

Rapid Lesson Sharing

Event Type: Smokejumping Accident

Date: August 22, 2025

Location: Squeezer Fire, Flathead National Forest
Montana

On August 22, 2025, the Squeezer Fire was detected on the Flathead National Forest within recommended wilderness. At 1309, the fire size was reported as 1 to 2 acres.

At the time, fuels indices in the local area indicated historically high live fuel moistures [Growing Season Index (GSI) >0.8–0.9], high thousand-hour fuel moistures, and Energy Release Components (ERCs) at or below seasonal averages. The decision was made to utilize a full suppression strategy for the Squeezer Fire. In support of this effort, at 1412, the Duty Officer placed an order for a load of smokejumpers.

A Sherpa aircraft, J-62, with 10 smokejumpers, two spotters, and two pilots left Missoula at 1512 and flew northwest toward Swan Peak. They estimated the fire was now 5-10 acres, smoldering in mixed conifer halfway up the south slope of a long valley. The flight from Missoula was smooth and winds in the fire area appeared calm. According to the aircraft GPS, the winds over the fire were approximately 2 mph. After arriving on scene and completing a high-level recon, several potential jump spots were identified in the area. Due to the steep terrain, several low-level passes were made over potential jump spots to visually inspect them for hazards and viability. These factors can help shape the initial jump plan and become part of the decision-making process for spotters and jumpers.

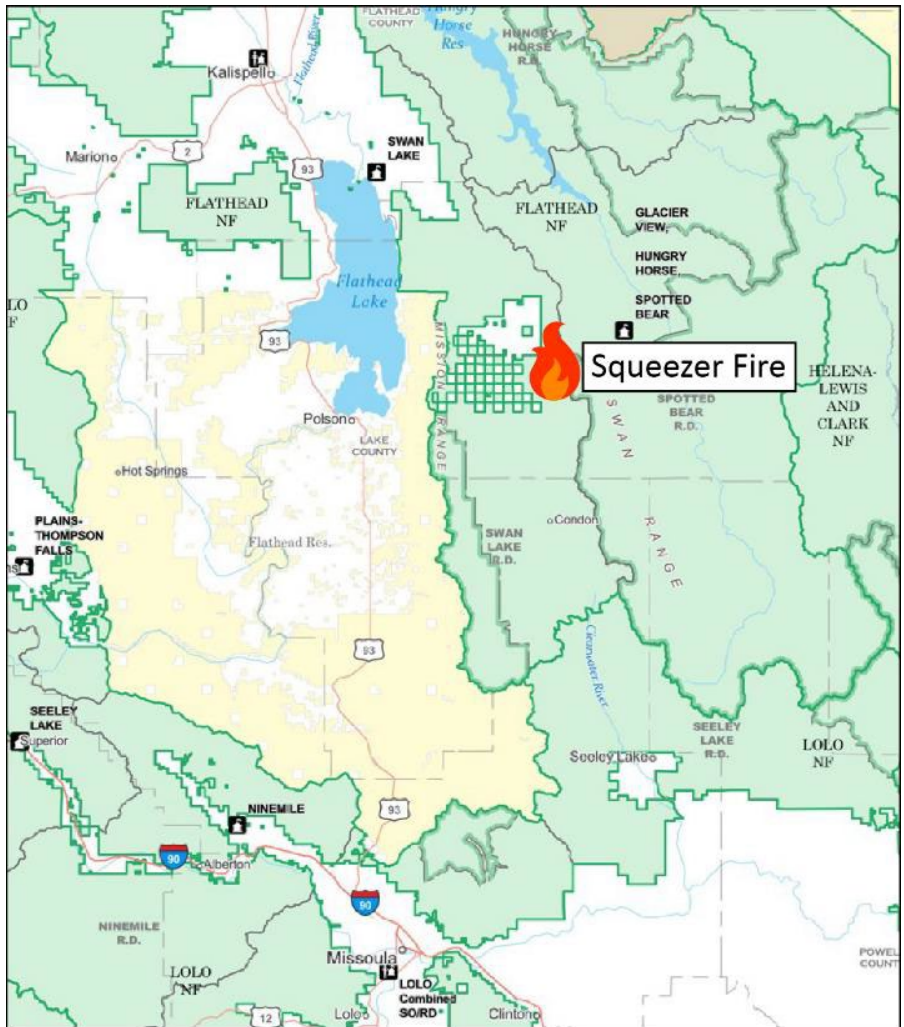


Figure 1. Map of the Flathead National Forest showing the location of the Squeezer Fire.

