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# AMSEATT

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## Concept Paper

by

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**Draft**  
6/97



## AMSEATT

Association for Measurable Standards and Evaluation of Aviation Technical Training

### **Preface:**

The aviation industry perpetually participates in initial/recurrent certification, or an evaluation process regarding aviation technical training courses and programs. Individuals who have experience in this arena will understand the manner in which certain agencies or organizations implement interpretation of the methodology and mandated regulatory requirements:

Inconsistency. The results are evident in the diversity of experience level of AMT school graduates and varying standards required of FAA certified schools. The outcome of this "minimum" and inconsistent method of evaluation and standard is obvious, and currently experienced by the end user: the Industry. As noted during the April 1997, ATEC Conference, Mr. George Rivas of United Airlines, gave a presentation to the conference participants discussing the results of statistics maintained on the preliminary practical exams given to prospective AMT employees. The sad state of this reality is an over 30% failure of prospective employees, due to the lack of basic and fundamental skills. A resolve to the current scenario is the development of measurable standards and a consistent process of evaluation for aviation technical training.

Therefore, it is the intent of this concept paper to formally institute a process, through the formation of an independent association, to develop measurable standards and an objective evaluation method for aviation technical training courses and programs. The purpose is to develop a more consistent product for the industry. This association would also provide independent evaluation and monitoring of participating educational facilities, thereby giving the industry a better measure of the quality of training from participating programs. For this paper, the association will be named

AMSEATT: Association for Measurable Standards and Evaluation of Aviation Technical Training. AMSEATT can define and provide clear benchmarks for aviation technical training by working closely with industry, educators, and regulatory agencies. The single goal is to improve aviation safety world-wide.

### **The Current Situation:**

Within the United States, existing AMT programs must meet the requirements set forth in FAR Part 147. The regulation is enhanced with an Advisory Circular AC 147-3, to assist in understanding the process of implementation for the FAR 147 regulation. For initial or ongoing certification, the FAA requires programs to meet the minimum standards of the established rule. How an institution accomplishes this must be interpreted and approved by the District and Regional offices performing the audit. The majority of schools today follow a curriculum format established by the Dave Allen Study. The Dave Allen Study was the primary basis of development for the current FAR Part 147 regulation, as well as the recommended student performance goals and objectives for the required subject matter.

With regard to FAR Part 147 certification, the schools are required to have curricula, instructors, facilities, and equipment that are approved by the District/Regional FAA offices to ensure the programs can meet at least the minimum standard, as interpreted by the audit administrators. Unfortunately, due to the various interpretations, there are different minimum standards imposed on AMT programs by the FAA.

Once certified, the FAA oversees the continued approval of an institution by two methods. First, existing programs are to be inspected at least on an annual basis, by the Principal Maintenance Inspector (PMI), to ensure the school is still meeting its approval status. The second method of evaluation is to monitor the average percentage scores for the written exams taken by student graduates of each approved school's AMT program. The regulation (paraphrased) states (FAR Part 147.38a), that the school must maintain a specific percentage score compared to the national norm. Unfortunately, utilizing the written test as an evaluation tool currently has no merit. The exams are in the public domain which reduces this evaluation method to a worthless statistical exercise. Any educational program can have its graduates memorize the questions and answers, thereby providing a high overall percentage on the test scores. This method of evaluation does nothing to measure the effectiveness and quality of an FAA approved AMT program.

The major short-coming of the annual PMI audit is, once again, the various standards imposed on AMT programs. To compound the problem, numerous PMIs lack experience as educators, and/or the processes within the educational arena. In addition, some never acquire formal training in the performance of an evaluation. There are exceptions, but statistically these few represent a small percentage and consequently have had limited impact on the total evaluation process.

To add to the situation, the FAA is currently in the final phases of revising the requirements for the Aviation Maintenance Technician (AMT) certification ratings. Currently the Federal Air Regulation Part 65, prescribes the requirements for the AMT with ratings of Airframe, Powerplant, or A&P. The proposed rule change will modify the AMT, and incorporate the A&P into one AMT certificate. In addition, a new rating is proposed which is the Transport rating. If an individual desires to work with commercial carriers, the AMT-T will be a requirement. The rule change will also add a transportable Repairman Certificate called Aviation Repair Specialist (ARS). With regard to aircraft maintenance, the proposed ARS, Avionic Specialty rating, addresses an area in aviation maintenance that is closely linked to the AMT-T, therefore, the initial measurable standard and evaluation process will incorporate this rating.

At present, the Notice of Proposed Rule Making is scheduled for release sometime in November of this year. After a response time, it is estimated that the new regulation (FAR Part 66) will become effective within an 18-month transition period. Unfortunately, the FAA currently has no plan in place that addresses the new evaluation process or a proposed revision of the existing FAR Part 147.

Experience has demonstrated that there are serious difficulties within the existing process of evaluation thereby creating a very unstable measurable standard. With the proposed FAR Part 66 rule change, it can be assumed a greater disparity of a standard between educational offerings, the knowledge level of graduates, methods of evaluation, and diversity of requirements (imposed by the FAA) will be created.

For the industry, the situation will generate more inconsistencies on the type of applicant who will be seeking employment. This will require hiring firms to engage in a more comprehensive screening, which ultimately equates to increased costs for operation.

A resolution to the aforementioned scenario can be created by the formation of an independent association. The association, working in conjunction with regulatory agencies, schools, and industry, can develop and maintain consistent measurable standards with an objective evaluation process. This will allow participating educational facilities, adhering to the standards and evaluation, to acquire formal acknowledgement for a level of educational excellence that exceeds the current FAA minimum standards.

