Overview of the Thirtymile Fire Incident

Summary

On July 10, 2001, the Forest Service Northwest Regulars #6, a Type 2 fire crew, was entrapped by wildland fire. The fire, caused by an abandoned picnic cooking fire, was located 30 miles north of Winthrop, Washington, along the Chewuch River. Fourteen crewmembers and two civilians were involved in the entrapment. The civilians arrived at the entrapment site while trying to exit the area in their truck. Fourteen shelters were deployed. One shelter contained one Forest Service person and the two civilians. Six individuals, four of whom died, deployed approximately 100 feet upslope from the road. The remaining people, including the civilians, deployed on the road. After the initial deployment they relocated to the river. The civilians' vehicle was destroyed by fire. The Forest Service vehicle sustained minor damage, but was driveable. Ten Forest Service personnel and the two civilians survived the burnover.

The following is an overview of the events and actions that took place related to the Thirtymile Fire Incident. This overview is based on interviews with over 40 individuals, and the analysis of dispatch logs, resource orders, medical records, weather conditions, fuel conditions, training records, and equipment performance. Additional detailed information that is relevant to the identification of causal factors that led to this incident is presented in the appendices and in the Findings Section of this report.

Initial Actions

Topography of the Chewuch River Canyon

3,346 foot elevation at the point of origin

3,356 feet elevation at deployment site

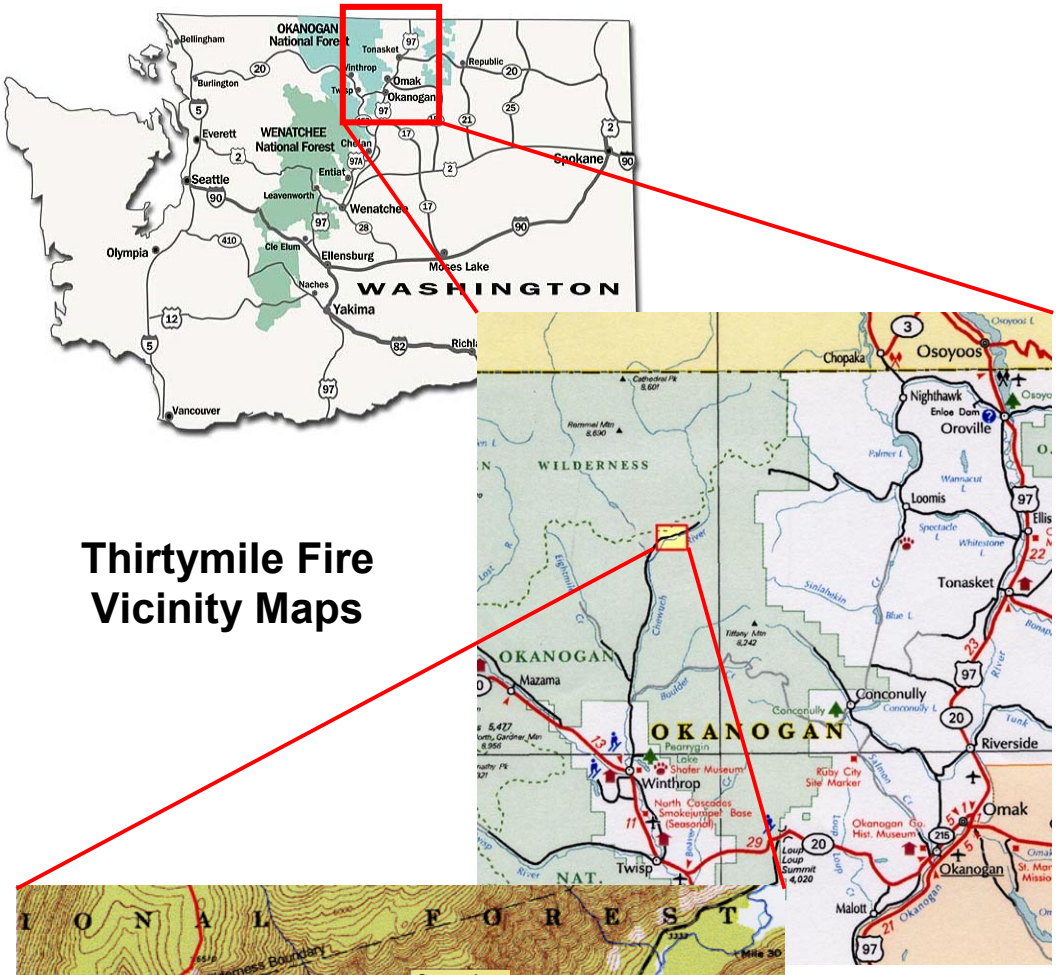
~3,300 feet elevation from the floor to the ridge line

~18,000 feet from east ridge to the west

On Monday evening, July 9, 2001, a Canadian Lead Plane (Bird Dog 8), returning to Canada after supporting the Libby South Fire (burning about 20 miles south of Winthrop, Washington), reported seeing a fire near the road along the Chewuch River about 30 miles north of Winthrop.(1) The report, received at 9:26 p.m., stated that "the fire covered two hectares or five acres with two spots ahead of it." Within thirty minutes a three-person initial attack crew and Engine #704 were dispatched to Action 103 (later named the Thirtymile Fire).(2)

The Chewuch River runs down a deep "V" canyon. Although there is little elevation change along the canyon floor, both sides of the canyon have steep slopes (70% to 100%). The southwest to northeast orientation of the canyon is in alignment with afternoon ridge top and up-canyon winds.

The initial attack crew arrived at the point of origin of the fire a few minutes after 11 p.m.



Thirtymile Fire Vicinity Maps

Fuel Conditions in the Chewuch River Canyon

Ladder fuels were abundant at the point of origin and on the east slope of canyon.

Fuels in the riparian zone on the canyon floor near the point of origin and throughout the canyon were dry enough to support surface fire and torching.

Crown fuels were dense and surface fuels were continuous on the slopes east of the river.

Crown fuels were discontinuous and surface fuels were less abundant on the rocky slopes west of the river.

They estimated the fire was burning in three to eight acres of heavy brush with flame lengths of two to four feet.[3] They could see two spots on the east side of the river, one near the river and another that was burning actively close to the east slope.[4]

It was later determined that the fire had started as the result of an abandoned picnic cooking fire.

The initial attack crew thought that the fire would grow and unless they could get water on the fire their efforts would be useless.[5] The initial attack crew boss then requested two engines, a Mark III pump, hoses, and at least a 10-person crew.[6] The initial attack crew had four bladder bags, hand tools and a chainsaw.

