written syllabi although no regulatory requirement exists. However, the FAA would like to see this approach become

the industry norm.

The FAA proposes to establish a new § 61.9 to require an instructor who provides training for an airman certificate or rating issued under part 61 to use a written syllabus that includes a summary of total training time; planned training time for each lesson; a detailed description of training to be covered in each lesson; and the aeronautical knowledge areas and approved areas of operation that apply to the airman certificate or rating. Because this requirement would apply to training conducted under part 61, and schools that conduct training under part 61 are not directly subject to FAA approval or certification, the instructor would bear responsibility for ensuring that all necessary areas of aeronautical knowledge and operation were covered in the training program. The proposal also would require the instructor to give a copy of the syllabus to the student at the outset of the training and ensure that the student completed the syllabus before the practical test.

The FAA does not, at this time, propose to require instructors to submit the syllabi for FAA approval. This would constitute a major administrative workload for the FAA and for instructors. However, the instructor would be required to maintain a copy of the syllabus, make it available for FAA inspection upon request, and provide each student with a record of the training accomplished. This proposal would revise § 61.189 to require each flight instructor to retain for 3 years a copy of the syllabus for each person trained by that instructor. Proposed § 61.219 would include the same requirement for ground instructors.

The FAA does not intend for each instructor to produce a personal syllabus for each course of training, although there is nothing to preclude such an effort should an instructor prefer to do that. Syllabi could be based on training courses published by manufacturers and training

organizations.

The FAA believes that the use of training syllabi would provide more continuity in training conducted under part 61. This is particularly important for students who change instructors in the midst of a training program.

25. Training and Endorsements

The FAA proposes several initiatives to enhance pilot training and preparation. These efforts include additional training and instructor endorsements that cover human factors

training, windshear avoidance training, and special aircraft certification training for pilots. In addition, current endorsement requirements for complex and high performance airplanes would be clarified under the proposal.

26. Endorsement for Complex and High Performance Airplanes

The FAA proposes to amend current § 61.31, which deals with high performance and complex airplanes. Under this proposed revision, complex and high performance airplane endorsements would be discussed in separate paragraphs of § 61.31. One endorsement would be required for a pilot flying an airplane with retractable landing gear, flaps, and a controllable propeller (commonly referred to as a 'complex airplane''). A separate endorsement would be required to operate a high performance airplane, which would be redefined from "more than 200 hp" to "200 hp or more." This proposed requirement for separate endorsements, one for complex airplanes and one for high performance airplanes, could be achieved simultaneously in a complex airplane of 200 horsepower (hp) or more.

Before giving the endorsements prescribed by §61.31, the instructor would be required to provide both ground and flight training in the airplane to ensure the pilot is proficient on the operation and systems of the

airplane.

In addition, § 61.31 currently requires endorsements only for holders of private or commercial pilot certificates. The FAA proposes to extend this requirement to holders of ATP certificates because it is possible to earn the certificate in a low horsepower, noncomplex, single-engine airplane.

27. Aircraft Type Specific Training

In December 1991, the FAA issued a Special Certification Review Report on the Piper Malibu and Mirage airplanes. This review was a result of seven inflight structural breakups involving Piper Malibu and Mirage airplanes. Although the review process did not discover any major design deficiencies, the special certification team that reviewed the airplane did make approximately 60 recommendations concerning design improvements and operational clarifications on the

The Special Certification Review team consisted of FAA engineers, inspectors, and pilots who were tasked with reviewing the certification process, service history, and operation of the Malibu and Mirage airplanes. The report issued on the airplanes was reviewed by

the FAA's Small Airplane Directorate and an action plan was developed. The plan included some possible airworthiness directives and recommendations for improved pilot training, policy revision, and rulemaking. Both the review team and Small Airplane Directorate concluded there is a need to improve the education and training of pilots in these high performance, complex airplanes. The FAA stated in the report that both the aviation community and the FAA have the responsibility for ensuring that pilots have the knowledge, skills, and abilities to operate these kinds of airplanes in normal, abnormal, and emergency situation.

In response to this Special Certification Review of the Piper Malibu and Mirage, the FAA is proposing to amend § 61.31 by adding a new paragraph that will require aircraft type specific training and a flight instructor endorsement for any aircraft that the Administrator has determined is necessary to ensure that pilots are adequately trained in normal, abnormal, and emergency situations on these kinds of airplanes. The FAA believes that pilots need this additional training to possess the necessary knowledge, skills, and abilities to operate these kinds of high performance, complex airplanes. The FAA proposes to require additional training and a flight instructor endorsement for a person to serve as a PIC of an aircraft that the Administrator has determined requires type specific training.

28. Human Factors

The FAA proposes to introduce human factor training requirements for all levels of pilot certification. The training requirements would include aeronautical decision making (ADM) and judgment training for pilots at all certificate levels. Although research on aeronautical human factors has been underway for many years, these concepts represent relatively recent advances in training methodology. The traditional approach to training is to focus on technical aspects of aerodynamics, aircraft characteristics and systems, airspace, meteorology, and regulations. The presumption is that the flight crewmembers will integrate these subject areas to respond properly to the situations faced in actual flight conditions.

The intent of adding the benefits of human factors training research to the pilot training regimen is to assist pilots in integrating available information and arriving at correct decisions. Based on this research, it is now feasible to systematically and explicitly study