
UNIT 6 - LETDOWN TRAINING

RAM-AIR PARACHUTE
TRAINING MANUAL

BLM SMOKEJUMPERS

CHAPTER 6 - LETDOWNS

In this unit, the student will be introduced to smokejumper letdown training. This training teaches students to perform a standard letdown from a ram-air canopy (2-rope letdowns and reserve letdowns are not practiced in basic Unit Training, but are discussed). Enough instructors must be present for students on every letdown apparatus to be observed.

This unit is divided into two lessons: Class Demonstration and Actual Training Letdowns.

UNIT OBJECTIVES

At the completion of this Unit the student must;

1. Perform a flawless standard letdown in less than three minutes.
2. Accurately list verbally the proper procedure for performing all types of letdowns for the given system being trained for (rope or tape with carabineer.)

EQUIPMENT NEEDS

- 1ea. - Letdown tower with training risers.
- 1ea. - Set of jump gear for each student.
- 1-4ea. - Dummy Reserves.
- 1-4ea. - ropes to keep students from spinning on the apparatus.
- practice letdown ropes.

Students **must** perform a speedy (3-minute) and flawless letdown before graduating from the unit. Students will talk their way through the letdowns so instructors can hear that no steps are missed and to help students memorize the procedure.

Lesson I CLASS DEMONSTRATION

Students will be introduced to smokejumper letdown procedures.

LESSON OBJECTIVE:

At the completion of this Lesson, the student must:

- Accurately list verbally the proper steps for completing a standard letdown.
- Accurately demonstrate the proper method for hooking up fellow jumpers to the letdown apparatus using the 3-ring system.

EQUIPMENT NEEDS:

of students X 1 ea. - copy of BLM-Smokejumper letdown procedures.
1ea. - letdown apparatus.

STUDENTS SHOULD BE GIVEN LETDOWN PROCEDURES WELL IN ADVANCE SO THEY CAN MEMORIZE THE STEPS OF A STANDARD LETDOWN.

Group Discussion

1. Discuss letdown procedures and answer any questions.
2. At the letdown units, an instructor is first hauled up the apparatus to demonstrate and talk his way slowly through a letdown, explaining what he is doing and why.
3. Students are shown how to hook up 3-rings so they can attach each other to the apparatus. Students move on to Lesson II and haul each other up the unit.

***Remember: While it is generally better to land on the ground, tree landings are not usually dangerous. If you have miscalculated your approach, hold what you've got. A low hook-turn to make the primary jump spot is more dangerous than a tree landing.**

Lesson II ACTUAL TRAINING LETDOWNS

LESSON OBJECTIVE:

At the completion of this Lesson, the students must:

1. Perform without error an actual standard smokejumper letdown in three minutes or less from a letdown training apparatus.
2. Accurately list verbally the proper procedures for performing all types of letdowns for the given system being trained for (rope or tape with carabineer).

EQUIPMENT NEEDS:

- # of students X 1 ea. - copy of BLM-Smokejumper letdown procedures.
 - 1ea. - letdown apparatus.
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General Instructions

1. Once a student is hauled up to the appropriate height, the instructor gives the okay to begin a letdown--students must vocalize each step as they go. Begin students at a low elevation until they can perform the steps safely.
2. The first letdowns should be slow and methodical--students should be told to get the procedure down before trying for speed.

***Sloppy letdowns should not be tolerated. Correct students when they miss a step on early letdowns.**

3. Group up students as need be to correct errors common to many.
4. Have students pay attention to others' letdowns, but don't allow them to coach--students should be listening to only a single instructor while performing a letdown.
5. As students progress, instructors can allow students to complete a letdown before telling them what they missed or did wrong.
6. For rookies, graduation from the letdown unit involves completion of a flawless letdown in a pre-determined time frame. As students get better at the procedure, instructors can time them and make suggestion on how to be more efficient.

