

Optical Gun Sight for Dornier DO-228 Aircraft

Introduction

The Optical Gun Sight, designed and developed by CSIR-CSIO, is an optical instrument for aiding the pilot for sight setting on a particular range. The OGS has been designed to be used with both eyes open. While one eye looks into the sight through the collimator, the other one looks through the Gun Sight for landing of the aircraft. The eye looking into the sight sees an illuminated reticle together with the periphery of the scene through collimator. A view of the periphery of the scene is important as it enables binocular vision to be maintained so that the visual axis of each eye is coordinated by enabling the pilot for landing the aircraft.



Functional Details

- Used with both-eyes open. One eye looks into the sight through the eyepiece, while the other looks forward through the aircraft window at the scene ahead.
- Either eye can be used to look into the sight. In most aircraft where side-by-side seating is arranged the pilot sits on the port side and for convenience the sight is placed on his left. It is usually convenient therefore for the pilot to view the sight with his left eye and the scene with his right eye.
- The eye looking into the sight sees an illuminated reticle against a black background together with the periphery of the scene.
- A view of the periphery of the scene is important as it enables binocular vision to be maintained so that the visual axis of each eye is coordinated by enabling the user to observe the reticle to be consistently fixed in space relative to the outside world.

Key Features

- Passive illumination
- Compact opto-mechanical system
- Focus at infinity
- 2-Lens system
- Customized Graticule

Applications

- Secondary Application: Daytime Landing System
- Primary Application: Optical Gun Sight

Specifications

Clear aperture at inlet	40mm±2mm
Focal length	122mm
Diameter of exit lens cell	60mm
Angular magnification	1.4mm
Type of lenses	Spherical
Collimation error	<0.3mR
Parallax error	0.7mR on full scale
Positional accuracy	2.1mR on full scale
Glass	High Quality/BK-7
Aberrations	Optimized
Track length	117m
Reticle	As per requirements
Weight	<800gm
Eyebox	As per requirements
Bore-sight-accuracy	0.7mR
Illumination	Passive

Status

The technology has been developed and qualification testing has been done. The technology is ready for deployment in the field.

Airworthy Units of Optical Gun Sights used in Dornier DO-228 Aircraft

