

Rapid Lesson Sharing

Event Type: Rapid Extraction Module Support

Date: September 2017

Location: The Pacific Northwest

***“The most important things are timing,
speed, and not caring who gets the credit.”***

**Director of Wildland Operations,
Advanced Life Support – Rapid Extraction Module (ALS REM)
Phoenix, Arizona**



The REMS team conducts an AAR where a rope system was used during a training exercise on the Umpqua North Complex.

1. Goal

The goal of this Rapid Lesson Sharing (RLS) is to provide information to Fire Managers, Incident Management Teams, and Ground and Aerial Resources about Rapid Extraction Module Support (REMS). This information, “feedback from the field,” was gathered through interviews with REMS, members of Incident Management Teams, and crews from multiple states assigned to fires in Oregon and Northern California. This RLS is intended to communicate these ongoing efforts to aid in the safe and effective use of this module.

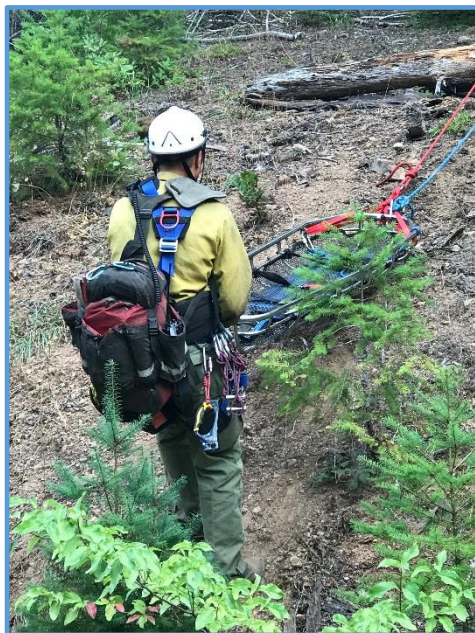
2. History and Development of REMS

Due to tragic events such as the 2008 [Dutch Creek Incident](#), and persistent safety concerns regarding medical rescue in dangerous conditions in northern California and southern Oregon, Rapid

CONTENTS

- 1. Goal...Page 1**
- 2. History and Development of REMS...Page 1**
- 3. What’s in a Name?...Page 2**
- 4. Even If the Name was Consistent, Other Inconsistencies Still Exist...Page 2**
- 5. You Have REMS on Your Fire – Now What?...Page 5**
- 6. “Best Practices” Advice from Practicing REMS...Page 5**
- 7. Final Thought...Page 8**

Evacuation Modules were developed in 2012 ([Darbro & Birchfield, 2015](#)). The topography, weather, and smoke conditions experienced on fires that year made the reliance on hoist or short-haul helicopters as the only means of firefighter rescue impractical. The REM provided an alternative form of rescue from steep/remote areas when aircraft was not an option.



REMS Rope Technician/Paramedic is lowered with Stokes basket during training exercise this September on the Umpqua North Complex.

As a way to standardize these modules, [Firescope California](#) assembled a Task Force to address problems such as a lack of a consistent definition of a REM, difficulties associated with ordering these modules, lack of a standard equipment list, etc. In 2015, the Task Force produced an Incident Command Position Manual [\[REMS, ICS 223-12\]](#) and changed the name from Rapid Evacuation Modules to Rapid Extraction Module Support (REMS). This name change was likely to emphasize the supporting role that the modules perform, as well as a way to match the abbreviation formatting in the Resource Ordering and Status System (ROSS).

After two fire seasons, a working group was formed to provide recommendations to improve the effectiveness of the REMS resource. This working group produced the [2017 REMS, ICS 223-12 document](#) which states: “It was understood that this would be a ‘living’ document and would have to be revisited after putting it into practice.” (Cruz, et al. p.3.)

