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Bear Facts

The Official Magazine of California Wing Civil Air Patrol



YOUTH AVIATION INITIATIVE

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Col. Alan Ferguson
California Wing Commander

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Commander's Corner

By Col. Alan Ferguson, CAP
Commander, California Wing



I am coming to the end of my term as your Wing Commander; the changeover happens at CAWG's Conference on 21 September. I am very proud of you and all that you have done in these past 3 ½ years: the training and the missions you have performed to help and safeguard California, the cadet pro-



grams you have made happen to grow our cadets, and the Aerospace Education you have promoted for the betterment of our cadets and students across the state. I thank you from the bottom of my heart for all the time and talents you have contributed to our missions. But we still have a ways to go and we still make mistakes. Here's a recent example where we need to improve.

Recently a member had invited a university professor and grant writer to a unit meeting. The professor had attended her first squadron meeting and was interested in joining CAP. However, during the second meeting something occurred which might have dissuaded her from joining our organization. The professor was introduced to the squadron members and turned over to a long-time CAP member for their new member conversation mentorship. Things seemed to be going on track until it was overheard that the professor was being told "you are not a fit for our organization" if you are not interested in pursuing emergency services. The professor explained

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ON THE COVER: The Youth Aviation Initiative may enable cadets to fly for CAP, and it may eventually aid in transitioning them to aviation careers that may include flying military aircraft.

YOUTH AVIATION INITIATIVE:

Funding America's Future in Aviation

By Russell Slater

Beginning next year, Civil Air Patrol will use federal funds from the U.S. Air Force to implement a program designed to help solve a national pilot shortage.

CAP cadets around the nation are enthusiastic about the initiative. Its purpose is to allow them to learn how to fly earlier, enhancing their experience and giving them a head start as they embark on military, commercial and other aviation-focused careers.

The Initiative

“Civil Air Patrol is working with its partners on many fronts to encourage America’s youth to pursue aviation careers,” said John Desmarais, director of operations at CAP National Headquarters. “CAP has a long aviation history, and as needs for more aviation-oriented youth are realized, we are expanding existing programs as well as fielding new ones to address the challenges.

“As we move into fiscal year 2019, CAP will be working hard to implement a significant initiative funded by the Air Force to attack the problems on several fronts,” Desmarais said.



Cadet 1st Lt. Aaron Loya, cadet commander of the Georgia Wing’s Bartow-Etowah Composite Squadron, prepares to solo in a glider. Photo credit: 1st Lt. Aaron Loya, Georgia Wing

Those measures include:

- \$1 million for formal flight instruction of CAP cadets, which is expected to lead to about 240 cadets soloing and another 60 earning their Federal Aviation Administration private pilot certificate;
- \$400,000 for CAP to provide cadet orientation flights for Air Force ROTC and Air Force Junior ROTC cadets;
- \$500,000 for STEM (science, technology, engineering and math) program support that CAP will use to field more kits for squadrons to employ as part of internal aerospace education programs and for teacher members to use in their classrooms. The STEM money will also support maintaining and updating kits to sustain the program; and
- \$500,000 to support career exploration activities for CAP cadets.

CAP offers more than 50 National Cadet Special Activities that enable participants

“It felt like I had the entire world at my fingertips. It is unlike any other feeling in the entire world.”

— Cadet Capt. Kevin Martinez, Bay Shore Composite Squadron, New Jersey Wing

to explore careers in the Air Force as well as the aviation industry by becoming a pilot, building and designing airplanes, managing airlines and serving in space command or pararescue.

“We’re also working hard to expand relationships with industry partners like Delta and American airlines,” Desmarais added. “This is a developing industry-wide issue, and by working together we can not only encourage cadets to consider pursuing military careers, but also either directly or as a step after the military go into commercial aviation. This also incorporates opportunities with accredited university aviation programs as well, encouraging CAP cadets to explore all opportunities.”



Blue water buckets in hand, participants in Week 1 of the Johnson Flight Academy douse a cadet who just finished his solo flight. (Johnson Flight Academy, which occurs each June in Southeastern Illinois, has provided flight instruction to CAP cadets for 50 years.) The ritual is common at the academy, where hundreds of cadets have learned to fly.