I. TAPE AND CARABINER LETDOWNS

A. Letdown Procedures

1. Make sure the parachute is securely hung in the tree. If it isn't hung up securely, try to pull yourself over to the tree and begin the letdown procedure from the trunk or a branch.
2. Lift your face mask. (If applicable) Feel around your neck, head, arms, and legs for suspension lines. Tie loose lines off, away from your body. This is to prevent you from getting hung up in any lines during your letdown.
3. Lower your mask. (If applicable)
4. Unfasten right side of reserve, P.G. bag, and lower P.G. bag attachment and allow them to hang on the left side.
5. Pull the O-rings out of your jump pants and straighten them. Make sure your carabiner is on the right ring assembly, with the gate facing away from your body.
6. Remove 6 to 8 feet of letdown rope and pass it up under your right leg. Leave the remainder of the letdown rope in your leg pocket.
7. Pass the letdown rope through your O-rings twice from right to left. Check for play.
8. Tie off to the tight side riser:
 - a. Starting inboard, thread rope between the V formed on the tight riser (inside to outside).
 - b. Wrap rope around back of riser, around front of riser, and thread through the V from outside to inside.
 - c. Tie off with 3 half hitches leaving 6 to 12 inches of tail.
 - d. Tuck the tail back into the V of the riser.
 - e. Now is a good time to pull the main release cables from the keepers.

NOTE: If you are rappelling from the tree due to an insecurely hung parachute, simply forego the tight riser and wrap rope around the trunk of the tree or a branch (3"+) and tie off with 3 half hitches leaving 6 to 12 inches of tail.
9. Pass the rope through the carabiner. Be sure the carabiner is away from your body, with the O-ring of your jump pants between you and the carabiner.
10. Take up the slack in the rope between the riser and O-rings:
 - a. Grasp the tight riser with one hand and the rope below the O-rings with the other.

B. Reserve Letdown Procedures

Procedures for the reserve letdown are mostly the same as for a standard letdown with a few modifications. Because the reserve is not able to release from the harness in the same manner as the main, the jumper must climb out of his harness to descend.

1. Make sure the parachute is securely hung in the tree. If it isn't hung up securely, try to pull yourself over to the tree and begin the letdown procedure from the trunk or a branch.
2. Lift your face mask. (If applicable) Feel around your neck, head, arms, and legs for suspension lines. Tie loose lines off, away from your body. This prevents you from getting hung up in any lines during your letdown.
3. Lower your mask. (If Applicable)
4. Put radio in leg pocket. Unfasten P.G. bag and let it fall to the ground.
5. Pull the O-rings out of your jump pants and straighten them. Make sure your carabiner is on the right ring assembly, with the gate facing away from your body.
6. Remove 6 to 8 feet of letdown rope, passing it under your right leg. Leave the remainder of the letdown rope in your leg pocket.
7. Pass the letdown rope through your O-rings twice from right to left. Check for play.
8. Tie off to the tight side riser carabiner. Wrap the rope around the carabiner twice, and tie off with three tight half hitches leaving 6 to 12 inches of tail.

NOTE: If you are rappelling from the tree due to an insecurely hung parachute, simply forego the tight side riser carabiner and wrap rope around the trunk of the tree or a branch (3"+) and tie off with 3 half hitches leaving 6 to 12 inches of tail.

9. Pass the letdown rope through your carabiner. Be sure the carabiner gate is facing away from the body, with the O-ring of your jump pants between you and the carabiner.
10. Take up the slack in the rope between the riser and O-rings:
 - a. Grasp the tight riser with one hand and the rope below the O-ring with the other.
 - b. Simultaneously do a one arm pull up on the riser and take up all the slack with the other hand. Your entire weight should now be supported by your letdown rope.
 - c. Transfer weight to carabineer.
 - d. Pinch letdown tape on carabiner with left hand and tie off letdown rope on carabiner using a slip knot. The loop of the knot should be at least 8 inches long.

11. Keep the coiled rope or rope bag in your leg pocket.
12. Now do a **FOUR-POINT CHECK**: (there's no need to worry about the RSL)
 - a. rope tied to carabiner with three half hitches.
 - b. rope through O-rings.
 - c. rope under right thigh.
 - d. rope tied off to carabiner with slip knot.

NOTE: If you skip the 4-point check and forgot to do a, b, or c above, you will probably fall.