Engine #704 arrived at the fire about 15 minutes before midnight. The initial attack crew boss offered the Supervisor on Engine #704 the Incident Command (IC) of the fire. The Engine Supervisor refused the IC role since he felt it was beyond what he could handle, it was dark, and he did not know the country very well.[7] It was his assessment that the fire was "20 to 25 acres … with multiple snags and numerous candles." This revised estimate of the fire size and the view that "it will grow, hit the slope and get larger" was passed on to the Okanogan Dispatch by the IC.[8] It was decided to hold at the road until the Entiat Interagency Hotshots (Entiat IHC) showed up.[9]

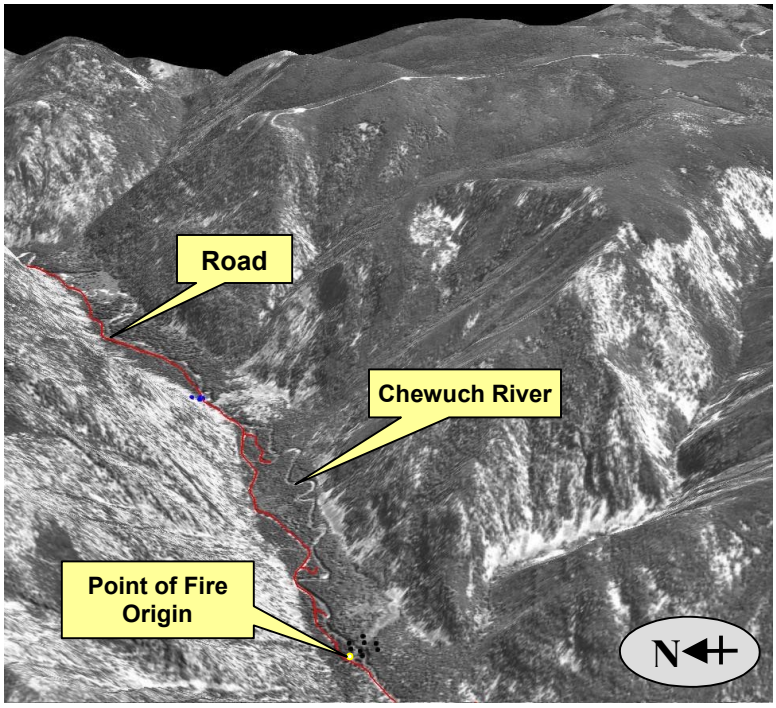


Figure 1. Chewuch River Canyon and Point of Fire Origin

At about midnight when the Okanogan Dispatch asked the IC if the fire could be let go until the morning, he responded that the fire needed "to be taken care of tonight because if it hits that slope it is going to the ridge top."[10]

The Entiat IHC was to be located and sent to the fire after working the day on another fire near Spokane, Washington.(11) After bedding down for approximately 30 minutes at the Liberty High School near Twisp, Washington, about 10 miles south of Winthrop, the Entiat IHC was awakened around midnight and sent to the Thirtymile Fire.

Around 1:00 a.m. on Tuesday, July 10th, the Entiat IHC and a pick-up truck with two additional firefighters arrived at the scene.(12) The pick-up truck had a Mark III pump, wye gates, and over 1,000 feet of hose.(13) Although the IC offered pump support, the Entiat IHC Superintendent felt it was not necessary. As a result the three-person initial attack crew, Engine #704, and the pick-up truck departed at 1:30 a.m.(14) The Entiat IHC Supervisor assumed the role of IC a little after 1:00 a.m.

The Entiat IHC began lining the fire between the road and the Chewuch River.(15) Numerous spots were noticed on the east side of the river. The plan of attack was to cross the river, find the spots, and line them.(16)

The Northwest Regulars #6

During the early morning of July 10 while the Entiat IHC crew was fighting the Thirtymile Fire, the Northwest Regulars #6 (NWR #6), a Type 2 fire crew, was called up. The NWR #6 crew was made up of 21 individuals from two different Ranger Districts located in central Washington State. These were:

- the recently combined Lake Wenatchee and Leavenworth Districts (referred to as Lake Leavenworth)
- the Naches District

Eleven members of the NWR #6 crew were from Lake Leavenworth and ten were from Naches.

The crewmembers were contacted beginning just after midnight. They were to assemble in Leavenworth, Washington, and then drive to the Twisp Ranger

