EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA) sponsored a two-day meeting in June 1991 as part of a series of meetings to address human factors in aircraft maintenance and inspection. At this meeting, the focus was on "The Work Environment in Aviation Maintenance." Industrial experience teaches us that the environment in which work takes place is important and can have a considerable effect on quality of work. For safety reasons and for economic reasons, any initiatives that might enhance maintenance productivity should be implemented.

The objective of this meeting was to examine the aviation maintenance work environment. The topic of "work environment" was addressed in its broadest sense with subject areas including the physical environment of the workplace, variables relating to specific demands imposed by maintenance labors, the evaluation of workforce productivity, and industrial safety and health concerns.

The meeting was attended by representatives of commercial aviation, air carrier maintenance, occupational safety and health, and academic institutions. Based on presentations given and ensuing discussions, the following recommendations are presented:

Physical Parameters

Recommendations

1. The adequacy of illumination in maintenance may well a problem. Studies should be made to determine the significance of current illumination levels and to identify optimum lighting procedures for use within and under aircraft. Solutions should be capable of implementation at major air carriers and for the smaller regional/commuter airlines.
2. Work in air carrier maintenance areas generally does not require hearing protection. However, where noise levels do exceed 85 dBA, care should be taken to ensure that appropriate hearing protection is provided and used. This will aid the work, reduce the possibility of damage, and lessen the potential for later claims for hearing loss.
3. The procurement of work support systems by air carriers would benefit from a set of human factors standards for these systems. These standards should be reviewed and approved by representatives of the air carriers before being adopted.

Workplace Variables

4. The occupational specialty of Aviation Maintenance Technician is changing significantly as new and advanced aircraft are introduced. To remain apace of these changes, the Federal Aviation Administration (FAA) should maintain a continuing review and update process for Parts 147 and 65 of the Federal Aviation Regulations (FARs).

5. As skill requirements for maintenance and avionics technicians increase, the supply of candidates, which may be minimal in any event, could decrease further and have serious impact on the ability to staff air carrier maintenance operations. A detailed manpower modeling study of the aviation maintenance technician occupation should be conducted.

6. Studies of industrial shift work show that night workers may be somewhat less proficient than day workers. However, no fixed guidelines exist for determining the best shift work arrangement. If problems appear, the best solution is one in which management and workers examine the issue together, outline available options, and decide on the best course of action.

7. The volume of paperwork, and the time required to process it, remains a problem in air carrier maintenance, as viewed by maintenance technicians. Introducing more flexibility into current procedures might help. Mechanics might be authorized to release an aircraft on their own signature with a fixed deadline following this for completion of required paperwork.

8. The management of maintenance paperwork would benefit through increased standardization. The FAA should consider developing a standard set of paperwork requirements for each airplane. This would remove differences associated with individual airlines and with individual FAA regions.

9. Maintenance technicians now spend considerable time inputting information into the computer. A study of the technician/computer interface is recommended to develop procedures for minimizing the time required for data input.

10. Increased automation in air carrier maintenance benefits everyone. Means should be explored, possibly through committees of the Air Transport Association (ATA), to ensure that the technology being developed at this time at major air carriers can flow freely and expeditiously to regional/commuter carriers.

Worker Productivity

11. Air carrier maintenance managers should review maintenance operations to determine the extent to which work teams exist now and ways in which this concept might be fostered. To the extent that work teams can be defined and team identification established, maintenance productivity could be enhanced.

Safety and Health in the Workplace

12. Every airline, of whatever size, should have a standard operating policy which establishes a joint management/labor health and safety committee. This committee should meet on a regularly scheduled basis and have appropriate authority to review health and safety issues in the workplace.