

Navigation Equipment and Methods



Lensatic Compass

The lensatic compass is the most common and simplest instrument for measuring direction

Lensatic Compass

Limitations

Effects of Metal and Electricity

Metal objects and electrical sources affect the performance of the compass

Suggested separation distance

- | | |
|------------------------------|-----------|
| • High-tension power lines | 55 meters |
| • Field gun, truck, or tank | 18 meters |
| • Telephone wire/barbed wire | 10 meters |
| • Machine gun | 2 meters |
| • Steel helmet or rifle | 1/2 meter |

Lensatic Compass

Limitations

Care of compass

The compass dial is set at a delicate balance that can be damaged by shock.

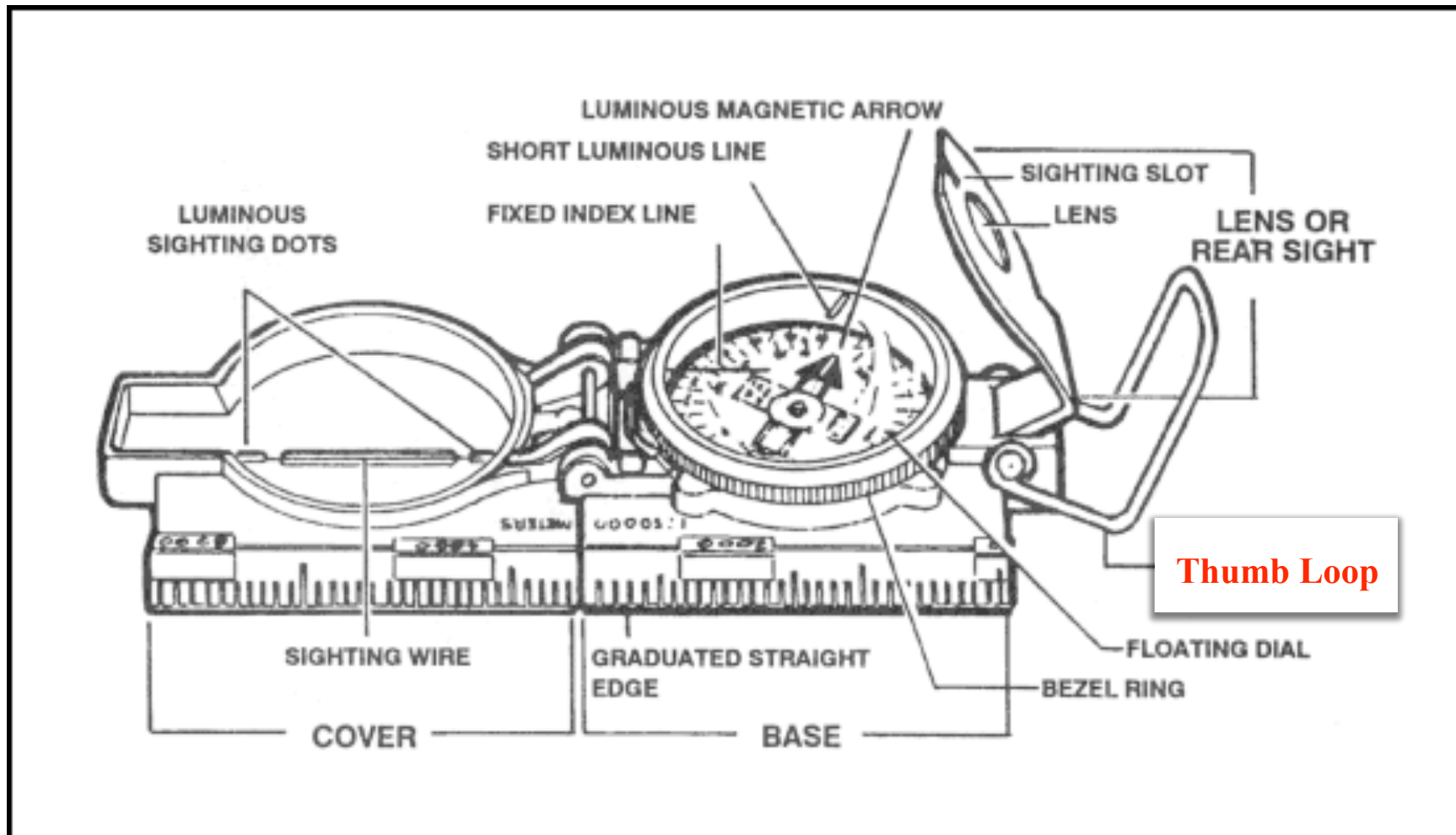
Close and return the compass to its container when not in use.

Attach the compass with a lanyard to your body.