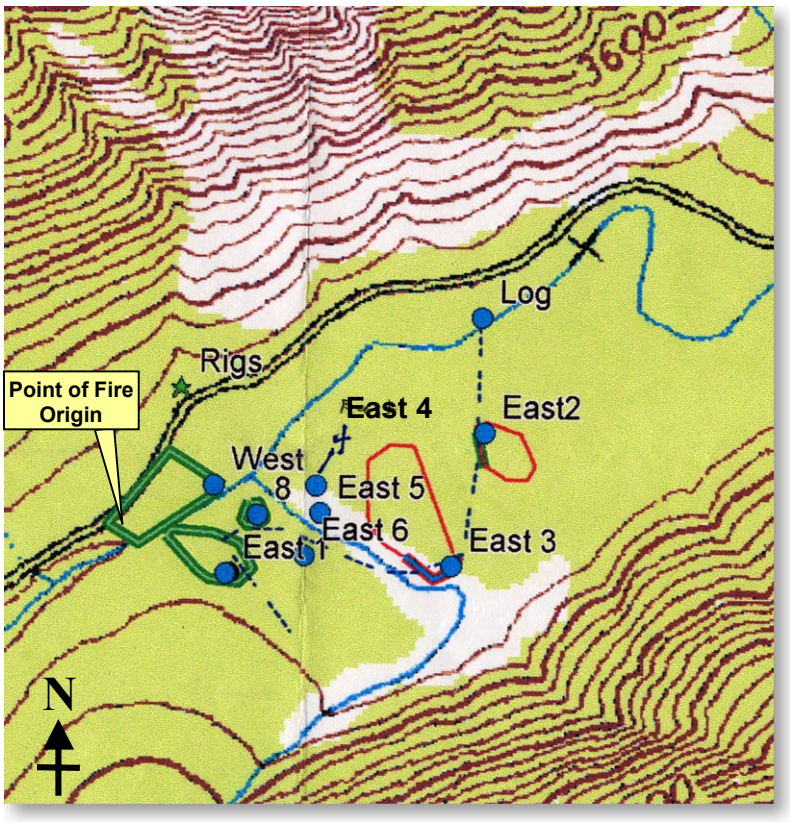
Northwest Regular #6 Type 2 Fire Crew

	Position	Home District
Ellreese Daniels	Crew Boss Trainer	Lake Leavenworth
Pete Kampen	Crew Boss Trainee	Lake Leavenworth
Squad 1		
Tom Craven	Squad Boss	Naches
Beau Clark	FFT2	Naches
Jason Emhoff	FFT1, EMT, FALB	Naches
Karen FitzPatrick	FFT2	Naches
Scott Scherzinger	FFT2	Naches
Rebecca Welch	FFT2	Naches
Squad 2		
Thom Taylor	Squad Boss	Lake Leavenworth
Armando Avila	FFT2	Lake Leavenworth
Nick Dreis	FFT2	Lake Leavenworth
Elain Hurd	FFT2	Lake Leavenworth
Jessica Johnson	FFT1	Naches
Matthew Rutman	FFT2	Lake Leavenworth
Devin Weaver	FFT2	Naches
Squad 3		
Brian Schexnayder	Squad Boss	Lake Leavenworth
Dewane Anderson	FFT2	Lake Leavenworth
Emily Hinson	FFT2	Lake Leavenworth
Jodie Tate	FFT1, EMT	Naches
Marshall Wallace	FFT1	Naches
Donica Watson	FFT2	Lake Leavenworth

Station for their briefing. They were informed they were being assigned to support the Libby South Fire.[17] The majority of the crew had as little as one or two hours of sleep before being called.[18]

When the Lake Leavenworth and Naches members of the NWR #6 crew met in Leavenworth around 3:00 a.m. they were organized into three squads.[19] One squad consisted entirely of personnel from the Naches District. The other two squads were made up of people from both ranger districts. Not all crewmembers knew the individuals from the other district with whom they would be working.

At 7:00 a.m., after about a three-hour drive from Leavenworth, the crew arrived at the Twisp Ranger Station to await their briefing. The NWR #6 crew was informed that they would not be going to the Libby South Fire. Rather, they would be assigned to do mop up on the smaller Thirtymile Fire. Many of the rookie crewmembers were disappointed.[20] Pete Soderquist and Elton Thomas, the District FMO and Forest FMO, respectively, accompanied the NWR #6 crew to the fire. The group arrived at the fire site just after 9:00 a.m.



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Thick green & blue lines - lines completed between 1 a.m. and 10 a.m. on 7/10/01
Narrow red lines - projected fire perimeter
● - fire hot spots and crossing log locations

Figure 2. Status of Entiat IHC Containment Activities and GPS Mapped Hot Spots

The Entiat IHC Actions During the Night

The Entiat IHC began their actions to line the spots around 1:30 a.m. Within twenty minutes Marshall Brown, the IHC Superintendent, reported that they had completed a fireline from the road to the river.[21]

By 2:15 a.m., after containing two spots in the mostly "dog-haired" thicket, they moved across the river. Eventually they found a crossing log (noted in Figure 2) to allow easy access to the east side of the river. At that time, Okanogan Dispatch requested information on their resource needs for the morning. The Entiat IHC Superintendent, Marshall Brown, ordered a crew and an aircraft for the morning. He also ordered two Mark III

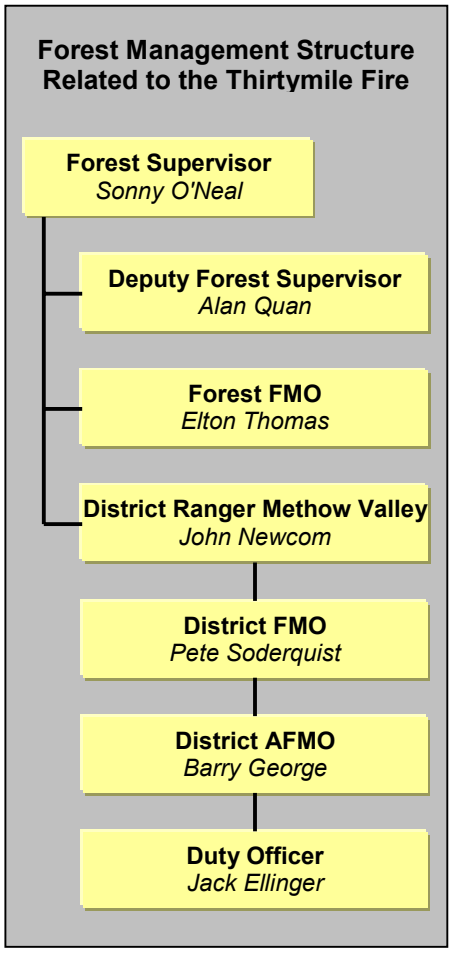
pumps with kits, 1,500 feet of hose, 10 wyes, 10 nozzles, and 10 reducers.[22] Confirmation was received three hours later at 5:26 a.m. that a Type III helicopter (Helicopter 13N) with a bucket and long line would be dispatched for arrival at 10:00 a.m. at the North Cascade Smokejumper Base (NCSB), located about 35 miles south of the fire site.[23]

By 5:30 a.m. there were seven spots on the east side of the river covering about five to six acres. Two spots were estimated to be about one acre each.[24]

The Entiat IHC took a break between about 5:30 a.m. and 6:30 a.m. to eat and rest. After the break they continued to work on the east side of the river digging a containment line and surrounding the spots until the NWR #6 crew relieved them. When they returned to the east side after 6:00 a.m. they noted that the "fire intensity had died down a lot."[25]

Transition to NWR #6

On the morning of July 10th, nearly all personnel on the Thirtymile Fire were suffering some effects of mental fatigue due to lack of sleep. This includes the Entiat IHC, the NWR #6, and key District and Forest personnel. As the day progressed, these effects would worsen, and provide one potential explanation for loss of situational awareness, compromised vigilance and decision-making. (A more detailed account of the fatigue factor is contained in the Human Factors Appendix.)



