2021 ReSET Technical Rescue Curriculum Update

February 2021

Recently the Regional Standardization of Equipment and Training (ReSET) Rope Curriculum Committee met to revise the Technical Rescue Curriculums (General Rescuer, Rope Tech, Confined Space Tech). This was driven by two factors:

1. To integrate the CMC Clutch and Skylotec Sirius into our programs
2. NFPA released the 2021 edition of 1006 (Standard for Technical Rescuer Professional Qualifications)

This "Information Bulletin" is intended to provide an overview of the significant changes in these curriculums. The changes primarily affected the following elements of our teaching:

- **Rescue Rigging**
  - Video- https://youtu.be/XDGV1LJ8w8I
- **Rope Access**
- **Commands**
  - Video- https://youtu.be/U_Y_icvnX-o
- **System Knot Passing**
- **Sked Vertical Bridle**
  - Video- https://youtu.be/ZyHzvzjo92M
- **Confined Space Emergency Retrieval Systems**
- **60-second Trauma Assessment and Vacuum Mattress**
  - 60-Second Trauma Assessment Video- https://youtu.be/MDd-1HMpxrY
  - Vacuum Mattress Video- https://youtu.be/NyUzTvFQExo

Rescue Rigging

Video- https://youtu.be/XDGV1LJ8w8I

Since 2007 when ReSET presented its first General Rescuer class our techniques and equipment choices have evolved with the trends of the technical rescue community. Our original curriculums pre-dated many of the mainstream devices we are familiar with today. Because of the large number of people we have trained, it has been difficult to move an entire region to new devices and techniques, but it is imperative that we do not become stagnant. In 2017 we stopped teaching the Tandem Triple Wrapped Prusik Belay, and now in 2021, we are removing all references to it all together. It was replaced with the ASAP Top Belay.

From the inception of ReSET we have relied heavily on Munter Hitches for our operations. We used them to provide friction during lowers, we used them to Belay, and we used them for Progress Capture. Now in 2021 we are making a large step to transition away from Munter

Hitches and toward two devices that emerged from a “fit-for-task” analysis done by area rescuers in December of 2020. The Two devices selected in the fit-for-task analysis are the:

1. CMC Clutch- primarily selected as a team-based rescue device.
2. Skylotec Sirius- primarily selected as a personal descender

In the evaluation, the CMC Clutch performed slightly better as a hauling device than the Sirius. Both devices were equally capable as lowering devices. Alternatively, the Sirius had several advantages as a personal descender over the Clutch, but the Clutch was still a very effective personal descender (albeit an expensive one). For this reason, ReSET has decided to teach the use of both devices in either a team-based rescue operation or as a personal descender.

These two devices will be taught when building lowering and hauling systems. The dogma of the past has been “Two Munters and Block & Tackles solve 90% of rescue problems”. The replacement will be “Two Clunch/Sirius and two pulleys solve 90% of rescue problems”. Students taking our programs will no longer be taught to use Munter hitches for rigging. Instead they will be taught to use a Clutch/Sirius for rigging.

One of the more significant features of these devices are their ability to “Force Limit”. Force Limiting occurs when a device is subjected to a force at which point rope begins to slide through the device under control, instead of causing a “Failure”. The force limit point of both the Clutch and Sirius are engineered to allow systems to not become overloaded, thereby overstressing system components or harming the people on rope.

Agency leaders who send their students to a ReSET class will be getting a different product than before. Below are some examples:

- Students will not be taught to use a Munter for lowering, belaying, or progress capture
- Students will not be taught a “Two Munter and Block & Tackle” system
- Students will not spend much time constructing Block & Tackle systems
- Students will focus on Inline Z-rigs with Clutch/Sirius as their primary raising system

Rope Access

In 2017 the ReSET Program transitioned from Single Rope Technique to using Rope Access techniques for rescuer personal vertical mobility. Rope Access involves using a primary rope and a backup rope. Traditionally students have been taught to use micro-racks for descent. With the new 2021 changes to the ReSET Curriculum rescuers will now be taught to use Clutch/Sirius for descending. This change brings significant efficiency and safety features to the rescuer, including:

- Auto-stop when hands free
- Panic-stop
- Smoother change-overs
- Ability to use a “Rapid Ascent/Descent (RAD)” technique
- Anti-error properties to prevent error when rigging the device
- Force Limiting properties that prevent rescuer injury

Commands

Video- https://youtu.be/U_Y_icvnX-o

Traditionally RESET has used the term "Roll Call" to initiate our operations. We will continue this practice, but additional steps to the operational command process have been identified with the intent of further increasing the safety and efficiency of our operations.

We will refer to the person calling commands as the "Control". The "Control" is typically the Rescue Group Supervisor, or may be delegated to the Rigging Lead, or other person who has clear understanding of the operation. Whoever performs the "Control" function should be clearly identified.

