

Trail Carry

Trail carries are common missions for EPCSAR. In fact, it is our most common mission. The use of the word "Trail" can be misleading as trails can be very difficult, steep, and on rugged terrain. While EPCSAR conducts many missions on Barr Trail, which is a well-defined path, it is not the only location for our trail carries. Some locations such as Mount Herman, Blodgett, and Eagle Peak, are very steep and rugged.

The need for a trail carry will be determined soon after the first units make subject contact, and decide if that individual will be unable to continue on their own. We will generally field the necessary equipment to facilitate a trail carry even if we are unsure it will be needed, as it saves time in the response.

The response will often begin with a hasty team for a medical or initial size-up. This team carries minimal equipment for speed. Oftentimes, particularly on lower Barr Trail-type missions, another agency (typically the local FD) has also responded and will have frequently made subject contact by the time SAR arrives at staging, effectively becoming the hasty team.

Other teams and positions are then assigned as resources become available on scene. Some of those positions are:

A trail carry mission begins with the mission page and movement to staging. An IC will be assigned who is responsible for all aspects of the mission (field operations, logistics, media coordination, etc). The IC will in turn assign a Rescue Group Supervisor (RGS), who has delegated the responsibility of oversight of the field operations, team leaders for each team that is fielded, a Safety Officer, to identify equipment to be fielded, verify the location of the patient, and identify the route to the patient.

The Rescue Group Supervisor (RGS) is responsible for field operations and will assign several field positions that are required for a trail carry mission. These will include Litter Captain and litter team members, Tagline Lead and tagline members, and trail guards. This person will also ensure that all required equipment is fielded for the mission and will ensure they have accountability for all persons going into the field.

Safety: Overall responsible for the safety of the system and monitoring safety concerns

Litter Captain: Located at the head of the litter. Controls litter movement, gives all commands except Stop (which anyone can call), and manages the litter team.

Litter Bearers (generally 2-4 persons): Keeps litter upright and level. Negotiates litter over rocks. The 2 persons at foot announce hazards to other litter bearers (rocks, water bars, etc). Litter bearers at the head monitor patient status.

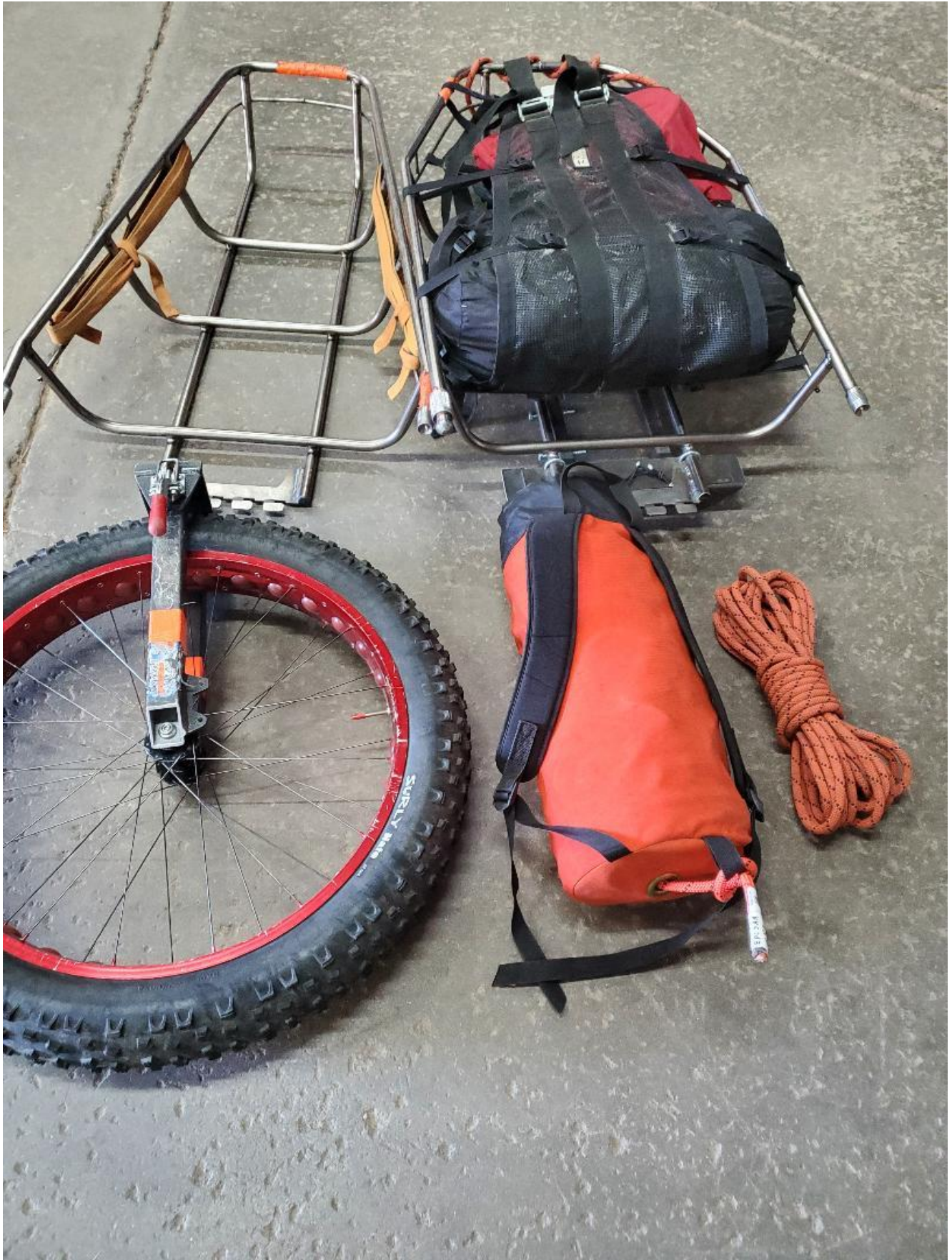
Tagline/Running Belay Lead: Communicates with Litter Cpt on belay and litter speed. Manages the tagline team.