Jump Spot Selection

The jump spot selected was at approximately 7,050 feet MSL (Mean Sea Level), below a 7,500 feet MSL ridgeline. The initial set of streamers took longer than expected to reach the ground, as the aircraft came in too high. They went back around to do another initial set. These indicated 100-150 yards of drift. The spotter threw a check set and the streamers reached the ground in 1 minute and 30 seconds. The spotter and the first four jumpers liked the jump spot, acknowledging that it would be challenging due to the steep slope and potential for “ridge compression” on the final

approach. (Ridge compression is a phenomenon in which wind is intensified as it flows over terrain. This compression can increase wind speeds and lift on the windward side.)



Photo 1. The jump spot is outlined in red near the top of the slope. The Squeezer Fire’s location/smoke is visible in the foreground.

Reservations about the jump spot were felt by some jumpers farther down the load. The steepness of the slope, lack of nearby and viable alternate landing areas, and the multi-aspect nature of the selected sidehill jump spot accounted for a majority of perceived difficulty in the jump. Jumper 7 passed their concerns up the load in an attempt to communicate with the spotter and Jumper in Charge (JIC). However, Jumper 1 (JIC) and the spotter never received this information. Eventually, jumpers farther down the load decided that as the mission progressed they would have additional real-time information about the jump spot and conditions.

Jumper 1 and Jumper 2 Exit the Airplane

During the jump spot selection and assessment portion of the mission, a few of the jumpers, including Jumper 1, noted experiencing air sickness. As Jumper 1 and 2 donned their jump helmets, they decided a right-hand pattern would allow them the best approach into the spot.

As the jump plane climbed to 3,000 feet AGL (Above Ground Level), Jumper 1 was hit by nausea. The spotters waited for it to pass before asking if Jumper 1 was ready to jump, telling the pilots to take another orbit. After ensuring Jumper 1 was ready, the spotter put them in the door to prepare to exit the aircraft. Once on final, the spotter determined that the jump plane was not on the correct heading to the release point and decided to pull Jumper 1 out of the

door. The next final approach allowed the spotter to be over the intended release point and to proceed with signaling Jumpers 1 and 2 to exit the airplane.

Jumper 1 had a clean exit and ensured their parachute was good. They began making front riser turns to lose altitude and create separation from their jump partner. Feeling like this first set of riser turns were ineffective, the jumper performed an additional set of front riser turns. Because they felt a lot of “up air,” they elected to perform a number of stalls (a deep brake maneuver utilized to lose altitude). By this point, the wind had carried them toward the ridgeline. Jumper 1 determined it no longer made sense to force a right-hand pattern.

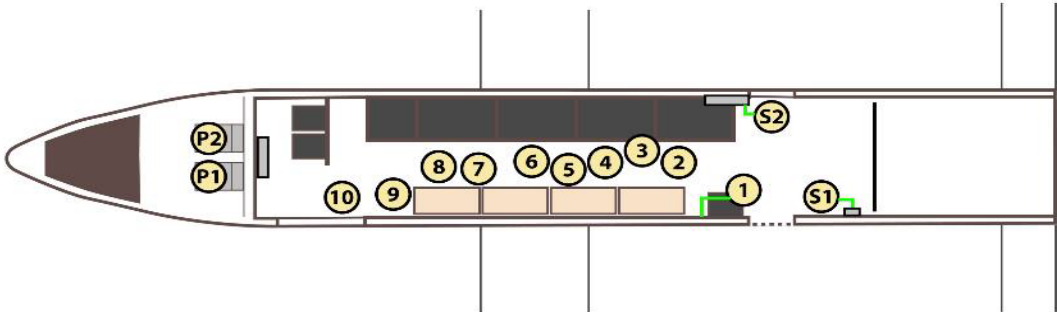


Figure 2. Diagram of the C-23 (J-62) showing the position of pilots, spotters, and smokejumpers prior to jump operations. In this RLS, jumpers are referenced by their number order.