13. Climb out of your harness:
 - a. Undo your chest strap.
 - b. Loosen your leg straps.
 - c. Release the leg strap on the left side.
 - d. Pull your left arm out of the harness.
 - e. Release the leg strap on your right side.
 - f. Pull you right arm out of the harness; you should now be out of your harness.
14. Lift face mask and check for suspension lines one more time. Lower face mask.(If Applicable)
15. Pinch letdown tape on carabiner with left hand and pull the slip knot free with your right hand (palm facing up). You can use your left hand to clear limbs and maneuver on your way down while braking with your right hand. The right hand will provide sufficient stopping force by simply squeezing the tape and dropping your hand to outer right thigh.
16. Let the rope slide slowly through your hands and make a smooth descent. The rate of descent can be controlled by braking.
 - Avoid sudden stops since this could dislodge the canopy from the tree.
 - Keep your hands out and away from the O-rings to prevent your gloves and sleeves from tangling. If any material gets caught in the O-rings you will be unable to continue rappelling as the rings will be jammed.

C. Two-Tape Letdown Procedures

The two-tape letdown is exactly the same as the standard letdown until the end of the letdown rope is reached.

1. With about 10-15 feet of rope left, the jumper ties off to the carabiner with a slipknot.
2. Jumper's JP climbs tree to get a second rope to him, or throws a rope up, or the jumper in the tree hauls the second rope up with parachute cord.
3. Ends of both ropes are tied together with a simple overhand knot.
4. Jumper releases the slipknot and proceeds with the letdown (overhand knot will pass through the O-rings on jump pants).

II. FRICTION DEVICE LETDOWN SYSTEM WITH ROPE

Introduction

1. Trainees should view a demonstration illustrating proper letdown procedures.
2. Trainers will demonstrate the proper setup of the friction device and carabineer on the letdown rope prior to use. Trainers will also demonstrate the proper way to stack the letdown rope in the rope bag.
3. Demonstration and training will be conducted using the tested and approved letdown procedures and standards.

Setting Up The System Prior To Use

1. Thread the letdown rope through the friction device as shown in Figure 1. Ensure rope end exits device toward the gate-side of the carabineer. Position the friction device on the letdown rope so there is about four feet of rope remaining.
2. The carabineer is clipped to the rings with the right hand from left to right so the rope exits to the rope bag in the right leg pocket.
3. The end of the rope is attached to the rope bag with a figure eight knot.
4. A slip knot is tied about fifteen feet above the figure eight knot. When a two-rope letdown is necessary the slip knot will stop the jumper and allow for a transition to the second rope.