Expanding Opportunities

Wendy Hamilton, manager of cadet career exploration programs at CAP National Headquarters, predicts the initiative will help enhance the organization’s contribution to the aviation industry.

“We’re starting to work with the industry to connect cadets directly to opportunities for pursuing careers in aviation-related fields,” Hamilton said. “The program will expand opportunities for our cadets, such as helping them get their private pilot’s certificate and having the funds to get to that milestone.”

CAP cadets impress aviation-related businesses with their focus and experience.



New Jersey Wing Cadet Capt. Kevin Martinez takes flight during the National Flight Academy in Shawnee, Oklahoma. Photo credit: Cadet Capt. Kevin Martinez, New Jersey Wing

“Cadets are vetted, and are getting out there and doing the work,” Hamilton said. “This program will help them take the next big step. Youth development programs, not just flying on the weekends, but leadership development, character development, good moral groundings, physical fitness training, all of it plays hand-in-hand. Cadets know how to work as a team.”

Cadets with Potential

Cadet Chief Master Sgt. Emma Diane Herrington of the Texas Wing is looking forward to the initiative. “I believe that this program can help answer the needs of the national pilot shortage, and I can’t wait to do what I can to help,” she said. Herrington has 40 hours of flight time and is in the final stages of obtaining her private pilot certificate.

Cadet Capt. Kevin Martinez of the New Jersey Wing heard



Cadet Chief Master Sgt. Emma Diane Herrington of the Texas Wing flies at the Shirley Martin Powered Flight Academy in Nacogdoches, Texas.

about the initiative through his flight instructors and CAP senior members.

“I think it is something I would be deeply interested in, as it helps people like me achieve lifelong goals and aspirations that many think are unreachable,” Martinez said. “Some people may not realize the incredible cost of maintaining flight training, and this program would help me and others like me out immensely in that aspect. I think this is just the program our nation’s youth needs to unlock their true potential.”

Martinez’s flight experience dates back to 2014, when he received his first cadet orientation flight at 12. Fascinated with aviation from an early age, Martinez credits his membership in CAP for opening the door to a new world of opportunities. He has received four powered orientation flights as well as two glider orientation flights.

During the summer Martinez logged 11.7 hours of flight time in nine days at the Southwest Region Powered Flight Academy in Shawnee, Oklahoma. “By the end of the week I soloed for the first time! Although it was just a pattern around the one-runway airport, it felt like I had the entire world at my fingertips. It is unlike any other feeling in the entire world.”

Cadet 1st Lt. Aaron Loya, cadet commander of the Georgia Wing’s Bartow-Etowah Composite Squadron, attended the Texas Wing Glider Flight Academy in 2016 and the Southeast Region Glider Academy this summer, where he flew solo for the first time. He recently began working toward obtaining a powered flight certificate, logging about five hours so far.



Civil Air Patrol Cessna 172s line the tarmac during Week 2 at Coles County Memorial Airport in Mattoon, Illinois. The airport is the site of CAP’s oldest National Flight Academy — the Johnson Flight Academy. Photo credit: Maj. Greg Hoffeditz, Illinois Wing



Maj. Evan Youngblood, commander of the Illinois Wing’s Shawnee Composite Squadron, provides ground instruction at the Johnson Flight Academy. This was Youngblood’s first year at JFA, where he served as a certified flight instructor. Photo credit: Maj. Greg Hoffeditz, Illinois Wing



Powered flight students at the Johnson Flight Academy maneuver a CAP Cessna 172 into its parking spot. Note the yellow T-shaped lines painted on the flight line as cadets attempt to line up the plane so they can tie it down. Photo credit: Maj. Greg Hoffeditz, Illinois Wing

These cadets and many others stand ready to reap the benefits that will result from the Youth Aviation Initiative. As multiple doors open for opportunities to better their education and future careers, they will continue to work on personal self-improvement while contributing to CAP’s mission of service to communities and the nation. ★

*Photos courtesy of CAP National Headquarters
Reprinted from CAP Volunteer Magazine, Fall 2018*

Why I Love Checklists

*Lt. Col. David Oberhettinger, CAP
California Wing Asst. PIO*

Editor's Note: Lt. Col. Oberhettinger is the Bear Facts editor and the Chief Knowledge Officer (CKO) of the NASA/Caltech Jet Propulsion Laboratory (JPL). JPL is this world's leading development and operations center for the robotic exploration of the solar system and deep space. We have visited all the planets, placed four rovers on Mars, landed by a liquid methane lake on Titan, discovered 26 Earth-like exoplanets, and Voyagers 1 & 2 have left the solar system and are operating in interstellar space.

