RING SIGHTS PO Box 2108, Salisbury, SP2 2BX, UK

HELICOPTER PILOT SIGHT

Subject to further information the sight recommended is Ring Sight LC-14-46.

This is one of our standard solid glass range with a single reticle pattern for day, low light and Night Vision Goggles (NVG): it has good eye relief.

The optic is 50 mm long with cross section 16 by 14 mm. In the role envisaged it would be used with the aperture 9 mm horizontally and 14 mm vertically (at an eye relief of 125 mm (5") these are 70 and 110 mils. The optic weighs 27g.

A range reticle (focussed at infinity) can be provided with elevation certainly up to 180 mils (10°) and probably up to 250 mils (nearly 14°) but of course such a reticle would probably special to weapon and its use in action would have to be thought through.

The sight will have to be boresighted to the weapons (or to the airframe if the weapons are aligned to it). Our past experience (somewhat out of date) has led us to believe that this could do with the application of simple optical principles; maybe you have progressed in this field - if not we can help). So the sight will need a zeroing system which we can design using principles we have already proved.

Such a zeroing system can be fitted with a drum or lever to set elevation if required. The optic would stay the same but with a different reticle pattern.

By day with the naked eye the reticle is lit by ambient light from the target area (the transmission in the focussing element means that it is visible). In certain day conditions it may be advantageous to switch on the LED array: certainly in low light with the naked eye this becomes necessary. With NVG the current in the LED array has to be reduced (according to the light level) to suit the NVG. This can be done automatically (as in our EPC sight) or manually (as in our LC-40-100 for guns firing sideways from helicopters).

It should be appreciated that with NVG the LC-14-46 is only used to inject the reticle into the NVG and only a small part of the NVG aperture is filled by the LC-14-46: the rest sees over the LC-14-46.

The LED array needs at least a 3 volt power supply. Current drains are low, from about 5 milliamps in low light down to 0.1 milliamp at the lowest NVG light level (this depends on the type of NVG). The power can come from a battery: we prefer a ½ AA lithium thionyl chloride battery, weight under 10g). Or it could come from the helicopter power supply if convenient.

Due to its solid glass construction maintenance is minimal. The front and back optical surfaces are flat and easily cleaned (they play no part in focussing the reticle which is all done internally).