

AEROSPACE EDUCATION

Specialty Track Study Guide



CAP Pamphlet 50-2
NATIONAL HEADQUARTERS CIVIL AIR PATROL
Maxwell Air Force Base, Alabama
AUGUST 2018

Preface.....	3
Training Requirements	3
Evaluation Requirements	4
Guidance for Trainers/Mentors, PDOs, and Unit Commanders	4
Rating Recognition	4
Yeager and Crossfield Award Certificates	6
Important Publications for Aerospace Education.....	6
Achieving the Technician Rating.....	7
Position Description.....	7
Knowledge, Performance, & Service Requirements.....	7
Knowledge Requirements	7
Performance Requirements	8
Service Requirements.....	8
Technician Level Checklist	9
Technician Rating Recognition	10
Achieving the Senior Rating	11
Position Description.....	11
Knowledge, Performance, and Service Requirements	11
Knowledge Requirements	11
Performance Requirements	12
Service Requirements.....	12
Senior Level Checklist	13
Senior Rating Recognition	14
Achieving the Master Rating	15
Position Description.....	15
Knowledge, Performance, and Service Requirements	15
Knowledge Requirements	15
Performance Requirements	16
Service Requirements.....	16
Master Level Checklist.....	17
Master Rating Recognition	18

Preface

This pamphlet prepares members for the responsibilities of a Civil Air Patrol (CAP) Aerospace Education Officer (AEO). The contents of this pamphlet apply to all levels, including Squadron, Group, Wing and Region Aerospace Education Officers and are governed by CAPR 50-1.

Pamphlet describes the Aerospace Education (AE) Specialty Track and is dedicated to preparing CAP members for the responsibilities of becoming CAP Aerospace Education Officers (AEOs). It encompasses the professional requirements for executing the AE mission in Civil Air Patrol, including the internal and external aspects of AE programs at all levels. The pamphlet provides AE information and training that enhances the candidate's knowledge of and performance in the AEO position in CAP.

This pamphlet also itemizes the important publications that are used to help the candidate gain knowledge of the aerospace education mission and responsibilities of the AEO and assistant AEOs. The AE specialty track is divided into three ratings: technician, senior, and master. Progressively mastering the material at each level in AE prepares the candidate for AEO or assistant AEO positions of increasing scope and responsibility. The specific requirements for each rating are included. Training in this specialty track can be accomplished either independently or under the guidance of a higher rated senior member trainer/mentor. The unit's Professional Development Officer (PDO), if available, and the commander, should be involved in the education of an AEO.

The member and the on-the-job trainer/mentor determine the level of competence at each level. When the member reaches the desired level of competency for the completion of a level, the unit commander then certifies proficiency through eServices. After the unit commander's certification of a technician, senior, or master rating, the member may wear the Davis Ribbon (technician rating) with bronze (senior rating) or silver (master rating) star.

Training Requirements

Each specialty track level contains **knowledge, performance, and service requirements** that must be completed in order to attain each successive rating. These requirements will vary as the candidate proceeds through the levels. These are completed through self-study, through on-the-job training experiences, and in agreement with your assigned trainer/mentor.

Knowledge Requirements are objectives describing what each candidate is expected to know to attain the rating.

Performance Requirements are objectives describing what each candidate is expected to complete through active participation in AE at the CAP unit to attain the rating.

Service Requirements dictate that candidates serve in an AE position or positions for a specified amount of time to receive the rating. Regardless of the position a candidate may take as an AEO, it is suggested that the level of responsibility begin modestly and increase as the candidate advances.

Here are the required times:

- Technician Rating – service for a minimum of six months
- Senior Rating – service for an additional six months
- Master Rating – service for an additional year

Evaluation Requirements

Evaluation follows the same model: technician, senior, and master. All three levels have knowledge, performance, and service requirements.

Knowledge requirements are listed for each rating. Successful completion of the knowledge requirements will be verified by the mentor, PDO, or unit commander after completion

Performance requirements are listed for each rating and become more demanding as the candidate advances in rating. A candidate must be able to perform the duties outlined in the performance requirement section at each level and the performance will then be verified by the mentor, PDO or unit commander. During the process, a candidate or mentor will inform the commander of progress.