The following article was reprinted from NASA's CKO News, from a series of articles titled My Best Mistake.

So far, my life and career have weathered many mistakes. But the best (that is, most survivable) lessons learned come from serious mistakes made by others. Politicians and physicists may agree. Otto von Bismarck once remarked, "Fools say that they learn by experience, I prefer to profit by others' experience." Werner Karl Heisenberg narrowed it down even further: "An expert is someone who knows some of the worst mistakes that can be made in his subject, and how to avoid them."

Here is one of my best mistakes. The year is 2004 and I'm at an altitude of 8000 feet in Banning Pass, ten miles north of Palm Springs Airport, with two passengers in my Cessna Cardinal. I'm reading my Descent for Landing checklist, as I'm about to radio the airport tower for landing clearance. Suddenly, dense black smoke begins to fill the cockpit. I flip the checklist over and follow the five steps listed on the back under *In-Flight Electrical Fire*:

- (1) Master Switch to Off
- (2) Other Switches (Except Ignition) to Off
- (3) Close Vents/Cabin Air
- (4) Extinguish Fire (In this case, I isolated a faulty transponder.)
- (5) Ventilate Cabin

These steps took maybe 90 seconds. Then we descended to an uneventful landing. The crisis hardly caused a significant increase in heart rate, because I just followed the checklist.



NASA pilot Dave Wright reviews pre-flight checklist prior to take-off. Photo Credit: NASA



Lt. Col. Oberhettinger completes a pre-flight inspection.

The formal checklist derives from a lesson that was learned on October 30, 1935, during a test flight of the B17 bomber prototype. The pilots attempted to take off with the tail wheel locked; this prevented the wheel from swiveling and resulted in a crash and the death of both pilots. From then on, Boeing provided a printed


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Checklist

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checklist with each production version B17. (Previously, pilots were expected to make their own checklists.) Today, all airplane manufacturers provide a pilot's handbook containing checklists specific to the model of plane. Most contributions to the content of airplane checklists come at the cost of someone's life. In *Law Abiding Citizen*, a 2009 film, we hear a line, "Lessons not learned in blood are soon forgotten."

The development and operation of spaceflight missions also involve complex procedures in which an error—such as missing one step in a procedure—can be catastrophic. Hence, we use checklists covering everything from procedures in system test plans to reminders on how to restore backups to our computer. JPL is presently operating 31 major spaceflight missions, and because we are very busy with another 22 major spacecraft in development (e.g., design, test, mission planning), we cannot miss a single step with a spacecraft like the \$2.4 billion Mars 2020 rover. With so many risks that are "unknown unknowns" in NASA programs and projects, checklists assure adherence to routine practice and help limit risk to the more novel elements of a mission.

Why do I love checklists? Because in 2004 a checklist helped me avert what could have been some serious unpleasantness. And because rather than letting my imagination run amok to my detriment (otherwise known as "panicking"), effective use of checklists allow me to direct my imagination to more productive purposes. 

High Flight

*Oh! I have slipped the surly
bonds of earth*

*And danced the skies on
laughter-silvered wings;*

*Sunward I've climbed, and
joined the tumbling mirth*

*Of sun-split clouds - and
done a hundred things*

*You have not dreamed of
- wheeled and soared and
swung*

*High in the sunlit silence.
Hov'ring there*

*I've chased the shouting
wind along, and flung*

*My eager craft through
footless halls of air.*

*Up, up the long delirious,
burning blue,*

*I've topped the windswept
heights with easy grace*

*Where never lark, or even
eagle flew -*

*And, while with silent lifting
mind I've trod*

*The high untresspassed
sanctity of space,*

*Put out my hand and
touched the face of God.*


*Pilot Officer Gillespie Magee
No 412 squadron, RCAF
Killed 11 December 1941*

Commander's Corner

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that she is primarily interested in volunteering by grant writing for the organization; unfortunately, this member only reiterated to her that we are an "air rescue squadron" and therefore the professor wouldn't be a good fit.

