

the spring tension, collision of the carabiner against another object, or simply the vibration of the rope over the carabiner.

If the load comes onto the carabiner at the instant the gate is open, carabiner failure may occur. (A carabiner with its gate open typically has less than 50% of its rated, gate-closed strength.) Using carabiners with high gate-open strengths or locking gates helps to eliminate the chances of this type of carabiner failure. Gate design and stiff spring tensions may also decrease gate lash. Keep clothing, equipment, and natural objects from interfering with gate closure.

It is best to use a quick draw or runner when clipping protection. This reduces rope drag and decreases the chance of the rope's upward travel dislodging your protection. Make sure the carabiner clipped to the protection has a straight-gate design. This reduces the chance of cross loading or of having the rope flip across the gate and unclip itself. Never clip the rope into fixed equipment with a single non-locking carabiner.

Retire a carabiner if it is dropped a long distance onto a hard surface. Non-visible damage may have weakened it.

There are 3 simple steps for inspecting carabiners before each use:

1. All surfaces of the carabiner should be free of cracks, sharp edges, corrosion, burrs, or excessive wear.
2. Gate opening and closing should be quick and easy. Be sure the gate and any locking mechanism closes freely and completely.
3. Rivets should not be bent, loose or missing.

If your carabiner does not pass the above inspection, remove it from service and destroy it.

#### ❖ Ropes

- Ropes used for climbing are dynamic - they are designed to stretch when fallen on, absorbing and dissipating the energy generated by the fall. Static ropes, such as those used in rescue work are designed with minimal stretch and should never be used for climbing. Although static and dynamic ropes look the same they are not interchangeable. Static ropes are not climbing ropes - never use a static rope for climbing or any application where dynamic loads may be encountered.

#### Ascending and Descending using a Single rope

Ascending and descending using a single rope is the going up and down of the main rope with the use of two 2.5 meter of a prussic. The ascender or descender is fastened with a safety line. This training is used for easy access of the rescuer to high angle buildings or when the main door is hazardous or dangerous to enter.

Rappelling techniques includes:

- ❖ Seat-hip rappel
- ❖ Butterfly/Australian/Run-down rappel
- ❖ Lizard/Spider rappel
- ❖ Man-under rappel - commonly used for high angle rescue operation wherein a conscious victim is properly or securely placed under the rappeller. Man-under rappel should be demonstrated from the assigned training director during the training. An extensive practice should be done to master the man-under rappel.