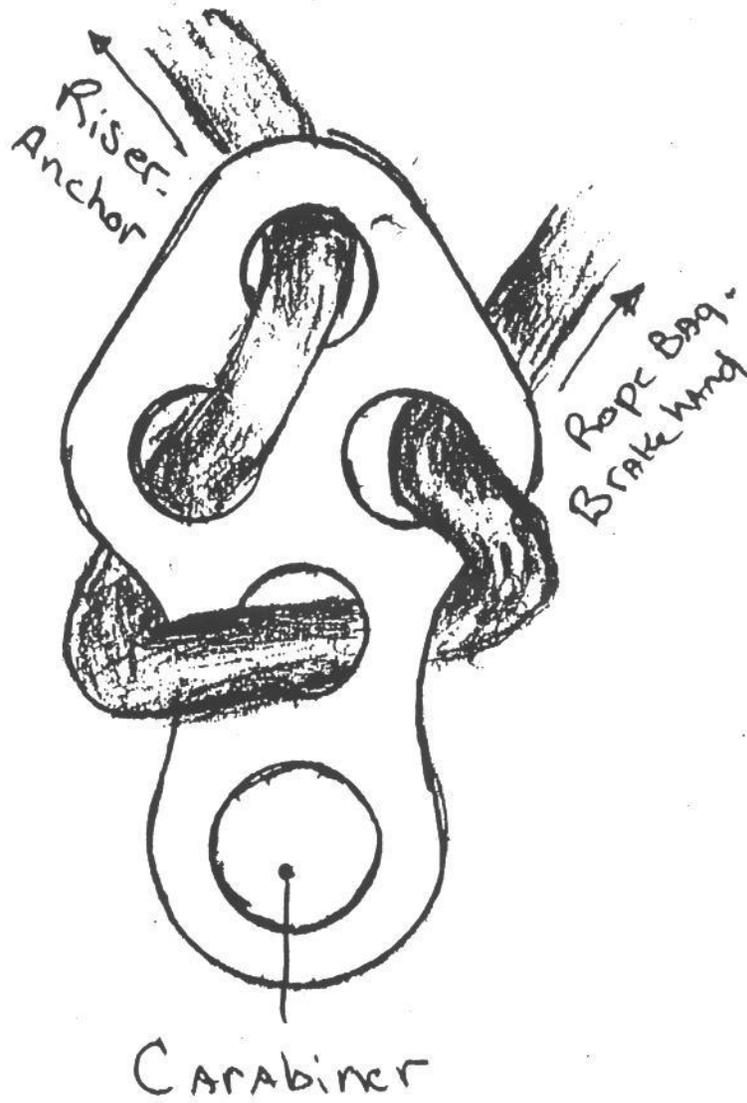


Figure # 1

A. Letdown Procedures

1. Make sure the parachute is securely hung in the tree. If not, tie off to the trunk of the tree or a healthy limb at least 3 inches in diameter.
2. Place drogue release handle in left leg pocket.
3. Lift face mask. (If Applicable) Feel around your neck, arms, and legs for suspension lines. Tie off any loose suspension lines to prevent being hung up during the letdown.
4. Lower facemask. (If Applicable)
5. Clear a path on your right side by unfastening the right side of reserve, the right side of P.G. bag, and the middle attachment on the P.G. bag. Allow them to hang on the left side.
6. Reach into jump pants and pull out O-rings.
7. Reach into the right leg pocket with the right hand and pull out the rappel assembly, leaving the rope bag in the leg pocket.
8. With the right hand, open the carabineer and clip both O-rings on the jump pants from left to right. Ensure the gate on the carabineer is closed and locked.
9. Tie off to the tight side riser:
 - a. Starting inboard, thread rope through the V formed on the tight riser (inside to outside) and pull tight to remove slack.
 - b. Wrap rope around back of riser, around front of riser, and thread through the V from outside to inside.
 - c. Tie off with 3 half hitches leaving 6 to 12 inches of tail.
 - d. Tuck the tail back into the V of the riser.
 - e. Now is a good time to pull the main release cables from the keepers.

NOTE: If you are rappelling from the tree due to an insecurely hung parachute, simply forego the tight riser and wrap rope around the trunk of the tree or a branch (3''+) and tie off with 3 half hitches leaving 6 to 12 inches of tail.

10. Tie a slip knot directly above the friction device with at least a 6 inch bight.

11. The jumper then performs a **Four Point Check**:
 - a. RSL – Ensure RSL is disconnected.
 - b. Rope – Make sure rope is properly tied off to tight side riser with 3 half hitches.
 - c. Slipknot – Ensure slipknot is correctly tied, directly above the rappel device.
 - d. Rappel Assembly – Ensure carabineer is through both O-rings and the rappel assembly is oriented properly.

Note: If you skip the Four Point Check and forgot to do b, c, or d, you will probably fall.

12. Release the risers:
 - a. Place your loose-side hand in the V on the loose-side riser.
 - b. Holding your weight on the loose-side riser, slowly pull the loose-side main release cable with the other hand until the 3-ring releases.
 - c. GENTLY EASE DOWN FROM RISER.
 - d. Place your tight-side hand in the V on the tight-side riser.
 - e. Holding your weight on the tight side-riser, slowly pull the main release handle with the other hand until the 3-ring releases.
 - f. GENTLY EASE DOWN FROM RISER.
13. Lift face mask and check for suspension lines one more time and then close facemask. (If Applicable)
14. Pinch the safety knot directly on the brake hole of the rappel device with your left hand and release slipknot with the brake hand and begin descent. It is possible to tie off during the descent should the need arise. Simply pinch the sections of rope together that are on each side of the brake hole with your left hand and tie a slipknot directly above the rappel device with the other. Release slipknot as described above.

B. Two Rope Letdown

There are two options available for a two-rope letdown:

- Tying off to the tree
- Belayed by jump partner (hanging/ground)

Tying Off to the Tree:

The jumper descends the original letdown system to the slipknot tied 15 feet from the end of the rope. The jump partner climbs the tree with the second letdown system and ties it off to the bole or a healthy limb at least 3 inches in diameter.

1. Attach the carabineer and rappel device of the second system to the rings on the jump pants in front of the original system with the gate facing the opposite direction.
2. Tie a slipknot above the new rappel device.
3. Release slipknot on original system and rappel down until the jumper's weight is transferred onto the second letdown system. Double check to ensure the new system is properly tied off to the tree and the slipknot is in place above its rappel device.
4. Remove the original system's carabineer from the rings on the jump pants.
5. Release the slipknot on the new system and rappel to the ground.