Lensatic Compass

Parts of a compass

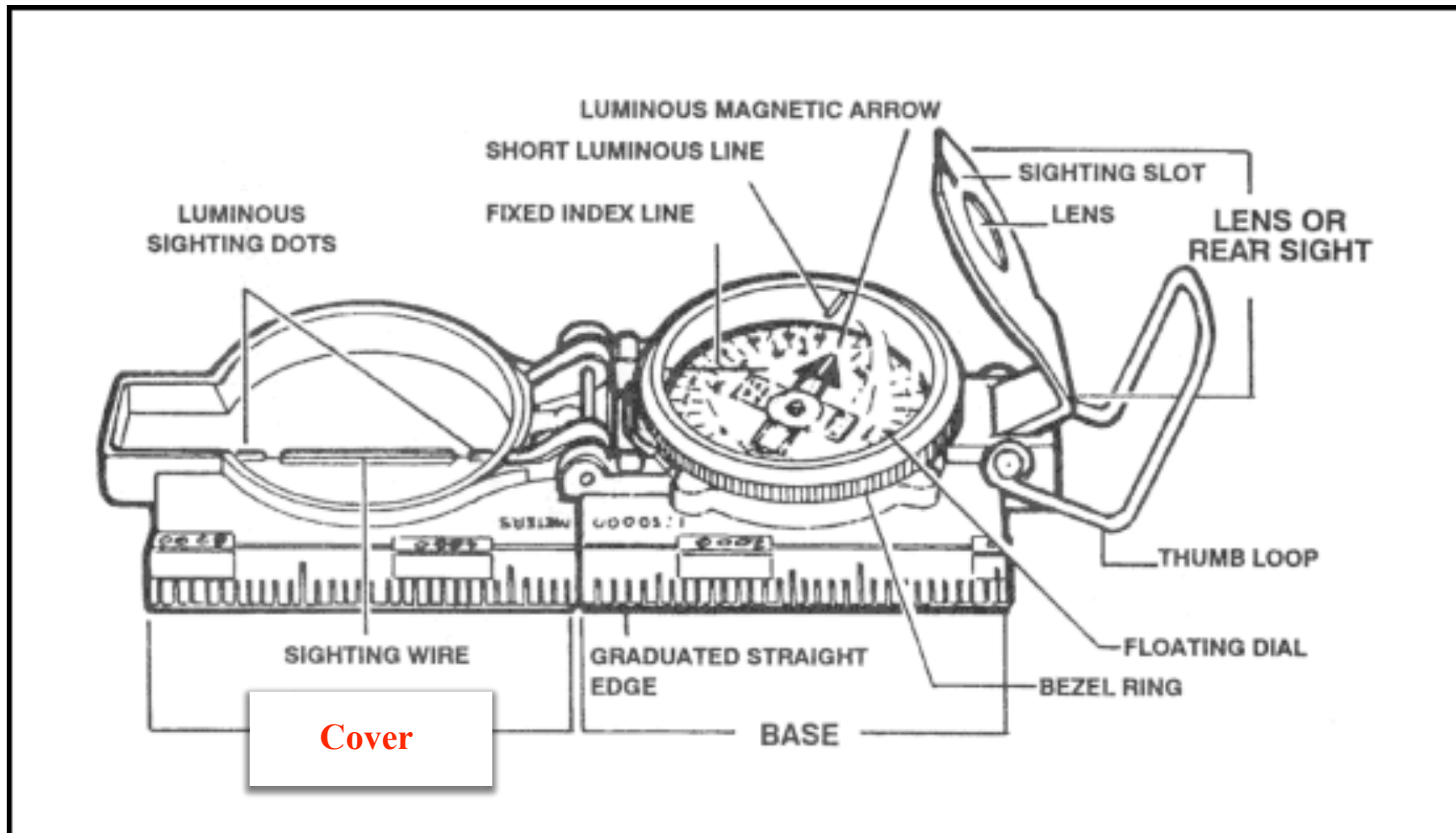
- Thumb Loop
- Cover
- Sighting Wire
- Eyepiece
- Sighting Slot
- Bezel Ring
- Index Line
- Compass Dial