Service requirements are also listed at each level and are verified. There are many different positions where candidates can serve as they work through the rating process. Again, candidates should keep commanders aware of progress.

Once the candidate has met the knowledge, performance, and service requirements, the unit commander certifies the rating. The commander will verify the activities performed, tasks accomplished, positions held, knowledge possessed, and program familiarity required by CAPP 50-2.

Guidance for Trainers/Mentors, PDOs, and Unit Commanders

The trainer/mentor plays an important role in the success of the AEO in training. This senior member officer, in partnership with the unit commander, guides the AEO through the knowledge, training, performance, and service requirements for the rating the student is pursuing.

Once the trainer/mentor is satisfied that the AEO has met all the requirements for the rating, the trainer/mentor and the AEO notify the unit commander.

When the commander is satisfied that the AEO can perform to the level required for the rating and has met the service requirements, the commander or the PDO records the award of the rating through the eServices Specialty Track Module as well as in the member's local personnel record.

Rating Recognition

AE Specialty Track candidates are eligible for recognition with a ribbon and an AE badge. In order for candidates to receive the appropriate recognition for technician, senior, or master rating, it is the responsibility of the candidate, mentor, or PDO to inform the unit commander of achievement of the evaluation items, and if required by the commander, to provide proof of performance.

Upon earning an AE Technician rating, the senior member qualifies to wear the Benjamin O. Davis Award ribbon. To complete the senior rating in the Specialty Track, the AEO must have earned the Brigadier General Charles E. "Chuck" Yeager Aerospace Education Achievement Award. Upon earning the senior rating, a bronze star is added to the Davis ribbon, and at the master rating the bronze star is replaced by a silver star. Additionally, AEOs achieving the master rating are awarded the A. Scott Crossfield Award ribbon.

The AE Specialty Track also has a badge. Upon earning the technician rating, an AEO is qualified to wear the AE badge. At the senior rating, a bronze star is added to the badge, and with the master rating a gold star replaces the bronze star. Refer to CAPM 39-1, CAP Uniform Manual, and CAPR 39-3, Award of CAP Medals, Ribbons, and Certificates, for additional information, including how to wear these ribbons and badges.

The chart below summarizes the rating recognitions discussed on pages 4-5. The chart displays the ribbons, the badge and the appropriate stars that can be worn as the AEO achieves the AE Specialty Track ratings, Yeager and Crossfield Awards.

Rating	Davis Ribbon	Yeager Ribbon*	Crossfield Ribbon	AE Badge**	
Technician					basic badge
Senior	add Bronze Star				add Bronze Star
Master	replace with Silver Star				replace with Gold Star

*The Yeager Award can be earned at any time prior to earning the Senior Rating.

IAW CAPR 50-17, 4 Jun 2015, CAP SM Professional Development Program, upon completion of Level II members are awarded the Gen Benjamin O. Davis Jr Award Certificate. If the Yeager Award is achieved before the completion of Level II, the Yeager Seal may be requested on the Davis Certificate.

** AE badge may be worn at all AE rating levels. A bronze star is added to it at the senior rating and a gold star replaces the bronze at the master rating. The AE badge, along with the ribbons, can be purchased at www.vanguardmil.com. A miniature AE badge is also available and can be worn as a lapel pin on the blazer uniform or civilian clothing.

Yeager and Crossfield Award Certificates

When members successfully complete the Yeager test they are eligible to receive the recognition certificate. Through CAP's Leadership Management System, upon successful completion, members can print the Yeager certificate on their own printer.

Upon successful completion of the master rating, the AEO is eligible for the A. Scott Crossfield Award. To request the certificate the commander must complete the master rating checklist and send it to Membership Services (CAP/DP). DP will then send the Crossfield Award certificate to the requestor.

Important Publications for Aerospace Education

AEOs should be familiar with the below listed publications. Reviewing these publications will enhance AEOs' abilities to perform their duties and accomplish the aerospace education mission.