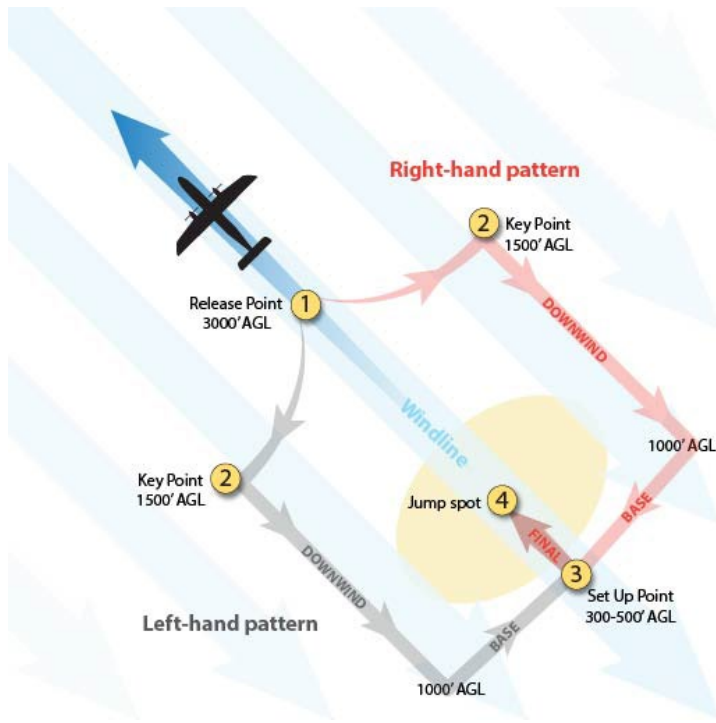


Figure 3. Diagram of left-hand and right-hand patterns.

After noticing Jumper 1 had elected to do a left-hand pattern, Jumper 2 decided it was in their best interest to stick with the previously planned right-hand pattern. They believed a right-hand pattern was still the safer option due to minimizing time spent near the top of the ridge and the potential effects of up air and ridge compression near the ridgetop. Jumper 2 reported feeling a lot of up air as they continued the right-hand pattern. Jumper 2 utilized stalls to counteract the floaty conditions they were experiencing throughout much of their pattern. They later remarked that it was a long flight and they felt the need to get to the ground. Jumpers 1 and 2 reported being able to see each other during most of their flights.

Jumper 1 continued to have trouble with up air as they turned base to final (see Figure 3). As they made their way into the spot, they reported the up air lifting them. This carried them close to the tree line at the far end of the jump spot, but they did not feel that “treeing up” in this instance was a good option. The tree line was in an avalanche chute and the potential alternate landing spots on the other side of this chute were at an adverse angle to the slope of the jump spot. Jumper 1 made a right-hand turn to modify their final, now looking at other possible landing areas.

