Rapid Lesson Sharing

Event Type: Short-Haul Procedures and the Traverse Rescue Stretcher

Date: 2016 Fire Season

Short-Haul Procedures and the Traverse Rescue Stretcher: What You Should Know

As the 2016 fire season unfolded in the Great Basin and the Northern Rockies, several reports of fireline medical emergencies that involved Short-Haul helicopters and the Traverse Rescue Stretcher (TRS) emerged.

While the specifics of these incidents—as well as other lessons and learning products—will be made available in the future, we now have an opportunity to summarize and explain several matters associated with Short-Haul procedures (timeframes, equipment) as well as how TRS can and cannot be incorporated into Short-Haul protocols.

There are three main areas worthy of discussion and clarification:

Short-Haul extraction on the 2011 Las Conchas Fire in New Mexico. Photo by Kari Greer.

1. **What can you expect from a Short-Haul mission?**
   - ❖ What are the timeframes and procedures associated with a Short-Haul?
   - ❖ What are the responsibilities of ground-based firefighters during a Short-Haul?
2. **How can the Traverse Rescue Stretcher (TRS) interact with Short-Haul operations?**
   - ❖ Will a Patient in a TRS be hooked directly to the Short-Haul line?
   - ❖ What is compatible with other approved Short-Haul equipment?
3. **Short-Haul is an effective tool, but should not enable a particular strategy and/or tactic.**

Video References

For Short-Haul informational program videos, see page 5.

2016 Fire Season Observations and Lessons

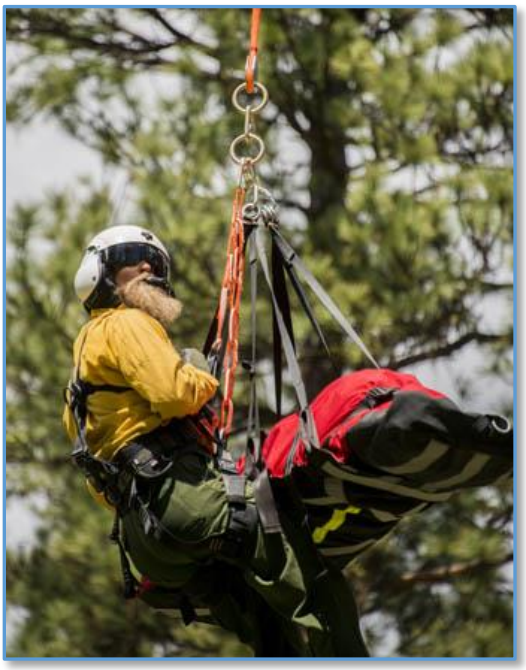
To address these main areas of concern, the following three key observation topics have been gathered from 2016 fire season experiences. Relevant lessons accompany each of these observations. While this RLS speaks directly to Short-Haul operations, these learning points can also apply to other aerial extraction methods, such as Hoist and Helicopter; and Single-Skid, Toe-In, and Hover Exit/Entry (STEP).

1. Observation: Short-Haul Expectations

There's a lack of understanding—from fireline and overhead-level firefighters alike—surrounding how Short-Haul missions work, how long they can take, and what folks on the ground need to do in the event a Short-Haul mission is requested.

Lesson:

Short-Haul missions do not happen instantly, but they can be faster and involve less risk than ground-based rescues.



A U.S. Forest Service Short-Haul rescuer during a 2015 training exercise with Bauman Bag. Photo by Lane Lamoreaux.

Short-Haul Timeframes

There's an impression that Short-Haul missions are rapid, perhaps because they're described as "short" hauls. "Short" refers to the distance the Patient and Rescuer may be moved (a "Short-Haul" or a short distance)—NOT the timeframe needed to accomplish the mission. Transportation of the injured party will be an appropriate distance, which will vary depending on location, terrain, helispot location, patient location, time of day, definitive medical care, etc.

However, in reference to timeframes and compared to a ground-based "carry out" rescue effort, a Short-Haul operation could be more expedient, as well as requiring a fraction of the number of ground rescuers.

This potential time-savings and the involvement of fewer personnel may represent a reduced level of overall risk exposure to the involved rescuers.

Detailed, Equipment Intensive, Deliberate Missions

Short-Haul missions are detailed, equipment intensive, deliberate missions. These missions are based on years of experience. The National Park Service has been doing Short-Haul missions since 1986. The Forest Service is in year two of the program's development stages.

A Short-Haul mission requires a Short-Haul Rescuer (see image above), a Spotter in the helicopter, and a Short-Haul-qualified pilot. Each of these positions requires specialized training. In the case of the pilot, Short-Haul qualification is particularly rigorous. Short-Haul qualification goes above the standard longline qualification.

