

Updated Aerospace Education Plan for Parker Cadet Squadron (As of 22 October 2015)

RMR-CO-173

Calendar Year 2016

Goals for 2016 calendar year:

1. Aerospace Education Activity Reports

GOAL: To submit complete and timely Squadron Aerospace Education Activity Reports

MEASURE: IAW CAP 280-2, The Squadron AE Activity Report will be completed and filed on time to Wing DAE.

DUE DATE: 31 December 2016

2. Aerospace Education Awards

GOAL: To submit for one of the four AE awards (such as Brewer, AEO of the year, AEO Teacher of the year) to wing headquarters.

MEASURE: Copy of the forwarded AE nominations will be placed in the squadron AE SUI continuity book.

DUE DATE: As appropriate considering deadlines of nominations.

NOTE: We did not submit an AEO in 2015. We hope this is not the case for 2016. All AEOs (1 Primary, 1 AEX Officer, and 1 secondary) assigned to Squadron either resigned (due to job or illness) or transferred in mid to late 2015. This will be a tough task to follow through on in 2016 if we do not have a worthy candidate as we are currently devoid of a primary AEO assigned to the squadron as of October 2015.

3. Aerospace Education Programs (STEM)

GOAL: IAW CAP 280-2 (Aerospace Education Programs Internal): Establish Internal AE Program in spirit of STEM - IAW CAP 280-2 (AEX Programs): Conduct valuable and educational AES lessons which motivate our youth towards STEM careers in aviation, aerospace or our country's military defense.

MEASURE: The squadron will utilize methods of a survey at the end of 2016 to assess cadets' knowledge and motivation levels of AES classes; In particular, squadron has access to/possession of STEM materials provided by NHQ. Classes will be conducted

periodically to adhere to CAP 280-2 Aerospace Education Excellence (AEX) Program spirit of intent - (IAW CAP 280-2: 3.b. AE Products and Services)

DUE DATE: 15 December 2016

NOTE: Again, all assigned AEOs, and especially our AEX/STEM Lead, Capt Pete Higgins' resignation due to illness will negatively impact CO-173 ability to accomplish this task in 2016 without major assistance from Wing, Group or another Squadron.

4. Aerospace Education in Other Community Organizations

GOAL: Attend International Air and Space Symposium

MEASURE: Squadron will again host International Space Symposium Guest Speaker prior to Parker Cadet Squadron cadets attending a day during International Space Symposium in Colorado Springs in Spring 2016. Cadets will then write After Action Report on findings (lessons learned).

DUE DATE: Report to Squadron CC by 1 May; Report to Group AEO by 15 May

5. Aerospace Education Members

GOAL: Increase AEM members in Wing

MEASURE: Recruit one (1) member into active standing

NOTE: Again, we lost 3 AEOs in 2015 and have (0) assigned as of 22 October 2015. As we stand with only 8 Senior Members, it will be a tough task to recruit and assign a new Primary AEO without experience.

6. Aerospace Education Officer (Commander)

GOAL: Improve Squadron Track 215 rating by one level by end of FY 2016

MEASURE: Complete Technician Track and Yeager Award

NOTE: it was Squadron CC intent to accomplish in 2015. Instead, Commander accomplished Levels I and II, and Safety Officer Rating in 2015 (leaning heavily on assigned AEOs in 2015 to accomplish Technician track upgrades.) Will strive to accomplish in 2016.

PLAN OF ACTION DETAILS:

Monthly Aerospace Lessons:

1. A key and necessary portion of the aerospace education program for 2016 like in 2015 is to include a more focused effort upon educating the cadets on various historical prominent individuals who have contributed significantly to aviation or aerospace history or military history. A minimum of 5-10 minutes will be used as an “attention getter” at the start of every aerospace class each month to present a lesson on a historical figure (such as Billy Mitchell, Lance Sijan, Ira Eaker or others) in an effort to not only educate cadets on the importance of the aerospace history and legacy that occurred to secure our freedom, but to also establish a recognition of the various awards that can be earned through the cadet career.
2. Please see below for a schedule topical listing of aerospace classes that will be taught for 2015.