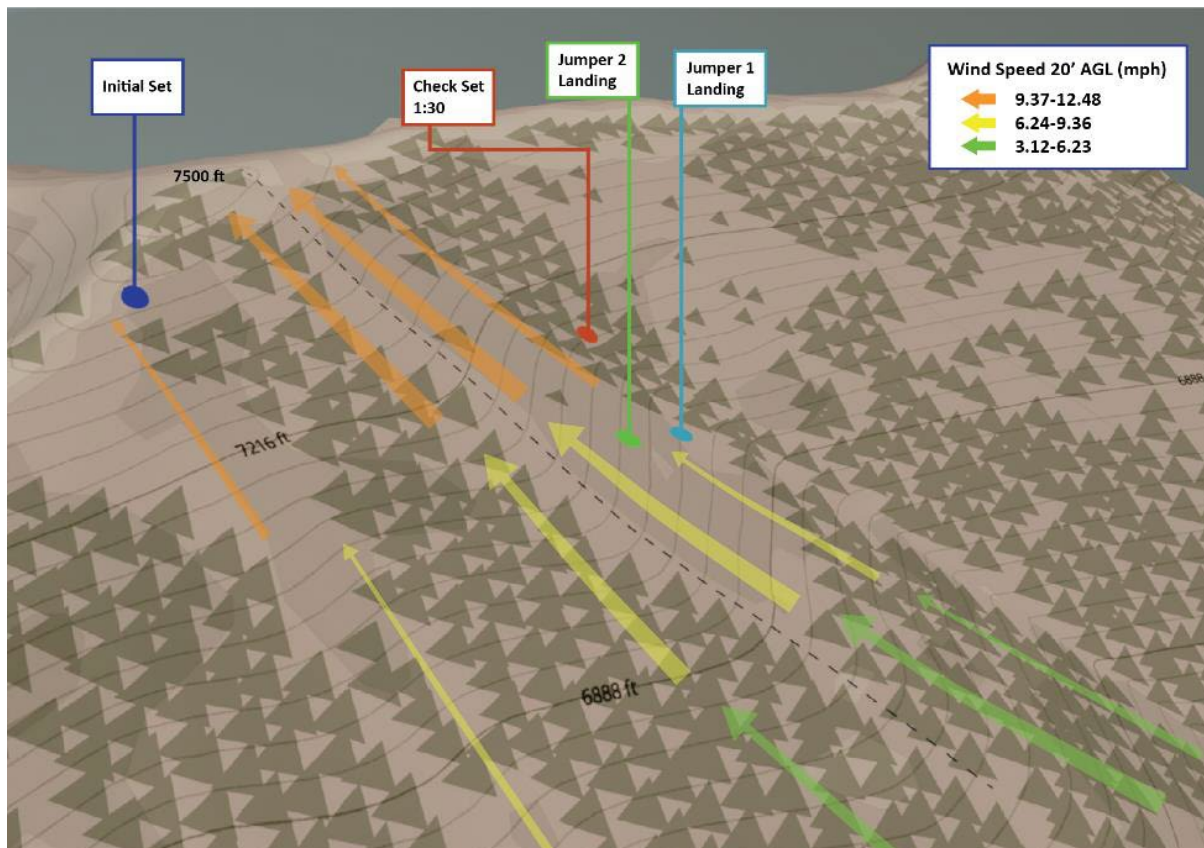


Figure 4. Contour terrain of jump spot with wind direction and speed estimated with Wind Ninja.

Jumper 1 spotted Jumper 2 just as they came into the spot from the west. They were now on a similar contour and converging. Both jumpers then made left-hand avoidance maneuvers with Jumper 2 landing before and upslope from Jumper 1. Jumper 1's left-hand turn continued around for approximately 270 degrees which put them impacting rising terrain upon landing.

Seeing that both jumpers were now on the ground, one of the pilots described listening for the familiar call on air-to-ground that the jumpers were on the ground safely: "It felt like forever," the pilot said.

Unfortunately, the first call from the ground was from Jumper 2: "[They're] not in good shape. I need help!" Jumper 2 requested two additional smokejumpers, the trauma kit, and aerial evacuation immediately. They started to try to stabilize Jumper 1's head and cut away their parachute. J-62 relayed a request for a short-haul helicopter to Dispatch at 1613. Fifteen minutes later, they also requested an Air Attack.

Injured Jumper Protocol

The spotters moved into their injured jumper protocol. The need for assistance on the ground was immediate. Briefly, they weighed the value of moving two less experienced EMTs up from the middle of the load. Jumper 2 was qualified as a nurse, an unusually high level of medical expertise. The next two jumpers in line both had more than 60 fire jumps and considerable leadership experience. They were already hooked up and briefed. The spotters decided to keep the jump order as it was and not prioritize additional medical qualifications.

Both jumpers flew a right-hand pattern. Jumper 3 reported that they were able to execute their jump as planned but confirmed having to work through ridge compression on final. They landed directly upslope from the injured jumper. Jumper 4 flew a right-hand pattern as well, but was unable to execute the final leg of the pattern as planned. Jumper 4's final carried them toward the tree line, similar to Jumper 1. Once going long was imminent, Jumper 4 made the decision to reverse their direction of final approach and made a 180-degree turn, landing softly on a contour in the jump spot.

Jumper 3 got their gear off and ran down to the injured jumper. Without a dry run, J-62 delivered a trauma kit close to the injury site. The injured jumper was oriented face up, head pointing downslope, parachute piled loosely on top. The jumpers attempted to use the knife from a reserve parachute container to cut away gear, but ended up having more success with pocketknives and trauma kit shears. It was evident that both upper legs were fractured. A traction device located in the trauma kit was used to pull traction on the right leg and a tree branch was used to splint and support the left leg. They were able to secure the patient on the Traverse Rescue Stretcher (TRS).

While patient treatment and medevac coordination were in process, J-62 continued placing cargo at the top of the ridge, well away from the injury site. They dropped cubies, food boxes, and saws—enough for the remaining jumpers to be prepared to stay several days. They were able to perform all cargo operations before Air Attack or the extraction helicopter arrived on scene, clearing the air space for rescue operations.

Jumpers Coordinate Care on the Ground

Jumper 3, working as the Incident Within an Incident's Incident Commander (IWI IC), established positive communication with Dispatch, J-62, the Air Attack platform, and a Type 1 Helicopter doing bucket work on the fire. Jumper 2 took the

Communicating Patient Information

Prioritize communicating medical information (8-Line/MIR/Form ICS 206) to the dispatch center. County dispatch centers may not be able to dispatch ground and air ambulances without key information. A brief description of the injury or condition, including how the individual is packaged, can help air ambulance personnel arrive on scene with supplementary equipment. Body/flight weight and estimated elevation of the incident site can help with fuel planning and crew configuration. Provide accurate information to avoid delays.

