Rapid Lesson Sharing

Event Type: Motor Vehicle Tree Strike

Date: October 8, 2020

Location: The August Complex Fire
Shasta Trinity National Forest, California

"Engage in informal, mission-based risk discussions daily and ask for feedback to ensure understanding."

-Division Supervisor

"Know your topography. Do your homework."

-Rapid Extraction Module Support (REMS) Supervisor

"Empower people to take action."

-Division Supervisor

Brief Background

The August Complex Fire started as 38 separate fires ignited by lightning strikes during August 16-17. Four of the largest fires merged into one fire which, by early October, grew to more than one million acres. Due to the size of the complex, three different Incident Management Teams were managing this historic blaze that was burning in extremely steep country when this vehicle tree strike incident occurred.

Narrative

At approximately 1600 on the afternoon of October 8, a Strike Team Leader for Division Kilo on Branch 31 was driving on a U.S. Forest Service road when he encountered an engine heading in his direction. Knowing that the road was not wide enough for them to pass each other, he decided to back up to a wider spot behind him, located just around a slight bend in the road—to provide the engine room to pass.

While the driver of the first engine was briefly stopped on the road, he heard a loud "crack" sound, then spotted a snag about 75-100 feet up on the ridge begin to fall. Knowing that the Strike Team Leader had backed-up in that direction, the engine proceeded to round the curve just in time to see a massive dust cloud emerge.

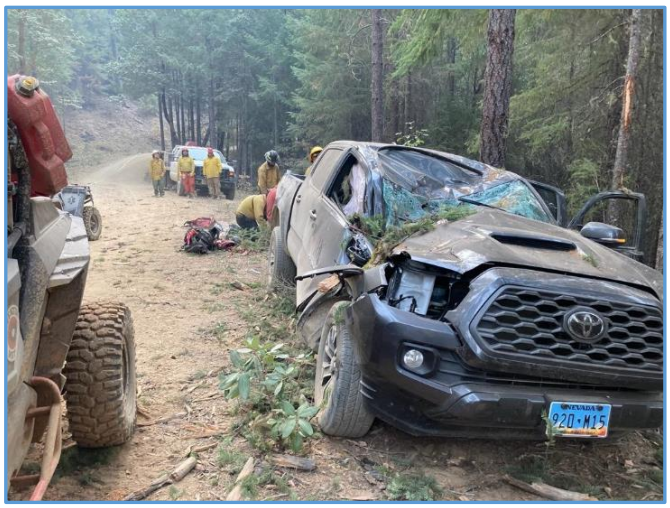
As this dust began to clear, they could see headlights. Next, as the dust continued to settle, they saw a mostly crushed gray mid-sized Tacoma truck as well as the 24-inch DBH portion of the fiery snag that had just struck the truck—which had bounced off and was laying on the ground.

Top Photo – Where the burning 24-inch DBH snag hit the truck. Bottom Photo – The fallen snag after a hand crew cut it and moved it off the road.

Nearby Resources Respond Immediately
The Engine Captain, who also had advanced medical training, immediately arrived on the scene to discover the driver of the Tacoma stirring around and trying to get out of the vehicle.

Although badly injured, the driver was able to exit the vehicle and the Engine Captain began to assess him.

Next, the Engine Captain attempted to contact the Task Force Leader. The Engine Captain was able to communicate that it was a "Red" medical incident, but because he was the primary caregiver responsible for rendering aid, the Engine Captain then went "radio silent" for a short time.



The Engine Captain communicated that the truck driver's injuries necessitated a "Red" medical response.

The Engine Captain and his crew made a temporary neck brace from a SAM Splint to immobilize the patient's neck. (A SAM Splint is a compact, lightweight, highly versatile device designed for immobilizing bone and soft tissue injuries in emergency settings.)

The branches from the snag that fell began to ignite small fires on the ground. A nearby hand crew and engine crew started putting them out with some hose from an existing hose lay.