Trail Guards: Holds hikers/runners back from litter and identifies hazards in front of the litter. Notifies the litter team of runners/hikers waiting to pass. Need guards both above and below the litter team. Runners/hikers can be impatient, and depending on the severity of the subject's medical condition, may have to be restrained from interfering with the evacuation.

Medical Lead: Responsible for patient care and will advise the litter team of injuries or medical conditions. Medical Lead will advise the litter captain of the best method to load the patient into the litter and the best location to place the litter for patient loading.

Unassigned persons will walk down with the litter team with some behind the tagline and some located in front of the litter. Unassigned members need to be ready at any time to assume any position on the trail carry.

EPCSAR uses standard equipment for most trail carries which consist of a litter that is carried broken down into two pieces (top and bottom half). The litter contains a patient restraint system/straps, patient helmet, knee bag, and Wiggies (medical grade sleeping bag). Standard equipment also includes the wheel, tagline (50 ft anchor rope), or 200 ft belay rope for steeper trails. Each litter is color coded to pair up with its wheel. While all wheels will fit all litters, the colored-coded (litter-wheel combo) one is specifically built to pair perfectly with its litter. Depending on the mission the VSB (Vacuum Splint Body or sometimes referred to as a vacuum mattress) or VSL (Vacuum Splint Leg) may be required as well. In cold weather trail carries may require heat blankets and heat packs for patient warming.



Each member should know how to attach each piece of equipment to their pack. This will vary with each member, their pack type, and the method they choose to employ to do so.

Regardless, the method needs to be efficient, and secure. It is also important to attach equipment to your pack and not carry the equipment in your hands. It is important to leave your hands free for other tasks. When possible, the Wiggies is removed from the top half of the litter and given to another member to carry. This reduces the overall weight of the top half of the litter which is our heaviest piece of equipment.

Litter

Upon arrival at the patient's location one person is usually designated to be lead medical unless another agency with superior medical qualifications has assumed Pt care, otherwise lead medical is assigned and tends to the patient. The Rescue Group Supervisor will assign personnel to assemble the litter system. This involves assembling the top and bottom half of the litter, tightening the suspension straps, and attaching the tagline (or belay line) to the litter, and adding prusiks to the tagline. The litter is then ready to be placed in a position for the patient to be loaded.



Tagline

The tagline is a 50 ft anchor rope that is connected to the bridle of the litter by a steel carabiner and is the brake for the litter on a downhill path or the engine to pull the litter up a hill. Generally, 3-4 members will tie-in to the tagline

with prusiks and connect the prusik to their harness. These tagline persons will control the speed of the litter downhill and pull the litter uphill as the terrain dictates. The Tagline Lead (TL) is the first person on the tagline from the litter. This person is responsible for ensuring that the other tagline members are ready for the trail carry, verifies that the litter is on-belay with the Litter Captain, and ensures that the tagline members hear the litter Captain's commands (to be repeated by the TL if necessary) and calls out obstacles for the other tagline members. The TL must ensure that the tagline is always in line with the litter. This requires that the tagline members stay in line behind each other and must move quickly around a switchback to keep the tagline in line with the litter. A tagline that is not in line with the litter can cause the litter to lean left or right and potentially throw the litter and litter bearers off balance. It is important to note that the litter cannot move until the tagline is ready and has the litter's belay.

Periodically you must transition from a down to an uphaul on a trail carry. To do this the Litter Captain calls for a stop and then identifies which direction the litter and tagline will rotate to place the tagline in front of the litter for an uphaul. The litter is usually stationary and is just rotated on its wheel. Once the tagline is in front of the litter, the Litter Captain can call for an "up". To transition from an uphaul to going down the trail this method is repeated to move the tagline behind the litter.

Litter/Wheel

Once the patient has loaded into the litter the attachment point for the wheel must be determined. There are 3 attachment bolts under the litter. Members must determine the center of gravity for the patient in the litter and place the wheel directly under that point. Once the wheel is attached you should level the litter and determine if the wheel needs to be moved toward the head or foot. If the litter bearers on

the foot of the litter find that they must lift the litter to keep it level then the wheel must be moved to a bolt nearer to the feet. If the litter bearers at the head have to push down to make the litter level the wheel should be moved to a bolt that is towards the foot. The person who will attach the wheel must determine which side of the litter to be on before the litter team lifts the litter. The correct location is on the same side as the bolt heads.