Overall, our Operational Command process is grouped into three different phases and starts with the announcement of "Roll Call":

Operational Brief- In this phase Control outlines the systems built and gives direction on how they will be used to conduct the operation. Of key importance, is ensuring the edge transition plan is well explained, and everyone involved in the edge transition knows their roll.

Readiness Inspection/Check of all Positions- In this phase each position in the operation should be inspected for readiness. This is done by Control calling out to each position. All rescuers in the vicinity of that position have a duty to inspect the correctness of the elements contained within that position, thereby ensuring the position is "safe". This is emphasized by Control announcing to have "fresh eyes inspect the position". The person responsible for that position should reply with a "ready" reply when he/she feels that the position has been inspected and is safe for operation. All rescuers have the opportunity to challenge this ready response. The absence of a challenge is considered and endorsement to move to the next position.

> *Note: we have removed the specific command "safety check". A more thorough "safety inspection" is now performed by placing an emphasis of inspecting each "position" by all rescuers in the vicinity during the "Readiness Inspections/Check" phase. Allowing many eyes to inspect systems and actions is better than only one set of eyes previously used.*

Perform the Operation- After all positions have been inspected and found to be safe, Control will direct the execution of the plan that was briefed in the "Operational Brief". This phase is proceeded by the command "Position the Load" thereby directing the team members to move the load in a position to be hauled or lowered. Once the load is into position, the command "Load the System" will be used to suspend the load by the ropes.

System Knot Passing

With the change to the new devices, many of our systems are now significantly simplified. For example, System Change-overs are no longer a technical process. The Clutch/Sirius both perform well as a raising and lowering device. Passing a Knot through a lowering system is basically the same process as before. Passing a knot through a system during a raise has caused ReSET to adapt our knot passing process. The detailed steps are outlined in the new Rope Technician curriculum.

Sked Vertical Bridle

Video- https://youtu.be/ZyHzvzjo92M

In 2017 ReSET made significant changes to the curriculum adding redundancy to multiple elements of our systems. This included completely new anchoring material introducing the concepts of Multi-Function and Single-Function anchors. Included in this material was the Critical Point test and a Critical Point Variance assessment. These were all tools to evaluate redundancy. Even with these tools we continue to identify areas where redundancy is a grey area. As we have continued to evaluate our programs ensuring redundancy permeates our philosophy, material was added to the critical point sections of our curriculums providing guidance for how best to address these “grey areas”. An example of a “grey” item we wanted to act on was the vertical Sked bridle. The Vertical Sked Bridle was a critical point that did not pass the Critical Point Variance assessment. A technique used by other programs in the rescue industry is to tie two butterflies at the top of a vertical Sked before reeving the vertical bridal rope through the grommets. This technique was adopted for our curriculums and will now be taught in all our programs.

Confined Space Emergency Retrieval Systems

With the transition to Clutch/Sirius, and specifically to inline Z-rigs, this created a conundrum in the Confined Space program with retrieval systems. Traditionally, we taught students to tie Munter hitches in the retrieval line, that would act as a “belay” for any vertical raise or lower, but would also act as a progress capture if the rescuer had to be “emergency retrieved”. It was our standard practice to build a Block & Tackle as a “retrieval system” that was ready to be piggybacked onto any retrieval line at a moment’s notice. With a much reduced, and almost nil, emphasis on the Block & Tackle, this will no longer be a common solution. The replacement will be to have a mechanical rope grab and pulley at the ready near any retrieval line. If multiple retrieval lines are co-located near each other, then one rope grab and pulley can serve them all. Alternatively, if retrieval lines are not co-located, then a separate rope grab and pulley should be positioned near each anchor where retrieval lines are connected.

60-Second Trauma Assessments and Vacuum Mattress

60-Second Trauma Assessment Video- https://youtu.be/MDd-1HMpxrY
Vacuum Mattress Video- https://youtu.be/NyUzTvFQExo

ReSET has long identified technical rescues as “medical operations with technical intervention”. In the 2021 re-write ReSET has added two elements that provide a stronger focus on medical care in these rescue settings.

First is the 60-second Trauma assessment. This is a very specific method of performing a trauma assessment that builds on the current trend in the medical community to focus on “Blood loss” first. The assessment process ends with the rescuer providing a CAN (Conditions, Actions, Needs) report over the radio. General Rescuer students will be tested on this skill, and students in the other programs will be required to demonstrate the skill during scenarios.

The second medical element is the addition of the Vacuum Mattress to our curriculums. Vacuum mattresses have become a staple of patient care devices in the rescue industry. This is reflected by the many Office of Medical Directors and agencies adopting their use. The ReSET curriculum now contains material for using Vacuum Mattresses.