We are not the same CAP as we were 10 or even 5 years ago, and we need to change more and faster. We need to change our thinking and actions to stay relevant for tomorrow. Turning away potential volunteers because they don't wish to train as air crew doesn't make sense. We need all kinds of people doing all kinds of good work in the name of CAP. You need to think of the needs of CAP at-large (not just at your unit) – what does Wing and National need to accomplish and how can my squadron help accomplish this big picture. If a person with specialized skills shows up at your unit, welcome them into the squadron and contact higher headquarters to help find the perfect fit for the potential member.

I challenge you to recruit somebody that doesn't look like you and may have different talents to help your squadron, and all of CAP, to progress. We need diversity in our membership, talents, and thinking, and we need it now. 



A Day in the Life of an Aerospace Education Officer

Lt. Col. Randall Carlson, CAP

Editor's note: This "Day in the Life" snapshot of the AEO role is another in a series intended to highlight some of the avocational opportunities available to CAP members.

The phone rings and you are asked if it is possible for you to address a group of district school teachers about CAP and Science, Technology, Engineering, and Math (STEM) next Friday? It's the phone again and you are asked if you can help a newly assigned squadron Aerospace Education Officer (AEO) get an AE program together for a Wing Staff Assistance Visit (SAV) in two weeks at their unit? These are real questions AEOs answer and the trips they take above and beyond just doing their job. The life of an AEO is never dull, and there is always something to do.

A day in the life of an AEO builds upon itself. No matter at what level you find yourself, there is a lot to do as you go from the unit, to the group, and on to wing and region levels. You could possibly end up at the National HQ/AE level as an AEO, but the building blocks are all the same. It helps if you love to see the light of understanding in a person's eye, or a smile from ear to ear after a first glider/powered orientation flight, or watching a cadet get lost in the clouds flying an RC airplane.

AEOs open doors to all that a cadet can be-- and some doors they do not even know exist. I have met so many parents who have begged me to help their son or daughter find something to spark their imagination or something they can build a career upon. AEOs can offer them the dreams of applied STEM and its hundreds of possible career paths. I am proud to be an AEO as I educate and help others discover their dreams.



It was late in the year 2006 when my grandson, whom I was raising, said "... I want to join CAP". Having served some forty years in the U.S. Air Force (USAF) and Air Force Reserve, I was ready to retire. When Luther added that hook many of us have heard, "...but I want you to join with me...", we both joined CAP. I didn't know much about CAP: when I joined the RMR-CO-099 unit, I asked the question almost all new senior members ask, "...is there anything I can do to help?" The answer was, "Why yes, we need an aerospace officer." That sounded interesting and almost instantly I became the unit AEO. I asked, "What does an AEO do," and I was pointed to several CAP regulations and a pile of papers in a drawer, and I was told to "...go figure it out."

It is not the best way to do things, but lots of AEOs also begin their careers this way. Within 60 days of being appointed a unit AEO, I was asked where the unit Annual AE Report was, and why didn't the Wing Director of Aerospace Education (DAE) have it? My predecessor had kept a few notes and nothing more. The Annual AE Report documents what has been done in the unit's AE program over the year, as well as what related cadet programs activities linked to AE were accomplished. After much research, I filed a report within two weeks. A lesson learned: record things as you go along, and keep records up-to-date. I began logging all the unit's activities related to AE in earnest. These included all orientation flights, radio-controlled (RC) flying events, and related AE activities in the unit, as well as AE field trips. My Colorado Wing (COWG) DAE took

me under his wing and gave me enough materials to get a successful AE program off of the ground.

In 2007 I attended the National AEO School to learn just what an AEO's job really was. While there I learned the importance of an AE Plan of Action (POA), and learned to mirror it with a CAP AE Activity Report. If I did this documentation right after the events happened, the annual report was building itself all year long, and the annual report was done with little effort the next and subsequent Decembers. I learned that this practice enabled me to face a Staff Assistance Visit (SAV) inspection any time with little or no prior notice.

