



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

ORDER
8000.80A

Effective Date:
08/20/2010

SUBJ: Aviation Safety (AVS) Chief Scientific and Technical Advisor (CSTA) and Senior Technical Specialist (STS) Program

- 1. Purpose of this Order.** We prescribe the mission, composition, and management of the AVS CSTA and STS Program. We also prescribe the roles and responsibilities of individuals holding CSTA and STS positions in the Aviation Safety (AVS) line of business.
- 2. Audience.** We wrote this order for all AVS managers and staff members who may need to use CSTA and STS expertise.
- 3. Where to Find this Order.** You can find this order on the Directives Management System (DMS) website: http://www.faa.gov/regulations_policies/orders_notices and on the FAA's Regulatory and Guidance Library (RGL) website at <http://rgl.faa.gov>.
- 4. Cancellation.** This revision cancels Order 8000.80, *Regulation and Certification (AVR) Chief Scientific and Technical Advisor and Senior Technical Specialist Programs*, dated December 31, 2002.
- 5. Explanation of Policy Changes.** In this revision, we clarified CSTA roles and responsibilities, adding a table listing current CSTA specialties and their host divisions. We've also clarified that the Program is managed by AIR-103 at Washington DC headquarters, and consolidated all AIR-103 management, administrative support responsibilities in paragraph 14. Finally, we updated all lines of business references from AVR to AVS.
- 6. Background.** Staying ahead of rapid technological advances in aviation safety requires us to call on personnel with notable knowledge and skill in highly complex specialties. The CSTA/STS Program gives us access to these personnel. Since its inception, the program has given us a team of experts to help standardize how we apply procedures and the requirements of Title 14 of the Code of Federal Regulations for all product types. We've also gained a better understanding of technical issues within the FAA, and among industry, government and academia, nationally and internationally.
- 7. AVS-1 and AVS Service Directors' Responsibilities.**
 - a.** The Associate Administrator for Aviation Safety (AVS-1) has established the CSTA/STS Program. While AVS-1 delegates most CSTA/STS management to the AVS service directors, the Associate Administrator reviews the short-term incentive plan (STI) developed every year with the CSTAs. The STI gives CSTAs their annual goals, which are linked to the FAA Flight Plan and AVS strategic priorities.

b. AVS office/service directors are accountable to AVS-1 for CSTA and STS accomplishments. Office/service directors are delegated the following responsibilities and tasks:

(1) Recommend the appropriate number of CSTAs and STS positions, based on organizational need, national budget constraints, and personnel limits to AVS for approval. The Administrator may adjust the population to keep abreast of current and future CSTA and STS staffing needs based on the unique nature of their positions.

(2) Determine the specific CSTA or STS technical specialties needed to support AVS requirements. The determinations are based on a periodic workload study identifying aviation industry trends and the need for continued or new CSTA and/or STS support. Study results are reviewed by the AVS-1, the directors of the Aircraft Certification Service (AIR-1) and Flight Standards Service (AFS-1), along with division managers and the CSTA program manager.

(3) Determine the priorities of CSTAs or STSs according to established goals.

(4) Supervise CSTAs and STSs and resolve any conflicts that may occur between CSTAs, STSs and division or directorate managers.

8. How CSTAs Support the FAA.

a. CSTAs are critical not only to our maintaining a high level of aviation safety, they also help us retain international leadership in developing and implementing technical standards for new technologies and operations. CSTAs serve as the FAA experts in their technical specialties, ensuring that we incorporate state-of-the-art scientific and technological requirements into our regulatory and certification programs. CSTAs lead, direct, monitor and support research and development programs that advance aviation safety in their specialties. CSTAs are accountable to the office/service director for all technical efforts within their specialty.

b. CSTAs identify issues and at the same time, receive broad direction from office/service directors on which issues are major concerns to industry and us. CSTAs have wide discretion to pursue these issues, as long as their pursuit is within resource constraints and aligns with AVS priorities/direction. From a technical perspective, CSTA recommendations are major determinants of technical solutions for the FAA. The responsible FAA office, such as the Directorate or Aircraft Certification Office (ACO), must follow up on the issue and document a final position to either accept or reject the CSTA recommendation.

c. Work Assignments. Regional, Center and Washington headquarters officials may contact the CSTA or STS directly for assistance. CSTA/STS will determine the priority of their work. The appropriate AVS office/service will resolve any CSTA work assignment conflicts with the requesting officials.