Number	Title	Notes
CAPR 20-1(l)	<i>Organization of Civil Air Patrol</i>	Examine the AEO job descriptions and guidance pertaining to AE positions
CAPR 50-17	<i>CAP Senior Member Professional Development Program</i>	Identify how the AE specialty track fits into professional advancement
CAPR 60-1	<i>Cadet Program Management</i>	Learn how AE fits into the cadet program
CAPR 50-1	<i>Civil Air Patrol Aerospace Education Mission</i>	Understand this foundational AE regulation
CAPP 50-1	<i>Aerospace Education Officer Handbook</i>	Discover how this pamphlet aids AEO knowledge of AE programs
CAPP 50-2	<i>Aerospace Education Specialty Track Study Guide</i>	Use pamphlet to advance in the AE Specialty Track
	<i>Aerospace Dimensions Modules</i> (includes Leader Guide)	Basic introduction to aerospace topics used by Phase I & II cadets and in middle school classrooms
	<i>Aerospace: The Journey of Flight</i> (includes Teacher Guide)	Comprehensive aerospace textbook used by Phase III & IV cadets, senior members, high school and college students
	<i>Model Rocketry Program and Advanced Model Rocketry Program</i>	Rocket modules used by cadets and students in rocketry program
	<i>Aerospace Education Excellence (AEX) Award Program</i>	Hands-on AE activities for cadets, senior members and teacher members
	<i>AE STEM (Science, Technology, Engineering & Math) Kit Program</i>	Choose from various AE STEM kits with hands-on learning
	Website – AE pages www.gocivilairpatrol.com/ae	Excellent resource for all AE products/programs including those not mentioned on this list

Achieving the Technician Rating

Position Description

The Aerospace Education Officer (AEO) at the technician level is expected to:

- Possess a basic knowledge of the Aerospace Education Programs.
- Know the duties and tasks associated with CAP's squadron and group AEO and assistant AEO positions.
- Implement aerospace education programs for cadets and senior members at the squadron level and promote AE in local schools.
- Develop into a highly motivated and trained AEO who will conduct and promote effective internal and external aerospace education programs.

Knowledge, Performance, & Service Requirements

Knowledge Requirements

To complete the technician rating in the AE Specialty Track, the member must:

- Explain the appointment process for the specialty track.
- Describe the knowledge, performance and service requirements of the AE Specialty Track.
- Review AE programs and products, including AE STEM Kits, provided by National Headquarters with the trainer/mentor.
- Define the Aerospace Education Excellence (AEX) hands-on award program and how to implement it in squadrons and schools.
- Outline the selection and recruitment procedures of Aerospace Education Members (AEMs), describe the Aerospace Connections in Education (ACE) program in schools and explain the Teacher Orientation Program (TOP) Flights for teachers.
- Explain the difference between earned and nominated awards.
- Demonstrate knowledge about formulating budgets, obtaining grants, and funding of AE activities.
- Describe the preparation of an online AE Plan of Action (AE POA) for a squadron.
- Describe the preparation of an online annual AE Activity Report for a squadron.
- Describe the subordinate unit inspection (SUI) process for a squadron.
- Successfully complete the online technician level test in eServices Learning Management System.

Performance Requirements

- Compile an AE Notebook, in either a paper notebook or digital format, based on the below listed topics:
 1. Appointment of AEOs
 2. AEO Specialty Track
 3. AE/STEM Programs and Products
 4. AEX
 5. AEMs, ACE and Top Flight
 6. AE Awards
 7. Budget, Grants and Funding
 8. AE POA
 9. AE Activity Report
 10. Inspection Preparation

Service Requirements

- AE technician candidates will have served a minimum of 6 months in one or more of the positions below:
 - Composite squadron – AEO, AEO for cadets or senior members
 - Senior squadron AEO or assistant AEO
 - Cadet squadron AEO or assistant AEO
 - Group AEO, group internal AEO, or group external AEO
 - Wing DAE, wing internal AEO, or wing external AEO

Technician Level Checklist

To complete the checklist, the member must:

Knowledge, Performance, and Service Requirements	Mentor or PDO Initials and Date
Knowledge	
Read the publications listed on page 6 and demonstrate a general familiarity with them.	
Explain the appointment process for the AE Specialty Track.	
Review AE programs and products provided by National Headquarters with the trainer/mentor.	
Define the Aerospace Education Excellence (AEX) Award program and how to implement hands-on activities in squadrons and schools.	
Explain the difference between earned and nominated awards.	
Demonstrate knowledge about formulating budgets, obtaining grants and funding of AE activities.	
Describe the preparation of an AE POA for a squadron.	
Describe the preparation of an annual AE Activity Report for a squadron.	
Describe the SUI process for a squadron.	
Successfully complete the online technician rating test in eServices Learning Management System	
Performance	
Compile an AE notebook (on paper or digital file) including the 10 topics listed on page 8.	
Service	
Complete 6 months experience as an AEO/Assistant AEO according to the provisions on page 8.	
Dates of Service: from _____ to _____	

Candidate's Name _____
Last, First, M.I.