When the NWR #6 crew arrived at the fire at 9:04 a.m., the NWR #6 Crew Boss Trainer and Trainee met with the Entiat IHC Superintendent, Marshall Brown, to review the situation. Pete Soderquist, the District FMO, and Elton Thomas, the Forest FMO, also participated in this situation review meeting. This review meeting lasted about 45 minutes.[26]

At that time the Entiat IHC provided the NWR #6 with a GPS map of the hot spots and the Entiat IHC's containment activities (see Figure 2).[27]

Ellreese Daniels and Pete Kampen, the NWR #6 Crew Boss Trainer and Crew Boss Trainee, respectively, were shown the hot spots by Kyle Cannon, the Entiat IHC Assistant Superintendent. It was determined that the highest priority was spots 3 and 4 on the east side of the river (see Figure 2).[28] The tactics were to get the pumps going early and get water on the fire, cool it down, and have the crew mop it up.[29]

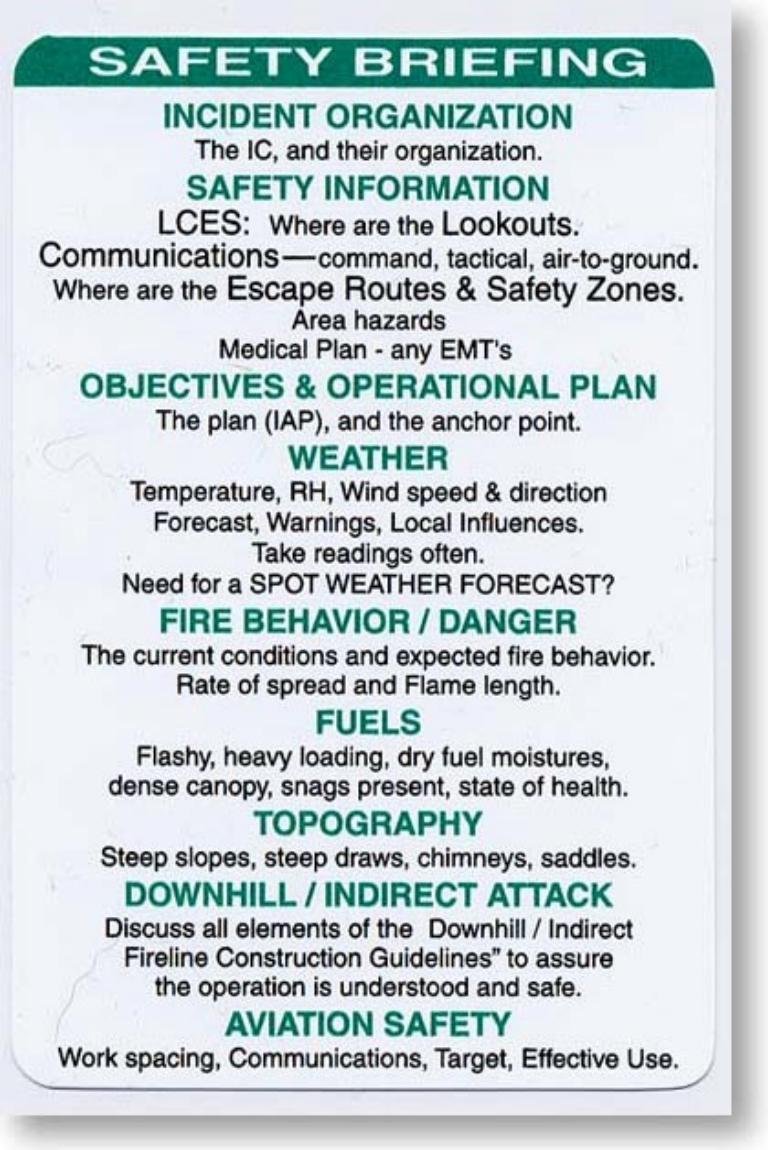
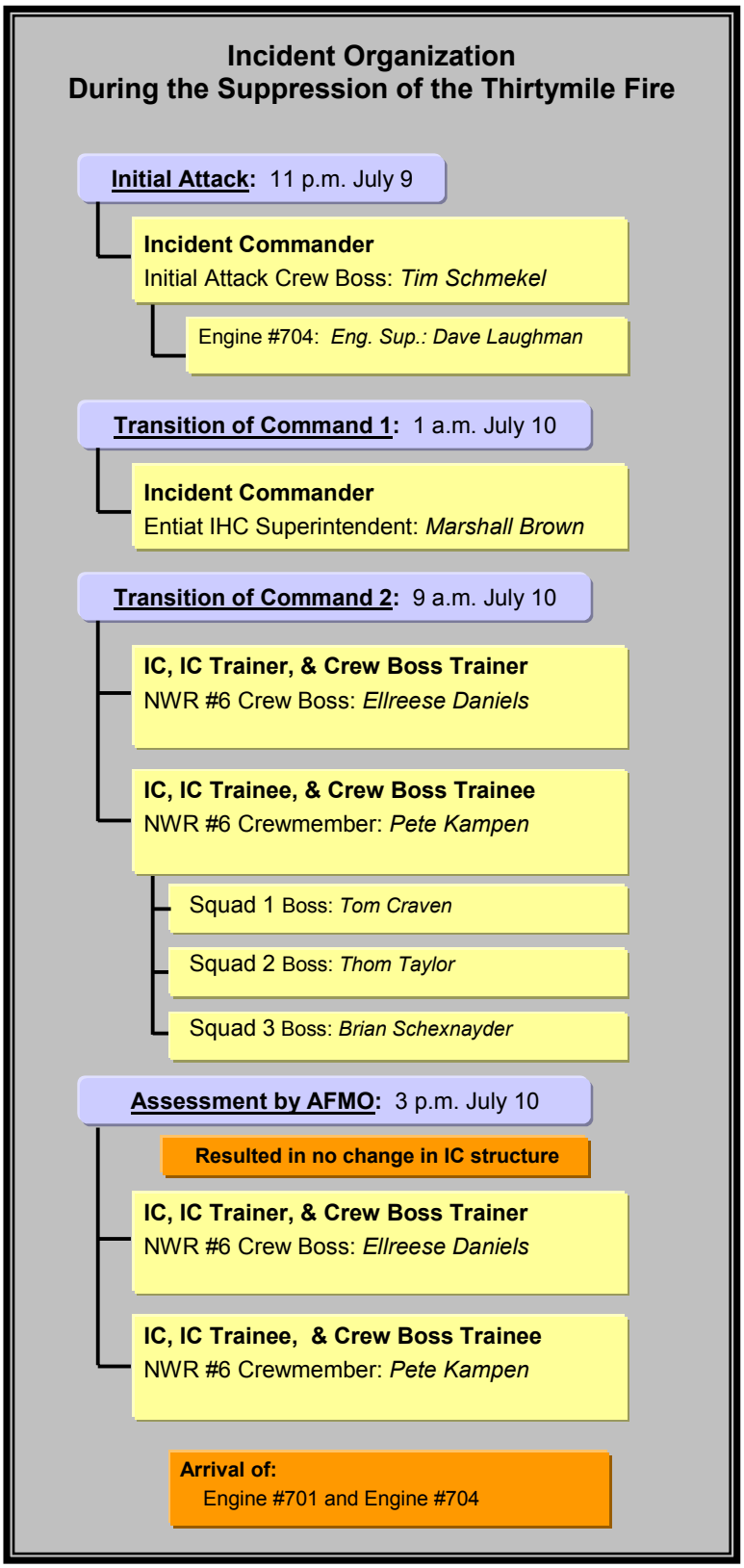


Figure 3. Okanogan & Wenatchee National Forest Safety Briefing Card

The Forest FMO estimated that although there was a lot of fire, it only covered about three acres scattered over a five acre area with very benign fire behavior. He and the District FMO discussed and checked on the availability of two other IHC crews. If they were available the plan was to have them assigned to the fire to knock it down and get it over quickly.[30] The District FMO requested that a barricade be placed on the road to prevent unauthorized personnel from entering the area.[31] Although approved by the District Ranger for the Methow Valley, the barrier was not put up until 3:17 p.m. that afternoon.

