Aerospace Content Order in the Cadet Curriculum

Proposal to assign modules to specific cadet achievements

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The current cadet curriculum has each cadet engage with aerospace content for 13 of the 16 achievements and allows for significant flexibility in the selection of modules, giving cadets the autonomy to choose the order in which they complete them. However, the anticipated benefits of this flexibility have not been realized as frequently as expected.

The impending transition to a new Learning Management System (LMS) in 2024 offers an opportune moment to reassess the cadet user experience, especially considering the recent additions of Cadet Interactive, honor credit, and test banking. The influx of choices confronting new and established cadets upon logging into the LMS has prompted the need for a critical evaluation of the current curriculum structure. This paper delves into the intricate dynamics of the cadet experience, technological concerns, and data analysis to propose a solution aimed at streamlining the aerospace curriculum for a more effective and user-friendly experience.

Background

Original Philosophy

The current curriculum allows cadets to take the aerospace modules in any order. The intention was that units will teach a module on their aerospace education night and then encourage cadets at any level to use that lesson for their next achievement module or test. The data shows that this is not happening as frequently as anticipated.

Phase 1 & 2 Cadets
Aerospace Dimensions Modules
Achievements 2 - 8

AEROSPACE DIMENSIONS

During Phases I & II, complete the 7 modules in any order, recording completion below.

No.	Title	Date Completed	Ach. No.
1.	Introduction to Flight		
2.	Aircraft & Airports		
3.	Air Environment		
4.	Rockets		
5.	Space Environment		
6.	Spacecraft		
7.	Cyber Defense		

Phase 3 & 4 Cadets
Journey of Flight Textbook
Achievements 9 – 11 & 14 - 16

AEROSPACE: THE JOURNEY OF FLIGHT
complete in any order

Test No.	Corresponding "Dimensions" Module	Study "Journey" Chapters	Date Completed	Ach. No.
1.	Introduction to Flight	1, 7, 8		
2.	Aircraft Systems & Airports	2, 9, 10		
3.	Air Environment	3, 18, 19		
4.	Rockets	4, 21, 23		
5.	Space Environment	5, 24, 25		
6.	Spacecraft	6, 26, 27		

You must complete one test during Achievements 9, 10, 11, 14, 15, and 16. You may take the tests in any order. If possible, study the *Journey of Flight* chapters corresponding to the *Aerospace Dimensions* module being studied by the cadets you are mentoring or instructing. Some chapters in *Journey of Flight* (11-17, 20, 22) are not included in your course of study. Cyber defense is a topic in *Aerospace Dimensions* but not *Journey of Flight*.

Fig. 1 Aerospace tracker details from CAPVA 60-101a & CAPVA 60-101b

Cadet User Experience

Civil Air Patrol will be moving to a new learning management system (LMS) in 2024, which provides an opportunity to evaluate user experience for cadets and contemplate if we should simplify the program. Choice in aerospace module selection has been a mainstay of the modern cadet program. In 2021 we also added Cadet Interactive, honor credit and test banking, which complicated the user view.

New cadets log into the LMS and see OPSEC along with the Cadet Welcome Course, 4 leadership courses (1 to take and 1 to bank, with options for honor credit for each), and 7 aerospace courses (each of which splits into an interactive and a test course once enrolled). In total, there are 13 options in the new cadet's initial view in the LMS.

The Cadet Super Chart (CAPVA 60-100) and the Cadet Personal Tracker (CAPVA 60-101a

Fig. 2 Cadet Achievement Screen for New Cadet

and 60-101b) help cadets know their options for each achievement. An achievement card is included at the top of the page to provide guidance, but this many choices can be overwhelmingly confusing for new cadets and their parents.