Hoist Operations

Two Bear Air requires a sterile cockpit during hoist operations. The hoist **S**ystem **O**perator will initiate the hoist by saying: “**SO** ready to hoist,” then wait to hear the “clear to hoist” confirmation from the pilot. They need to keep the radios on for emergency traffic, but also need clear communication throughout the hoist operations. Avoid radio traffic on A/G and A/A channels used during an IWI until hoist operations are complete.

lead on medical and patient care, delegating what help they needed from the other two jumpers. They told Jumper 3 to put in a request for Two Bear Air, a local hoist ship. Jumper 3 relayed this and Dispatch ordered them, as well as a short-haul ship from McCall, Idaho as a backup. (There was a closer short-haul ship located in Libby, Montana which was down for mechanical issues.)

Seventy-four minutes after the injury occurred, Dispatch informed them that Two Bear Air was five minutes out. J-62’s pilots heard Two Bear Air call on the backcountry channel as they lifted off and were able to ensure that they switched to the correct frequencies. A/G communication went smoothly using TAN, a local mutual aid channel.

Hoist Operations on a Steep Slope

Two Bear Air was on scene at 1733. The steepness of the terrain prevented the rescuer from standing during the hoist. Hoisting the patient with the rescuer in the seated position gave them a higher risk of spinning during the hoist.

On flatter terrain, the rescuer positions the patient with their head pointing into the rotor wash and a “fin” near the feet helps to stabilize them as they are raised off the ground.

To minimize the risk, the helicopter came in to hover lower than normal, producing unexpectedly intense rotor wash. The patient was packaged in the TRS inside a rescue bag. The Two Bear Air crew explained later that a rigid backboard is better for hoisting. Because of the hoist setup, a patient’s legs will briefly hang over the edge as they are pulled into the helicopter. The act of sliding them all the way into the aircraft can be very painful for patients with leg injuries. This is accomplished more smoothly with a rigid backboard.

By 1803, Two Bear Air was en route to transfer the patient to the Kalispell Air Advanced Life Support Emergency Rescue Team (A.L.E.R.T) air ambulance. They were received at the Kalispell Hospital Emergency Room at 1858. The patient underwent surgery to repair the injuries. They continue to make substantial progress toward healing and are expected to make a full recovery.

Considerations

Communication

- ❖ Jumper 1 spent much of the time utilizing the internal communication system (ICS) to discuss the mission with the spotter. This allowed for clear communication with one individual, but potentially acted as a barrier to the rest of the load.
- ❖ It is typical for the JIC to represent the load when it comes to comfort levels with the mission. In this instance, those jumpers farthest from the JIC expressed concern with the selected jump spot. This information never effectively made it to the JIC and spotter.

Jump Spot Selection, Jump Planning, Execution and Role Responsibilities

- ❖ Jump spot selection is a decision-making process shared between the spotters, pilots, and jumpers. It has many considerations: limiting complexities for jump and cargo operations, concerns about fire growth and escape routes, and even egress for demobilization after the fire suppression efforts are complete. Some of the additional jump complexities present on this jump include:
 - The multi-aspect nature of the spot minimized the margin for error even when attempting to execute a contour final pattern.

