



FACT SHEET

Delaware County Community Emergency Response Team Supplemental Training Series

INTRODUCTION TO WILDERNESS SEARCH & RESCUE

Section XIV – Rescue Operations

Rope Rescue

- Rope and rescue equipment has evolved to a high standard.
- This chapter is an “awareness” introduction.
- Rope rescue is inherently dangerous.
- Proper and extensive training and experience should be gained before using.

Rope Construction

- Most common materials used to manufacture ropes are nylon and polyester.
- Do not rot
- Easily inspected for repair
- High strength-to-weight ratio

Types of rope construction include:

- Laid
- Braided
- Kernmantle

Kernmantle Ropes

- Constructed using two parts:
 - Outer sheath (woven tube)
 - Inner core (strands of fibers bundled together)
- Very strong, easy to tie knots in, and abrasion resistant
Good lifeline

Types of Kernmantle Rope

- Static or low stretch
- Dynamic or high stretch
- Both can be used by rescuers and emergency personnel.
- Rule of thumb:
 - *Static* when not climbing, only hauling
 - *Dynamic* when climbing or risk of a fall exists

Kernmantle Rope Construction



Webbing

- Light, easier to pack, and can be used in a variety of situations
- Two main types:
 - Flat
 - Tubular
- Can be used as an improvised harness or anchor attachment, or to secure a patient to litter.

Rope Care

- Keep a log.
- ID marking
- Size
- Type
- Manufacturer
- Date purchased
- Date in service
- Where purchased
- Lot number
- Detailed history of use

Knots and Safety Factor

- A knot in a rope will reduce its strength by 30%.
- A ring bend (water knot) in webbing will reduce its strength by 50%.
- Reduction is not cumulative – A single knot will have the same effect as two or three knots.

Knots

Only a few are needed in most rescue situations. Learn a few useful knots and practice them often.

Knots to Know

Square Knot, Figure “8”, Figure “8” on a Bight, Figure “8” on a Bend, Water Knot (Webbing) & Prusik Knot.