Thumb Loop

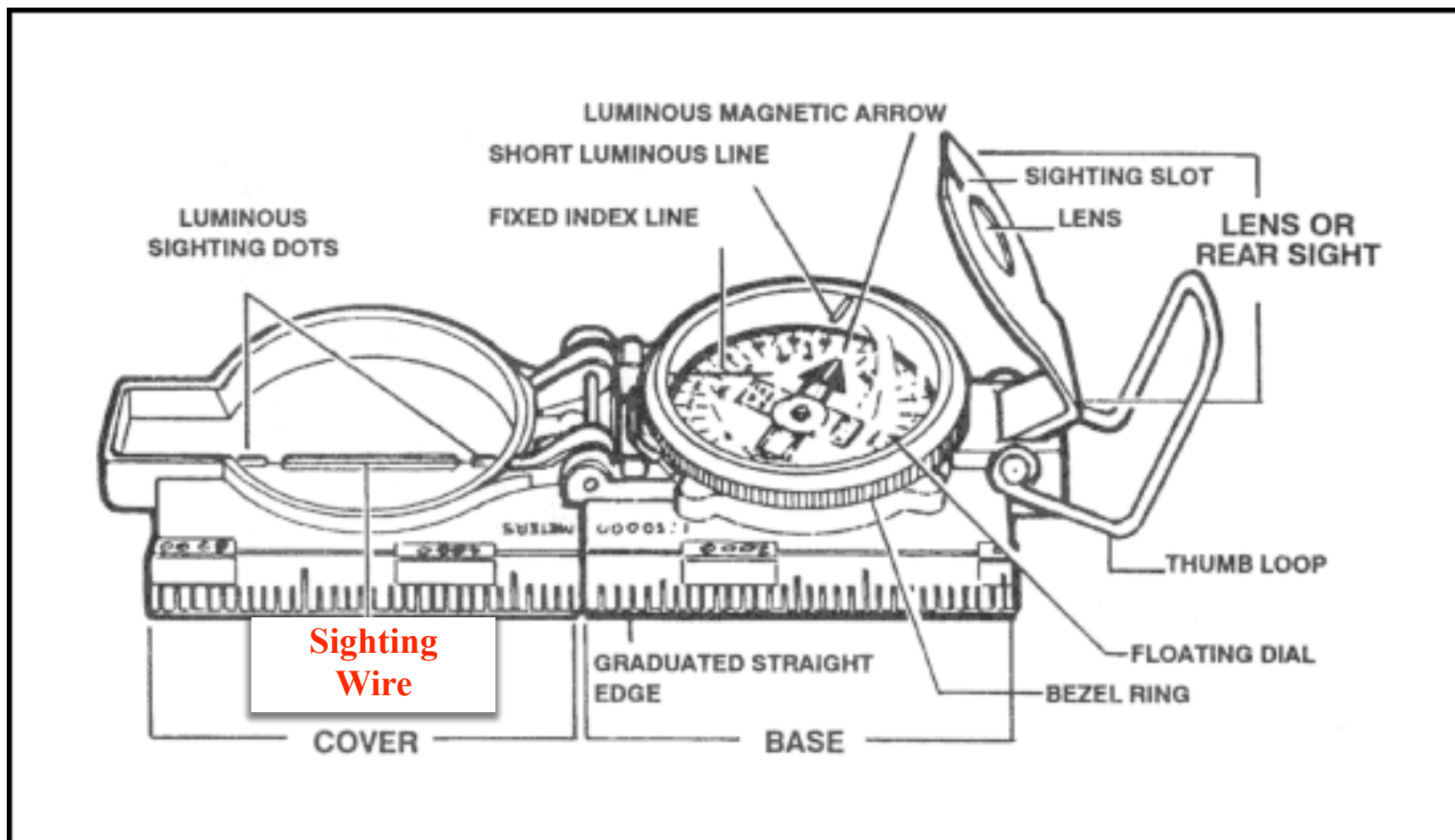
Secures compass in closed position

Serves as wire loop to assist in sighting objects



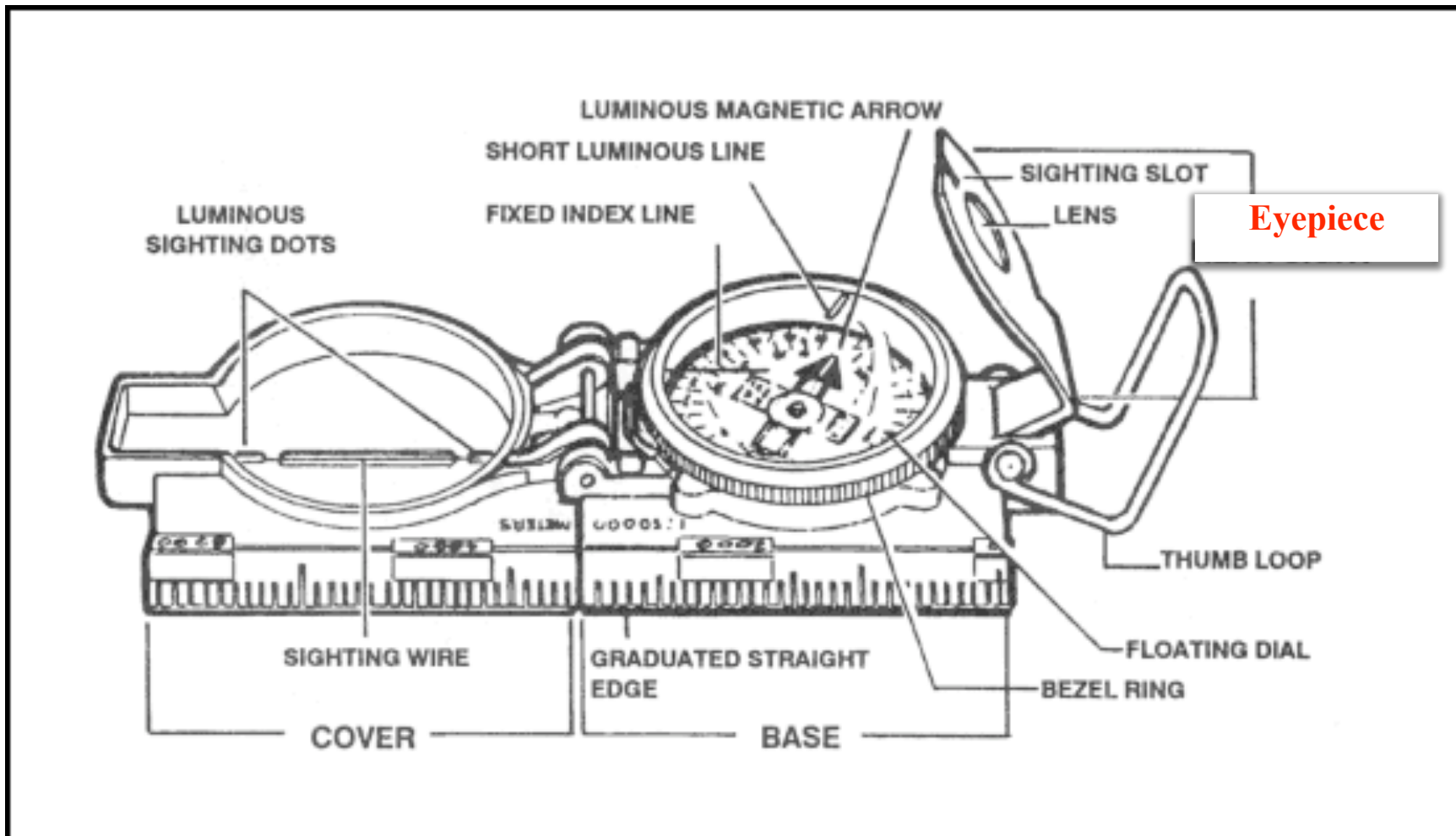
Cover

Protects face of glass crystal



