

12/31/02

**SUBJ: REGULATION AND CERTIFICATION (AVR) CHIEF SCIENTIFIC AND TECHNICAL
ADVISOR AND SENIOR TECHNICAL SPECIALIST PROGRAMS**

- 1. PURPOSE.** This Order establishes Chief Scientific and Technical Advisor (CSTA) and Senior Technical Specialist (STS) programs in the Regulation and Certification (AVR) Line of Business. This Order establishes consistent and uniform standards for establishing and managing the programs throughout AVR.
- 2. DISTRIBUTION.** This Order is distributed to the division level in the Offices of Financial Management, Budget, and Personnel; to the branch level in the Offices of Aerospace Medicine, Accident Investigation, and Rulemaking, and Aircraft Certification and Flight Standards Services; to the director level in the regions and centers; branch level distribution in the regional Flight Standards Divisions and Aircraft Certification Directorates; and to all Flight Standards and Aircraft Certification Offices.
- 3. BACKGROUND.** The rapid technological advances in aviation safety require a limited number of personnel possessing significantly higher than average levels of knowledge and skill in certain highly specialized disciplines. The CSTA/STS Programs provide the agency a unique opportunity to enhance working relationships and to improve standardization between the regions in the application of procedures, the Code of Federal Regulations, and to provide a better understanding of the agency's technical positions. To satisfy these critical safety requirements, positions have been established in Aircraft Certification, Flight Standards, and Aerospace Medicine.

The Aircraft Certification Service identified requirements in certain aerospace engineering specialties such as flight deck human factors, flight loads/aeroelasticity, flight environmental icing, fuel system design, etc. The Office of Aerospace Medicine requires specialized expertise in medical disciplines such as psychiatry. Flight Standards identified requirements for specialties such as National Airspace System procedures, simulation engineering, navigation/communication enhancement, Communication/Navigation Surveillance/Air Traffic Management, airspace system capacity enhancements, aging aircraft, rotorcraft operations, etc. These areas of expertise, and others that may be established by office/service directors within the AVR organization, require nationally and internationally recognized technical specialists for agency-wide utilization in the development and application of safety regulatory policies and practices.

4. **RESPONSIBILITIES.**

a. Each AVR office/service director plans, directs, funds, and controls the activities for the CSTA and/or STS Program. With approval of the Associate Administrator, this authority may be redelegated. The office/service director shall:

(1) Determine the kinds and numbers of CSTA and STS needed. There should be a limited number of CSTA and STS positions due to the unique nature of the position. The service director is authorized to make adjustments to these determinations from time to time, within national budget constraints as well as personnel restrictions and approval requirements, as may be necessary for the FAA to keep abreast of current and future CSTA/STS staffing requirements.

(2) Determine the specific CSTA and/or STS technical specialties needed in a particular Office/Service. All such positions shall be reviewed periodically to validate the requirement of the individual specialty.

(3) Determine the responsibilities and functions for the CSTA and/or STS in accordance with established goals.

(4) Serve as the national focal point for all matters pertaining to the functions and responsibilities for the CSTA and/or STS Program.

(5) Supervise the CSTA and/or STS administratively, make technical work assignments, and resolve any conflicts which may occur.

(6) Prepare the annual performance evaluations using performance standards developed with the CSTA and/or STS specialists. The performance standards will be based on performance objectives established for the individual's specialization and will be based on the requirements of the appraisal system to which the position is assigned. Input will be obtained from appropriate Washington headquarters and regional management having first-hand knowledge of the CSTA and/or STS on-the-job performance.

(7) Determine the need for and issue, as appropriate, an internal order or appendix to this order implementing his/her CSTA and/or STS Programs.

b. Washington headquarters, centers, or the regions shall domicile the CSTA/STS and be responsible for furnishing specific workspace and other administrative services in accordance with existing procedures.

c. Chief Scientific and Technical Advisors perform high-level research and development in the physical, biological, medical and engineering sciences, or a closely related technical field. Research and development positions are characterized by the following features:

(1) The systematic investigation of theory, experimentation, or simulation of experiments;

(2) The application of the scientific method, including problem exploration and definition, planning of the approach and sequence of steps for reaching a solution, execution of experiments or studies, interpretations of findings, and the documentation or reporting of findings; and

(3) The exercise of creativity and critical judgement, and an understanding of the variation which may materially affect the nature of the end product.

The CSTA is involved in research and development which has a direct and major impact on the level of difficulty and responsibility for the work performed. Incumbents are expected to possess a graduate degree and/or specialized work experience equivalent to the graduate degree level, research experience, and a national or international reputation in their field. Typically, the incumbent of a CSTA position:

(1) Has authored fundamental documents in the field of specialization that are widely used and cited;

(2) Has received significant honors from major organizations for his/her accomplishments and contributions; and

(3) Is sought as an advisor and consultant on scientific and technological problems that extend beyond his/her specialty.

Chief Scientific and Technical Advisors shall:

(1) Provide leadership and direction in specialization to research, test, evaluate and implement new technologies and their applications for aviation safety.

(2) Determine scientific and technological effort and experimentation areas for application to aviation research and development. Initiate research and development in areas of specialization designed to foster and improve aviation safety.

(3) Monitor scientific and technological activities related to the agency's research and development effort to foster and promote aviation safety, and determine implementable results from research performed by the U.S. and foreign aviation industry, military, academic and research institutions, other U.S. government agencies, and foreign civil aviation authorities.