In late 2007, while retaining my AEO role, I was appointed the RMR-CO-099 unit commander. As a commander, you dread wing SAVs and other inspections as they make or break officers. I have always enjoyed making things work, fostering cooperation between areas and individuals, and working toward a common goal. In reality, no one likes an inspection. Both as an USAF Senior NCO and later as an Operations Officer/Unit Commander, I decided to always be ready for an inspection and not to endure a repetitive flurry of activity getting ready for them. The tool for this is the Inspector General's (IG's) own checklist. I developed the first USAF continuity binder in 1988 based upon the IG checklist. If you just do what it asks, document that all the time, you can face any inspection with no prior warning and get at least a satisfactory rating.

A year later, I was appointed the Colorado Wing (COWG) Director of Aerospace Education. I made it a point to run annual COWG AEO training seminars and stressed the need for continuity binders to incorporate the SAV/IG tasks into POA procedures in all 32 COWG units. As a result, my job as the COWG DAE was made much easier when compiling the wings' year in review Activity Report for submittal to Region and National HQ AE.

In the USAF, an Operational Readiness Inspection or unit inspection could be one of the most distasteful events possible. This cautionary carried over into my CAP career. My approach to this was validated when as the COWG DAE, the Wing was scheduled for a CAP/USAF Inspection while I was at Pensacola Naval Air Station teaching at the National AEO School. I had left all the answers to the questions, and my continuity binders, in Colorado. The wing commander said "you know what happens if AE fails, right? I smiled, and told Col. Phelka it was covered. The assistant DAE stood in for me, and the Wing AE program received the highest rating possible with 4 lauditories. Continuity binders work!



2018 National AEO School, Pensacola, FL.

No matter the level of AE you are supporting, you have the power to dream, to find new and interesting AE and CP related activities for your unit's personnel to enjoy and learn from. Interestingly, senior members enjoy many of the same fun activities as cadets, such as building and flying radio-controlled planes and quads, building and flying rockets, and touring air museums-- and of course the "Fizzy-Rocket."

I personally have a bag of AEO tricks that I take on the road annually when I speak at AEO schools, wing and national conferences, teacher and STEM workshops, and school assemblies. Since 2007 I have been assigned to the National HQ AE Team, writing new AEX workbook curricula and developing new STEM kits. Everything I have learned in AE has come from that first assignment in a composite squadron in Colorado. It is a given that you will have to search for some of the answers you seek. But along the way you will discover new and interesting things that need to be shared with all of the AEO family and the entire CAP membership.


For example, I authored the Model Airplane and Remote-Control (MARC) Program for CAP under the AE Aerospace Education Excellence (AEX) banner in 2011-2013. It grew into a National Cadet Special Activity Program, as well as AEX. To date, I have directed or assisted directing in 15 NCSA MARC flight academies. I dared to dream this because of my love of flight, building model airplanes, and (in the 2010 time frame) a lack of this in CAP. I asked a senior CAP officer why CAP had no model airplane program, and he told me "...no, but we should, so go create one". So, thank you, General Carr, we have one.

The year 2018 in the life of this AEO began with a phone call about speaking at the Huntington Beach Teacher STEM fair on March 1 with short notice. Capt. Douglas Miller and myself met with about forty teachers and introduced them to CAP and CAP/AE STEM kits. From that evening, 4 teachers became Aerospace Education Members (AEMs).

Mid-June found me teaching at the National AEO School at Pensacola, FL. I am usually asked to speak on MARC or on the newest AEX Activity Book, *Women in Aviation Vol. 1 (WIA-1)*, that I authored. Writing that book took about 16 months. After leaving Pensacola, I went directly to March Air Reserve Base, where I was co-directing the National Cadet Special Activities (NCSA) MARC RC Flight Academy that I had been working on setting up over the last 12 months. Encampments and NCSA events do not happen overnight or without a lot of planning. The event was successful, there were no cadet injuries, and I had completed my 15th NCSA Event as a director.