No Spot Fire Weather Forecast was issued for the Thirtymile Fire. Pete Soderquist provided a weather forecast based on a Spot Fire Weather Forecast for 6:00 p.m. the previous evening (July 9) for the Libby South Fire. This Libby South Fire forecast indicated low relative humidity, high temperatures and that the "fuel type was a trigger for fire behavior."[32]

The Forest FMO reminded Pete Kampen, the NWR #6 Crew Boss Trainee, to use the Safety Briefing Card (see Figure 3) to brief the crew. Pete Kampen briefed the three squads using the Libby South Fire forecast information on the low humidity, high temperature, and a predicted wind event greater than 10 mph. He explained that the tactics would involve using hose lays to bring water from the river and digging hand lines around the hot spots.[33] The briefing took about half an hour and was completed about 10:30 a.m. The NWR #6 crew was informed that this was a lot of work for them and that another 20-person crew was staged at Tonasket, Washington.[34] (Later in the day Air Attack found out that this crew would arrive about 8:00 p.m.).[35] During the discussion with the District FMO, Pete Kampen and Ellreese Daniels had been informed that the NWR #6 could expect support from Helicopter



13N for bucket work. The District FMO reminded them again just prior to departing for a Libby South Fire planning meeting.[36]

The NWR #6 crew had eight handheld radios. When Pete Kampen attempted to call Okanogan Dispatch he could not make contact. Ellreese Daniels, the Crew Boss Trainer for the NWR #6, was able to contact Okanogan Dispatch using his handheld radio. This was in contrast to the Entiat IHC situation where they had to use their mobile radio in their truck to contact Okanogan Dispatch.[37]

Pete Kampen and Ellreese Daniels agreed that Daniels would assume the role of the Incident Commander (IC) on the Thirtymile Fire and handle the communications. Kampen would manage the strategy and tactical decisions. Requests would be passed through Daniels to Okanogan Dispatch.[38]

At 11:00 a.m. the Entiat IHC left the fire site and drove about two miles downriver to bed down at a campground. Twenty minutes later Pete Soderquist and Elton Thomas departed for the Libby South Fire ICP.[39]

After the NWR #6 crew completed the safety briefings, the pumps were set up and the crew crossed the log to the east side of the river and began to apply water to the fire and dig line at about 11:00 a.m.[40]

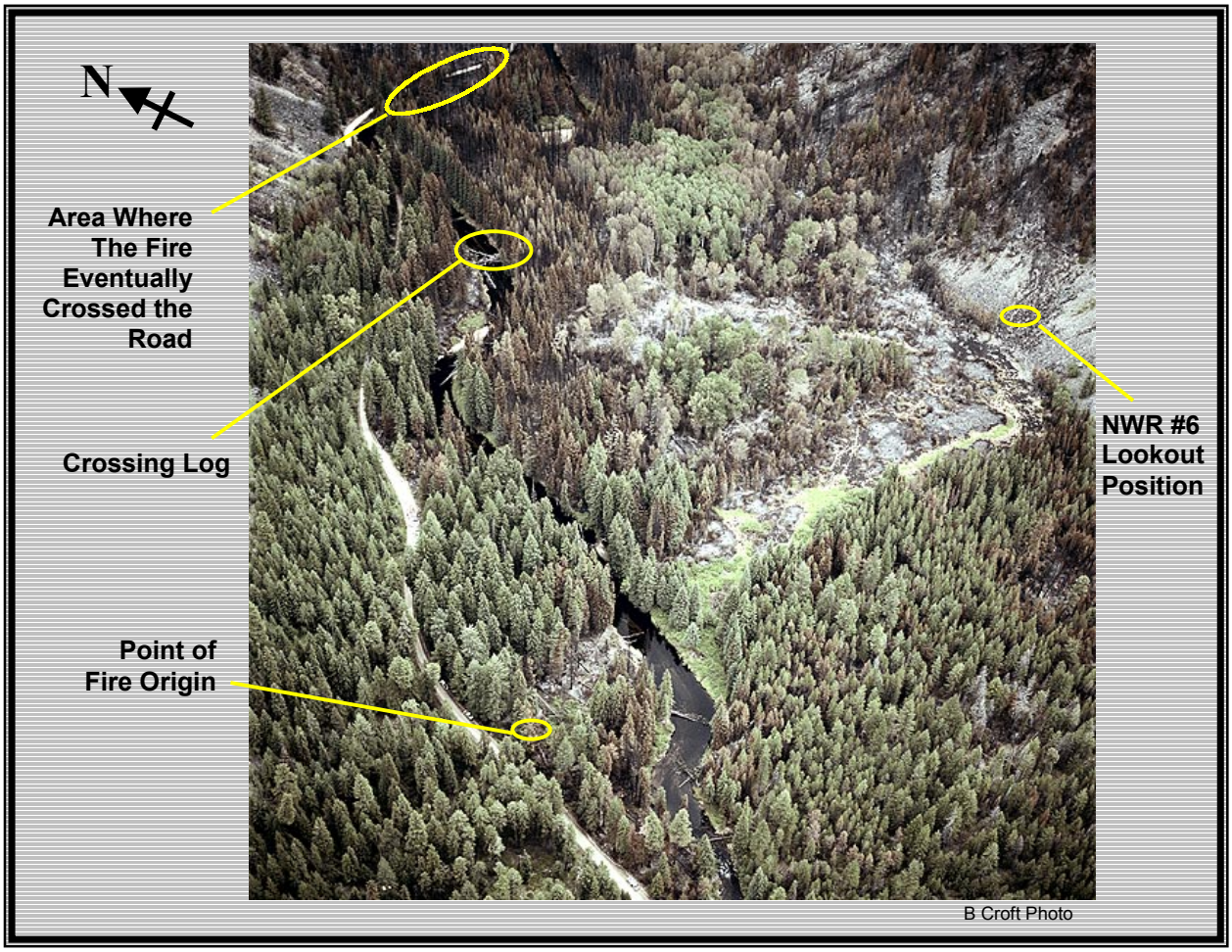


Figure 4. Area of Fire Activity from Evening of July 9th to 4:34 p.m. July 10th

By about noon the crew experienced several equipment-related problems:

- They had difficulties keeping the two pumps running, possibly due to improper use of pressure relief valves, and lack of experience with pumps and hoses.
- Several hoses burst. Some felt that the hoses were old and the pump was "picky."(41)
- At least four pulaskis broke during operations on the east side of the river. One handle split and heads came off of the handles on three apparently new pulaskis.(42)

The Crew Boss Trainee, Pete Kampen, decided to change tactics and dig a line to pinch the head of the fire. Jodie Tate, who had been operating the pumps was pulled off to dig lines.(43) The fireline construction was difficult with a lot of roots.(44) Some crewmembers realized they were digging line ahead of the fire and knew it was a "watch-out" situation.(45)

At 12:08 p.m. Pete Kampen requested that Helicopter 13N be launched.[46] Twenty minutes later he requested additional crews from Okanogan Dispatch. Daniels considered it unusual for green foliage to be burning as it was for this time of year.[47]

> ***Safety Zone***
>
> ***An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of blowup in the vicinity.***
>
> **Source: Fireline Handbook**

Donica Watson had been posted as a lookout on the rock scree above the crew on the east side of the river (see Figure 4).[48] She was responsible for taking weather observations and relaying information to Ellreese Daniels. As the fire behavior began to intensify, Daniels removed her from the rock scree sometime after 2:00 p.m. because of poor access to the escape route.[49] She was reassigned back to her squad. At this time Air Attack became the lookout for the Thirtymile Fire.

In response to the request for additional crews, the Okanogan Dispatch had attempted to contact the Entiat IHC. Since the Entiat IHC had not been contacted by 1:00 p.m., Pete Kampen sent one of the NWR #6 crewmembers to wake the Entiat IHC. The Entiat IHC Superintendent felt that the crew required more sleep and did not wake them until around 1:30 p.m.[50] The Entiat IHC returned to the fire around 2:00 p.m. The NWR #6 crewmembers were working on the east side of the river at that time.[51] The Entiat IHC Superintendent contacted Pete Kampen to review the situation. A little later Kampen decided to pull the NWR #6 crew back across the river to the road. The fire had been burning through the hoses in several places and spotting over their containment line. Pete Kampen accepted the fact that they "had lost the fire."[52] At 3:00 p.m. the NWR #6 crew was pulled back to the lunch site "safety zone" on the west side of the river. There they joined the Entiat IHC crew and ate lunch, rested, watered, and sharpened their tools.

K. Cannon

Figure 5. Fire on East Side of River at 2:45 p.m.

The Air Support Actions

Several times during the morning briefing the District FMO had informed the NWR #6 crew boss

Figure 6. At the Lunch Site After 3 p.m.

trainee and trainer that Helicopter 13N would be available for bucket work. Around 12:00 p.m. the NWR #6 was notified by the Okanogan Dispatch that Helicopter 13N was available 5 miles south of Winthrop at the North Cascade Smokejumper Base (NCSB).(53) At 12:08 Pete Kampen (through Ellreese Daniels as his communications connection to Dispatch) requested that Helicopter 13N be launched with a bucket.(54)

When contacted at 12:30 p.m. concerning the estimated time of arrival, the Okanogan Dispatch indicated that the helicopter required permission to dip out of the Chewuch River.(55) (This area of the Chewuch River is a Research Natural Area, and the river is a habitat for endangered fish species).

Air Attack was diverted from the Libby South Fire to the Thirtymile Fire at 12:40 p.m.(56) About twenty minutes later Air Attack stated that there was a dip site available down the river and another one was two miles up the canyon. Okanogan Dispatch repeated that they could not use the helicopter until they got permission.(57) Permission was received at 2:00 p.m. to use the helicopter.(58) (A detailed review of the sequence of events related to Helicopter 13N is presented in the Management Findings Section.)

Helicopter 13N departed for the fire at 2:38 p.m. from 8-Mile Camp which was about 20 miles south of the fire.(59) Helicopter 13N began making water drops on small spots at the south edge

of the fire and continued to work until having to refuel around 4:15 to 4:30 p.m. Before refueling, the fire had spread up the east canyon walls. After returning from refueling, the pilot of 13N noted that the fire spread had moved back to the canyon floor with spotting on the west wall of the canyon.(60)

Air Attack ordered a single engine air tanker (SEAT) at 1:15 p.m. Around 1:40 p.m. Air Attack announced that the fire was getting active, growing, and additional crews and air support were needed soon.(61) A few minutes after 2:00 p.m. the SEAT flew over the fire and decided the canyon was tight. Although he did not think it would be of much help, the SEAT pilot dropped the load on a small strip of timber.(62) Air Attack decided to have the SEAT reload and hold.

At 2:34 p.m. Air Attack requested a heavy air tanker. About a half an hour later Tanker 62 was en route with an estimated arrival of 3:21 p.m. Also, at about 2 p.m., Ellreese Daniels ordered another tanker and a PBY.(63) Tanker 12 was diverted from the Libby South Fire and arrived at the fire around 3:40 p.m. It could only make two drops before it was out of flight time.(64) The PBY would have to stop at Omak Lake for water while en route to the fire.

Around 3:20 p.m., Air Attack reported that the fire had reached about 50 acres in size and was crowning and going to the ridge.(65) Within 15 minutes the fire had grown to 100 acres and was almost on the ridge.(66) Air Attack then requested two additional Type 1 or 2 tankers.
At 4:03 p.m. the First Butte Lookout reported that the Thirtymile Fire was forming its own