(4) Serve as the world class technical specialist on matters related to the technical specialization by identifying and developing new and emerging technologies for application to civil aviation, ensuring that state-of-the-art scientific requirements are incorporated into FAA's technical programs.

(5) Develop FAA policies, regulations and standards, national policy and national directives, or advisory circulars in the specialized technical area.

(6) Provide leadership for such activities as seminars or symposiums and develop training materials designed to keep technical disciplines current in the ever-changing state-of-the-art.

(7) Develop and publish technological/scientific papers, etc., based on the results of FAA-sponsored research and development efforts in the specialized areas.

(8) Possess a broad knowledge of the professional field and a high level of professional recognition to assure cooperation and acceptance of evaluations and recommendations, and the ability to present, defend, and interpret the program to top levels of authority in the agency and the aviation industry.

CSTA receive broad direction from the office/service director on which issues are the major concerns to the FAA and the industry. CSTA have wide discretion within resource constraints to pursue these areas. Recommendations are authoritative and conclusive from the technical perspective and are major determinants in FAA's decisions on those issues. The incumbent must meet the specialized skills of the CSTA position.

d. Senior Technical Specialists serve as nationally or internationally recognized technical specialists with a high level of specialized operational and technical expertise and skill in a certain highly-specialized discipline. The STS positions established within the AVR organization are responsible for coordinating the development, operational testing and evaluation, and implementation of national programs and procedures related to the field of technical specialization.

The STS position requires expertise that is directly related to the critical AVR safety mission. The position requires origination of new concepts or approaches and develops new policies and procedures governing critical AVR/FAA programs and objectives. The incumbent must meet the specialized knowledge, skills, and ability of the technical discipline/specialty. The STS is recognized inside and outside the FAA within a specific discipline or functional area as demonstrated by:

(1) Active participation in professional organizations directly related to the technical specialty;

(2) Frequent presentations to professional organizations, other agencies, or private sector firms;

(3) Service on national or international committees and working groups; and

(4) Authored publications directly related to the employee's technical specialty

Senior Technical Specialists shall:

(1) Maintain close and continuous contact with representatives of the aviation industry, professional societies, academic and research institutions, specialists in other Federal agencies including the military establishment and foreign civil aviation authorities to maintain and develop specialized professional knowledge and skills.

(2) Serve as special technical advisors within the FAA in the area of technical specialty.

(3) Represent the FAA in national and international activities requiring technical knowledge and skills of the specialty.

(4) Participate in the development of FAA regulations and standards, national policy and national directives, or advisory circulars to provide procedures and practices in highly-specialized technical areas.

(5) Participate in or lead such activities as seminars or symposiums and develop training materials designed to keep technical disciplines current in the ever-changing state-of-the-art.

(6) Perform other technical functions as assigned.

5. **WORK ASSIGNMENTS.**

a. Regional, Center and Washington headquarters officials may contact the CSTA or STS directly for assistance. The CSTA/STS will determine the priority of his/her requested work assignments in accordance with procedures established by his/her office/service.

b. Conflicts on work assignments for the CSTA/STS will be resolved by the appropriate AVR office/service after consultation with the official(s) requesting assistance.

6. **TRAVEL COSTS.** All travel and per diem expenses incurred by the CSTA and STS while performing their functions will be budgeted and managed in Washington headquarters by the appropriate AVR office/service. Travel orders, advances, and vouchers for the CSTA/STS will be submitted to an appropriate AVR office/service for administrative review and approval. Travel advances and vouchers will be audited and processed by the Accounting Operations Division (AFM-200), or appropriate regional or center accounting division.

7. **TRAINING.** The appropriate AVR office/service is responsible for identifying training requirements for the CSTA and STS, scheduling training quotas, and funding the training costs to include travel and per diem.

8. **APPOINTMENT AND PLACEMENT OF SPECIALISTS.**

Persons meeting the criteria above shall be known as "Chief Scientific and Technical Advisors" or "Senior Technical Specialists." As defined, their duties and responsibilities require or authorize them to formulate, determine, and/or influence agency policy within an area of specialization. This may be reflected in the form of agency documents, such as Advisory Circulars, Airworthiness Directives, Federal Aviation Regulations, Operational Procedures, etc. Work products will document results of formal studies and evaluations and can be used as a basis for agency rulemaking.

a. CSTA and STS positions are established, certified, and classified as Washington headquarters positions in recognition of their role as a nationally recognized expert, but may be physically located in headquarters, or in any region or center. Selected candidates will normally be located in Washington headquarters, center, or a regional headquarters. All

exceptions will require the approval of the Associate Administrator for Regulation and Certification. If a specific office placement is considered necessary for optimum utilization (e.g., placement in a facility or office near a particular industry activity), that location will be stated in the announcement. Physical location of a CSTA or STS in a region or center will require the consent of the affected region or center.

b. Criteria for CSTA and STS selection requirements shall be developed by the appropriate AVR office/service. The CSTA and STS position vacancies shall be announced for nationwide competition and the office/service director shall be the selecting official. Selection will be made from among the best-qualified candidates with the required training and experience. Emphasis will be placed on the latest skills and expertise to bear on the critical technical area being served.

c. The CSTA and STS will be accountable to the office/service director for all technical efforts within the area of expertise, and AVR office/service directors will be accountable to the Associate Administrator for Regulation and Certification for CSTA and STS Program accomplishments.

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