

Glare as a Mechanism of the Motion of an Aircraft through the MIRCE Functionability Field

Dr Jezdimir Knezevic, MIRCE Academy, Exeter, UK

Abstract

MIRCE Mechanics is the discipline of MIRCE Science that focuses on the scientific understanding and description of the phenomena that govern the motion of functionable system types through the MIRCE Functionability Field [1]. A full understanding of the mechanisms that generate the motion is essential for the accurate predictions of the functionability performance of functionable system type. According to the 2nd Axiom of MIRCE Science the motion of a functionable system type through MIRCE Space is a result of imposed natural phenomena or human activities, which are jointly called functionability actions. Thus, the main objective of this paper is to address glare as an observed physical phenomenon in aviation that can contribute to fatigue, due to the frequency with which the pilot's eyes must adapt from cockpit to exterior, from near to far, from dark to light. Although it is not a frequently manifested catastrophic event, direct or reflected glare is a physically observable phenomenon, which has been attributed to impact directly on the performance of humans involved in flying aircraft and operating them on the ground. The paper also presents a set of possible preventions and management actions that could be taken to reduce the consequences of glare on the safety of flying.

1. Introduction

2. MIRCE Science Fundamentals

3. The Mechanics of Human Vision

4. Glare as a Physical Phenomenon

4.1 Types of Glare

4.2 Sources of Glare

4.3 Night Time Glare

4.4 Human Made Glare

5. Impact of Glare on Pilots Vision

6. Glare Protecting Methods

7. Conclusions

8. References

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