When WIA-1 was completed, I immediately began working on WIA-2, so that work is always going on in the background. In mid-August I helped with the Great Lakes Region (GLR) AEO School at the Air Force Museum in Ohio. My task was to update AEOs on STEM and AEX workbooks (specifically WIA-1) and set up a radio-control fun-fly at a local Academy of Model Aeronautics (AMA) club's flying field. I had to contact the club, get approvals, set up feeding arrangements or the AEO School BBQ there, and ensure there were enough buddy-boxes for the RC training planes and RC instructor pilots to allow the AEMs and AEOs to experience RC flight. We had 60 AEMs and AEOs in attendance.

The final 2018 AE event for me was the National Conference in Anaheim, CA, one week after the GLR AEO School. The high point was the "open house" portion, where we were able to show AEOs, commanders seniors, and cadets what AE has to offer.

As I write this, we are going through WIA-2's final edits at National HQ, and it is well along to becoming available in the spring. There are 24 women in the WIA-1 and WIA-2 volumes. I have had to contact many of the featured women personally for approvals to use their photos, as well as get quotes from them that will encourage our cadets. Last week I communicated with Patty Wagstaff (U.S. national aerobatic champion); this morning with Dr. Sheila Widnall (the first female Secretary of the Air Force). This then is a day in the life of this AEO, and the job is certainly never boring or dull. 

***SUPPORT OUR CADETS . . .
THEY ARE OUR FUTURE!!!***

Aircrews Reflect on the Camp Fire Disaster Recovery Mission

2nd Lt. Jerry Camp, CAP

Starting on November 8, 2018 the whole nation watched the news reports of the Santa Ana wind-whipped firestorm that enveloped Paradise, CA and the surrounding area in Northern California. The Camp Fire, as it became known, was the most destructive fire in California history. Over 80 lives were lost, and 13,972 residences, 528 commercial structures, and 4,293 other buildings were destroyed, according to the California Department of Forestry and Fire Protection (CalFire).

Two days later, while the fires were still burning, the Federal Emergency Management Agency (FEMA) reached out to the Civil Air Patrol California Wing (CAWG) to initiate a disaster recovery effort. On November 16, aircraft and aircrews gathered at Sacramento Executive Airport where Cessna 182s equipped with the Garmin G1000 glass flight deck were fitted with WaldoAir Corp XCAM Ultra50 3D imaging/infrared photo pods. The software on the infrared system gave the mission pilots the courses to fly to ensure complete coverage of the area to be documented.

Due to weather, smoke, haze, and the ongoing firefighting operations, the first flights did not launch until November 17. Mission pilot Maj. Georgios Michelogiannakis from the Amelia Earhart Squadron 188 described his first sortie on that first day:

“My first flight for this mission was the very first day when we were called to take infrared pictures of the town of Paradise. Since the fire was ongoing and the temporary flight restriction was active, we weren’t allowed in until it was dark. Flying in the dark in marginal visual conditions with very few outside visual references (lights) was definitely one of my most challenging flights...using primarily the rudder to preserve the ground track the photo equipment asked for, which was a challenge by itself given the tight margins the equipment was expecting. As we were flying back (to Sacramento), the photographer reviewed the photos and said that it looked like there were ‘a thousand little fires.’”

On December 1, CAWG aircraft fitted with the imaging pods began flying 3D photo sorties. According to James Summerville, CEO of WaldoAir Corp:

“These 3D models will be used by FEMA in disaster recovery efforts, debris volume calculations and classification, along with fire mitigation experts, who will determine the effectiveness of mitigation techniques on certain structures.”

Maj. Mark Sobel, Group 6 Operations Officer, described flying with the 3D imaging pod:

“To get 3D images...requires flying a series of circles. First, they define the area and set up a line or multiple lines spaced accordingly. The line becomes the center of the circle and the circle starts on one end. There are about 15 circles (where the image below shows only the current circle) covering each of the 3 lines. The circles are offset from each other slightly, providing the overlap spacing.”

Chaplain Maj. Paul Vance, from Squadron 85, flew two sorties on December 2. He described the sorties this way:

“The flying was extremely demanding, comparable to flying a curving ILS for 3 hours straight. The cameras were quite amazing... they would trigger themselves only when you were in the right position



WaldoAir Corp XCAM Ultra50 3D imaging/infrared pod on a CAP G1000 C-182. Photo credit: Lt. Col. Noel Luneau

for the next shot. If you strayed off the creeping circle track (image below), the camera would stop shooting until you re-centered the needles on the tablet computer in the cockpit and repeated the missed section.”