"What firefighters do is make do."
-Division Supervisor

Off-Scene Resources Respond to "Red" Over the Radio
Although the initial report on the command channel was complicated because the Division Trainee [DIVS(t)] was trying to break through during the afternoon updates, the message that this was a "Red" medical incident made it through and provided enough information for other resources to begin taking critical action that led to the quick and efficient response.

The Incident Within an Incident (IWI) plan instructed 9-1-1 to be called first. As a result, the California Highway Patrol heard the call and sent a patrol officer to assist with directing traffic if the need arose. The Water Tender Operator nearby moved to a "Y" in the road to be able to direct responding resources to the scene. A hand crew also began directing traffic and performing scene control.

"There are two right turns you definitely would have missed if people wouldn't have been directing traffic."
-Division Supervisor

Meanwhile at the Incident Command Post, the Medical Unit Leader who had heard the chatter on the radio, followed the Incident Management Team's IWI plan and headed to the Communication trailer along with the Team's Air Operations Branch Director. The rest of the Command and General Staff met in the predetermined "IWI Room," which was designed to ensure that they could listen to the radio with minimal distractions, as well as refer to a Division map with visual markers for the location of all medical resources.

The Resources Mobilize
and the Division Trainee Becomes the IWI-IC

The strategically placed Rapid Extraction Module Support (REMS) Team was in place to respond quickly after receiving the initial call from the Division Trainee. Not all REMS Teams are equipped with a UTV for wilderness transport, as this incident's REMS Team was. (See footnote information below for issues related to ordering and standardization).[1]

While they were en route, the REMS Team called the Communications Lead and requested a medical evacuation helicopter. The Communications Lead followed the IWI plan and called 9-1-1. This call alerted Shasta Dispatch, who alerted North Ops, who contacted the California National Guard Medical Extraction Helicopter that was prepositioned at the Redding Airport. Air Operations contacted Air Attack and instructed him to launch ahead of the Medical Extraction Helicopter.[2]

While the Division Trainee was en route to the scene, he had a brief conversation with the Engine Captain who had provided initial care. They determined that the Division Trainee would be the IWI IC. He called for an ambulance and an air ambulance and started to report the full 8-Line assessment over the radio.

The REMS Team Arrives on Scene

The patient was assisted out of the truck by the engine driver on scene and was leaning over the tailgate when the REMS Team arrived. The REMS Team Leader began to provide the next level of care that was so desperately needed.

The REMS Team Leader's initial assessment quickly determined that the patient was having trouble understanding the situation and was unable to answer an initial set of basic questions. The patient repeatedly asked *"What happened to me? My neck and back hurt"*—even though the REMS Team had already explained this to him.

The patient was also in extreme pain. He had fractured three vertebrae (T2, T3, and T4) and sustained extensive ligament damage.

Knowing that he was going to be transported via a jarring UTV ride with the level of his pain, it was critical that the REMS Team was able to start pain management at the scene. They took off the temporary SAM Splint and swapped it out with a cervical collar.

With the assistance of several crew members on scene, they performed a standing take down in order to secure him safely to the backboard before placing him in the Stokes basket.

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[1] For readers who may not be familiar with REMS Teams, please click here to learn more. Specifically, take a look at page 4 of this Sept. 2017 "Rapid Extraction Module Support RLS" to see an example of how REMS modify their UTV for wildland transport. Although this type of resource is still not typed within IROC, ordering resources are learning to ask more questions about their capabilities and REMS teams are growing in popularity for their life-saving capacity.

[2] Although they were able to get the latitude and longitude in the approximate 30-minute flight to the scene, the original location was reported using landing zone locations and drop points. The Air Attack didn't have those specific maps and had to wait on a subsequent call to confirm the location for the Medical Extraction Helicopter. However, launching Air Attack to assist incoming aircraft is a crucial safety measure.

