

FTM Semitech

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Logic

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You have: patient, litter, able-bodied people, rope, hardware, helmets **trees, slope**
What's your plan?

Semitech! (semi-technical rescue)

Why semitech?

- You are in an inaccessible place to emergency vehicles. The patient needs to be transported to a better location: road, field, etc. (slope bad. road good.)
- Semitech is safe and efficient
- Plan your exit route and make it happen. (road up? road down? go.)

Who is in charge?

Rescue Specialist
Safety Officer
Litter Captain and Medic
SEE APPENDIX A

How to:

Going UPhill?

Litter needs safety support team (that's the whole idea of semitech):

Uphill Rope Handler--prepares for next pitch
Belayer--emergency brake
Downhill Rope Handler--assist belayer

Going DOWNhill?

Litter needs safety support team (that's the whole idea of semitech):

Downhill Rope Handler--prepares for next pitch
Belayer--emergency brake
Uphill Rope Handler--relay between downhill and belayer

Belayer

safety of the litter team
has been looking for an appropriate belay point (=tree)

- alive
- big
- location

How to set up a Belay

- Stand with the rope between you and the tree, facing away from the tree. (your back to the rope and to the tree)
- Stretch out both arms and grab the rope in each hand, running it behind your back.
- The uphill hand will become your brake hand (you may want to wear leather gloves to protect your hands).
- The rope runs around your backside.
- Move around the uphill side of the tree; your brake hand is on the far (uphill) side of the tree (In a correct stance your brake hand is NOT the arm closest to the tree)
- The more times you wrap around the tree, the more friction you will create in the rope system. Finding the balance between being stuck (too much friction) and having no control (too little friction) is the art of belaying.
- Establish secure footing with your "brake hip" (the hip on the side of your body with the brake hand) farthest from the tree. This is the only correct place to put this hip, otherwise you will face-plant into the tree when you try to save a falling team!
- How to Brake? Push your brake hand down between your legs, bracing yourself against the force of the litter team. Don't let your brake hand get too far from your body. Don't let your non-brake hand help brake.
- Before the litter can go anywhere, you must test the system with a Preload. A preload is when the team pulls on the litter with their full strength and weight and you must prevent them from moving by braking. If the preload fails and the team slips, you must go OFF BELAY and add more friction to the system by wrapping more around the tree. Then go back ON BELAY and try again. Keep preloading until you and the team are comfortable with how safe the system is.
- Always step completely out of the belay system and unwrap it from the anchor before calling BELAY OFF.

***** WHEN YOU ARE ON BELAY, YOU ARE RESPONSIBLE FOR THE SAFETY OF THE TEAM. YOU CAN NOT ADJUST YOUR SYSTEM (e.g. to increase or reduce friction) WITHOUT GOING OFF BELAY (you have called OFF BELAY and the litter captain has responded with BELAY OFF).

Commands:

These communicate vital information between belayer, rope handlers, and litter captain. They should be **loud and clear**.

On Belay	Litter captain asking belayer: Am I ON BELAY?
Belay On	Belayer responding: Yes, your BELAY is ON. (this conversation can be reversed if the belayer ever needs to ask the litter captain if he is ready for the belay to be on)
Preload	The litter team wants to test the system; the belayer should prevent the rope from moving by braking.
Down Slow	Allow the litter to descend slowly.
Up Slow	Allow the litter to ascend slowly.
Slack	"The rope is too tight. Reduce the tension by giving me some rope"

Tension	(up rope) Remove slack from rope.
Falling	Someone is falling; the belayer should lock off the system immediately.
Stop, Rock, Vomit	Commands from the litter team to halt the system.
Clear	The danger has passed. Continue on.
Two-oh	Belayer informing rope handlers and the litter captain that 20 feet of rope remain. A new belay point needs to be found and the litter team needs to find a safe place to stop.
One-oh	10 feet remain.
Off Belay	Litter captain telling belayer: My team no longer requires a belay.
Belay Off	Belayer telling litter captain: I am no longer belaying you and I have stepped out of the system.

Rotation

Uphill pitch --> Downhill, Uphill, Belayer. Acronym = DUB
(It's *DUmB* to go uphill, because it's hard)

Downhill pitch --> Belayer, Uphill, Downhill. Acronym = BUD
(Your *BUD-dies* will only help you going downhill :)

Knots

On the litter team:

ASRC HARNESS--used to secure litter handlers to the litter using biner and girth.

On the litter:

GIRTH HITCH--used to attach SAR personnel harnesses to the litter with perlon

Patient packaging:

TAUT LINE HITCH--used to secure patient into litter with webbing.

Rope Handler:

FIGURE-8 ON A BITE--used to attach litter to a rope and belay system.

Belayer:

TREE WRAP--used as a friction device to control speed of rope movement.