Capt. Louise Mateos, from Squadron 10, who had just qualified as a mission pilot earlier this year, flew on December 2, 2018 and said:

“The damage we saw was heartbreaking—just imagining the lives lost, disrupted or forever changed. I don’t know how a community can come back from that.”

Following FEMA tasking of CAWG to take damage assessment pictures of the Camp Fire in Northern California, CAWG flew 37 sorties with 66.0 flight hours and generated many gigabytes of data covering the entire burn area and staging areas. This was the first time that CAWG utilized the WaldoAir XCAM



The WaldoAir Corp Ultra 50 navigation tablet. Pilots must fly exact patterns to collect the proper images for processing into 3D images. Photo credit: Maj. Mark Sobel




This flight track shows the exact circles and flight path flown by mission pilots to collect the images. Photo credit: Chaplain Maj. Paul Vance, taken from ForeFlight and overlaid on Google Earth



The devastation captured by the WaldoAir Corp. camera pod. Photo credit: Capt. Louise Mateos

Ultra 50 3D sensor to produce both 2D and 3D imagery, and this was only the second time that CAP had used this as our imagery collection system. Since the Northern California fires were a Presidential Declared Disaster (DR-4407), participating CAP members are eligible for the Disaster Relief Ribbon with “V” Device.

The photo above shows some of the devastation of the fire. WaldoAir CEO, James Summerville, spoke of “the fickle nature of wildfire,” referring to the homes that were left standing while most of the neighborhood was devastated.

A link to a video WaldoAir Corp. created from the images acquired by CAWG aircrews is available at https://youtu.be/N9FxsII_mP. 

Secretary of the Air Force reflects on 70 years of the Air Force Auxiliary

Lt. Col. Crystal Housman, CAP



ANAHEIM, Calif. – Secretary of the Air Force Heather Wilson reflected on Civil Air Patrol’s seven-decade history as the civilian auxiliary of the U.S. Air Force along with her personal connection to the organization when she addressed CAP members Aug. 25, 2018, at the organization’s National Conference in Anaheim, California.

An audience of 700 members and guests listened as Wilson told the story of her grandfather, George C. “Scotty” Wilson, who flew in Britain’s Royal Air Force and barnstormed around America before his love of aviation and desire to serve led him to CAP during World War II.

“He joined a group of volunteers,” Wilson said. “He towed targets and chased submarines off the coast in various parts around New England.”

Wilson’s grandfather was one of 125,000 CAP subchasers during the war. They found 173 German subs off America’s coast and attacked 57.

The organization was founded Dec. 1, 1941, predating the Air Force’s creation in September 1947. CAP became the service’s official auxiliary when President Harry S. Truman signed Public Law 80-557 on May 26, 1948.

That was the same year George Wilson, who logged more than 1,000 flying hours with CAP, took the helm as commander of CAP’s New Hampshire Wing. He served in the role from 1948-1954.

The aviator passed his love of flying down to his granddaughter, who grew up spending Saturdays in an airplane hangar.

“I saw joy in that hangar,” Wilson said drawing a correlation between her youth in aviation and CAP cadets’ experiences today. Addressing the organization’s adult members she continued, “and all of you here are responsible for what the next generation sees.”

She recalled meeting a nervous CAP cadet at the 2017 EAA Oshkosh AirVenture air show in Wisconsin.

“The young people you work with are learning skills, but they are also way out of their comfort zone ... in a safe place,” Wilson said. “It’s when you’re out of your comfort zone growing up that you’re learning what it means to be a responsible member of the community. It causes young people to grow into better versions of themselves.”

Two of those young people have grown to become pilots on this year’s Air Force Thunderbirds F-16 aerial demonstration team, she said, referring to Lt. Col. Kevin Walsh and Maj. Nate Hotffman.

“That’s not too shabby for kids who grew up flying Cessnas,” Wilson said – a reference to CAP’s fleet of general aviation single-engine aircraft.

From inspiring the next generation of F-16 pilots to training those of today, CAP has a direct impact on the Air Force, she said. The auxiliary flies an average of 200 air defense missions every year throughout the country.