Managing the litter

As a general rule, four litter bearers are used for most litter operations but can be reduced to 2-3 depending on the terrain and width of the trail. Two litter bearers may be the safest option for a trail that is very narrow or to go around obstacles.

The Litter Captain is the lead for litter operations. The Litter Captain manages the patient packaging into the litter,

ensures it has been approved by the Safety Officer and provides all the litter commands for movement. The Litter Captain must ensure that all litter bearers have the appropriate equipment (helmet, eye pro, gloves, traction (in snow/ice)) to properly perform the trail carry mission, ensure the litter is on belay, coordinate the lifting of the litter for wheel placement, giving the commands for the movement of the litter, and managing the speed of the litter. The Litter Captain is also responsible for patient monitoring by either doing this task themselves or delegating this task to the other litter bearer that is at the head of the litter.

The litter bearers are responsible for ensuring they have the correct gear for the mission, assisting with patient packaging, keeping the litter upright and level, moving the litter around obstacles, calling out obstacles as the litter approaches them, and calling for a stop as required.

All litter bearers should know the injuries or medical issues of their patient so that they do not accidentally add more injury or pain to the patient. As an example, if you have a patient with a left ankle injury the litter bearer on the patient's left side near the leg must be careful not to hit, rub against, or move the ankle/foot in any manner.

There is an art to keeping the litter upright and level without using a lot of muscle. Litter bearers should learn and practice using their body (hips) and not their arm muscles to keep the litter upright and level.

If the litter has tilted too far to the right or left and must be uprighted to a level position, the litter must be lifted, made level, and then set back down on its wheel. The litter should not be jerked into an upright position as this only jerks the patient in the litter which usually causes pain, and may be unexpected by the other litter bearers, potentially throwing them off balance or causing injury.

The litter bearers on the foot of the litter identify the travel line of the litter wheel and then steer the litter on that line. The members ahead of the litter will call out obstacles, and often make recommendations for the best path for the wheel to follow. Litter bearers must be prepared to lift the litter over rocks and to gently let the litter down water bars, rocks, etc. While the litter can roll down small rocks or water bars, you do not let the litter drop down any distance. The Litter Captain will generally call for a "down slow" when doing down rock drop areas. Once the litter is on the ground the Litter Captain must continue at a slow pace until the entire tagline has traversed the rocks as well.

It takes muscle and energy to be a litter bearer. A litter bearer should advise the Litter Captain when they are too tired to properly conduct litter operations. The Litter Captain will call for a stop to change the litter bearer or coordinate with the Rescue Group to change the litter bearer while on the move. Too often litter bearers stay on the litter when tired. Doing so only endangers the patient and the other litter bearers. It is important to come off the litter when you start to tire.

All litter bears should ensure that the carabiners on their harness are locked. If left unlocked there is a high probability that the carabiner gate will open when pressed against the litter and will then lock to the litter. It is advisable to move all carabiners, scarabs, prusiks, etc from the side in which you are on the litter. This keeps your hip closest to the litter free of anything that can interfere with your grip on the litter or your movement. Moving items to the back of your harness is advisable since you may ultimately be a litter bearer on both sides of the litter sometime during the mission.

EPCSAR uses standard commands for litter operations. They consist of:

On belay?: This is the standard query from the Litter Captain to the belay to ensure the system is built, and safetied, and the Belay Team is ready to take the load.

Belay on: This is the reply that the belay TL will give to the Litter Captain. Upon hearing "On Belay?" the TL will verify that all members on the tagline are ready for operations and will then reply "Belay on".

Loading the litter: This is stated by the Litter Captain and advises the tagline to be ready for tension on the tagline and for the litter bearers to be ready to lift the litter.

Lift on 3: This is stated by the Litter Captain and is used to advise the litter bearers that they will lift the litter off the ground, on the count of 3 so that the wheel can be attached.

Anyone not ready: Query to the litter and tagline teams to verify that all are ready for movement.

Down slow; Down or Down-Down (also Up, Up slow): Dictates the speed of the litter. Down slow is very slow and used to go over/down obstacles or steep locations, Down is the average speed of a person walking casually down a trail, and Down-Down is a very fast speed in which the litter bearers are still walking but doing so at a quick pace. Up slow and up are used for pulling the litter uphill.

Once the litter is at the trailhead, or vehicle for transport, the litter will be stopped. The Litter Captain will direct the litter team to lift the litter, remove the wheel, and place the litter on the ground. The litter team will then unstrap the patient and assist as required to place the patient into a vehicle or ambulance's gurney.

Once the patient is transferred to an ambulance (or their privately owned vehicle for those that decline ambulance transport) the team will place all equipment back into the

Rescue vehicle. Any equipment that must be decontaminated due to patient blood, urine, vomit, etc must be identified to the RGS. As a last, but very necessary item, all members will be accounted for to ensure that all members are out of the field.