Fatigue Management Seminar

FAR 117 Fitness for Duty and Responsibilities
January 22–23, 2020
McLean, Va.
CAMI Aviation Fatigue Research Plan relevant to Part 117

Thomas Nesthus and Steven Hursh

January 22 at 1445-1545
“FAR 117 – Recent Interpretations and Studies”
CAMI Overview of Research Plan

- Two studies are planned that are relevant to the application and interpretation of Part 117.
  1. Behavioral Adaptation/Acclimation to Time Zone Changes
  2. Effects of Workload in short haul operations on crew performance
Behavioral Adaptation/Acclimation to Time Zone Changes

• Objectives:
  • To deliver research which can be applied to the improvement of issues of concern to aviation safety
  • To identify and detail non-circadian human behaviors which aim to facilitate or prevent acclimation to a new time zone
    • To investigate the degree to which behavioral tactics modulate acclimation to new time zone
    • To investigate the impact of behavioral tactics on crew performance under operational conditions typical of the aviation industry
Effects of Short Haul Flight Ops on Crew Performance

• Objectives
  • To deliver research which can be applied to the improvement of issues of concern to aviation safety
  • To investigate the relative contribution of workload and work schedule factors to airline crew performance.
    • with particular attention to short haul flight schedules
    • with particular attention to the relationship between workload, sleep and fatigue
  • To identify potential mitigations to workload or schedules which may be related to improvements in crew performance
Study Approach

• Study addresses issues of concern to aviation safety in the context of behavioral adaptation to time zone changes.

• Findings can be applied to the operational environment in a manner which reduces risk or improves performance.

• Study utilizes a sample population representative of the aviation industry.

• Study uses a sufficiently-sized sample population to adequately address research questions and power statistical analyses.

• Study procedures and/or interventions do not violate current aviation regulations for the country in which the study is to be conducted.
Both Proposals will Include Defined Sections

- Introduction
- Proposed methodology
- Recommendations and justification
Introduction

• Literature Review – studies relevant to the objectives of the project.

• Review of Previously-used Methods – consider alternative methods and recommend a method most suitable to meet the objectives of the project.

• Gap Analysis – What important scientific gaps of knowledge will be addressed by the proposed research.
Methodology Defined by Proposal

• Lead by scientists sufficiently expert in the field.
• Study design will be discussed with justifications based on the objectives of the study and practicality of achieving acceptable results.
• Study population will one most relevant to the concerns of the aviation industry.
• Define and justify the metrics and measurements to be used in the study.
• Provide an adequate statistical plan, including a power analysis to justify the population size.
Contractual Driven Requirements

• Timelines, Milestones and Deliverables
• Cost Estimates and Budget
• Preferences and Recommendations
  • This section will highlight attributes of experimental design, subject matter expertise, and target metrics which are of particular interest to the Civil Aerospace Medical Institute and Federal Aviation Administration.