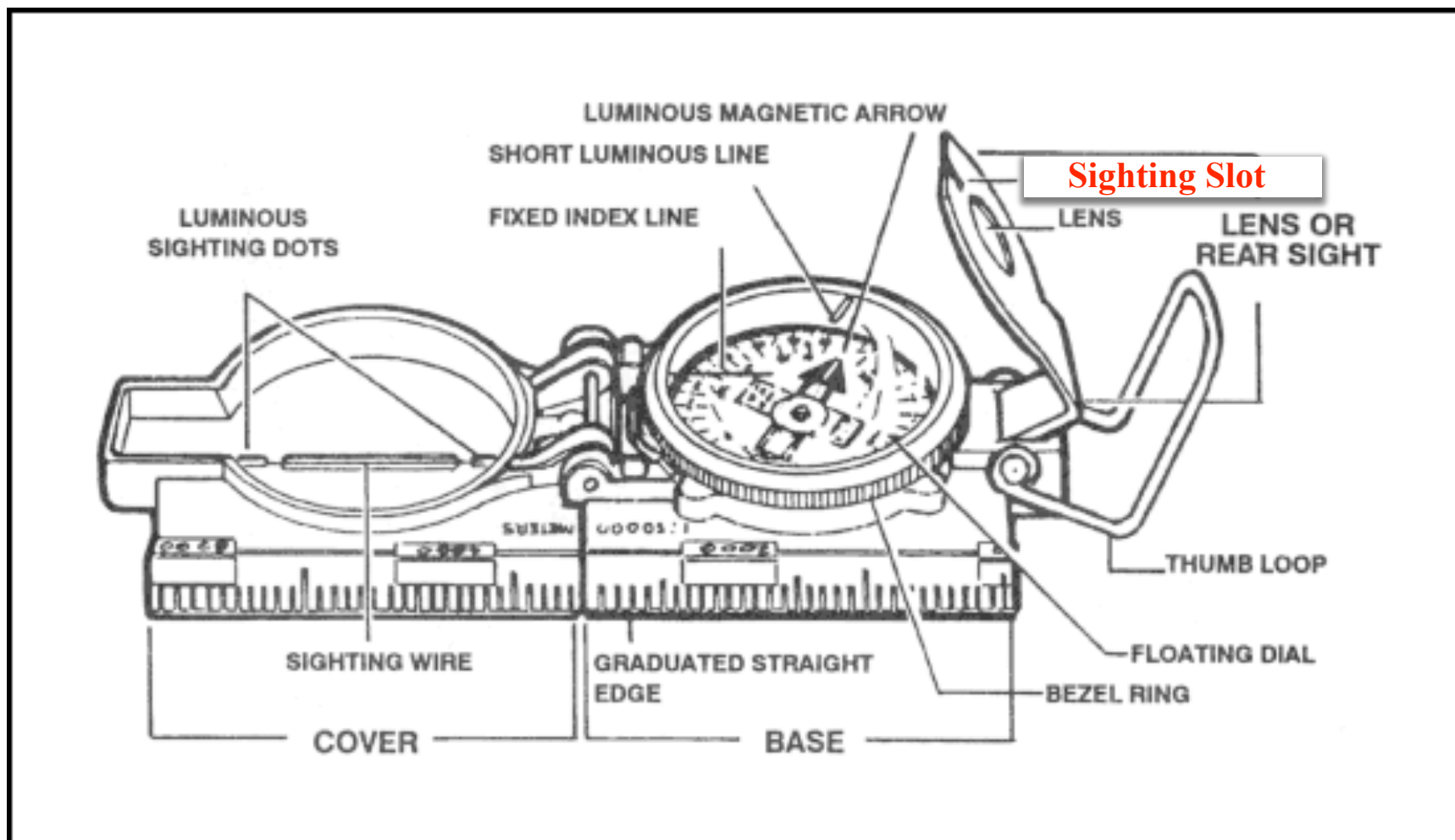
Sighting Wire

Used to sight objects



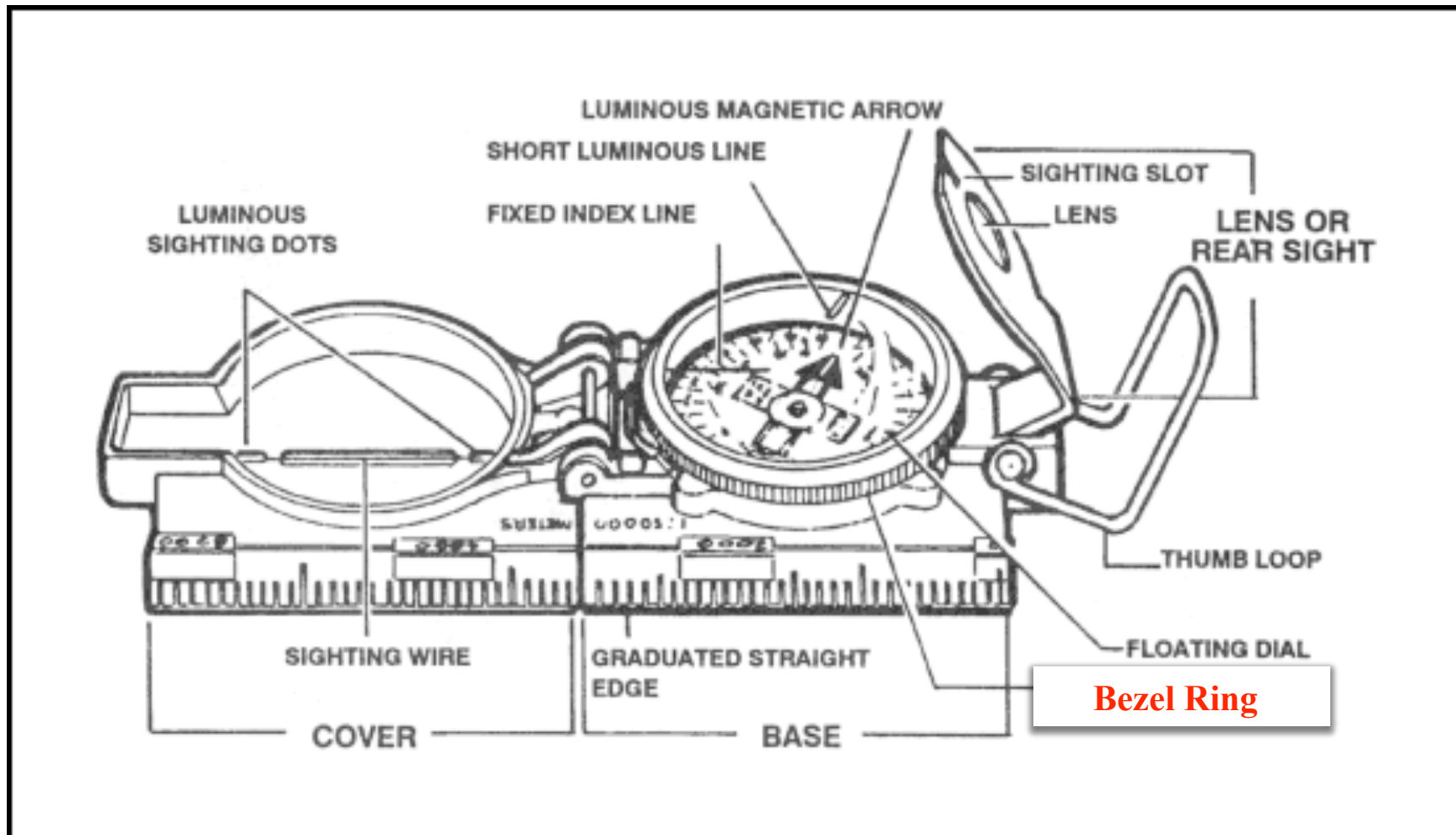
Eyepiece

Aids in sighting azimuths
Locks compass dial in place



