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NVG PAPI

Night Vision Goggle Compatible Precision Approach Path Indicator



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A rugged, lightweight portable precision approach path indicator (PAPI) for covert operation.

GENERAL DESCRIPTION

The unit is battery powered and can be controlled either manually or by radio control. It emits infra-red light at a fixed intensity so providing complete compatibility with generation 2 and 3 Night Vision Goggles (NVG).

CONSTRUCTION & FINISH

The projector base is manufactured from a honeycomb sandwich, composite material which provides a flat, lightweight but extremely rigid platform upon which the optical system is mounted. The optical system comprises two parabolic reflectors, two beam splitters, two doublet lens assemblies and two infra-red absorption filters. The battery, inclinometer and spirit level are also mounted on the projector base. Three threaded adjusting legs, fitted with coil springs, support the projector base which is protected from the elements by a weatherproof enclosure which is secured in position by the attitude adjusting knobs. The enclosure incorporates viewing windows for both the inclinometer and the spirit level. A hinged panel gives access to the inclinometer to enable the operator to set the desired approach angle. A window in the forward face of the unit protects the optical system from stone damage that may be caused by jet efflux. The radio antenna, control switches and battery charging connector are mounted on the enclosure. All fittings are fully corrosion protected.

PHOTOMETRIC PERFORMANCE

The NVG-PAPI is a two lamp unit which produces a single intensity infra-red signal, half of which is steady light and half of which is occulting light. As it is not possible to see colour in the infra-red spectrum the usual red signal seen in PAPI systems is replaced by the occulting signal. No visual spectrum light is emitted from the unit. A full four unit PAPI system is provided with MOSKIT and the information presented to the pilot is as follows:

- 4 x Steady Lights - WELL ABOVE THE GLIDE SLOPE
- 3 x Steady 1 x Flashing - SLIGHTLY ABOVE
- 2 x Steady 2 x Flashing - ON SLOPE
- 3 x Flashing 1 x Steady - SLIGHTLY BELOW
- 4 x Flashing - WELL BELOW THE GLIDE SLOPE

Approach angles of between 2° and 8° can be achieved and the unit is accurate to within one minute of arc.

POWER SUPPLY & ENDURANCE

Power is supplied from a single 12v 7.0Ah rechargeable, maintenance free, sealed lead acid battery (SLAB) giving eight hours continuous performance. The battery is fixed in the unit and need only be taken out when replacement is required. Battery charging is accomplished via a sealed battery charging connector.



ENVIRONMENTAL PERFORMANCE

The TAC PAPI has successfully completed a full and comprehensive schedule of environmental and type testing designed to meet exacting UK military standards. These include:

- Climatic Conditions
- Corrosion and Salt Resistance
- Mould Growth
- Fluid Contamination
- EMC
- Vibration and Shock
- Reliability & Maintainability

CONTROL

Control of the TAC PAPI is achieved either manually or remotely by using the Master Switching Unit (MSU). A selector switch mounted on the control panel of the TAC PAPI enables either mode to be selected by the operator during deployment. Radio control is via a coded VHF receiver module mounted inside the sealed electronics enclosure. The coding of the radio signal ensures a high rejection of radio interference from other transmissions and protects the unit from unauthorised operation either by accident or intent.

DEPLOYMENT

Once the optimum glide path angle has been decided the two TAC PAPI units are deployed in a wing-bar 9 mtrs out from the runway edge (port side on approach) and spaced 6 mtrs apart. The approach angle and angle differential settings between the two units can be set prior to deployment, it is then only necessary to level the units once they have been positioned. When deployed the TAC PAPI is mounted upon a base plate, which may be fixed into place, and is then secured by a spring and bobbin arrangement at the fore and aft positions.

DIMENSIONAL DATA

Height	295mm (11.6") (Including antenna)
Width	480mm (19")
Length	315mm (12.5")
Weight	10.5kgs



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