January 2016 - Lift and Thrust

- Synopsis -- Teach cadets why an airplane will fly. Four forces of flight.
 1. Assemble 3 various models of airplanes.
 2. Attempt a distance record.
 3. Test to see which one will fly the greatest distance with a discussion on why

February 2016 - Airports

- Synopsis - Leave cadets with an understanding of how airports operate.
 1. Various parts of airports.
 2. Runway markings, signs, and lights
 3. ATC and communication with control towers

March 2016 - Sectionals

- Synopsis -- Teach cadets how to use sectional and what they are for
 1. Compare sectionals to WAC and to Terminal Area charts.
 2. Put cadets into groups and have them plan a route as a team
 3. Have the cadets present their plans

April 2016 - Air Environment Lesson & International Space Symposium

- Synopsis – (Internal) Teach cadets about the earth's atmosphere in relation to weather; (External) Host guest speaker (lesson) and attend Space Symposium (practical exercise)

1. atmospheric layers
2. Air composition movement (cloud formations and movements, air mixture, etc.)
3. Stability versus instability
4. Space flight and exploration
5. Future of manned/unmanned space flight evolution

May 2016 - Flight

- Synopsis – STEM activity to include basic overview on building aircraft and basic flight

1. Different parts of an aircraft
2. 4 forces of flight and 3 axis of aircraft and movements around the axis
3. Video clip of flight

Explain how to get flying (O-flights, flight training through a flying club, Flight Academy, etc.)

June 2016 - Flight careers

- Synopsis – Further motivate and encourage aviation by exposing them to the many career choices involving flight.

1. Demand for pilots and opportunities available
2. Civilian pilot careers (Capt Tanya Gatlin)
3. Military flight careers (Lt Col Hauff & Brig Gen Taco Gilbert – Former Commandant USAFA)

July 2016 - Solar system

- Synopsis -- Teach and show how the solar system works using the link below.
<http://www.pbs.org/wgbh/nova/space/tour-solar-system.html>

1. Tour the solar system
2. Illustrate orbital movements and explain perigee and apogee
3. Explore desired planets

August 2016 – Stars

- Synopsis -- Teach and display how to use and fly the squadron's RC aircraft.

1. Give power point on components and how to use it.
2. Teach them different types of RC crafts and drones.
3. Allow practice sessions

September 2016 - Satellites

- Synopsis – Have guest speaker from Space industry visit and explain satellites, the parts and different kinds of satellites and their importance.

1. Observe them draw out a satellite with type and parts listed (in groups)
2. Explain different/necessary components of a satellite (power source, uplink, downlink, command, data, telemetry, etc..)
3. Explain different types of satellites

October 2016 - Rockets

- Synopsis -- leave cadets with an understanding of rockets and how they function.

1. Teach about rockets
2. Give PowerPoint on structure and uses
3. Build a small model rocket

November 2016 - RC Aircrafts

- Synopsis -- Teach cadets about stars and their lives

1. Show PowerPoint on stars
2. Teach about lifespan of stars
3. Talk about constellations
4. Have cadets make continuations with marshmallows and toothpicks

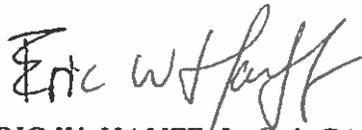
December 2016 - The Orion Mission

• Synopsis -- Teach the cadets about the future Orion mission and NASA's goals with it.

1. Show video from Lockheed Martin on launch

2. Teach about the mission, rockets, plans and time for when the mission will take place

*** AEPOA Drafted by Squadron Commander as Squadron Secondary AEO. With exception of Sqn/CC, there are currently zero primary AEOs assigned. We plan to remedy this issue by end of calendar year, 2015.**



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