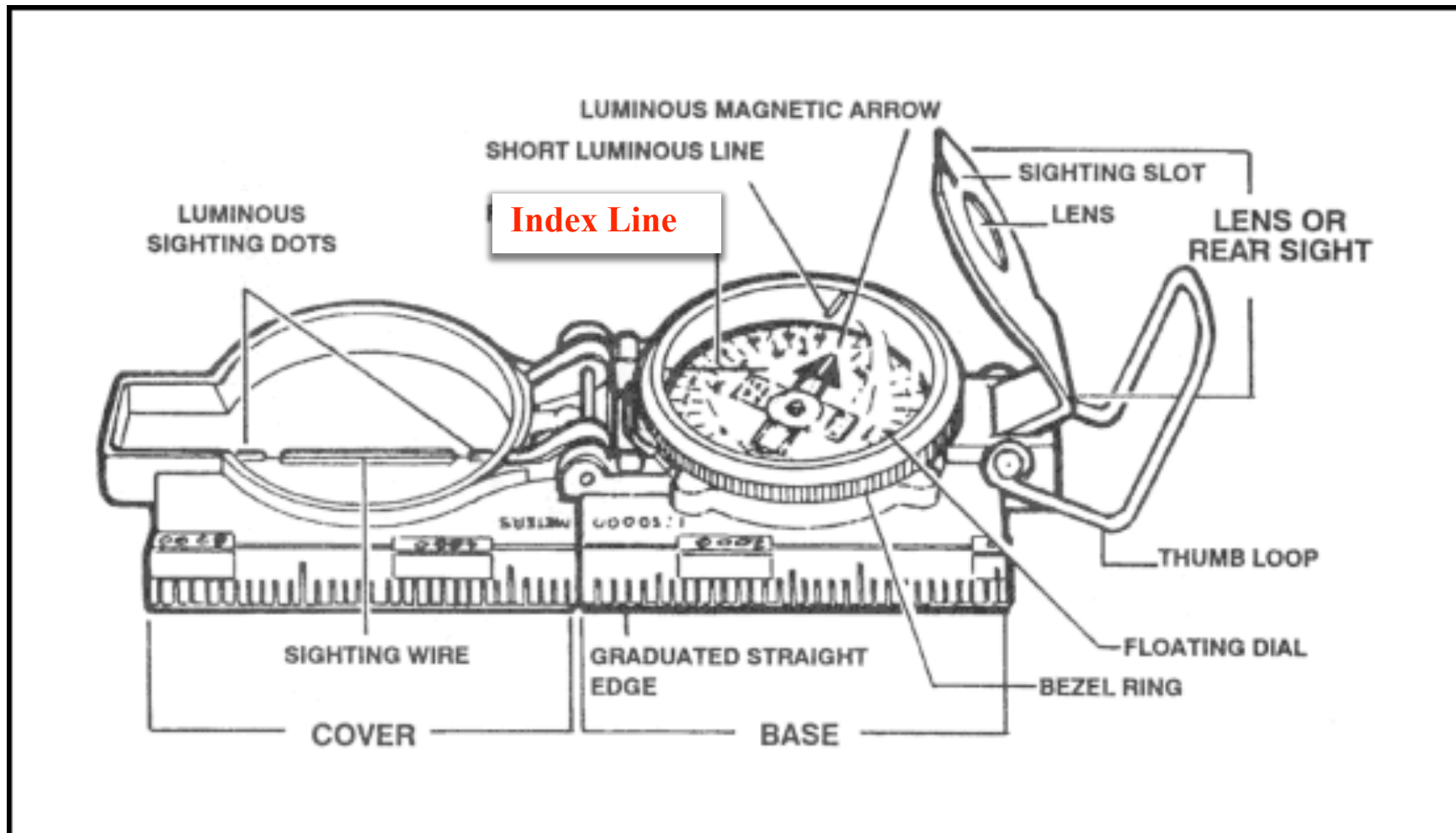
Sighting Slot

Used in sighting azimuths



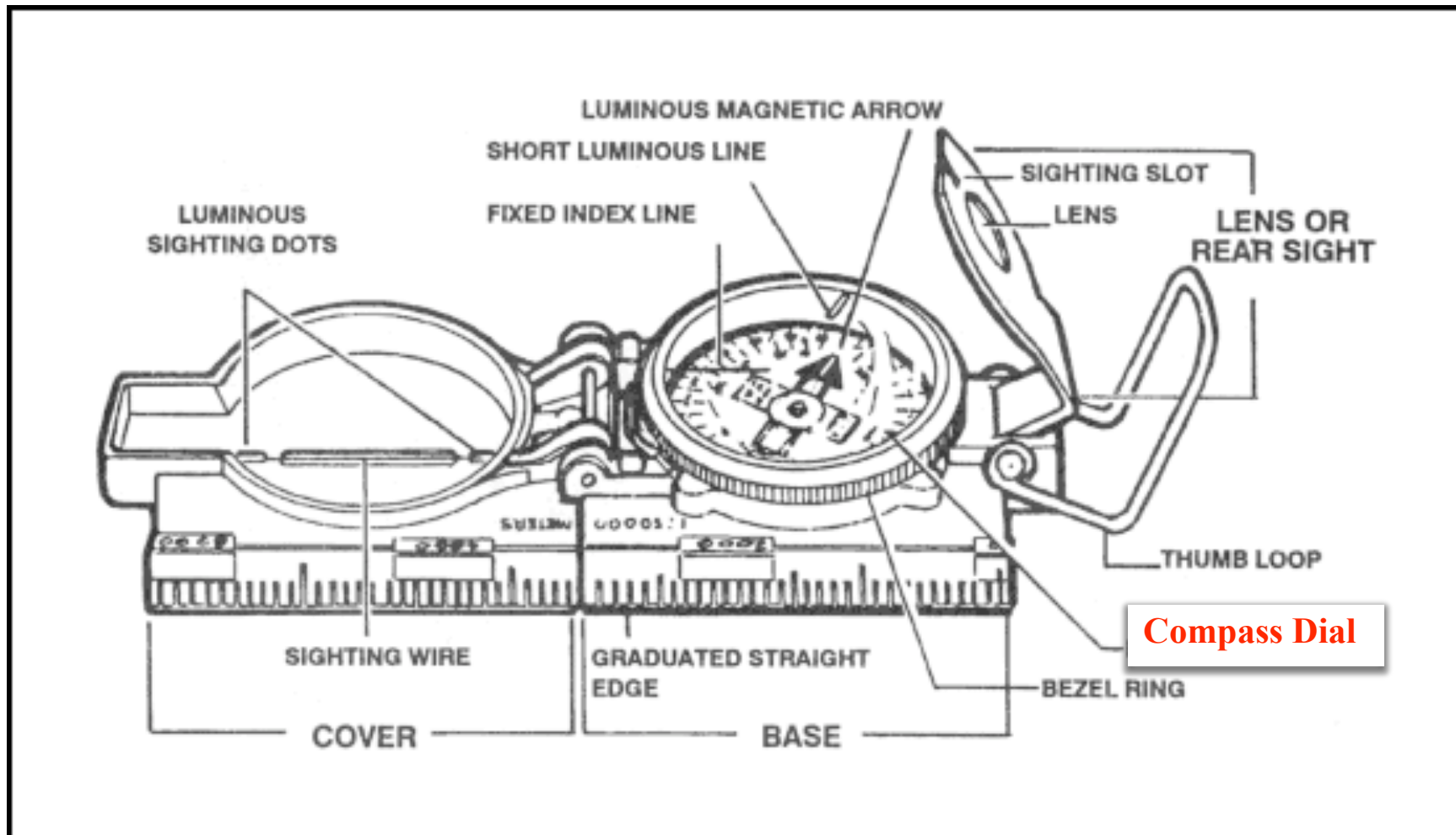
Bezel Ring

Used in pre-setting a direction in night compass work. Each click represents three degrees



