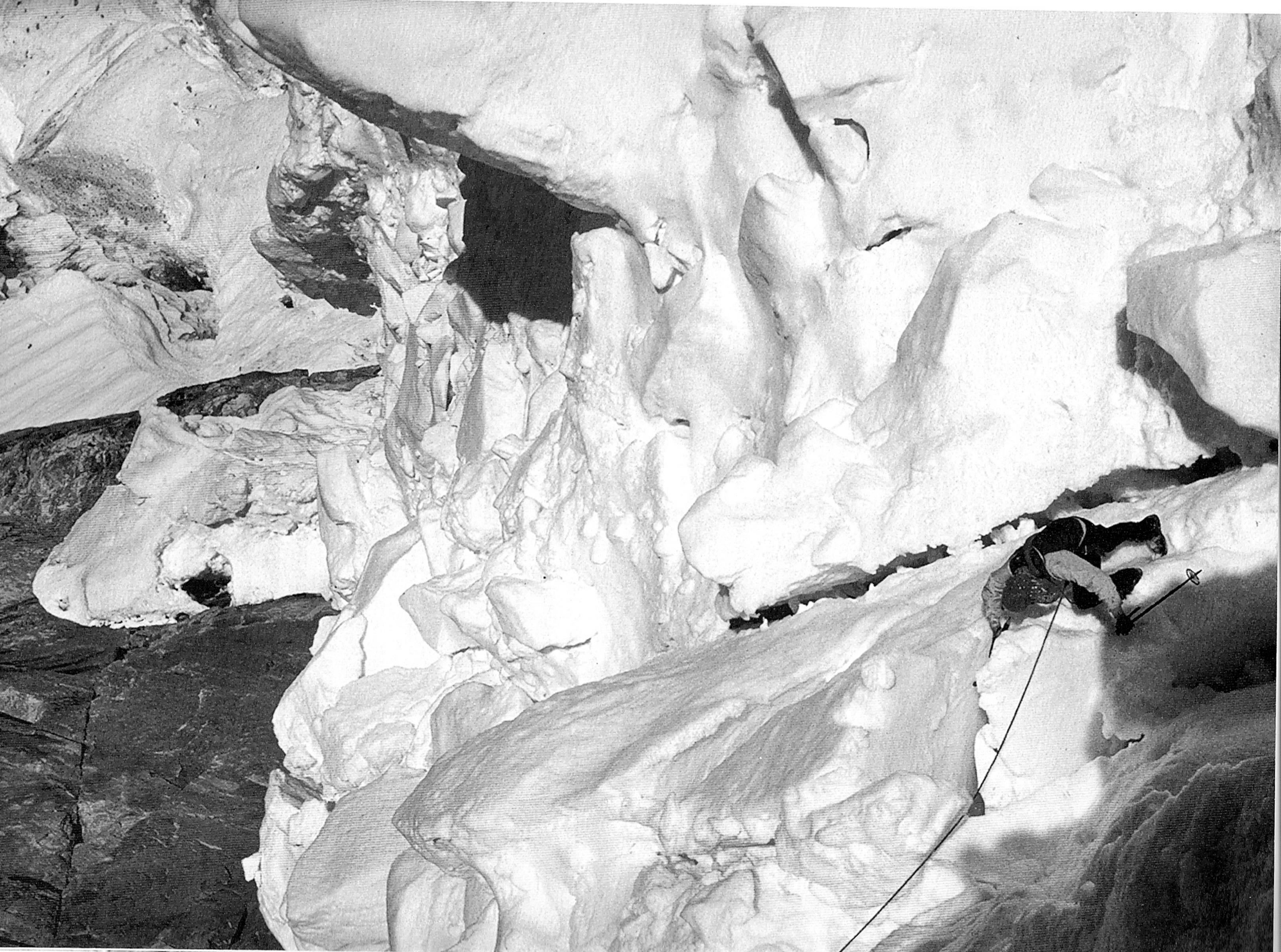

CHAPTER 3

RESCUE TECHNIQUES FOR THE GLACIER TRAVELER

The previous chapter discussed the precautions that glacier travelers can take to guard against crevasse falls. But being prepared and careful doesn't change the fact that an occasional fall into a crevasse is a part of traveling on glaciers. Therefore, knowing how to ascend out of a crevasse and how to haul a partner out of one have long been acknowledged as essential skills for the glacier traveler. This chapter outlines the fundamentals of these skills, and the following chapter adds more advanced techniques to make crevasse rescue reliable in more situations.

ASCENDING SYSTEMS

Most crevasses trap victims between unclimbable walls of soft snow overhung by looser snow. So to get out of a typical crevasse a person needs to have a system for ascending the rope. Big-wall climbers, spelunkers, and glacier travelers all have developed various systems for ascending a rope. Each system uses a set of two or more rope-gripping devices, either mechanical ascenders or prusik (or similar) knots. With all your weight on one ascender or knot, the other, unweighted one can be moved up the rope; then you shift all your weight to the "new" one and raise the other, repeating the process up the rope. As well as using various knots or camming devices, systems differ in how they connect body parts to the knots or ascenders.