CAP Grade _____ CAPID _____ Unit Charter No. _____

Approved _____ Commander's Signature _____ Date _____

Note: When the commander is satisfied that the AEO can perform to the level required for the rating and has met the service requirements, the commander or the PDO records the award of the rating through the eServices Specialty Track Module as well as in the member's local personnel record.

Technician Rating Recognition

Upon earning the technician rating, the senior member has earned the Davis ribbon. After earning the technician rating, the member is entitled to wear the AE Badge. Refer to CAPM 39-1, *CAP Uniform Manual*, and CAPR 39-3, *Award of CAP Medals, Ribbons, and Certificates*, for additional information, including how to wear these ribbons and badges. Refer to the following chart.

Rating	Davis Ribbon	Yeager Ribbon*	Crossfield Ribbon	AE Badge**	
Technician					basic badge

*The Yeager Award can be earned at any time prior to earning the senior rating.

IAW CAPR 50-17, 4 Jun 2015, CAP SM Professional Development Program, upon completion of Level II members are awarded the Gen Benjamin O. Davis Jr Award Certificate. If the Yeager Award is achieved before the completion of Level II, the Yeager Seal may be requested on the Davis Certificate.

** AE badge may be worn at all AE rating levels. A bronze star is added to it at the senior rating and a gold star replaces the bronze at the master rating. The AE badge, along with the ribbons, can be purchased at www.vanguardmil.com. A miniature AE badge is also available and can be worn as a lapel pin on the blazer uniform or civilian clothing.

Achieving the Senior Rating

Position Description

The Aerospace Education Officer (AEO) at the senior level is expected to:

- Comprehend the duties and tasks associated with CAP's squadron, group, wing and region aerospace education positions.
- Implement the elements of the various aerospace education programs.
- Implement AE activities within the unit.
- Promote AE programs for the local community with organizations such as civic organizations and schools.
- Perform successfully in a leadership role within AE.
- Perform other AE Officer related duties as required.

Successfully accomplishing these objectives prepares AEOs for positions from the squadron to the region level.

Knowledge, Performance, and Service Requirements

Knowledge Requirements

To complete the senior rating in the AE Specialty Track, the member must:

- Outline the process of appointing a senior member to the AE Specialty Track.
- Describe the components of the technician rating.
- Explain AE and STEM as it is used in CAP programs.
- Summarize the requirements of a successful AEX program.
- Describe the procedures of a TOP Flight.
- Generalize the role of financial support required to execute CAP AE activities.
- Identify the components of an AE Plan of Action.
- Explain why the annual AE Activity Report is important.
- Identify the major AE components of a unit SUI and a unit self-inspection.
- Successfully complete the online senior level test in eServices Learning Management System.

Performance Requirements

- Maintain the AE Notebook.
- Lead an AEX or AE STEM activity.
- Develop and submit an AE Plan of Action or an annual AE Activity Report to the next higher echelon.
- Earn the Yeager Award.
- Attend one of the following activities:
 - a wing or region AE conference, AE workshop or AEO training session;
 - an AE School (region or national);
 - two AE learning labs or AE break-out sessions at a wing, regional or national conference.
- Perform one of the following activities:
 - Present or direct the AE portion of a cadet encampment
 - Mentor an AEO in achieving the AE technician rating
 - Participate in the AE portion of an SUI or AE Self Inspection
 - Prepare and present an AE activity for teachers within local schools
 - Contact a local community civic organization to present current AE issues

Service Requirements

- AEO Senior candidates will have served a minimum of an additional 6 months after receipt of the technician rating in one or more of the positions below:
 - Composite squadron – AEO, AEO for cadets or senior members
 - Senior squadron AEO or assistant AEO
 - Cadet squadron AEO or assistant AEO
 - Group AEO, group internal AEO, or group external AEO
 - Wing DAE, wing internal AEO, or wing external AEO