Technological Concerns

Incorporating a choice of aerospace modules, each with an interactive course and an online timed test, alongside test banking with test banking stopping points at each milestone includes significantly more complications in programing for the LMS and eServices. These many choices also provide many more possibilities for errors in our systems. Errors cause challenges at every level as cadets reach out to their squadron leadership, squadron leaders reach out to Directors of Cadet Programs, up to the National Cadet Team and/or IT Helpdesk tickets. Errors require time and effort, which can impact cadet interest and promotion timing.
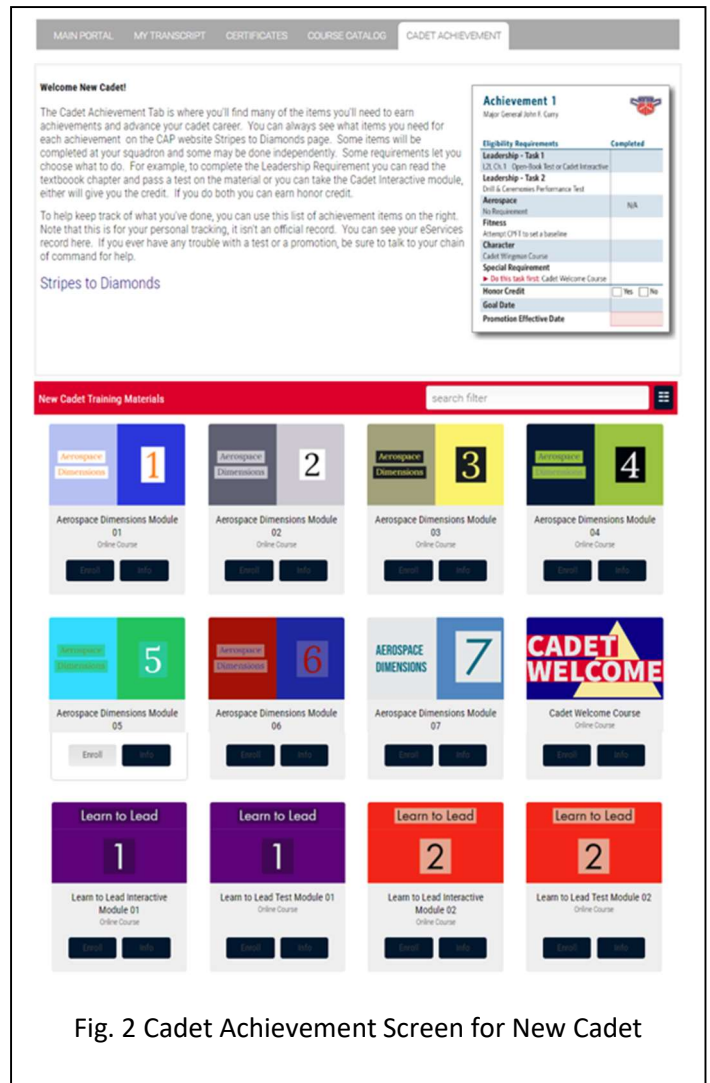
Data Analysis on Cadet Aerospace Engagement

It's important to note that for the Leadership promotion requirement cadets are taught to take the chapter corresponding to their achievement level. For instance, cadets studying for their third achievement would delve into Learn to Lead chapter 3. However, due to Achievement 1 not necessitating an aerospace requirement, the module numbering deviates by one.

The data shows that most cadets take the aerospace modules in sequence. The data also shows that the cadets that don't take the modules in sequence choose their next module based on their achievement number. For example, C/SSgt's in Achievement 4 predominantly pick the next module in numerical sequence and those that don't choose the next module in sequence pick the module number that matches their current achievement (Achievement 4).

	Most Popular (Numerical Order)			Next Highest (Achievement Order)		
	Cadet Count	% Cadets	Aerospace Task	Cadet Count	% Cadets	Aerospace Task
Achievement 2	8349	91%	Aerospace Dimensions 1	399	4%	Aerospace Dimensions 2
Achievement 3	5108	81%	Aerospace Dimensions 2	505	8%	Aerospace Dimensions 3
Achievement 4	1855	75%	Aerospace Dimensions 3	273	11%	Aerospace Dimensions 4
Achievement 5	1211	73%	Aerospace Dimensions 4	170	10%	Aerospace Dimensions 5
Achievement 6	739	72%	Aerospace Dimensions 5	139	14%	Aerospace Dimensions 6
Achievement 7	393	68%	Aerospace Dimensions 6	95	17%	Aerospace Dimensions 7
Achievement 8	161	72%	Aerospace Dimensions 7	30	13%	Aerospace Dimensions 6

Fig. 3. The data shows the aerospace module that cadets choose for their achievements. This data set includes all cadets that have joined CAP in 2022 through 2023

Cadet Packet Integration

The New Cadet Kit that cadets receive was altered in Oct 2023 to focus on the fundamentals that new cadets need in Phase 1. We emphasize Aerospace Dimensions Modules 1 & 2 because they are the first two aerospace books and the foundation of what new cadets should learn to launch their cadet career and be prepared for orientation flights.