APPENDIX A

Semitechnical Rescue Positions

Rescue Specialist

Rescue Specialist is responsible for the overall coordination and execution of an evacuation. She coordinates plans with Base, helps choose a general route, oversees team composition, equipment, resources etc. The Rescue Specialist consults and briefs the Litter Captain, Safety Officer, Medic, and any other appropriate personnel on the situation. The rescue specialist makes it possible for the Safety Officer, Medic, and Litter Captain to do their job without incidents.

Safety Officer

The Safety Officer oversees the safety of everyone involved in the evacuation. He must constantly review all decisions with specific regard to how each decision affects the safety of the team, patient, and personnel. This job includes ensuring ample rest, hydration, and rotation of team members. The safety officer might advocate for any number of specific actions throughout the course of an evacuation, but must be careful not to micro manage any one particular area, particularly if this might lead to neglect in other areas. The Safety Officer communicates with the Rescue Specialist, Medic, and Litter Captain to ensure a smoothly run evacuation.

Medic

The Medic holds the highest functional medical certifications on an evacuation. Her primary responsibility is the care and well being of the patient being transported. The Medic must function at all times within her current medical training level and ASRC medical protocols. The Medic collaborates with the Rescue Specialist, Safety Officer, and Litter Captain to ensure that the well being of the patient is never compromised.

Litter Captain

A Litter Captain functions as the Field Team Leader for the Litter Team on a task. As such, he must keep the team's safety, comfort, and well being in the forefront of his mind. A litter Captain is responsible for communicating expectations to Litter Handlers, as well as to be the team's contact person for any concerns a Handler may have. He is constantly coordinating with the Medic, Safety Officer, Rescue Specialist and Rope Handlers. The Litter Captain is the only person on the litter to communicate regularly with other members of the evacuation team.

Litter Handlers

Litter Handlers participate as perhaps the most crucial component of a litter evacuation. They constitute the Litter Team and are concerned primarily with the safety of themselves and their teammates. They communicate directly with the Litter Captain, except when yelling "falling, rock, stop, vomit" in which case they are communicating very loudly with everyone involved in the system. Be sure to repeat those commands when you hear them to be sure that everyone hears them. Six litter handlers (including the Captain) are needed on an evacuation, but adjustments may be made.

Rope Handlers

A team of 3 Rope Handlers will rotate through various rope positions, transferring responsibilities with each consecutive pitch. Rotation is important for efficient movement up or down a hill. Efficient rotation also ensures rest and variation of tasks for handlers whose work is exacting and difficult. The specific rolls of each rope handler position are detailed below. Each rope handler must be able to perform all 6 roles with precision.

APPENDIX B

Ideal Downhill Semi-Tech Scenario in 25 Steps

1. Rescue Specialist coordinates plans for an evacuation with BASE. They choose a general route, oversee team composition, equipment, resources etc. Rescue Specialist consults and briefs Litter Captain, Safety Officer, Medic, and any other appropriate personnel on the situation.
2. Litter team and Medic stabilize and package patient for descent. Initial Belay Person and Rope handlers rig the stokes (Y-yolk, 'biners opposite and opposed), locate descent corridor, and 1st belay point.
3. Safety Officer reviews scene, and may at this time make recommendations to the Litter Captain, Medic, Rope Handlers, or Rescue Specialist.
4. When the litter team is ready to begin descent and the Litter Captain has properly briefed her team, the Litter Captain commands **"On Belay."** (*Asking the question: am I ON BELAY?*)
5. Belayer replies **"Belay On"** when on a proper belay (*Answering the question: yes, your BELAY is ON*)
6. Litter Captain asks Litter Team **"Ready to Lift"**
7. Litter Team replies **"Ready"**
8. Litter Captain commands **"Lift."** Litter team lifts the litter in unison. At this time the Litter Captain again turns to the Belay Person and commands **"Preload"**
9. Belayer echoes consent with **"Preload"**
10. Litter Team preloads the system. If the belay system is adequate the Litter Captain thanks the Belayer, **"Thank You."** If the System needs to be adjusted for any reason the **"Stop"** command will be given and the preload sequence will begin again.
11. Litter Captain commands **"Down Slow"**
12. Belay echoes **"Down Slow"**