Senior Level Checklist

To complete the checklist, the member must:

Knowledge, Performance, & Service Requirements	Mentor or PDO Initials and Date
Knowledge	
Outline the process of appointing a senior member to the AE Specialty Track.	
Describe the components of the technician rating.	
Explain AE and STEM as it is used in CAP programs.	
Summarize the requirements for a successful AEX program.	
Describe the procedures for a TOP Flight.	
Generalize the role of financial support required to execute CAP AE activities.	
Identify the components of an AE Plan of Action.	
Explain why the annual AE Activity Report is important.	
Identify the major AE components of a unit SUI and a unit self-inspection.	
Successfully complete the online senior level test in eServices Learning Management System.	
Performance	
Maintain the AE notebook.	
Lead an AEX or AE STEM activity.	
Develop and submit an annual AE Plan of Action or an annual AE Activity Report to the next higher echelon.	
Earn the Yeager Award.	
Attend one of the activities listed on page 12.	
Perform one of the activities listed on page 12.	
Service	
Complete an additional 6 months experience as an AEO/Assistant according to the provisions on page 12.	
Dates of service: from _____ to _____	

Candidate's Name _____
 Last, First, M.I.

CAP Grade _____ CAPID _____ Unit Charter No. _____

Approved _____ Commander's Signature _____ Date _____

When the commander is satisfied that the AEO can perform to the level required for the rating and has met the service requirements, the commander or the PDO records the award of the rating through the eServices Specialty Track Module as well as in the member's local personnel record

Senior Rating Recognition

Upon earning the senior rating, a bronze star is added to the Davis ribbon and to the AE Badge. Refer to CAPM 39-1, *CAP Uniform Manual*, and CAPR 39-3, *Award of CAP Medals, Ribbons, and Certificates*, for additional information, including how to wear these ribbons and badges. Refer to the following chart.

Rating	Davis Ribbon	Yeager Ribbon*	Crossfield Ribbon	AE Badge**	
Senior	add Bronze Star				add Bronze Star

*The Yeager Award must be earned at any time prior to earning the senior rating.

** AE badge may be worn at all AE rating levels. A bronze star is added to it at the senior rating and a gold star replaces the bronze at the master rating. The AE badge, along with the ribbons, can be purchased at www.vanguardmil.com. A miniature AE badge is also available and can be worn as a lapel pin on the blazer uniform or civilian clothing.

Achieving the Master Rating

Position Description

The Aerospace Education Officer (AEO) at the master level is expected to:

- Demonstrate comprehension of the duties and responsibilities associated with CAP's squadron, group, wing and region AE positions.
- Demonstrate comprehension of how to manage unit CAP AE programs.
- Successfully implement AE activities and duties as it pertains to their unit.
- Successfully perform in an AE leadership role
- Provide aerospace education policy and activity recommendations to their commander.
- Develop programs that enhance CAP aerospace education in the community.

Knowledge, Performance, and Service Requirements

Knowledge Requirements

To complete the master rating in the AE Specialty Track, the member must:

- Describe the role of AE in the cadet program and in the advancement of cadets, as well as, the involvement of AE in senior member professional development.
- Discuss the importance of AE programs and products as they relate to accomplishing the AE mission.
- Explain an AEX program for a CAP unit or school.
- Describe the process for planning a TOP Flight for an AEM.
- Describe the process for recruiting an AEM, including the membership process.
- Identify the qualities of an individual or organization worthy of an AE award nomination. Consider the following awards for nominations:
 - Brewer Awards
 - AEO of the Year
 - Teacher of the Year
 - AFA/CAP Aerospace Cadet of the Year.
- Describe the components of the Squadron AE Achievement Award
- Describe the components of writing a successful AFA AE Grant.
- Describe the components of a unit's AE Plan of Action and AE Activity Report.
- Discuss the value of the AE portion of a wing compliance inspection.
- Successfully complete the online master level test in eServices Learning Management System.

- Describe the components of the Squadron AE Achievement Award.