Fig. 4. New Cadet Kit

Please see the proposal below to learn how we can improve the cadet experience in our new LMS by having a determined order for which cadets engage with the aerospace content.

Proposal

Problem

Cadets currently choose from a selection of aerospace options for their achievements. While the choice does allow for more autonomy, the added complications of being able to take these required modules/tests in any order has drawbacks. There is significantly more time and effort required to program the cadet progression in the LMS and eServices. This also leads to more frequent errors in cadet records requiring headquarters support to correct. The overabundance of choice can also lead to confusion for cadets, particularly those newer to the program. And finally, the choice can lead to cadets at the same achievement with wildly varied knowledge of aerospace concepts. A determined order for the aerospace curriculum will help with these problems.

Proposal

Require Aerospace Dimensions Modules and Journey of Flight Tests to be completed in sequential order of the curriculum. This order will align with the books that cadets receive for each phase.

It can overwhelm new cadets to see a large number of courses to choose from when they join. Reducing options will help get cadets excited about CAP and provide targeted curriculum for understanding aerospace topics.

Beyond the streamlined experience, there's a significant benefit to adult leaders and fellow cadets knowing exactly what cadets at each level have learned. For example, all Phase 2 cadets will have learned the basics of flight curriculum in Phase 1.

Expected Concern

While they may not be numerous, there are squadrons where the Aerospace Education team instructs from the Aerospace Dimensions modules and encourages cadets to use the corresponding module for their current achievement, either regularly or on occasion. This would not necessarily change significantly if cadets completed modules/tests in a specified order for their achievements. There is still benefit in off-cycle module instruction during AE nights, since it enables all cadets to engage more deeply with content they may have breezed through in an online module or in a timed test. Repeating already tested curriculum is important to success on later milestone exams. And if the module is new to the cadet, being taught lessons in advance of an achievement will provide familiarity that should help new cadets have success in later modules when they advance to that achievement.

Grandfathering

Cadets that have already taken courses out of sequence will need to take the earliest available course for each subsequent promotion until they catch up with the prescribed sequence. eServices Accomplishments will remain unchanged for the time being to support the cadets being grandfathered.

Data on Module Usage

The data shows that cadets are predominantly engaging with aerospace content in sequence with some confusion on sequence order and achievement order. This appears to show that most cadets are tackling their aerospace modules independently of the unit's instruction. The proposed tethering of AE modules/tests to achievements will have a minimal impact on the vast majority of cadets.

Financial Impact

There is no anticipated extra costs for the proposal. It will likely lead to financial savings since a determined sequence for aerospace content will streamline the programing in the new LMS and reduce helpdesk tickets for logic errors, saving employee time to focus on other improvements.

Necessary Steps for Change

1. If adopted, coordinate with the Learning team for new LMS integration and grandfathering logic and update impacted regulations, visual aids, and websites (English and Spanish).
2. Then inform the field via a detailed Cadet Blog post, social media campaign, article in PROPS, and direct emails to adult leaders, parents and cadets.
3. Updates to websites and documents would need to include:
   - CAPR 60-1 Section 5.3.2 – Change "in any order desired" to be "in order" for both Aerospace Dimensions and Journey of Flight references
   - CAPVA 60-100 Super Chart – Remove words "complete in any order" and include appropriate aerospace module/chapters for each achievement
   - CAPVA 60-101 Personal Cadet Tracker Home Printer Version Phase I-IV – Update achievement cards
   - CAPVA 60-101a Personal Cadet Tracker – Phase I & II – Remove words "complete in any order", update achievement cards for appropriate order, update super chart graphic

- CAPVA 60-101b Personal Cadet Tracker – Phase III & IV – Remove words "complete in any order", update achievement cards for appropriate order, update super chart graphic
- Ranks & Awards Website – Update achievement pages to remove "complete in any order" and include appropriate aerospace module for each achievement

Final Thoughts

In conclusion, this paper advocates for a shift towards a sequenced aerospace cadet curriculum, like the leadership curriculum, to enhance the user experience and streamline the learning process. The proposed changes aim to provide a more cohesive, structured, and accessible educational journey for cadets.