The **prusik knot** has served as a tried-and-true rope-gripping device for decades now, and all glacier travelers should be practiced with it. The **Bachman variation** (see Appendix 2) is favored by many for ease of movement. Tiny mechanical devices offer even greater conve-

◀ *Greg Collum working through a moat/crevasse complex on the Tiedemann Glacier, British Columbia Coast Mountains*

nience and easier operation than knots. Full-size, "big-wall" ascenders are also faster and easier to use than knots, but few glacier travelers justify their weight and expense unless they need them anyway for their climbing objective. Some do not grip well on icy ropes. With any mechanical ascending device, one must be careful to not install it where it might receive a shock load, as this can damage the rope. It's also best to avoid putting shock loads on prusiks or similar knots, for unless they are already set tight they can slip and be burned by the sliding rope.

A prusik knot is made from a loop of supple rope, usually 6-millimeter perlon. The best knot to tie the loop is a grapevine or "double fisherman's" knot. To make a prusik knot from the loop you simply wrap it through itself two or three times around a rope of larger diameter (see fig. 3.1). Essentially, then, the prusik knot is a double or triple girth hitch. Straighten the wraps so that they coil cleanly and snugly around the main rope. The wraps grab when you pull on the open loop, and, up to a fairly substantial force, the more you pull the more tightly they grab, because the wraps are snugging onto themselves. But when you loosen the wraps and hold them directly, they slide freely along the main rope. After a person's body weight has wrenched the wraps tightly, an easy way to loosen them is to press against the single "opposing" wrap designated in the drawing.

A prusik's friction relies on the suppleness and smaller diameter of the prusik cord. With climbing ropes of either 9 or 11 millimeters in diameter, the best compromise between strength and bite is a 6-millimeter prusik. However, a somewhat stiff 6-millimeter prusik on a somewhat stiff 9-millimeter rope will definitely need that third wrap to keep it from slipping. When new, a single strand of 6-millimeter perlon rope will hold up to 1,700 pounds, but it should nevertheless be replaced frequently. Some climbers favor marine-braid Dacron cord for their

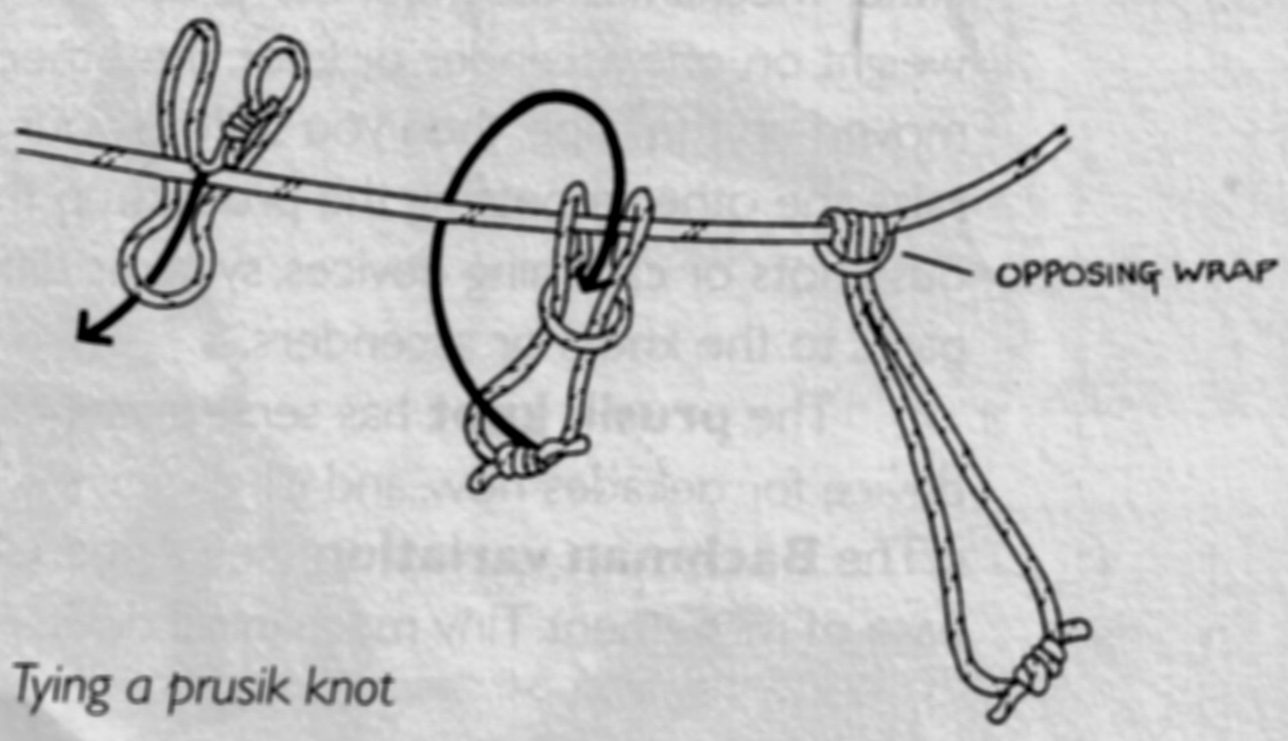

Figure 3.1 Tying a prusik knot

prusiks because its very supple sheath grabs extremely well. However, be aware that this softer sheath wears faster than the stiffer but tougher perlon. The new nylon-sheathed, 5.5mm Spectra cord is a suitable, prusik material that's essentially as strong as a climbing rope, although even the softer weaves are a bit stiffer than perlon. Kevlar cord should never be used for a prusik because it's quite stiff and its fibers readily break down with repeated flexing.