13. Litter Team begins descent
14. Downhill Rope Handler clears a decent corridor in front of the Litter. Choosing the path that the team will take, clearing obstacles, and looking for the next belay site.
15. Uphill Rope Handler stays between the Belayer and the Litter team in order to relay commands between the two, and provide assistance as necessary.
16. When there are approximately 20 feet of rope left then the Belayer will call out **"TWO- OH"** to indicate its time to establish another belay site. The command **"ONE-OH"** can be given when only ten feet of rope remain.
17. As soon as conditions Allow, the Litter Captain commands **"Stop"**
18. The Belayer echoes **"Stop"**
19. The Litter is lowered when the Litter Captain addresses her team with the commands **"Clear"** and **"Ready to lower."**
20. The Litter Team will respond **"Ready"** and the Litter will be set down after the Captain gives the **"Lower"** command, allowing for the establishment of another belay site. The medic will take this time to tend to the patient. The Litter Captain informs the Belayer **"Off Belay."** (*statement: I am now OFF BELAY*)
21. The Belay person can now step out of the rope system, unwrap the rope from the anchor and respond **"Belay Off."** (*statement: the BELAY is OFF the tree*)

***The following three steps occur simultaneously:**

22. The Downhill Rope Handler establishes a new belay site (becoming the Belayer for the next pitch) and takes up any slack in the rope system.
 23. The Uphill Rope Handler proceeds downhill, past the new belay point becoming the new Downhill Rope Handler.
 24. The old Belay person proceeds Downhill to between the new belay point and the Litter to serve as the Downhill Rope Handler
 25. The Belayer will let the Litter captain know that the system is prepared by calling out **"Belay On"** (*statement: your BELAY is once again ON*)
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Dictionary of Semi-Tech Verbal Commands

On Belay-	Are you ready to belay me, am I ON BELAY?
Belay On-	Yes, I am ready to belay you, your BELAY is ON.
Off Belay-	I (my team) no longer requires a belay.
Belay Off-	I am no longer belaying you, and have stepped out of the belay system.
Slack-	The rope is too tight, give me three feet of slack
Tension (Up Rope)-	Remove slack from the rope
Preload-	The litter team wants to test the system. The belay person should prevent the rope from moving.
Down Slow-	Allow the litter to descend slowly.
Down Fast-	Allow the litter to descend quickly.
Up Slow-	Allow the litter to ascend slowly.
Up Fast-	Allow the litter to ascend quickly.
Stop -	Command from any person to halt the system. The Belayer should lock off the system.
Two-Oh-	Roughly 20 feet of rope remains, the litter team must find a safe place to stop and a new belay point must be located.
One-Oh-	Roughly 10 feet of rope remains, the litter team must find a safe place to stop and a new belay point must be located.
Rock!-	Something is flying through the air, everyone should brace themselves, and the Belayer should lock off the system.
Clear-	The danger has passed, continue as usual.
Falling!-	Someone is falling, the Belayer should lock off the system immediately.
Vomit!-	The patient is going to VOMIT! Stop the litter, lock off the belay, turn the patient on their side (towards the medic) and remove the face shield.
Ready to Lift-	Litter Captain asks the Litter Team, "are you READY TO LIFT?"
Ready-	Affirmative
Lift-	Command to Litter Team from Captain to lift the litter in unison.
Clear-	Clear area, where litter will be lowered, of debris.
Ready to Lower-	Litter Captain asks the Litter Team, "are you READY TO LOWER?"
Lower-	Command to Litter Team from Captain to lower the litter in unison
Ready to Ladder-	Litter Captain asks the Litter Team, "are you READY TO LADDER?"
Ladder-	Command to Litter Team from Captain to ladder the litter in unison
Ready to Toenail-	Litter Captain asks the Litter Team, "are you READY TO TOENAIL?"
Toenail-	Command to Litter Team from Captain to toenail the litter in unison

LITTER SKILLS

Litter Captain may use **"Up Fast"** **"Down Fast"** to increase rate of travel and may use **"Slack"**, **"Standby"**, **"Tension"**, **"Up Rope"** or other commands as necessary.

Litter teams may be asked by the Litter Captain to **"Ladder"** or **"Toenail"** the litter over obstacles. These are commands that should be echoed to the Belayer one time only to inform them of activities out of site. These commands are repeated to the litter team every time but only to the belayer before the initial ladder or toenail.

Any person involved in the rescue may use **"Stop"**, **"Falling"**, **"Rock"** or **"Vomit"** when appropriate.

The belay line must be under tension to function properly. The litter team must avoid ascending faster than the belayer is able to take up rope.

All litter movement should always be preceded by a call for a belay. There should never be litter movement if a hazard is present without a belay

Walk out of step to minimize rocking motion and keep litter level unless medic instructs otherwise.

Litter stance: Kneel on the knee closet to the subject's head, with your other foot forward and nearly touching the stokes, both hands on the litter rail with palms down. Lift by pulling away from your partner and slowly standing up.

Pairs of Litter Handlers across the stokes should be of approximately the same height; the litter Captain may want to arrange the team so that the tallest members are on the downhill side.

Always wear a seat harness, gloves, and helmet; carry your field pack with you and clip into the belay system. Safety is your first priority.