G. JOINT SESSION

FATIGUE RISK MANAGEMENT SYSTEM (FRMS): MEASUREMENT AND EVALUATION OF EFFECTIVENESS

June 18, 2008
10:15 – 11:45

Panel Overview

The *"FRMS: Measurement and Evaluation of Effectiveness"* session was chaired by Dr. Tobjorn Akerstedt, from the Stress Research Institute of Stockholm University and Karolinska Institutet Department of Clinical Neuroscience. The session included three presentations by human factors and fatigue experts. Dr. Ann Williamson, University of New South Wales, stressed the importance of ongoing evaluation of fatigue risk management programs and provided some practical examples for conducting such evaluations. Dr. Steven R. Hursh, Institutes for Behavior Resources, described the usefulness of biomathematical models as part of a comprehensive FRMS and as a tool for ongoing evaluation of operations. The panel closed with a presentation by Captain Gregory Fallow, of Air New Zealand, describing the company's science-based fatigue monitoring and management program and ways in which they determine the effectiveness and success of their programs The purpose of the panel was to disseminate information on the importance of ongoing evaluation of Fatigue Risk Management Programs (FMP) for effectiveness and success in the field of aviation.

The process of evaluation for FMPs should ideally measure operator fatigue management, company level fatigue management, and system level fatigue management (relationships between individual operators, company, and other parties). Evaluation and measurements of both inputs (i.e., program design) and outputs (i.e., effect on fatigue levels) of the FMP is important for a comprehensive assessment. An evaluation of a FMP conducted in long distance road transportation was presented as an example to demonstrate the process of a formal evaluation.

A scientifically-derived, objective tool is one approach that can be used for measuring and evaluating the effectiveness of a FMP. For example, biomethematical models of fatigue and alertness can help to assess and forecast fatigue risk based on information that is readily available within the operational setting. However, it is imperative that the model be a valid predictor of performance and operational risk, and must be able to respond to new information about the environment and the states and traits of individuals. Any changes made to the FMP based on the results of the model feedback should be gradual and proportional to risk. Such models can also provide a useful foundation for schedule design and can be used to flag trips that may cause fatigue.

The evolution and structure of Air New Zealand's FRMS was provided as an example of a successful FRMS in the aviation industry.

Its success has been based on operational assessments and evaluations and the development of a non-punitive fatigue reporting system. As part of their program, they have formed a multidisciplinary Crew Alertness Study Group. This group is responsible for administering the program conducting operational studies, providing crew education, and providing advice to management on fatigue-related issues. In several cases, the study recommendations have led to changes to scheduling practices. Both the practical and operational process examples presented during the session provided valuable insight to carriers on potential ways to evaluate and assess their organization's FRMS.