3. What’s in a Name?

One of the first questions asked during interviews for this RLS was: “What is REMS?” When we got to the eighth unique answer, we stopped asking that question. The diversity in the responses about the title reflects the diversity of ways individuals view what they believe REMS actually is. Each variation invites a slightly different

understanding of the purposes and capabilities of this resource. Regardless of the official title, these unofficial ones are currently circulating:

- Rapid Extraction Module
- Rapid Extrication Module
- Rapid Extraction Medics
- Rope Extraction Module
- Remote Extraction Module
- Rescue Extraction Module
- Advanced Life Support-Rescue Extraction Module
- Rapid Extraction Module Support

The differences reflected in these various words—and, in some cases, the spelling of the words—reflect a wide range of understanding of this resource. For example, you would be in for a surprise if your understanding of the resource was that it is an “**extrication**” module as opposed to an “**extraction**” module.

4. Even if the Name was Consistent, Other Inconsistencies Still Exist

Organizationally, while REMS work for the Medical Unit Leader, they can be assigned to a Division, Branch or Group depending on availability and number of REMS on a fire. Beyond this commonality, we observed a wide range of equipment capabilities and functionality of the REMS in the field, starting with classification and ordering.



REMS Rope Technician with two rope bags that meet Low angle Rope Rescue Operations (LARRO) standards.

What is Being Ordered: Personnel or Equipment?

Currently, there is little consistency in the REMS ordering process. Many questions surround the classification of these modules in ROSS.

One Incident Management Team processed orders for REMS as “Name Request” orders for the personnel as “Technical Specialists” (THSP) using an Overhead (“O”) number. Once the “O” number was filled, a supplement order was placed for their truck using an Equipment (“E”) number. An order for their specialized rope and climbing gear was ordered using a Supply (“S”) number.

Some members of the IMTs and REMS suggested ordering REMS using “O” numbers, while others suggested using “E” numbers.

Another IMT ordered REMS using an “E” number (very similar to ordering a Type 6 Engine), with an extensive list of requested equipment.

One REMS was name requested by an IMT but the local Dispatch Center did not understand the order, returning it to the system as “Unable to fill.” The REMS leader ended up calling the Dispatch Center and worked through the process with the Center Manager to fill this order. In this case, the confusion in the ordering process revealed that the Dispatch Center didn’t realize that they had REMS within their system.

Overall, some members of the IMTs and REMS suggested ordering REMS using “O” numbers, while others suggested using “E” numbers.

Wide-Ranging Capabilities and Equipment can Establish False Expectations

The 2017 REMS, ICS 223-12 document (discussed on previous page) addresses the minimal standards for the REMS. The current standard includes a two-person module, 4-wheel drive truck, and a Rope Rescue Cache that meets current Low Angle Rope Rescue Operations (LARRO) standards (National Fire Protection Association [NFPA] 1983 Technical or General Use). However, how much rope, what kind of rope, what type of rigging, and what type of hardware tend to vary considerably.

The 2017 REMS, ICS 223-12 document also suggested upgrades to the minimal standards. While all REMS meet the minimal standards, several programs have gone far above these standards. This calls into question the need for a typing system for REMS, based on extraction, medical, and transport capabilities.

Extraction

Some REMS perceive their role to be extracting a patient from a remote location and moving the patient to a place where additional resources can reach them. These REMS travel with extraction gear (ropes, wheeled Stokes, single-person walk-out harness, etc.) but do not carry advanced medical gear. These REMS will need to be supported by fire line Medics to provide patient care and transportation for the patient once the rope extraction is completed.



Wheel systems for transporting a Stokes basket. "Skinny Wheel" on the left. Wide wheel on the right, also known as "The Big Wheelie."

Extraction and Medical Treatment

Some REMS plan to extract a patient from a remote location and provide medical care in the process.

These REMS travel with extraction equipment and Advanced Life Support (ALS) supplies and have a fire line qualified Paramedic, who is also rope rescue qualified, as part of the module.

By including medical in this resource's capabilities introduces a few other considerations. First, medical licensure across state lines becomes an issue.

Even if Paramedics are allowed to administer pharmaceuticals as a part of an incident, they may encounter problems when incidents cross state lines.