"REMS are the best possible resource for these situations. As an agency we need to work to expand and promote these programs."
-Division Supervisor

The REMS Team loads the patient into their UTV for transport to the helicopter's landing zone.

Once the patient was secured and was as comfortable as possible (via pain management medication) aboard the UTV built for wilderness transport, the REMS Team drove him to the nearest helicopter Landing Zone (LZ), located approximately 20 minutes away. (For more information, see the "REMS Practices Worth Sharing" section in this RLS.)

Responders Prepare the LZ for the Medical Extraction

The Division Supervisor learned that the medical extraction would be performed by the California National Guard. This alerted him to the fact that they would need to create more space at the LZ and prepare for much more rotor wash than typically occurs with smaller helicopters.

Once the REMS Team arrived with the patient, they transferred him into the ambulance that was waiting there, primarily to protect him from the dust and debris kicked up by rotor wash.

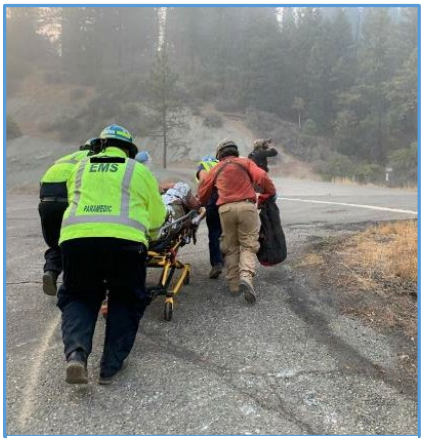
To see what rotor wash from a UH-60 (Blackhawk) is like, check out this YouTube video of the California National Guard helicopter arriving at the Landing Zone: https://youtu.be/RZtzy9lWBuE. (Photo above is a screen shot from the video.) This short video shows the entire process of boarding the patient.

They also moved vehicles farther away from the LZ to create more space and packed-up the gear that had arrived at the scene with the REMS Team to prevent it from flying around. Even with these preventive measures, when the Medical Extraction Helicopter began to land, fittings from a box of hoses began to hit the people at the scene and a box of lunches went flying down the hill.

The Patient is Loaded into the Medical Extraction Helicopter

The IWI's Incident Commander recalled: *"The patient was only in the ambulance for about two minutes before the medical extraction ship arrived."*

They retrieved the patient from the ambulance, and the Flight Nurse spoke briefly with the Medical Unit Leader, who had arrived at the LZ, and the REMS Team Lead. The helicopter was on the ground for no more than approximately five minutes.



The patient is transferred from the ambulance to the helicopter.

The Hospital Liaison Receives the Call to Respond to the Hospital

"I know he's not, but the first question I ask is: 'Is he okay?'" the Hospital Liaison recalled. She gathered other important information and made her way to the hospital. When she arrived, she asked the patient if he wanted her to be in the room or to be outside. He replied that she could stay with him. The hospital was having a difficult time getting the patient's pain level under control. The Hospital Liaison realized that she needed to do what she could to make conversation, in an attempt to take the patient's mind off his pain.

That evening, the Emergency Department Doctor was considering releasing the patient. However, the Hospital Liaison was concerned because the patient's pain was still not under control, as well as his overall condition, and if he was released he would be placed into a hotel room alone.

She therefore contacted the IMT's Medical Unit Leader and asked him to provide his opinion. Together, they were able to convince a nurse that the patient needed to stay at least overnight in the hospital for observation. The nurse was then able to convince the doctor of this. When the patient was stable, and they were preparing him to be admitted to a room in the hospital, the Hospital Liaison left shortly after midnight.

Caring for Our Own Continues

The next day, the Hospital Liaison began receiving calls at 0600 from the patient's home unit in Florida. She was providing as many updates as possible to both the home unit and the IMT. After gathering some items for the patient (reading glasses, etc.), she made her way back to the hospital. However, she was not allowed to see the patient because of COVID restrictions for admitted patients.