Index Line

Stationary black line used as a reference line



Compass Dial

Indicates direction in mils and degrees

Techniques of use

Two techniques are employed when using the lensatic compass

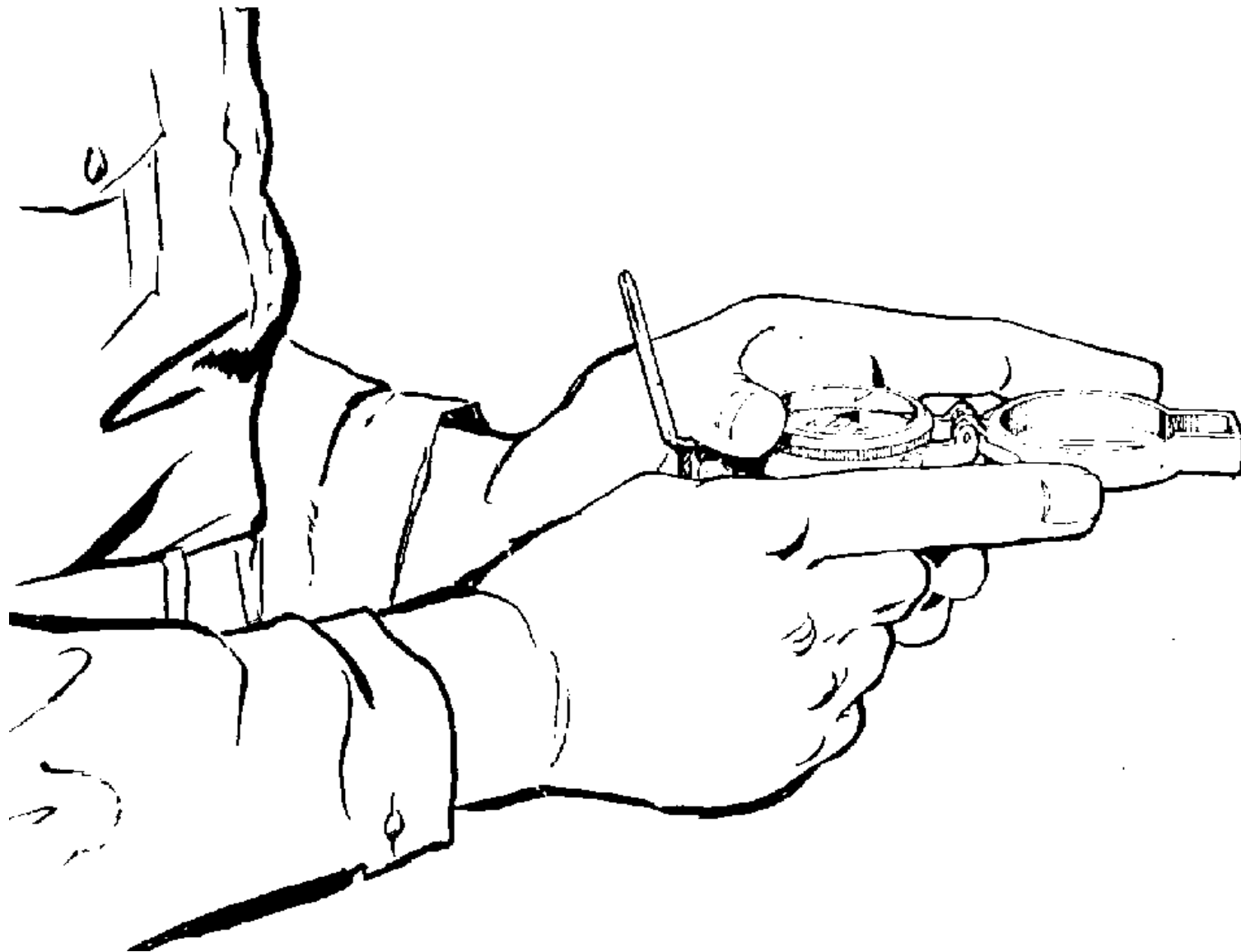
- Center hold technique
- Compass to check technique

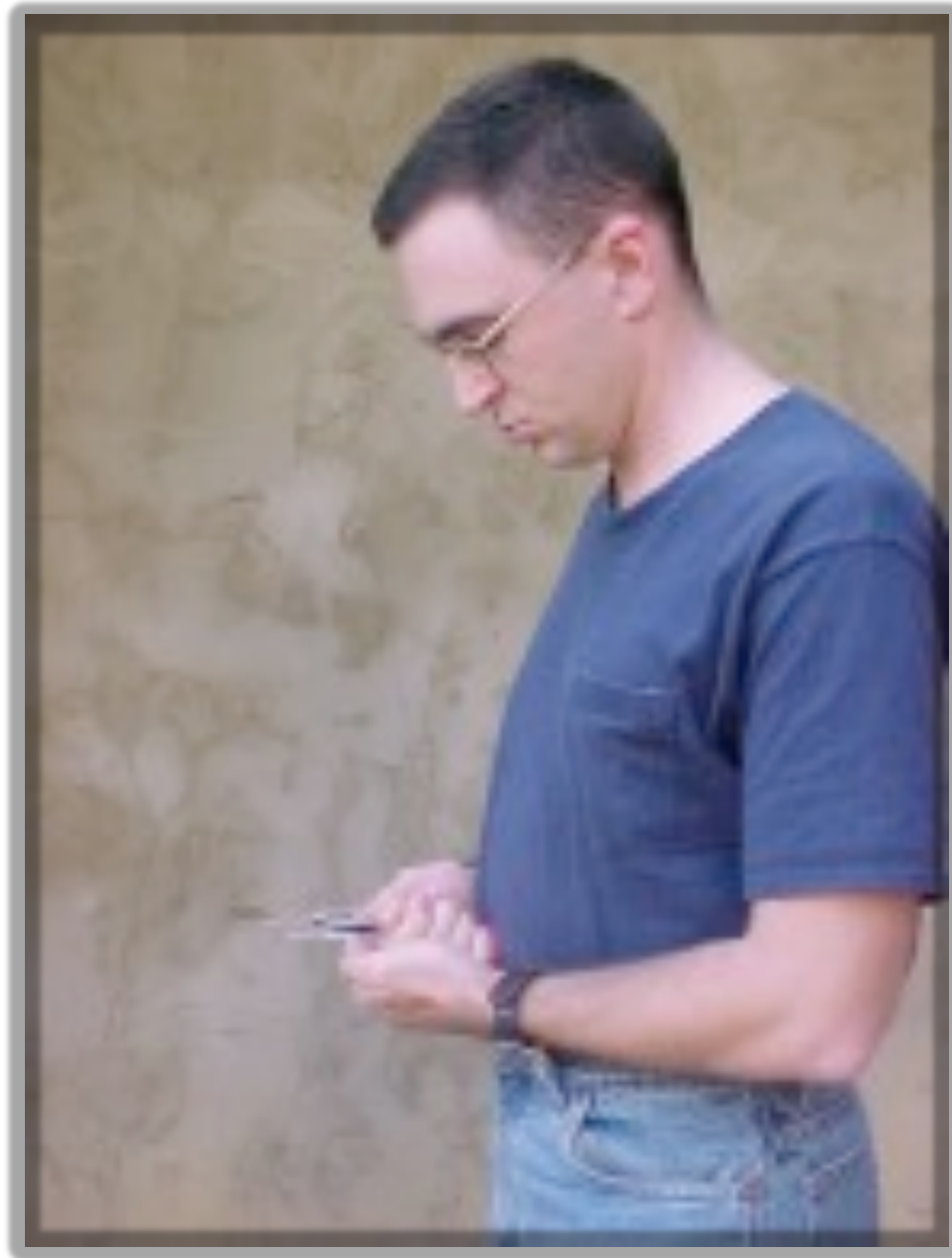
Center Hold Technique

Preferred method

Advantages

- It is faster and easier to use
- It can be used under all conditions of visibility
- It can be used over any type of terrain
- Accurate to within 11 degrees
- It can be used w/o removing eyeglasses