No matter how REMS is configured, they all will need assistance from other resources on the fire to be successful in their extraction operations.

Extraction, Medical Treatment, and Transport

Some REMS travel with extraction and medical equipment and bring their own UTVs. (See photo on right.) Their ability to transport increases significantly because of the UTV, not just because they can get to more remote locations but also because they can carry more equipment closer to the patient. One REMS member said: *"We stabilize and treat while transporting. This is our biggest advantage."*

No matter how REMS is configured, they all will need assistance from other resources on the fire to be successful in their extraction operations. Some will require being married-up with Paramedics, some will require transport, most will require air or ground ambulance support. However, all REMS will require additional people to be ready to retrieve equipment, assist in transporting the wheeled Stokes, assist with set-up and use of rope systems, etc.—in other words, "throwing calories at the problem."



This UTV is equipped with rappelling gear, Advanced Life Support equipment including a mobile EKG, a wheeled Stokes, wildland hand tools, and a rigid backboard. In addition to this equipment, the Paramedic, EMT, and Army Combat Medic on this resource consider themselves "an alternative to a short-haul helicopter operation."

5. You Have REMS on Your Fire – Now What?

Due to the wide-ranging capabilities of the current REMS and different perceptions about their proper use, it's difficult to suggest *one* best way to integrate REMS into IMT operations.

What we can suggest is to have an open conversation about operational scope and expectations *before* assigning REMS to the field. This conversation could include answering questions such as: “Do we stage REMS with the ambulance until we need them?”; “Do we have them scout the line and plan for a possible extraction?”; or “Do we allow REMS to engage operational and/or work on task books?”

While the REMS themselves are advised to initiate these conversations, everyone involved should take responsibility in ensuring a mutual understanding.

6. “Best Practices” Advice from Practicing REMS

During our interviews for this RLS, we heard several different perspectives on how to launch a new REMS program, how REMS should pack equipment, and what REMS should do once they check into an incident. To help new REMS be better prepared, we've compiled the following nine key “Best Practices” from our interviewees:

1. Know the worth of the REMS and be able to communicate it.

Those who are interested in launching a new REMS will likely have to explain the concept. One REMS suggested introducing the concept to their command officers by comparing it to a Rapid Intervention Crew (RIC). Most structural fire departments are familiar with the RIC concept that focuses attention on the foundational goal of *rescuing a firefighter*.

Other “selling points” include mentioning that: A.) Structural firefighters will have a chance to practice the skills they learned in expensive, required ropes training courses, and B.) Structural firefighters will gain exposure to ICS and wildfire operations.

2. You have to strike a balance when it comes to equipment.

Current wildfire REMS got their start in the structural fire realm. Because of this, there is a nice “blue print” of how to build an extraction module. However, because wildland resources need to be light and flexible, there needs to be a balance between packing heavy and packing light.

Interviewees mentioned having to make decisions about what to take on an assignment considering the fact that they would not be with a fully outfitted fire engine.

Although vehicle extrication equipment might be nice to have, most crews won't have the space to haul it in their trucks along with all of the other gear they are required—or choose—to bring.

One REMS with a qualified sawyer traveled with a chainsaw, which makes a lot of sense, but also takes up a lot of space. One REMS mentioned that they try to strike the equipment weight balance by having modular gear bags. They have a small medical bag with one IV bag and enough medical supplies to initiate patient care.



Aluminum carabiner (top) compared to stainless steel carabiner (bottom). One REMS member interviewed said they'd like to switch to aluminum because they are lighter in weight.



Example of modulated gear. On the left, a small medical bag that weighs 12 pounds. On the right, a much larger medical bag, that weighs 35 pounds.

They also have a much larger medical bag that they can send someone to the UTV to bring up, or they can simply start it up the hill at the same time the person with the lighter bag starts, with the intention that it will arrive shortly after the first smaller bag arrives.