Lesson:

When a Short-Haul mission is requested, here's an outline of what the Short-Haul crew might go through:

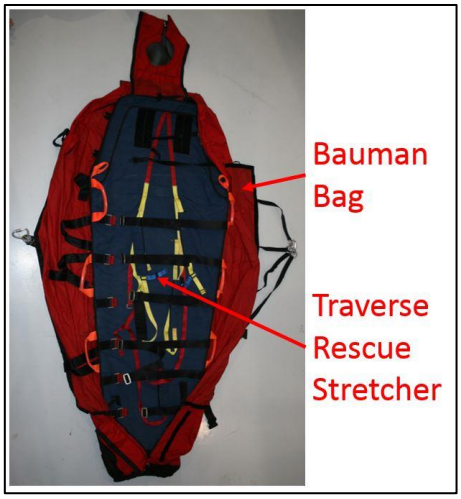
1. A Short-Haul mission is not much different than any other aviation mission. Key information needs to be relayed to the responding aircraft before launching. At a minimum this includes: location, associated frequencies, ground/air contacts, hazards, and patient info.

2. Based upon information gathered, the aircraft and crew will launch and complete an aerial reconnaissance flight—with high and low-level components. This initial flight is conducted with the Short-Haul Rescuer and Spotter on board the aircraft. The associated rescue equipment (Short-Haul line, medical equipment and Bauman Bag) may be onboard the aircraft during the recon, but no line is attached to the aircraft during this segment of the mission. The aircraft will establish radio contact with the accident site and solicit any additional information or provide rescue transportation options that may not have been discussed.

3. The aircraft will depart the scene and find a suitable landing location to configure the aircraft for Short-Haul operations. The Short-Haul crew and pilot will undergo a risk management discussion. If a Short-Haul mission is determined to be necessary and feasible, the crew will complete aircraft configuration.

   This configuration involves preparing the aircraft, personnel and equipment:

   a. Rescuer and Spotter put on appropriate harnesses and perform buddy checks.
   b. Short-Haul lines are attached to the aircraft.
   c. The necessary medical equipment is collected and prepped to fly. This can include immobilization devices and patient extraction equipment such as Bauman Bag or Bauman Screamer suit (flight-enabled and rated containers that the patient and litter will go into).



The TRS can be placed inside the Bauman Bag, which is the red and black outer layer.

4. Once all installations are completed with appropriate checks and double checks, the aircraft and Short-Haul Rescuer(s)—connected to the end of the Short-Haul line—will depart the configuration site back to the accident scene.

Lesson:

Even if you request a Short-Haul rescue, you might not get it.

When a Short-Haul mission is requested, a few things will happen that will influence the course of the mission. During a thorough recon, the Pilot, Spotter and the Short-Haul Rescuer will first look for a place to land the helicopter. It's not uncommon for viable landing sites to be just a short distance from the location of an injured firefighter. If there is a safe option to land the aircraft, that's what will likely happen.

After the recon is accomplished an Operational Risk Assessment is completed. If risk mitigations cannot be established, the mission is not performed. If risk mitigations can be established, at a minimum, an Emergency Medical Technician (EMT) is inserted into the incident site and the patient is packaged for transport.

As with any aviation operation, there is no guarantee that a Short-Haul mission will go as planned. There are times when the helicopter cannot respond due to reduced visibility caused by smoke, weather or darkness, or due to mechanical issues.

Lesson:

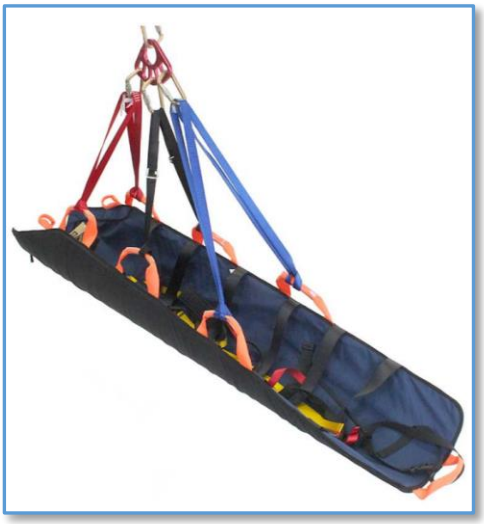
As a ground-based firefighter, if you request a Short-Haul rescue here's what you should be thinking about:

On the ground, bigger is better, but a canopy opening that is a minimum of 15 feet x 15 feet could be used to safely insert the Short-Haul Rescuer. This same sized opening can be used to retrieve the Rescuer and Patient. As in any aviation mission, the pilot has the final say on what will work.

In selecting a site for Short-Haul extraction, keep in mind these significant concerns regarding rotor wash:

- Every effort should be made to mitigate the threats associated with aerial Hazards (dead trees in particular).
- In areas of sloping terrain or with obstacles rising to one or more sides of the canopy opening, the Pilot must maintain proper rotor clearance from all obstacles.