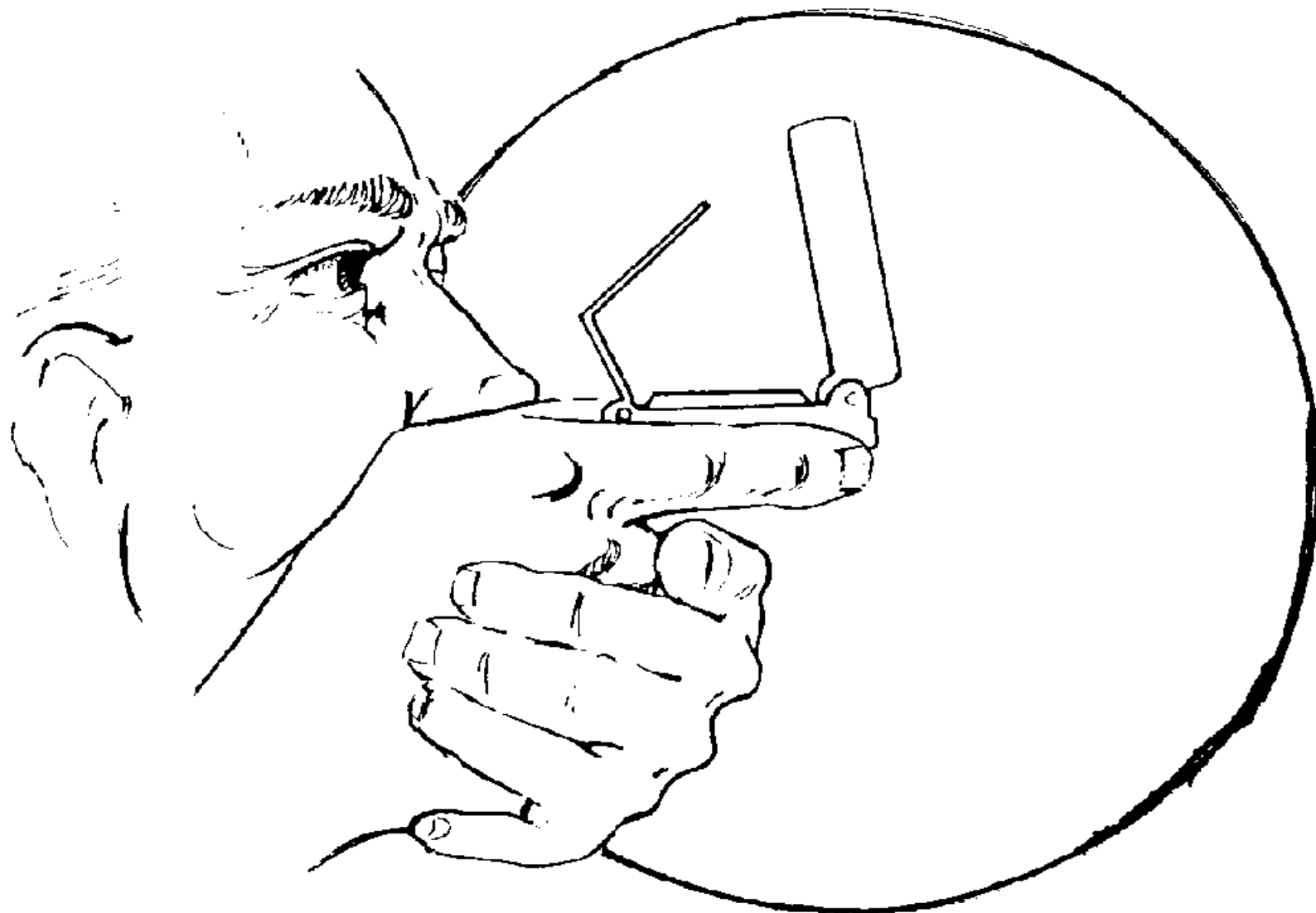




Compass to Check Technique

Advantages

- Works only with the Lensatic compass
- Accurate to within 3 degrees
- Used for Intersection and Resection