The Hospital Liaison recalled that it was very difficult not to be able to see the patient in person and ensure that he was okay. However, she was able to leave a package with the items that he needed. She later explained that she takes her Hospital Liaison job very seriously: *"I take it personally when someone is in there (the hospital)—like they are family."*

The second night, the patient was distressed because his pain still wasn't completely under control. The Hospital Liaison received a text from him expressing his concerns. She immediately called the nurse. A few minutes later, the Hospital Liaison received a text from the patient: *"You must have called them because they came to check on me."* He was extremely thankful.

Three days after the accident, when the patient's wife arrived, the Hospital Liaison waited with her to ensure that she wasn't alone. The hospital would not allow the patient to see his wife face-to-face. After two failed attempts to catch a glimpse of him through a window, his wife was becoming more distraught. The Hospital Liaison did what she could to support both the patient and his wife, including sitting with her in the parking lot for several hours at a time, on the off-chance his wife would be permitted to see him.

Over the next few days, the Hospital Liaison continued to help the patient and his wife. She even assisted the patient in returning to the fire's Incident Command Post so that he could thank—in person—the Incident Management Team and others who had responded to his accident. The Hospital Liaison also worked with the patient's home unit. At their request, the IMT released one other Florida-based employee to accompany the patient and his wife on their way back home for further treatment and recovery.

"Practices Worth Sharing" and "Lessons Learned"

The August Complex Tree Strike RLS revealed both "Practices Worth Sharing" (steps taken by those involved that are worthy of sharing) and "Lessons Learned" (opportunities to make necessary changes from issues that surfaced during the IWI).

I. Aviation

Practices Worth Sharing

Preposition important Regional resources and make sure everyone is briefed on their capabilities, ordering procedures, and communication frequencies.

A. Prepositioned Medical Extraction Helicopter – The Northern California Geographic Area Coordination Center (ONCC) worked with the state to strategically stage California National Guard hoist ships across the State of California. In this IWI, the California National Guard Extraction Aircraft was responding within less than approximately 20 minutes. They had touched down, loaded the patient, and left the scene in less than one hour of receiving their initial call.

B. A "Medivac Procedures Update" was provided to all aviation resources – Due to a recently recognized need for clarification around using the National Guard Medical Extraction Helicopters, North Ops developed a two-page guide (with a flow chart) for using this type of aircraft. (See Appendix A in this RLS for the document they developed.) The Guard also provided valuable feedback during this RLS, such as reminding ground resources that: *"Any time we use UH-60s or larger it always catches ground forces by surprise when they create so much wind."* In this situation, ground resources had taken measures to protect against rotor wash. Even so, there was still some unsecured flying debris.

Lessons Learned

A. Air Attack did not have the map of the Drop Points that were originally referenced for ground locations on the scene. In this case, this didn't make a difference because there was enough time to find the latitude and longitude en route.

B. Preplan with area hospitals to get direct phone numbers to the emergency department, if possible. The Medical Extraction Helicopter called the hospital in advance, referencing their arrival. But this information was not forwarded to the hospital's emergency department. While

the emergency department personnel quickly realized that they had an incoming patient as the helicopter landed, it was still a surprise to them.

II. Rapid Extraction Module Support (REMS)

Practices Worth Sharing

A. REMS provide an extremely valuable resource. REMS are capable of difficult patient transport, patient stabilization, and complicated extractions. They can navigate rough roads and quickly get a patient to the next level of care. Importantly, they can also provide pain management, which enabled this patient to avoid what would have been an excruciating, bumpy transport.

B. Really good REMS Teams are constantly monitoring the type of work being done on their Division and nearby Divisions to identify the riskiest operations for that shift. They also engage in on-going daily Division conversations and scan multiple radio channels to ensure that they can respond rapidly.

"Placement of the medical personnel was based on where the high-risk activity was taking place on the Division. We briefed on this every morning."