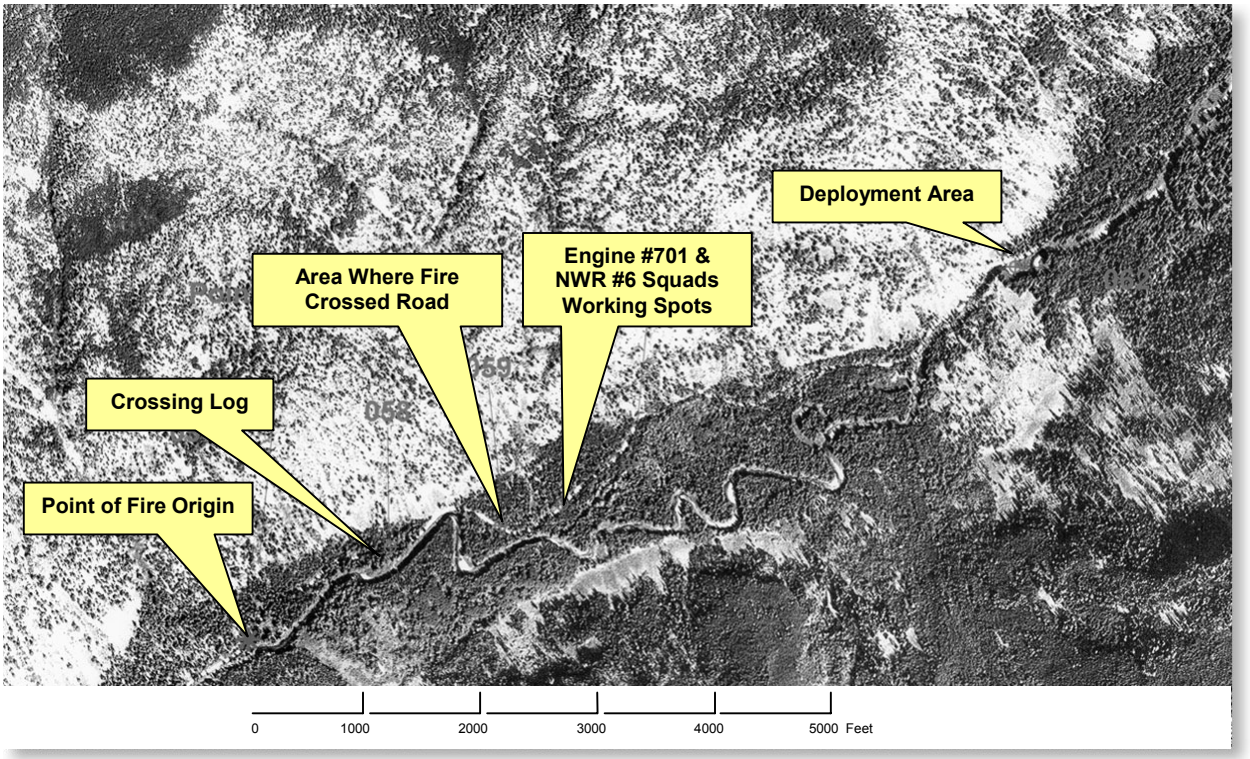


Figure 7. GPS Referenced Points from Fire Origin to Deployment Area

thunderhead.[67] By 4:18 p.m., Lead 66 requested the heavy tankers for the Libby South Fire. Both Air Attack and Lead 66 agreed that it looked like the Thirtymile Fire was going strong and it was moving in an uninhabited area. "It was not going to help throwing air tankers at it."[68] The tankers were diverted to the Libby South Fire. Helicopter 13N remained over the Thirtymile Fire dropping water.

Engines #701 & #704

At 2:27 p.m. Air Attack requested two engines. Engines #701 and #704 were then dispatched to the fire.[69] Initially Engine #701 had been assigned to work helispot, dust abatement, air crash rescue, and helicopter management at 8-Mile Camp 20 miles downriver from the fire.[70] According to Harry Dunn, the Supervisor on Engine #701, his mission from Okanogan Dispatch was to keep spots from the west side of the road.[71]

Engine #704 (a 4x4 pickup with a slip-on pumper) had been directed by the Duty Officer to put a "road closed" sign approximately one mile in from the end of the pavement on the Chewuch road. The sign was put up at 3:17 p.m. En route to putting up the sign Engine #704 was contacted by Okanogan Dispatch and requested to report to the Thirtymile Fire.[72]

The Supervisor of Engine #701 informed Engine #704 and three firefighters in a chase vehicle that their assignment was to keep the fire east of the road as per dispatch directions.[73] Around 3:30 p.m. both Engines #701 and #704 arrived on the fire scene. Neither checked in with the IC nor received a tactical briefing.[74]

Engines #701 and #704 drove past the Entiat IHC and NWR #6 crews and up the road to attack spots. Engines #701 drove almost to the end of the road and then headed back down looking for spots. The plan was to have Engine #701 work the north section and Engine #704 work the south section. The spots near the road were thought to be "rather small at this time."[75]

Figure 8. Torching Across the River

The Entrapment

The NWR #6 and the Entiat IHC had lunch and rested at the "safety zone" while they watched the fire continue to grow. The District AFMO, Barry George, arrived around 3:00 p.m.[76] He met with Ellreese Daniels and discussed taking over the IC role. When asked by Barry George, Daniels said he was still comfortable with retaining the IC role.[77] George indicated that it would be nice to keep the fire east of the road. But there was no pressure, rather this would be a "nice to do" rather than a "have to do."[78] He suggested that the Entiat IHC Superintendent check out the campgrounds.[79] Marshall Brown and Kyle Cannon, the Entiat IHC Superintendent and Assistant Superintendent, respectively, drove to the end of the road and noted three cars at the trail head. They did not see the truck or the two civilians that would eventually drive down the road and be caught at the deployment site. On the way back they met Engine #701.

K. Cannon

Figure 9. View of Fire Crossing the Road from the Lunch Site Area Just After 4:34 p.m. (Entiat IHC and Engine #701 in foreground.)

Around 3:30 p.m. the District AFMO met with Ellreese Daniels and Pete Kampen to discuss their concern that the initial attack had not contained the fire.[80] Soon after that discussion Ellreese Daniels received a call from the Engine #701 Supervisor asking for help with a spot on the east side of the road. Ellreese Daniels and Pete Kampen evaluated the situation and decided to bring a squad up to support the Engine.[81] Pete Kampen dropped Ellreese Daniels and the NWR #6 Squad 1 (Tom Craven's squad) off at Engine #701. Kampen then returned to the lunch spot with the van. A few minutes later Thom Taylor, the Squad 2 Boss, was told by Kampen to take his squad up to support the Engines.

When Squad 2 reached the first engine they encountered, Engine #704, they were told their help was not needed.(82) They continued on up the road to Engine #701. Just after Taylor's squad arrived, Engine #701 left to work some spots further south along the road.(83) The two NWR #6 squads remained working spots about 100 feet to the east of the road.

Squad 3 was called to support Engine #704. Within 2 minutes of arriving at the location of Engine #704 the crew was ordered back in the van.(84) The fire was actively spotting and had moved right up to the east side of the road. The crew quickly drove back down the road to their lunch site "safety zone." Crewmembers from the NWR #6 Squad 3 had to shield their faces from the intense heat as they drove past the fire.(85)

At 4:34 p.m., as Squad 3 retreated, Kampen and others radioed Ellreese Daniels to get the people out of the area. NWR #6 Squads 1 and 2 were about ¼ mile further up the road from where Engine #704 had been working.

