative humidity caused a dramatic increase in fire activity. A large patch of unburned fuel northwest of Turkey Rock actively burned and, pushed by west winds, crossed the indirect dozer line and burned southeast across the Trail Creek Road in a large finger. At about this same time, another unburned patch of timber northeast of Sheep Nose burned southeast across dozer line and on across Trail Creek further to the northeast of the Turkey Rock finger. Crews pulled back into safety zones in Divisions V and W and toward the end of the day, took advantage of opportunities to mop up around and/or protect threatened structures. Division U was able to hold their ridgetop line but had some slopovers and spotting that they planned on picking up the following day.

Again personnel were assigned to a night shift but their efforts were focused on protecting structures in the West Creek area.

Tuesday, June 18, 2002: Weather predictions for this day were similar to the previous day and extreme fire behavior and fire spread were expected and predicted. Initial plans focused on flanking from the anchor on Division X toward Division W and holding the line that still remained in that division (fig. 104). Division V planned to continue mop up around the structures in West Creek and anchor in at the U/V break and flank the fire to the south. The two fingers of fire from yesterday became active in the late morning and soon burned together, creating a large convection column. This drew in air from all around, particularly from the southwest, which increased activity in Divisions X and W, causing unburned areas in Crystal Creek to burn toward the column, crossing the lines in X and in Division W.

Late in the day, the main fire stalled out on top of the ridge east of West Creek. A plan to burn out from this ridge was developed but before it could be implemented, winds again picked up and the fire burned down off the ridge to the east and crossed Highway 67. Division U was not able to hold the line on the ridge between West and Trout Creek and most of the area around the Westcreek subdivision burned at this time. The fire also crossed Highway 67 near Westcreek at this time. Crews pulled into safety zones as needed, but by the end of the day, were again working on structure protection and mop up as well as developing anchor points and gathering information for the following day's suppression activities.

Again, the night shift extended anchor points in Division V and X.

Wednesday, June 19, 2002: Work on this day focused on establishing and/or extending anchor points. Crews on the northeast edge of the fire were able to construct considerable line in Division U and V (fig. 105). Because of the size of Divisions W and V, a new Division E was inserted between them (fig. 105). The fire burned back onto itself for the most part, there was considerable fire activity along the southeast edge of the fire in Division's W, X and E. Crews in Division W pulled back to safety zones during midday. By the end of the day, Division E had tied in with V and was poised to move down into Manchester Creek on the southeast flank. Division W was burning out along some roads and mopping up spots. Division X was anchored and pushing toward W. Division U was flanking the south side of the fire from Highway 67 and again flanking the fire from the P/U Division break.

The night shift was able to complete line from an anchor point in Division X to the X/W Division break and mopped up in Division V.

Thursday, June 20 and Friday, June 21, 2002: A cooler and moister air mass moved in over the fire area. Thunderstorms occurred both afternoons and some rain fell on the fire. Lower temps and higher humidity allowed crews to construct direct fireline on the remaining parts of Divisions W, E, V and U. Again, because of the size of Division U and the rough terrain, a new Division T was inserted between P and U (fig. 105). Line was completed in all divisions on Friday and some burnout occurred in Division W to clean up some spots near Signal Butte. Night crews continued mopup in W and V.

Saturday, June 22, 2002: Crews continued to mop up and hold all lines (fig. 106). The two un-staffed Initial Attack fires were staffed with helitack and put out. A third Initial Attack fire was discovered on the west edge of the fire and staffed during the afternoon.

Rehabilitation on Division A was completed. Burnout in Division W along the dozer line southwest of Signal Butte was completed. In Divisions X, E, V, U, and T, mop up continued with considerable support from heavy helicopters. All lines held.

Sunday, June 23, 2002: Mop up continued on all active divisions. Rehabilitation in Division Z was completed. Homeowners were allowed back into the Tom's Ranch and Sportsman's Paradise subdivisions. The Trail Creek Road in Division W was snagged.

Monday, June 24, 2002: Rehabilitation in Division Y was completed. A tractor berm in Division A was smoothed-out with a dozer. The power company met with OPS and a schedule for assessing electrical repairs in the burned subdivisions was completed. Electrical power in the Tom's Ranch and Sportsman's Paradise subdivisions was repaired and turned back on.

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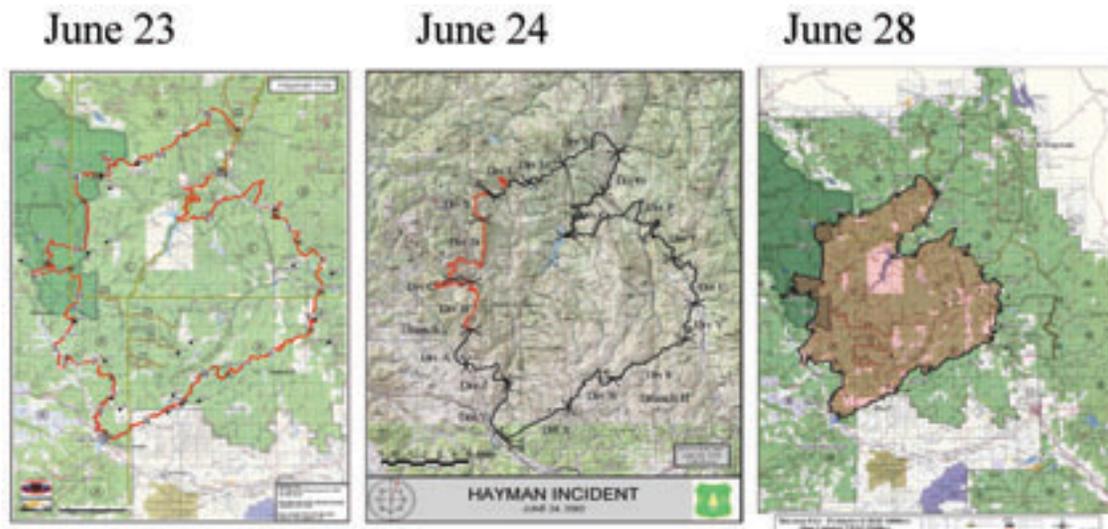


Figure 106—Maps of operational divisions on Hayman Fire for June 23, 24, and 28, 2002.

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