Performance Requirements

- Continue maintenance of the AE Notebook.
- Develop and submit an AE Plan of Action and an AE Activity Report since earning the senior rating.
- Present an AE activity at a wing or region conference, AE School, workshop or cadet encampment since earning the senior rating.
- Participate in the AE portion of a CAP unit or wing inspection.
- Mentor an AEO through achieving the technician or senior rating.
- Perform three of the following additional activities after receiving the senior rating:
 - Attend a wing, region or national AE School or workshop
 - Recruit an AEM
 - Assist in coordination of a TOP Flight
 - Coordinate with an AEM to do an AE presentation/activity
 - Develop and submit an AFA AE grant application
 - Develop an AE budget for a CAP unit
 - Serve as an advisor for the AE portion of a cadet competition team
 - Become a mentor/instructor for cadets in AE in Phases III and IV of the Cadet Program
 - Speak to a community organization or a school about AE in CAP

Service Requirements

- AE master candidates will have served a minimum of an additional 12 months after receipt of the senior rating in one or more of these positions:
 - Composite squadron – AEO, AEO for cadets or senior members
 - Senior squadron AEO or assistant AEO
 - Cadet squadron AEO or assistant AEO
 - Group AEO, group internal AEO, or group external AEO
 - Wing DAE, wing internal AEO, or wing external AEO
 - Region DCS/AE, region internal AEO, or region external AEO

Master Level Checklist

To complete the checklist, the member must:

Knowledge, Performance, & Service Requirements	Mentor or PDO Initials & Date
Knowledge	
Demonstrate comprehension of all duties and responsibilities associated with CAP's squadron, group, wing and region AE positions	
Describe the role of AE in the cadet program and in the advancement of cadets, as well as, the involvement of AE in senior member professional development.	
Discuss the importance of AE programs and products as they relate to accomplishing the AE mission.	
Describe an AEX program for a CAP unit or school.	
Describe the procedures for planning a TOP Flight.	
Describe the process for recruiting an AEM, including the membership process.	
Identify the qualities of an individual or organization worthy of an AE award nomination as outlined on page 15.	
Describe the components of writing a successful AFA AE Grant.	
Identify the components of an effective unit's AE Plan of Action.	
Discuss the value of the AE portion of a wing's compliance inspection.	
Successfully complete the online master level test in eServices Learning Management System.	
Performance	
Continue maintenance of the AE Notebook.	
Develop and submit an AE Plan of Action and an annual AE Activity Report since earning the senior rating.	
Present an AE activity at a wing or region conference, AE School, workshop or cadet encampment since earning the senior rating.	
Participate in the AE portion of a CAP unit or wing inspection.	
Mentor an AEO through achieving the technician or senior rating.	
Perform three of the additional activities as listed on page 16.	
Service	
Complete an additional 12 months experience as an AEO/Assistant according to the provisions on page 16. Dates: from _____ to _____	

Candidate's Name _____
Last, First, M.I.

CAP Grade _____ CAPID _____ Unit Charter No. _____

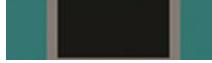
Approved _____ Commander's Signature _____ Date _____

When the commander is satisfied that the AEO can perform to the level required for the rating and has met the service requirements, the commander or the PDO records the award of the rating through the eServices Specialty Track Module as well as in the member's local personnel record.

Upon successful completion of the master rating, the AEO is eligible for the A. Scott Crossfield Award. To request the certificate the commander must complete the master rating checklist and send it to Membership Services (NHQ/DP). DP will then send the Crossfield Award certificate to the requestor.

Master Rating Recognition

Upon earning the master rating, a silver star is added to the Davis ribbon and a gold star is added to the AE Badge. With the notification from National Headquarters of the Crossfield Award certificate, the member is now entitled to wear the Crossfield Award Ribbon. Refer to CAPM 39-1, *CAP Uniform Manual*, and CAPR 39-3, *Award of CAP Medals, Ribbons, and Certificates*, for additional information, including how to wear these ribbons and badges. Refer to the following chart.

Rating	Davis Ribbon	Yeager Ribbon	Crossfield Ribbon*	AE Badge**	
					
Master	add Silver Star				replace with Gold Star

*See page 6 for information about the Crossfield Award certificate.

** AE badge may be worn at all AE rating levels. At the master rating a gold star replaces the bronze star. The AE badge, along with the ribbons, can be purchased at www.vanguardmil.com. A miniature AE badge is also available and can be worn as a lapel pin on the blazer uniform or civilian clothing.