- If a jumper “goes long” on their final approach they will eventually be flying into rising terrain with not many alternate options.
- Similarly, if a jumper “comes up short” as a result of setting up too deep, they would be flying into the rising terrain of the sub-ridge near the set-up point.
- Neither of these complexities would be present on a singular aspect sidehill jump spot.
- Pattern options are limited. A left-hand pattern requires a longer flight (approximately 270 degrees around the spot) to arrive at a proper setup point.
- ❖ Motion sickness may lead to decreased overall awareness and decision-making ability.
 - Jump Plan: The pattern portion of a jump plan should include, at a minimum, direction (right or left), type (standard or nonstandard), and setup point (intended final). The jump plan should be confirmed with all jumpers in the “stick” (the number of jumpers exiting the airplane on a given pass) before hooking up and receiving the jump briefing.
 - Converging Patterns: Although it is rare, there are cases in which jumpers within the same stick do not fly patterns of the same direction. This should be avoided as it sacrifices the many benefits of doing so: predictability, making adjustments based on the preceding jumper’s results, and an orderly landing sequence for multiple jumpers in the air.
 - In the event that jumpers in the same stick are flying converging patterns, it is imperative that each perform their role to ensure an orderly landing sequence and maintain jump partner awareness. Canopy inputs that conserve altitude provide the second jumper in the stick with more time and flexibility to adapt to their jump partner’s pattern.
 - A contour landing on sidehill jumps is used to provide the jumper with a stable final leg of the pattern. By flying a contour final, jumpers can avoid the hazard of landing into rising terrain which would result from approaching a sidehill jump spot directly from the downhill side. It also alleviates accuracy issues associated with approaching a sidehill jump spot from the uphill side when a jumper will overrun the jump spot when pointed downhill because the forward speed of the canopy carries them past the falling terrain in the jump spot. This effect is commonly referred to by jumpers as “slope soaring.” The initial downslope approach flown by Jumper 1 made it very difficult to land in the jump spot.
 - Alternate landing areas, including timber landings, provide a jumper with a stable canopy, slow flight, and predictability to the rest of the stick. Low-level turns increase descent rate and forward speed. In most cases, “holding what you’ve got” will have better outcomes than large turns made low to the ground. Early identification of possible alternative landing sites is necessary and should be part of the jump plan. If an alternative is going to be selected, it is important to do so with enough altitude remaining for a safe landing, typically above 300 feet.

External Pressures

- ❖ National emphasis on full suppression has narrowed the strategic flexibility available to Agency Administrators, limiting the use of fire as a proactive management tool under suitable conditions.
- ❖ Local fire environmental conditions and risk assessments must remain central to fire strategy even when national intent or political pressures are strong.

Lessons Learned

- ❖ Effective communication is critical at all levels of aviation and firefighting safety. Look for opportunities to ensure barriers that are preventing thorough communication are minimized.

- ❖ Minimizing inputs while on final increases the chances of a safe landing. Continue emphasizing these principles of parachute manipulation during refresher trainings.
- ❖ When going over jump spot selection in refresher trainings, encourage more in-depth conversations over jump spot complexity. Some factors to consider: experience of the jumpers on the load, the necessity to jump/values at risk, current and expected fire behavior in relation to the jump spot, and the protocols for turning down a jump spot.
- ❖ Before committing to jump operations, communication with local duty officers is critical to ensure strategic alignment between jumpers and the local unit's intentions, especially if fire conditions/behavior have significantly changed since the order was placed. If able, a call placed to the ordering unit's duty officer prior to launching can be an effective means of ensuring quality communication is established.
- ❖ Hoist-capable helicopter platforms offer a valuable resource during initial attack as they do not require a helispot or a large number of personnel. Once the patient is packaged and hoisted inside they are able to quickly transport them to rendezvous with an air ambulance or definitive care.
- ❖ Advanced medical training of operational firefighters becomes increasingly important when a traumatic injury occurs during initial attack and medical infrastructure is not in place.
- ❖ Direct communication between agency dispatch centers and medevac helicopters would aid in smoother operations.
- ❖ On this incident, ordering an Air Attack platform allowed for better coordination between fire operations and the medical incident.

Timeline (approximate)

Initial location: 47.7202 x 113.6787

August 22, 2025

- 1309** – Smoke report, Battalion Chief (BC) responding
- 1412** – BC orders ship, considers ordering jumpers
- 1425** – BC orders jumpers
- 1435** – Engine en route
- 1442** – Order placed for smokejumpers
- 1512** – Sherpa J-62 aircraft en route from Missoula with 25 min ETA
- 1559** – J-62 jump ops
- 1613** – 2 jumpers on the ground, report injury to Dispatch
- 1621** – Dispatch contacts Two Bear Air
- 1624** – 4 smokejumpers on the ground
- 1626** – Requested Air Attack
- 1633** – Coordination Center tells Dispatch the McCall short-haul ship is responding
- 1651** – Two Bear Air mobilized
- 1716** – Air Attack on scene

1727 – Dispatch advises Two Bear Air 5 min out

1735 – Two Bear Air on scene

1741 – Air Attack requests Type 1 Helicopter back to fire for bucket work

1745 – A.L.E.R.T. (local air ambulance) en route to Condon Airstrip

1804 – Two Bear Air and A.L.E.R.T. notified Dispatch they are meeting at Goat Station – estimated time en route: 5 min

1805 – J-62 departs fire en route to Missoula

1828 – Type 1 Helicopter departs fire en route to Helena

1850 – Air Attack released

1858 – Patient arrived at Kalispell hospital

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