- If possible, the Short-Haul site should be an appropriate distance away from burning material. The amount of rotor wash associated with a Short-Haul can have a significant impact on burning and smoldering material.



Traverse Rescue Stretcher™

2. Observation: The Traverse Rescue Stretcher and Short-Haul Compatibility

There's an expectation that the Traverse Rescue Stretcher (TRS) equipment can be "hooked" to a Short-Haul line.

Lesson:

TRS gear can be—and has been—successfully used in wildland fire operations. However, a Patient in a TRS cannot be directly attached to a Short-Haul rescue line.

The confusion regarding the TRS attaching to a Short-Haul rescue line may be from the outcome on the Freezeout Ridge Fire. This extraction is a well-known example of TRS gear being used with a helicopter, longline, and remote hook. This extraction was NOT a Short-Haul mission. The mission was conducted by a pilot who happened to be qualified for both longline *and* NPS Short-Haul missions.

The National Park Service and U.S. Forest Service have equipment and standards: All equipment used in Short-Haul operations is approved by the appropriate agency's Short-Haul Operations committee, in coordination with the USFS National Technology Development Program (NTDP) in Missoula. The TRS—which has been evaluated by MTDC—is not accepted for Human External Load operations as a standalone device, but may be incorporated with the Bauman Bag.

Lesson:

A TRS can be used to move an injured firefighter with ground-based rescue resources. If needed, the patient can be transferred to the appropriate Short-Haul equipment in an expedited fashion.

The 2014 Freezeout Ridge Fire emergency helicopter extraction used the TRS equipment. This extraction was NOT a Short-Haul mission.

If you have a TRS at an accident site and are considering requesting a Short-Haul, it's appropriate to use the TRS, particularly if there's need to move the patient to a more appropriate location on the ground.

If a Short-Haul mission commences and the patient is packaged correctly, the Short-Haul rescuer can insert the patient in the TRS inside the Bauman Bag. Additionally, the Bauman Bag supports and is compatible with a variety of common wildland patient packaging devices including: standard backboards, Stokes and SKED litters. Each of these devices are unique; and they each require familiarity and training prior to an emergency situation.

3. Observation: Potential Short-Haul Effects on Tactical Decisions

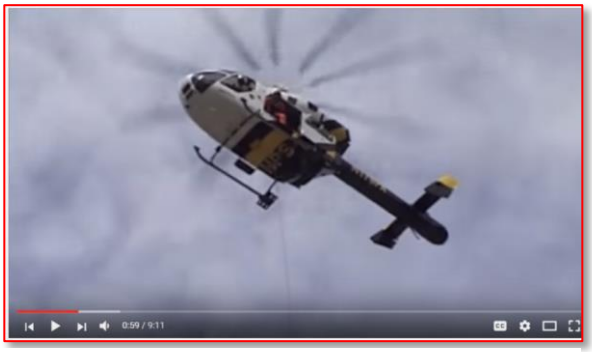
There is significant concern that personnel may be making tactical decisions based on the availability of an aviation asset, including Short-Haul resources.

Lesson:

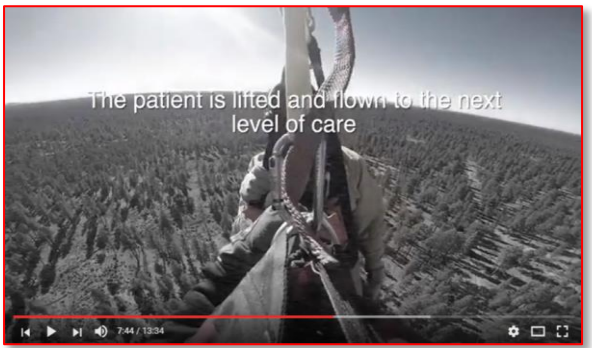
Short-Haul, much like any other tool in wildland fire (fire shelters, medical providers, PPE, etc.), should not be part of risk management discussions where additional exposure to risk or hazards is undertaken due to the presence of a Short-Haul capable helicopter.

The conversations that take place associated with certain assignments—particularly those that would require a Short-Haul in the event of an injury—are critical. Just like the availability of fire shelters should not influence strategy and tactics, the availability of an aviation resource, especially a Short-Haul-capable helicopter and crew, should not influence strategy and tactics.

For More Information on NPS and USFS Short-Haul Programs
Check Out these Three Videos



NPS Short-Haul – An Introduction
https://youtu.be/bNDmDihm8YQ



Emergency Medical Short-Haul:
An Introduction to a New Forest Service Program Supporting Employees
https://youtu.be/OOhbUP5b14U

ROCK! Firefighter Extraction Story by the Wildland Fire Lessons Learned Center
https://youtu.be/singJsUrYzE

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