Belayed by Jump Partner:

Hanging Belay: The jump partner climbs the tree with an additional line, sets up an anchor above the jumper, anchors himself to the tree, and belays the jumper to the ground.

Ground Belay: The jump partner climbs the tree with an additional line, sets up an anchor above the jumper, climbs down the tree, and belays the jumper from the ground.

C. Reserve Letdown Procedures with Rope

Procedures for the reserve letdown are mostly the same as for a standard letdown with a few modifications. Because the reserve is not able to release from the harness in the same manner as the main parachute, the jumper must climb out of the harness to descend.

1. Make sure the parachute is securely hung in the tree. If not, tie off to the trunk or a healthy limb at least 3 inches in diameter.
2. Lift your face mask. (If applicable) Feel around your neck, head, arms, and legs for suspension lines. Tie off any loose suspension lines to prevent being hung up during the letdown.
3. Lower facemask. (If Applicable)
4. Put radio in leg pocket. Unfasten P.G. bag and let it fall to the ground.
5. Reach into jump pants and pull out O-rings.
6. Reach into the right leg pocket with your right hand and pull out rappel assembly leaving the rope bag in the leg pocket.
7. With the right hand, open the carabineer and clip both O-rings on the jump pants from left to right. Ensure the gate on the carabineer is closed and locked.
8. Tie off to the tight-side riser carabineer. Wrap the rope through the carabineer twice, pull tight to remove slack, and tie off with three tight half hitches leaving 6 to 12 inches of tail.

NOTE: If you are rappelling from the tree due to an insecurely hung parachute, simply forego the tight-side riser carabineer and wrap rope around the trunk of the tree or a branch (3"+) and tie off with 3 half hitches leaving 6 to 12 inches of tail.

9. Tie a slip knot directly above the friction device with at least a 6 inch bight.
10. The jumper then performs a **Three Point Check:**
 - a. Rope – Make sure rope is properly tied off to tight-side carabineer with 3 half hitches.
 - b. Slipknot – Ensure slipknot is correctly tied directly above the rappel device.
 - c. Rappel Assembly – Ensure carabineer is through both O-rings and the rappel assembly is oriented properly.

Note: If you skip the Three Point Check and forgot to do any of the steps, you will probably fall.

11. Climb out of your harness:
 - a. Undo your chest strap.
 - b. Loosen your leg straps.
 - c. Release the leg strap on the left side.
 - d. Pull your left arm out of the harness.
 - e. Release the leg strap on the right side.
 - f. Pull your right arm out of the harness; you should now be out of your harness.
12. Lift face mask and check for suspension lines one more time and then close facemask. (If Applicable)
13. Pinch the safety knot directly on the brake hole of the rappel device with your left hand and release slipknot with the brake hand and begin descent. It is possible to tie off during the descent should the need arise. Simply pinch the sections of rope together that are on each side of the brake hole with your left hand and tie a slipknot directly above the rappel device with the other. Release slipknot as described above.

POWER LINE LANDINGS AND LETDOWN PROCEDURES

Do whatever you must to keep from landing in power lines, even if it means doing a downwind landing. If collision with a power line is imminent

1. Bring your arms in tight across your chest.
2. Make sure your feet and knees are together (make yourself as streamlined as possible so you don't bridge on any two lines).
3. Try to zero out your airspeed (but don't stall), so that you come straight down between the power lines.
4. **Do not** grab any power lines.

If you hang up in the power lines, you have the following options:

- Have someone call the power company and have them turn off the power before you do anything.

- If you're not too high off the ground, you may elect to cut away without tying off to your canopy with your letdown rope. Make **sure** your RSL is disconnected. Remove the knife from the reserve container. Release your P.G. bag and reserve and drop them to lessen the impact when you hit the ground.
- If you do a letdown, **DON'T DROP YOUR LETDOWN ROPE TO THE GROUND, LEAVE IT IN YOUR LEG POCKET.** If you drop your letdown rope to the ground, you will ground yourself out and roast like a wiener!!
- When you're about ten feet off the ground, while holding yourself in place by grabbing the rope above your O-rings or friction device, cut your letdown rope cleanly below your O-rings or friction device. Then, let go of the rope and fall to the ground.