

Control: ABU-1224

FY 1998 CONGRESSIONAL DIRECTED ITEMS, ADD-ONS AND RECOMMENDED ITEMS

PROGRAM: Air Traffic Control/Airway Facilities Human Factors

REFERENCE: House Report 105-188, p. 64; Conference Report 105-313, p. 55

BACKGROUND: The recommendation provides \$10,000,000. Of the funds provided, \$500,000 is for additional research into assessment, evaluation, and development of training methodologies related to the English language proficiency problem. The issue is discussed further under FAA "Operations". The FAA is also encouraged to follow up with further research into the fatigue-related effects of the current "2-2-1" shift rotation policy for air traffic controllers. A recent study by the Civil Aeromedical Institute raised issues of sleep deprivation and performance loss which, in the Committee's opinion, warrant immediate follow-on research.

PRESENT STATUS: The Chief Scientific and Technical Advisor for Human Factors (AAR-100) is lead on the English language proficiency project. There have been several meetings with AAR-100, Air Traffic Services, and the International Division on the English language proficiency issue. The group is currently (1) collecting information about existing English language training programs that could serve as a model, (2) identifying potential members of a government/industry/academia working group, and (3) examining research options. A draft plan of training research activities for the project is currently under review by AAR-100, Air Traffic Services, and the International Division. A research psychologist is in place as program manager, and suggestions for the program's organizational infrastructure are identified in the draft plan.

Research on issues associated with fatigue and air traffic control (ATC) work schedules continues at the Civil Aeromedical Institute (CAMI). CAMI is gathering data from ATC facilities to determine the extent to which the "2-2-1" and other work schedules are being used. Outcomes will be used to determine the availability of alternative schedules and their utility in ATC facilities. A collaborative report ("The Role of Shift Work and Fatigue in Air Traffic Control Operational Errors and Incidents" under review for publication) involving CAMI and NASA Ames Fatigue Countermeasures program researchers, examined the association between operational errors and shift work as reported in the Aviation Safety Reporting System and the FAA Operational Error/Deviation System. In addition, a study of volunteers at one ARTCC using the NIOSH General Health and Adjustment Questionnaire found some evidence of shiftwork maladaptation; however, the findings in the air traffic control population were generally less prevalent than in other populations working rotating shift schedules. A report entitled "Effects of Quick Rotating Shift Schedules on Self-Reported Health and Adjustment of Air Traffic Control Specialists" describes those outcomes and is under review for publication. Laboratory studies are underway to assess the effectiveness of various fatigue countermeasures that may serve to reduce any potential fatigue-related changes in performance particularly during the midnight shift. Outcomes from a "napping" study with the US Army suggest that napping may provide some benefits for night shift workers. A project assessing the use of "bright lights" as a possible fatigue countermeasure is currently underway with the US Air Force. An evaluation of shift lag and fatigue assessment methodologies was completed in conjunction with a study using USCG aircrews. Additional studies are

planned to field test fatigue countermeasures and alternative work schedules. Educational materials are being prepared to assist air traffic controllers in coping with shift work requirements.