The crewmembers from Squads 1 and 2 dropped their gear and nine of them jumped into the van with Ellreese Daniels. The other four began running down the road.(86) As Daniels drove the van down the road he saw a "wall of flames", and he quickly turned the van around, picked up the other crewmembers and the crew gear, and drove about a mile up the canyon.

The Deployment Area

Ellreese Daniels evaluated three possible sites as he drove north, and with support from Air Attack, he selected the fourth site as the place were they could safely watch the fire pass them by.(87) It was characterized by extensive rock scree above and west of the road. The Chewuch River and a sand bar were just east of the road. There was relatively sparse forest vegetation in the surrounding area. The scree slope consisted of a jumble of six-inch to six-foot diameter rocks interspersed with woody debris and duff.

The NWR #6 crew unloaded and began to congregate on and above the road as they watched the fire. The van was turned around and parked on the side of the road next to the river.

There was no formal briefing given concerning possible deployment. At first everyone stayed on the road. After a while one of the squad bosses, Thom Taylor, and one of his crewmembers, Armando Avila, went up the scree slope to look for possible deployment spots.(88) Avila thought there was too much vegetation amongst the rocks and told Taylor that he was going back to the road with the others.(89)

Six of the ten crewmembers from the Naches District clustered together on two rocks about 30 feet above the road. Several times the IC tried to tell the people on the rocks to come down to the road.(90) Rebecca Welch left the Naches group on the rocks and returned to the road.

B Croft

Figure 10. The Road and Rock Scree Deployment Areas Looking West and Down River

By 5:00 p.m., Air Attack had estimated the fire to be over 500 acres. It was moving up the east canyon slope.[91] A few minutes after 5:00 p.m., two civilians, Bruce and Paula Hagemeyer, arrived at the entrapment site after having driven up the road earlier in the afternoon. The couple had been resting at the Thirtymile Campground and had become worried about the fire. No spare shelters or personal protective equipment were made available to the civilians.[92]

Deployment

At 5:24 p.m., the behavior of the fire changed dramatically. In spite of the lack of forest vegetation and brush in the immediate vicinity of the crew, the immensity of the fire overwhelmed the area and the crew. The abruptness of this change appears to have caught the crew by surprise. They were not in a heightened state of readiness. Shelter deployment was no longer optional but essential if any were to survive.

Crewmembers reported the fire was "coming very fast, roaring" and was preceded by ash and a "fire snowstorm."[93] The IC directed the crewmembers to "get your shelters out and use against the ash" in order to protect them from falling embers.[94]

Very quickly thereafter he told the crewmembers on the road to deploy -- some did not hear him due to the noise of the fire which sounded like a "freight train." Many found it difficult to deploy in the increasing wind.[95] Several of the crew deployed with their head facing the flames and with their backpacks on. Some deployed with their face up. Others dropped their backpacks right next to their shelters. At least one crewmember deployed without gloves. Neither of the civilians had gloves.

M Rutman

Figure 11. The Approaching Crown Fire

Thom Taylor had concluded that the rock slope was not a good deployment area and was coming down to the road when the fire column engulfed the site.[96] Thom Taylor was about 40 to 50 feet from the road when the flames came at him from across the canyon. He turned and ran up the slope before he deployed.

The Naches group on the rocks also ran up the slope when the column engulfed the site. They were right behind Taylor. Taylor deployed first and observed a group of five (Tom Craven, Jason Emhoff, Karen FitzPatrick, Jessica Johnson, and Devin Weaver) running uphill in front of the flames just prior to their deployment.[97] He yelled at them to deploy as he was getting into his shelter. They were unable to get further up the slope due to the rapidly deteriorating conditions.

The six deployed in a tight cluster among the rocks. The site where they deployed was about 100 feet above the road and had large, one to three foot boulders, with burnable, woody material imbedded in the rocks.

Conditions outside of the shelters at the deployment site on the road and in the rocks were lethal during the first minutes of the event. Within a few minutes, Thom Taylor was convinced that his shelter would not hold together long enough to save him.[98] He decided to run down the slope and jump into the river.

Figure 12. View Across the River Just Prior to Deployment

Jason Emhoff did not have gloves on and his hands were badly burned as he attempted to extinguish the flames within his shelter. He could not effectively hold the shelter down and decided to leave his shelter. After a few minutes he left his shelter and moved through the scree field trying to avoid the heat and flames. He eventually reached the road and got into the van. He avoided getting into the river due to his recent EMT training and concern with possible shock from the cold water.[99]

Prior to deployment, the civilians had time to put on long sleeved shirts, long pants, hats, and gather water and a towel. When the crew deployed, the civilians jumped inside the shelter with Rebecca Welch. They took the towel and a gallon of water into the shelter.[100]

The van sustained little heat damage. Only the license plate plastic frames were melted. The civilian's pickup caught fire during the burnover and eventually was completely destroyed.

While in the shelters the IC attempted to calm the crewmembers. He was in radio contact with Air Attack

Figure 13. The Scree Slope

throughout the entire deployment period and was monitoring the outside conditions. When it appeared safe he ordered everyone into the river. The crew joined Thom Taylor in the water. After about 15 minutes they moved to the sandbar.

Figure 14. Deployment Spot on the Road Between Two Packs that Burned

The Rescue and Evacuation

Following the burnover and deployment, the Entiat IHC, who were down the road, quickly organized for the rescue operation. The Entiat IHC EMT team was briefed on what to expect at the site, and prepared supplies and personnel for action upon reaching the burnover site. Due to the extreme heat and multiple fallen snags, two attempts were required to reach the deployment site.

Pete Kampen and four of the Entiat IHC arrived about 30 minutes after the deployment. When they arrived the IHC Superintendent assumed control of the accident scene and remained until the scene was turned over to local law enforcement.

NWR #6 crewmember Jason Emhoff was found in shock with second and third degree burns; his hands were severely burned. Others had minor burns and smoke inhalation. The civilian woman had burned her hand climbing over a log while getting in the river. The EMT team provided immediate medical attention, wrapping Emhoff's hands and calling for an airlift for him. He was transported to a burn center in Seattle while the other injured people were treated locally.

K. Cannon

Figure 15. Pete Kampen With Medical Kit at the Road Deployment Site at 6:10 p.m. (Entiat IHC truck in the background)

The IC asked the Entiat IHC for assistance in checking on the people who had deployed on the rocks. This was not possible because the rock scree slope was too hot, with burning material and rolling rocks. The Entiat IHC Superintendent attempted to discover signs of life in the four shelters, but got no response. It was later determined that all four deaths were caused by asphyxia due to inhalation of superheated products of combustion.

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