9. CSTA Qualifications. Candidates are expected to have a graduate degree, or specialized work experience equal to a graduate degree in their technical discipline, or both. Typically, what we look for in a prospective CSTA is an individual who:

- a.** Is a nationally or internationally recognized expert in his or her field.
- b.** Has accomplished significant research in his or her field.
- c.** Has extensive, in-depth aviation-related experience and demonstrates domestic and international leadership in their specialty.
- d.** Is a sought-after consultant on scientific and technological problems.
- e.** Has written widely-read source documents in their specialty.
- f.** Has received significant recognition/honors from major organizations for their accomplishments and contributions, and
- g.** Actively supports industry committees, working groups, or professional organizations related to their specialty.

10. CSTA Duties. CSTAs serve as the FAA expert on matters in their specialty. They identify and help develop new and emerging technologies for application to civil aviation. In addition, CSTAs:

- a.** Define and advances new technologies in aviation by providing leadership in the development and implementation of technical standards for new technology
- b.** Provide expert scientific and technical advice and guidance in all research and development programs in their specialty. Lead and direct the research, testing, evaluation, and implementation of new technologies. CSTAs monitor the scientific and technological activities in worldwide research and development by the FAA and international aviation industry, civil aviation, military, academic and institutions to promote aviation safety. CSTAs determine what research results can be most feasibly implemented.
- c.** Serve as expert technical advisor to FAA senior executives, managers, aerospace engineers, and safety inspectors for subjects in their specialty.
- d.** Identify the need for, and influence policy, regulation and standards development. Although the accountable directorates and divisions generate and issue the policy, in some instances they may ask the CSTA to take the lead, or be involved in developing the policy.
- e.** Represent the FAA in national and international activities requiring their technical knowledge and skills.
- f.** Help aviation authorities and the domestic and international aviation community in certification, operation, repair, overhaul, accident/incident investigations, and other areas.
- g.** With broad knowledge of the professional field and high professional recognition, CSTAs ensure cooperation and acceptance of their evaluations and recommendations. CSTAs represent and

interpret the CSTA/STS Program to top levels within the FAA, the international and domestic aviation community, and other government organizations.

h. Develop and publish technological/scientific papers based on results of FAA-sponsored research and development, or on experience in resolving aviation-related issues, and

i. Lead, sponsor or participate in seminars or symposiums: CSTAs develop training materials to keep technical specialties current, and this includes delivering workshops and training to FAA employees, industry and civil aviation authorities.

11. How STSs Support the FAA. Senior technical specialists serve as nationally- or internationally-recognized experts with extensive operational and technical expertise in a certain specialty. STSs work with CSTAs to coordinate the development, operational testing, evaluation, and implementation of national programs and procedures related to their specialty. STSs are accountable to the office/service director for all technical efforts within their specialty. The appropriate AVS office/service will resolve any STS work assignment conflicts with the requesting officials.

12. STS Qualifications. STS positions require expertise directly related to the critical AVS safety mission. While not required to have the same level of education, recognition and publication history as CSTA candidates, STSs must be able to originate new concepts or approaches, and develop new policies and procedures governing critical FAA and AVS programs and objectives. STS incumbents must demonstrate knowledge, skills and abilities of the technical specialty. A prospective STS is an individual who:

a. Is an active member of professional organizations directly related to their specialty.

b. Makes frequent presentations to FAA employees, other agencies, international authorities, professional organizations and private industry.

c. Is an active member on national or international committees and working groups, and

d. Publishes articles about his/her specialty in professional journals.

13. STS Duties. STSs maintain close contact with representatives of the aviation industry, professional societies, academic and research institutions. They also stay closely connected to the CSTAs and specialists in the military, other civil aviation authorities and federal agencies to maintain and develop specialized professional knowledge and skills. In addition, STSs:

a. Serve as special technical advisors within the FAA.

b. Represent the FAA in national and international activities requiring their technical knowledge and skills.

c. Participate in developing FAA regulations and standards, national policy and directives to implement procedures and practices.

d. Lead or join in seminars or symposiums, and develop training materials to keep technical specialties current with the state of the art techniques, and

e. Perform other technical functions as assigned.

