

- FAA's maintenance human factors program is focused on reducing the number of accidents and incidents resulting from human error in maintenance. Examples of research in this area include:
  - Human factors of delivering technical information to line aircraft technicians using wireless, portable, pen-based computers that display technical publications
    - Study on Aviation Maintenance Technicians (AMT) using hand-held technology to determine if it is feasible for this technology to be used in aircraft maintenance environment. Results show significant improvement to access of technical documentation when working outside the aircraft – less reliance on systems such as microfiche, quicker, fewer mistakes
  - Human factors evaluation of competencies and roles within a maintenance work environment with the emergence of advanced aircraft systems
    - Updating the knowledge, skills, and abilities needed by AMTs to meet current and future requirements to maintain all types of aircraft. The last update of these requirements was in 1974 and was the foundation for training in FAR Part 147.
  - Providing training and job aids utilizing Web-based technology, simulation and intelligent tutoring systems which recognize human capabilities and limitations
    - Developing a prototype Web-based distance learning Maintenance Resource Management training center and evaluating feasibility of its use
    - Developing a prototype computer-based automated system of self-instruction for specialized training
  - Evaluation of fatigue and shift-work impact on maintenance technicians and identifying human factors interventions which minimize/mitigate errors
    - Analyzing initial data on duty time of AMTs and other fatigue factors (off-duty schools, rotating shifts) to determine the impact on human performance and human error
  - Integrate shift-change error identification and mitigation processes into the aircraft maintenance error-detection and reporting system
    - Identifying potential limitations of the existing shift-change process and developing standardized shift-change procedures that include human factors interventions to minimize errors in shift/task change