When asked about his gear, one interviewee said: *"You have to take every ounce into consideration in the wildland. For instance, stainless steel carabineers are cheaper and currently in use on most crews. However, strength being comparable, we'd like to switch to aluminum because it's light."*

When you're packing, each thing matters. It can be like death by a thousand bee stings."

Within the same conversation, this same person said: *"When it comes to equipment, we'd rather be looking at it than looking for it."* These two quotes show the balance that must be struck concerning equipment choices.

"You may need to have someone else grab and haul your gear, this is common. Label your bags clearly so that someone who has never seen your gear could locate what you send them to find."

REMS Team Lead

3. For those who may be unfamiliar with REMS, it is a good idea for REMS to introduce themselves at a morning briefing.

This will allow you to provide an explanation of your specific capabilities and clear-up any misconceptions. You may also choose to try to locate "hidden pockets of expertise" by asking for anyone with ropes training, rescue skills, etc. to tell their Division Supervisors about their training.

This way, when you need assistance, you know the best people to select.

This introduction also provides an opportunity to put the crew at ease about what they might be asked to do. It could be as simple as saying: *"You don't need specialized training to assist us. If we need your help, we will talk you through what we need you to do."*

4. Go slow to go fast.

Some people suggested that REMS should be extremely active in scouting, training crewmembers, and practicing rescues. Others said that REMS should stay put with the truck until they are called.

One Division Supervisor recalled the REMS volunteering to train crewmembers on the proper use of the wheelie by transporting hose and other equipment to the fire line. In the time it took to make the five trips with the wheelie, they were able to train all 20 crewmembers on how to balance the wheeled Stokes and listen to voice commands about its proper use.

One REMS member said: *“If we would have gotten a call, we could have dumped the equipment right there and took off.”* Again, there must be a balance between being active and being ready to act when the call comes in.



REMS providing ALS treatment for a heat-related injury on the Miller Complex just before the patient was hoisted from the fire line.

5. “Don’t tie yourself down.”

One REMS member told us that when his module arrives on a Branch or Division, they say: *“We need to get settled.”* This means that they are going to do some recon. They need to know where they have access (above or below) certain sites, what types of trees they will be working in, where escape routes are, etc. And, if possible, it’s best if they can be on an operations recon flight.

They also recommend test-driving and timing how long it takes to drive from extraction point to drop point, and drop point to helispots.

They suggest getting to know the fire’s location and the crew’s location in the area of responsibility—and update that information when they move (both after daily briefings and per each move during the day).

6. Gather information about equipment and personnel.

Where are the different crews? Where are they in comparison to where we are?

What type of work will these different crews be doing?

Different tasks have inherently different risks that may inform the type of rescue and medical equipment that we should have prepared.

7. Learn everything you can—including pertinent information about the incident helicopter.

What kinds of equipment do the crews have? How far away are they? What type of personnel do they carry? What are the weights capabilities?

Explicitly discuss terminology and capabilities. Don’t assume that everyone understands “short-haul,” “hoist,” “medevac site,” “helispot,” etc.

While these terms may seem common, they may not be commonly understood. It's worth the short discussion to make sure that everyone is on the same page. Also, get GPS coordinates format and datum for helicopters!

8. Be ready to be the leader in the moment.

Crewmembers might want to stay with their injured crewmates but you may need them to help clear a new path for extraction. Be ready to communicate these needs clearly and be ready for push-back.

9. Become proficient in radio communication.

Know what frequencies and channels you should be using for REMS communication (tactical) and when you should be using a command channel.

7. Final Thought

“If you didn’t have a REMS, would you put the crew in?”

Just as with any other safety measure, we must be diligent in asking ourselves if our risk mitigation efforts enable, mitigate, or transfer risk.

We never want to extend our risk profile because of the presence of the REMS.

Although none of the interviewees said they thought this was happening, hypothetically they agreed that people might feel more comfortable to tackle a risky part of ground because of their presence. All agreed that this would put personnel at a higher risk, creating a much more vulnerable system overall.



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