The Industry will benefit by knowing that graduates from such schools have successfully completed their training from a facility that subscribes to a higher standard of evaluation, which

they themselves helped established. The outcome is a better applicant and decreased time spent in the hiring process, thereby saving company resources.

With a concise standard and evaluation process, the FAA can benefit by having an industry driven, accepted process available for review. The long term outcome can be that the association becomes a formal regulatory arm of the FAA regarding the initial and ongoing certification process of aviation technical training programs. This would be a process similar to what the United States Department of Education utilizes for all other Federal accredited educational facilities.

In addition, AMSEATT can establish standards and an evaluation tool for short term and international training programs and courses. This will allow lateral acceptance of training from participants, reduce duplication of training efforts, and provide for a shared resource training market for industry.

#### **Measurable Standards:**

With regard to AMT programs, industry need must be a consideration in the level and type of training provided. The product produced by the various educational facilities should not only meet the minimum standards stated in the FAR's, but also provide an outcome based standard to ensure that the student has acquired the knowledge level of the subject matter as well as the intent of the subject item. The educational goals for FAA certified AMT schools are currently based on FAR Part 147, Appendix B, C, and D, subject items. For each item, the school lists the training objectives and goals corresponding to the required teaching level. An example being Appendix B., Basic Electricity, Item 6, it reads: "Inspect and Service Batteries," and it is to be taught at a teaching level 3. In order for the school to satisfy the regulation, specific objectives and goals must be developed that will ensure that the student complies with the teaching level and subject item.

Due to the diversity of ways to meet a stated goal via different objectives, the development of a standard that focuses on defined outcome based student performance becomes necessary. Utilizing outcome based performance allows for measurable standards that can be a cross platform regardless of the type of objectives a facility develops for any given subject. This concept was the intent of the current certification process, however, the difference will be the established outcomes, and the ability of the educational facilities to successfully demonstrate their method of measuring the outcome based performance of their students for any given subject item.

In order to effectively develop these measurable standards, a collective team of educators, and industry representatives must establish defined outcomes for the subject areas in both the AMT-T and Aviation Repair Specialist, Avionics. The task team will be a focused group of diverse individuals that can effectively establish measurable standards that are concise in their expected outcomes. With the development of standards covering the AMT-T and ARS, Avionics Specialty, an evaluation tool can then be formulated to be used on the participating programs. Once the initial process is completed for the FAA programs, the task team can begin development on standards and an evaluation tool for all aviation technical training courses and programs.

### **The Evaluation Process:**

The evaluation process will review the method employed by a given program to measure the outcome based performance of their students for any given subject item. This will encompass the equipment, curriculum, facility, and facilitators to ensure that the total educational environment can effectively measure and meet the standards established by AMSEATT. This evaluation tool will also provide AMSEATT the ability to objectively review educational facilities to ensure that the curriculum can demonstrate traceability of the outcomes to the required subject matter and accountability for the internal auditing and ongoing quality control of the educational environment.

### **Method of Implementation:**

The first step is the formal establishment of the AMSEATT task team. The first project for the task team will be to develop the measurable standards for the AMT-T, and ARS Avionics Specialty subject areas. Once completed, the evaluation tool can be formulated to provide a consistent base for evaluation of participating programs.

The task team will be comprised of individuals representing industry, and educators in the private and public sector (vocational and degree offering). As material is drafted, copies will be provided to key contacts within representing organizations such as Aviation Technician Education Council (ATEC), Association of Avionic Educators (AAE), the FAA, and other related groups. The task team will solicit and invite comments and suggestions, but work independently. AMSEATT will not be formally associated with any represented organization. The time line of completion for this endeavor is November 1997. The reason is to proceed the NPRM, thereby assisting the aviation community with this regulatory change.

The Air Transport Association (ATA), corresponding member companies, and other aviation technician hiring firms and organizations, will be solicited to endorse this endeavor. With

industry support, aviation technical training facilities will directly benefit if they acquire AMSEATT endorsement.

The AMSEATT endorsement for training programs will provide hiring firms with an indicator for those subscribing schools. Student graduates of AMSEATT endorsed programs would then be the most attractive as prospective employees. Schools will benefit with enhanced placement opportunities for their graduates, increased visibility in the aviation training market, which will equate to greater student numbers.

Once AMSEATT is established within FAA certified initial aviation training programs, the process will be exported to review industry training courses and programs world-wide. With a global standard and evaluation process, AMSEATT can provide a bench mark for standards and evaluation of any participating entity. As stated, this will allow lateral acceptance of training from participants, reduce duplication of training efforts, and provide for a shared resource training market for industry.

**Conclusion:**

With every critical training and service industry sector in the world, excluding FAA approved AMT training, there is a standard in place that exceeds the minimums and provides a measure of quality control and assurance. In manufacturing, ISO 9000 has allowed for a common "language" in the global manufacturing industry; the United States medical profession adheres to independent standards established and maintained by the American Medical Association; and other groups such as the Society of Automotive Engineers; American Standards for Testing and Material; and the Fluid Power Society, all strive to enhance the level of professionalism within their respective industry.

For aviation technical training, it is time for a paradigm shift in the way we view the current process and become pro-active by the establishment of measurable standards and a consistent evaluation method. This can only be possible with the collective effort and contribution of educators and industry representative. The time line has been set, the task is clearly defined; therefore, the association and task team will officially be formed by June 30, 1997. Thereafter, the transformation of aviation technical training will begin by the fabrication of the "gauge block" for aviation technical training for the 21st century.