

Eglinton Detachment

Introduction to Night work

Approach

Cadets will not only be required to work by day but also at night, especially when they are carrying out duties of a sentry or acting members of a patrol.

Night vision

The eye has two sets of light sensitive cells which are used for seeing, one set by day (cones) which are in the centre of the eye, and the other set by night (rods) which are placed around the day cells. The day cells need strong light to function, they will work in moonlight, but under worse conditions of light they are useless. The night cells are very sensitive to light and will work when the day cells can no longer see, there is normally no use for night cells by day because when looking straight at something the light entering the eye strikes the day cells only.

Most people have the ability to see in the dark, whether their day vision is perfect or not. Constant training and practise will improve night vision.

The ability to see at night can be affected by colds, headaches and tiredness.

Adaptation

The change over from seeing with day cells in strong light to seeing with the night cells in darkness is known as night adaptation, it is a slow process, for the night cells take about 30 minutes to become completely efficient, there is no short cut to this. An alternative to sitting in darkness for 30 mins waiting for adaptation is to remain under red light for the same period of time, this will produce almost complete adaptation, and will also allow

Eglinton Detachment

work to be done during the waiting period, this will be seen by yourself during the waiting period, and the night cells are weak and tire quickly. Once adaptation has taken place, it is not possible to stare at an object without vision becoming blurred for longer than 4 to 10 seconds; the angle of the sight must be changed to allow the cells to rest.

Off- Centre vision

The day cells are in the centre of the eye, at night when looking at an object, very little will be seen because these cells cannot work in poor light. The night cells must be used to see at night.

They are around the day cells, so this means looking at an angle (6 to 10) degrees away from the object, this is called off-centre vision.

Having identified an object using off-centre vision, it is possible to look directly at it for a few seconds before its image disappears, this is a useful aid to shooting at night. When observing at night it is possible to scan the ground using the method used in daylight.

In order to study an object or a piece of ground in greater detail it is better to scan using a "Figure Of Eight" technique which uses full use of off-centre vision.

Protection

Any bright lights will spoil night adaptation. A match flame or a muzzle flash will spoil it for several seconds. An illuminating flare will ruin night vision, it must become an instinctive to cover one eye when faced with any light at night, and this will preserve part of the night vision.

Eglinton Detachment

Practise with cadets

Make every cadet cover one eye, when they have done so, send them outside into daylight for a minute or two to spoil the night adaptation to the uncovered eye.

When the class is back in the dark room do not allow them to uncover their protected eye until they have discovered that their unprotected eye has lost its night adaptation.

By switching the light on and off, show that red light does not affect night vision.

Staring

Switch on the red torch and place it on a stand facing the class. Go quietly to the room switch, and when they describe the light as moving, prove by turning on the lights that it never moved.

If any single light or a prominent object is stared at for too long, it will seem to move, this is the reason why a sentry imagines that he is being stalked at night and sometimes fires for no apparent reason. This can be prevented by "Placing" the object against something else, such as a finger at arms length.

Four main points of the lesson

Adaptation – Off-Centre vision – protection – staring.
While night vision will never be as good as day vision, it is possible to see at night, it just takes practise.

End of lesson

Eglinton Detachment