-Division Supervisor

III. Division Operations

Practices Worth Sharing

A. Division Supervisors lead by empowering firefighters to take action as appropriate in emergency situations. A hand crew cut the fallen snag to get it off the road and put out small brush fires along the road. A water tender directed traffic, and other key intersections were staffed, while additional crew members kept unnecessary people out of the area.

B. Communicating early, even with incomplete information, allows others to initiate action. The Engine Captain called in a "RED" which allowed the Division Supervisor Trainee to hear about this need and clear other radio traffic. It also allowed off-site resources to mobilize.

C. The Division Supervisor utilized mission risk discussions daily with his Division. This allowed for real-time feedback and understanding of risk. It also invited a more robust discussion around risk.

IV. Taking Care of Our Own: The Hospital Liaison and the Work of the Wildland Firefighter Foundation

Practices Worth Sharing

A. Hospital Liaisons may function as patient advocates in some cases. In addition to the typical work a liaison does by working with comps/claims, the Hospital Liaison in this incident was able to assist medical personnel in making the decision on whether or not to keep the patient overnight. She was able to do so because she was in close contact with the Medical Unit Leader.

B. The needs of the patient don't always end when then are discharged from the hospital. According to the Hospital Liaison, this was an "extended" incident because she stayed engaged with the patient and his wife to continue to help them. The patient wanted to go back to fire camp to thank everyone. When he did so, the Incident Commander presented him with a "challenge coin" which made the patient very emotional.

C. Reach out to the Wildland Firefighter Foundation (WFF) early in the process. Occasionally, when one of our injured firefighters is a cooperator, AD, or state employee, there can be delays in obtaining necessary services. In this case, the fastest way to fly the wife in and support her when she was waiting to accompany her husband home was to go through the Wildland Firefighter Foundation.

Appendix A.

Dispatch Procedures for Medevac Helicopter

The California National Guard has provided 24/7 use of a NVG and hoist equipped helicopter. The flight crews will include at least one EMT-Paramedic, making these resources Advanced Life Support (ALS) transport helicopters. The helicopter will be located at the Redding Airport and will be available for any requests for emergency medevac assistance to firefighters in Northern California. This includes all state and federal units and forests within the North Ops area.

IMTs or Units will assess the emergency and choose the appropriate mode of extraction and stabilization prior to requesting the medevac / hoist helicopter.

Dispatch Procedures from outside RICC

Incident contacts local ECC/Dispatch Center & requests Medevac Helicopter

1. Local ECC will follow local protocol for nearest available rescue aircraft.
   If none are available and the helicopter on base at Redding is determined to be the closest, call **the Northern Region Aircraft Supervisor** with the FC-106 and incident information at **(530) ###-####.** If unsuccessful contact the **Northern Region Duty Officer** at **(530) ###-####**.
2. Requesting ECC builds a request for a Type 1 Standard helicopter (special needs, NVG Hoist Medevac) in IROC and places to North Ops.
3. Northern Region Aircraft Supervisor contacts CNG medevac helicopter AAML and provides FC-106 and any other pertinent information.
4. Northern Region Aircraft Supervisor notifies requesting ECC of fill information via phone.
5. Medevac helicopter follows standard incident flight following procedures per the 2020 California Interagency Mobilization Guide.
6. Medevac helicopter notifies incident ECC of arrival at incident.
7. Medevac helicopter notifies incident ECC of departure from incident, ETD/ETA and destination.
8. Medevac helicopter follows standard incident flight following procedures per the 2020 California Interagency Mobilization Guide until the patient is delivered.
9. Incident ECC notifies Northern Region Aircraft Supervisor that medevac helicopter is released and ETD/ETA via phone.
10. Incident ECC releases medevac helicopter in IROC back to CNR Preposition.
11. Incident ECC notifies Northern Region Aircraft Supervisor of any critical updates.

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