1

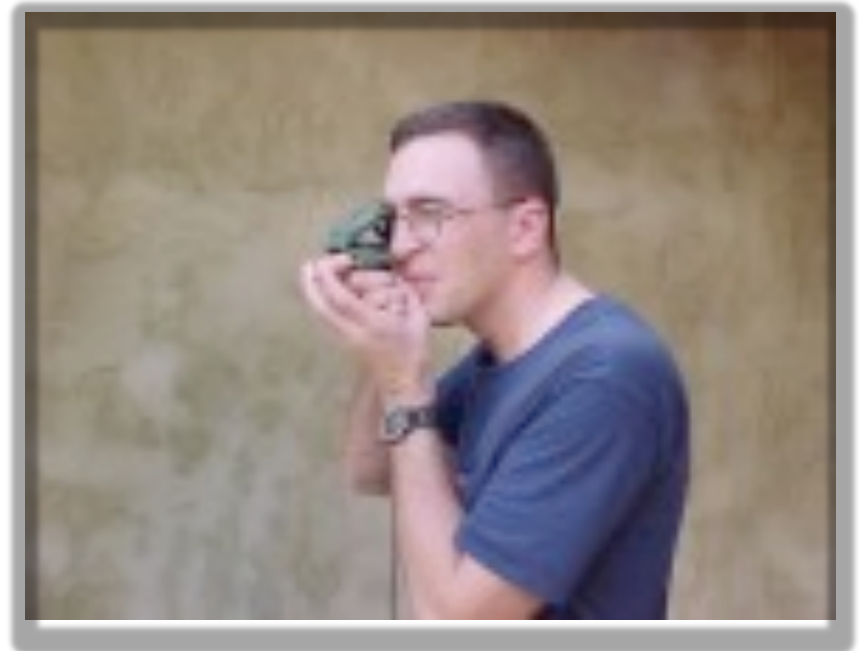
2





3

4

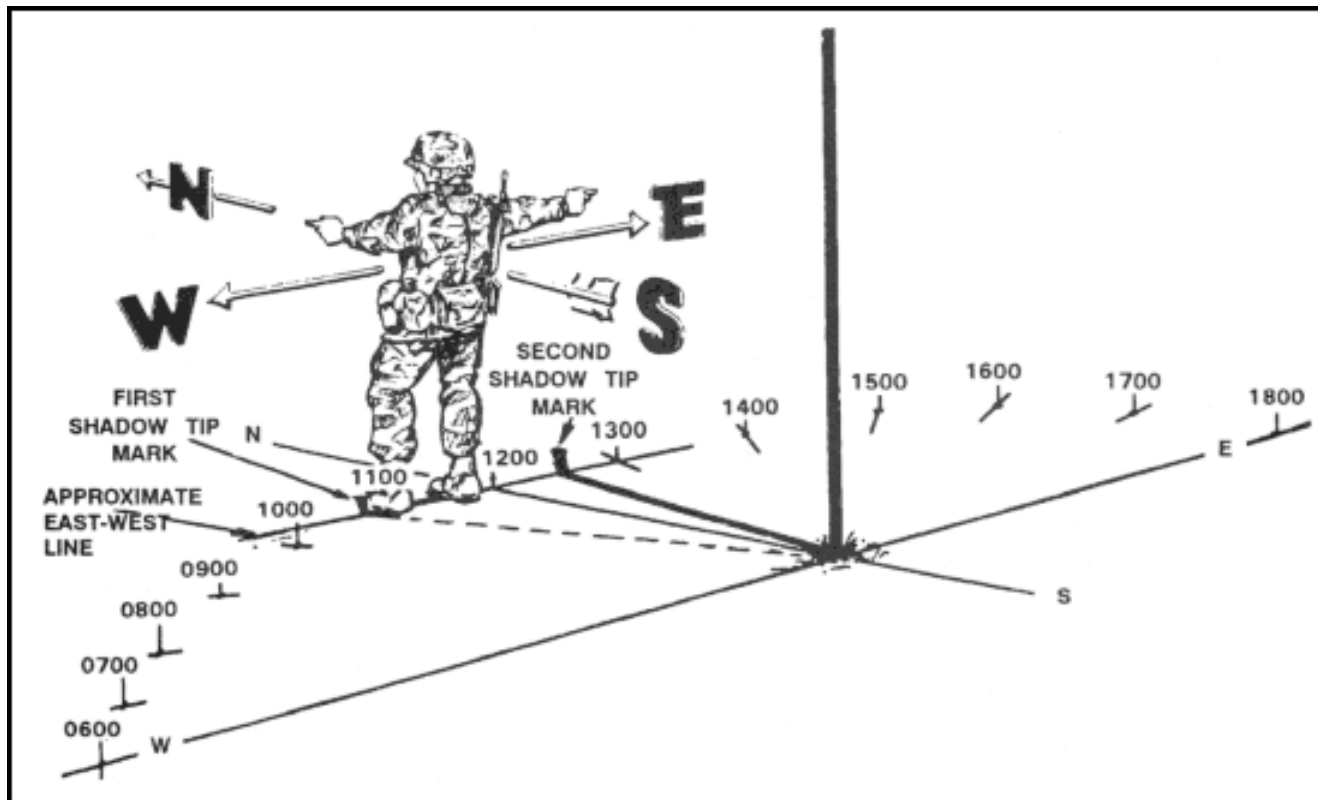


Presetting a compass

- Hold the compass level in the palm of the hand
- Rotate it until the desired azimuth falls under the fixed black index line
- Turn the bezel ring until the luminous line is aligned with the north seeking arrow. The compass is now preset
- Assume the centerhold technique and turn until the north seeking arrow is aligned with the luminous line.
- Proceed in the direction of the sighting wire.

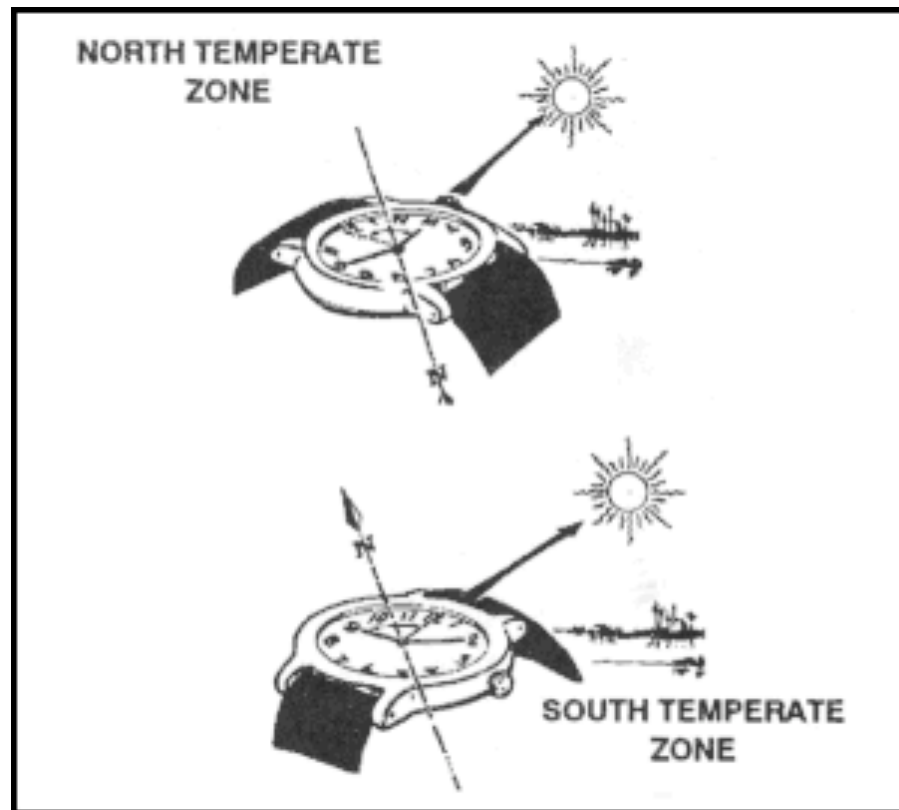
Field expedient methods

- Step 1: Place stick in ground and mark tip of shadow with stone.
- Step 2: Wait 10-15 minutes and mark new position of shadow tip.
- Step 3: Draw a straight line between the 2 marks .
- Step 4: Stand with the first mark to your left, you are now facing north



Step 1: Point the hour hand toward the sun

Step 2: The south line is mid-way between the hour hand and 1200*



1300 if DST

North Star

- It is not the brightest star
- Less than 1 degree off of true north
- Use the pointers of the Big Dipper, 5 times the distance
- North star is the last star in the handle of the Little Dipper

