

Converting the Mitchell System to a Frog System

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Two basic rope ascending styles have existed since I started caving over 40 years ago: The sit-stand type (including most knot systems) and the “ropewalking” systems. Not including the many hybrids, the most common types today are the universal sit-stand Frog System and the two ropewalking type systems used primarily in the U.S.: The Mitchell System and the bungee-assisted “Ropewalker.”

There is perhaps only one characteristic of all these systems that is virtually undebatable: ropewalking systems are almost universally more efficient for ascending than sit-stand systems. Speed however, is only one of the aspects of ascending that must be considered. Weight, bulk and versatility are very significant factors in overall vertical performance.



Fig 1: Wearing the Mitchell roller box over the Croll allows rapid conversion to the Frog System. The Croll serves as the Mitchell QAS.

The International adoption of the Frog System clearly shows a practical compromise between efficient climbing and system versatility. This does not mean however, that everyone using the Frog system is content with these compromises or that they are the only methods that work.

Europeans have recognized the systemic problems with sit-stand systems and some are addressing it in creative ways. Although it increases system weight and bulk, the addition of a low-placed foot ascender such as a Petzl Pantin increases Frog climbing efficiency, particularly for longer ascents. I have even found a couple of British websites illustrating a method of using a third ascender to convert a Frog System to a bungee-assisted ropewalking system for very long ascents. Rather than debate the merits of the sit-stand versus the ropewalking systems, I offer another option.

Recent testing shows that the Mitchell System is in fact, very well-suited for Alpine SRT rigging methods and offers significantly greater climbing efficiency than the standard Frog for certain body types. It can also be converted to a Frog system when desired.

Traditionally, the Mitchell System has been presented as a “three phase” system. Using a third ascender on a tether called a Quick Attachment Safety (QAS), the Mitchell can be converted to the sit-stand Texas system (phase 2) or a modified system for climbing slopes (phase 3). Although these alterations increase Mitchell System flexibility, my testing suggests a simpler modification that addresses the problem more effectively. The modification is also compatible with International Alpine SRT rigging styles.

Instead of attaching a third ascender to a short tether as a QAS, I wear my normal Frog rig (Croll ascender and chest strap) underneath the Mitchell chest box. When ropewalking the Croll is NOT attached to the main rope and does not hinder normal Mitchell climbing. It does however, provide a QAS that allows me to rest when using my Mitchell System. Since I always carry a third ascender for safety, this modification does not change the total weight/bulk of my normal Mitchell or Frog Systems.

My Mitchell System with the added Croll, can be converted to a two-footed Frog in about 45 seconds, even when on rope.



Fig 2: The standard Mitchell System with Croll addition is shown at left. The Croll does not interfere with normal Mitchell System ascents. To convert to a Frog, first attach the Croll to the main rope. The long foot line is then shortened by twisting it into a carabiner, then the lower ascender is clipped into the foot loop line and adjusted to proper height (center photo). The roller box is disconnected from the main rope entirely. The long cowtail is used as the Frog safety tether. For short drops or sequential pitches, the chest box is not used and the Frog System is used exclusively (right photo). There are several possible variations to the conversion shown here depending upon the initial Mitchell configuration. (See figures 3 and 4)

Using the Croll instead of the traditional QAS has several advantages over the standard Mitchell three-phase:

1. The chest box and lower Mitchell ascender can remain stowed until needed. This eliminates the need to wear the Mitchell chest box on rappel, while still providing an effective, safe Frog System. (See Fig 2)

2. The Frog is more energy efficient than the Mitchell phase 2 (Texas system) for general rope climbing and particularly for short pitches.
3. The systems can be interchangeably converted on rope.
4. I find the Frog more effective on slopes than the Mitchell Phase 3.

Procedure

A standard Croll ascender and Frog chest strap are worn under the Mitchell roller box.

1. Attach the Croll to the main rope and sit down on it for comfort.
2. Attach your long cowtail to the upper ascender as the Frog safety tether.
3. Loosen the Mitchell chest box and tension the Croll chest strap.
4. Disconnect the chest box from the main rope.
5. Remove the upper foot loop from the roller box. Although the normal long foot loop is too long for full Frog efficiency, it is easily shortened by twisting the rope and clipping it into a carabiner at the foot stirrup.
6. Attach the lower Mitchell ascender to the upper foot loop and adjust to proper height.
7. Frog normally.

Some Mitchell users have built their systems for minimum weight and bulk. If your Mitchell foot loops are made with rope instead of sewn stirrups, the lower Mitchell ascender is not used and the conversion produces a two-foot Frog system (See fig. 3).



Figs 3 (left) and 4 (right): Double rope loops may be used in place of sewn stirrups for the Mitchell System. This decreases system weight and bulk and greatly facilitates the Frog conversion. Both loops go over the same foot when using the Mitchell and one loop on each foot for Frogging (Fig 3). The double foot loop requires a chicken loop when using the Mitchell. The short Mitchell ascender is not used in this configuration and can be stored until needed. Fig 4: A complete minimum weight (1200g) and bulk Mitchell System is shown at right.

Rope foot loops may be substituted for sewn loops to decrease Mitchell System weight and bulk (See Fig 4). A double loop knot such as the double figure eight, in the end of the Mitchell's upper foot line, provides the standard Frog foot loop setup. This Mitchell configuration has approximately the same weight and bulk as the bungee-assisted "Frog to Ropewalker" conversion that uses a third handled ascender.