Of all the connecting systems, the **Texas system** has drawn the most favor among glacier travelers for its simplicity, lightness, comfort, and ease of use. It consists of a simple prusik loop (made from 40 to 45 inches of cord) clipped to a locking or doubled carabiner on the seat harness, plus a second prusik knot with a pair of extensions and small loops for the feet (see fig. 3.2).

The foot loops, or "stirrups," are best constructed from a single strand 10 to 12 feet long, as follows:

1. In the middle of this strand tie a figure eight with a bight at least 6 inches long.
2. Stand and hold this bight at your diaphragm with the two strands

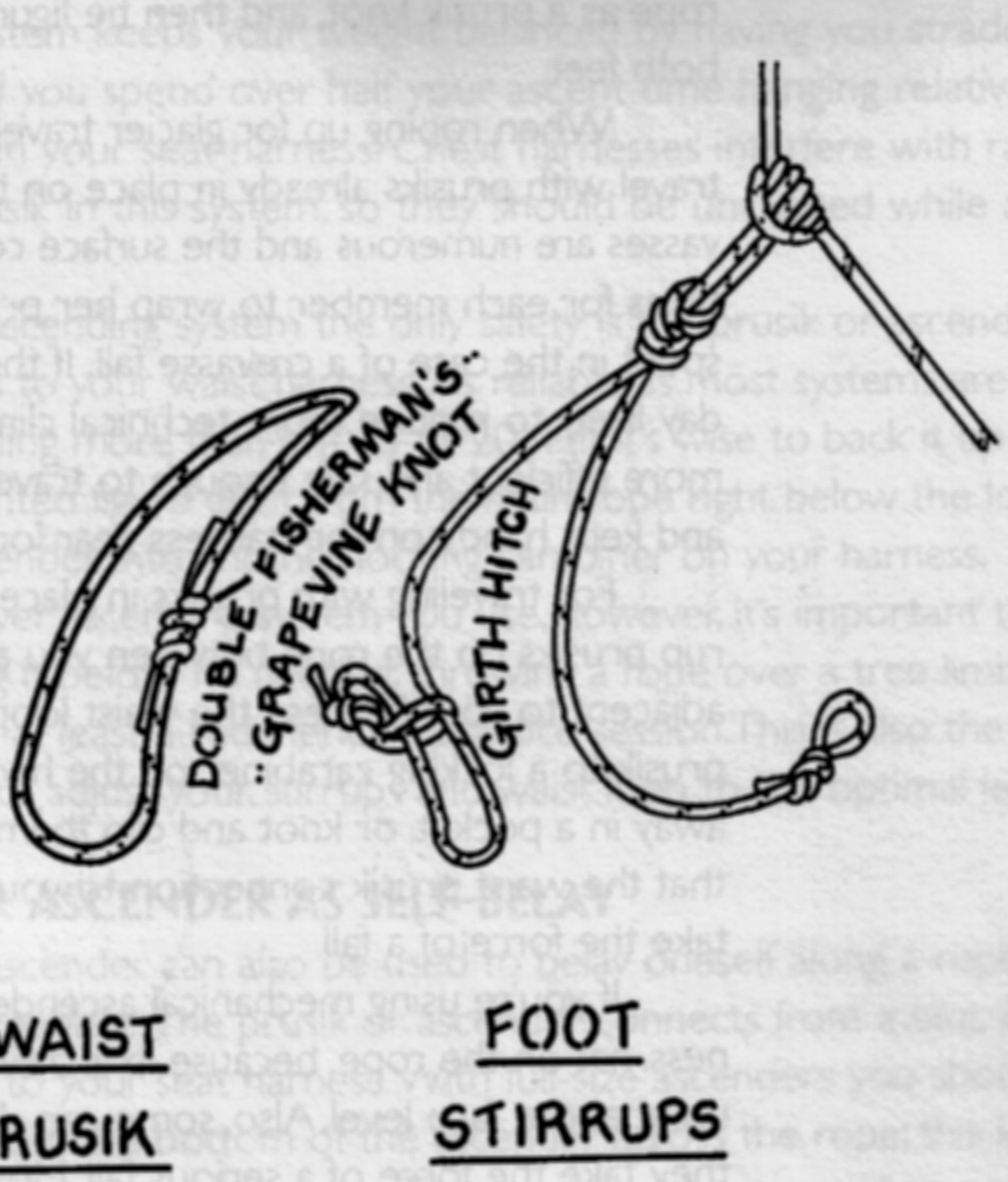

Figure 3.2 Texas prusik system