14. CSTA/STS Program Composition. CSTAs and STSs are advisors in the technical specialties, listed on the FAA CSTA Program website, which can be found at the following URL:

http://www.faa.gov/aircraft/air_cert/design_approvals/csta/

15. How the CSTA/STS Program is Managed. The Aircraft Certification Service's Aircraft Engineering Division Manager (AIR-100) has been delegated as the executive to manage the CSTA program, infrastructure and strategic goals including: the CSTA initiatives, performance and the introduction of new technologies. The AIR-100 Technical and Administrative Branch, AIR-103 supports the CSTA/STS Program. The staff includes a CSTA program manager and analyst in the Washington headquarters, with another program analyst in Seattle, WA. They manage the business planning and budget, process CSTAs annual travel plans, memos, and trip reports. AIR-103 staff supports CSTA and STS performance reviews, and coordinates with human resources staff on hiring and placement. The AIR-103 staff arranges training, plans and conducts an annual CSTA conference, and provides other administrative support as needed. The following paragraphs cover certain topics in greater detail.

a. Budget. AIR-100 centrally manages and funds the CSTA/STS program budget. This includes all travel and per diem expenses, plus any other budget requirements. CSTAs and STSs submit travel orders, advances and vouchers to AIR-100 for review and approval. CSTAs and STSs discuss budget concerns and priorities with the appropriate AIR or AFS office as needed.

b. Performance reviews. AIR-103 collects input on CSTA/STS performance from the Washington headquarters and regional management offices with first-hand knowledge of CSTA and/or STS job performance. AIR-100 maintains this input for performance reviews and awards. Performance standards are based on objectives set for the individual's technical specialty and the appraisal system to which the position is assigned. The CSTA's senior manager is responsible for developing and implementing the specific performance standards and plans for each CSTA, using the required appraisal system to which the position is assigned.

c. Hiring and Placement.

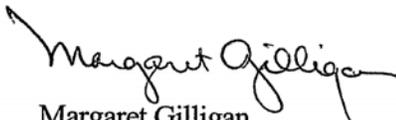
(1) CSTA and STS positions are established, certified, and classified as AVS headquarters positions in recognition of their national role. They may, however, be physically located outside headquarters, in a region or center. Placing a CSTA or STS outside the headquarters requires the approval of the AIR-100 and the appropriate Service/Office, as well as the consent of the region or center. AIR-103 is responsible for furnishing specific workspace there, and other administrative services for CSTAs and STSs according to existing procedures.

(2) CSTA and STS selection requirements are developed by the requesting AVS office/service. CSTA and STS position vacancies are announced for nationwide competition.

d. Training. When an office/service identifies CSTA and STS requirements, AIR-103 schedules the training for the CSTA and/or STS, and funds all costs to include travel and per diem.

e. Conferences and meetings. AIR-103 helps produce conferences at various locations every 12 to 18 months. Participants include the CSTAs, STSs, AIR-103 program support personnel, division managers to whom CTSA report, the Associate or Deputy Administrators of Aviation Safety, the Directors or Deputy Directors of the Flight Standards and Aircraft Certification Services, and other guests. In addition to current FAA, AVS and CSTA business, conference agendas include program reviews by each CSTA and a roundtable discussion on general topics. For everyday progress reviews and communication, CSTAs generally do business through bi-monthly teleconferences with AIR-100 management, CSTA program manager and support personnel.

16. Distribution. Distribute this order to the division level in the Office of Financial Management, Budget and Personnel; to the branch level in the Aircraft Certification, Air Traffic Safety Oversight and Flight Standards Services, including the regional Flight Standards Divisions and Offices and Aircraft Certification Directorates and Offices; the branch level in the Offices of Aerospace Medicine, Accident Investigation, Rulemaking, and Aviation Safety Analytical Services, Office of the Chief Counsel, Office of Human Resources.



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