Federal Aviation Administration rules require remotely piloted aircraft to have an escort when they fly outside military airspace. Last year, CAP logged more than 600 flight hours escorting the New York Air National Guard’s MQ-9 Reapers from their home in Syracuse, New York, to nearby military airspace for training.

Turning to CAP’s long-standing work with the Air Force Rescue Coordination Center at Tyndall Air Force Base, Florida, Wilson credited the auxiliary with handling 90-95 percent of the center’s inland search and rescue missions.

“Henry David Thoreau was fond of saying, ‘the only people who ever get anyplace interesting are the people who get lost.’ That goes double for the people who find them,” she said.

The auxiliary has saved 146 lives since the fiscal year began in October.

“That’s 140 people who got to make that phone call home to say, ‘I’m all right. Civil Air Patrol found me,’” Wilson said.

She spoke of the organization’s work with other state and federal agencies, including support missions for the Department of Homeland Security, Drug Enforcement Agency and Federal Emergency Management Agency.


Shortly before her speech, CAP’s Texas Wing was lauded by AFNORTH for its work to provide aerial imagery for FEMA during Hurricane Harvey a year earlier.

As Wilson wrapped her remarks, she defined what the Air Force expects of its auxiliary airmen.

“We expect proficiency at your skills: flying, geolocation, emergency management [and] search and rescue,” she said. “We expect you to be good at what you do. We expect you to be safe in your operation.”

“I also expect you to engage the next generation in a way that is positive and meaningful,” Wilson said, turning her focus back to the 25,000 young people serving in CAP’s cadet program.

Before her speech, Wilson engaged one of them herself.

“Actually meeting the secretary of the Air Force and sitting down and talking with her about our program was such an honor,” said Cadet Staff Sgt. Chloe Hirohata of Billie L. LeClair Cadet Squadron 31 in Riverside, California. “It warmed my heart, really, knowing that someone in such a high position of power ... understands where we come from, understands our program and understands what we’re all about.” 

INTEGRITY EXCELLENCE RESPECT VOLUNTEER SERVICE

“Project Legacy” Will Honor America’s Ace of Aces

Chief Master Sgt. Noel Furniss & Chaplain Maj. Michael L. Morison, CAP

Redwood Empire Composite Squadron 157 in Santa Rosa and Martin Search and Rescue Composite Squadron 23 in Novato are hard at work on “Project Legacy,” a cadet community service project honoring a World War II ace. Led by Chaplain Maj. Michael L. Morison and Anthony Hamill, the Squadron 157 Aerospace Education Officer (AEO), a permanent display at Hamilton Field History Museum in Novato will be established to depict the exploits of United States Army Air Corps (USAAC) Major Richard Ira Bong, Medal of Honor (MoH) recipient.

Major Bong was one of the most decorated American fighter pilots and the country’s top flying ace in World War II, credited with shooting down 40 Japanese aircraft, all with the Lockheed P-38 Lightning fighter. Major Bong was a member of the 49th Fighter Squadron, 14th Fighter Group, at the local Hamilton Army Airfield in Novato, which was where he learned to fly the P-38. He died in California while testing a jet aircraft shortly before the war ended.

The cadet-built permanent display will feature the MoH recipient’s flying accomplishments, with an emphasis on a hand-built model of Major Bong’s P-38 Lightning. It will include interesting backstories and explain the unique features of this aircraft’s design, development, and performance. The project will allow



Raymond Dwelly, Director, Hamilton Field History Museum, and Chaplain Maj. Michael Morison, Deputy Chaplain Pacific Region and Assistant AEO for Squadron 157, agreeing to collaborate on Project Legacy for the museum. Photo credit: Susan Rowe Morison



The top-scoring American ace of World War II, Richard I. Bong, was credited with 40 aerial victories.

the cadets to work with not only the Hamilton Field History Museum, but also with the P-38 National Association Museum at March Air Reserve Base in Riverside, CA and the Richard I. Bong Veteran's Historical Center in Superior, Wisconsin.

“Project Legacy” is viewed as an innovative aerospace education project. Squadron cadets, seniors, and external resource personnel met at the museum on January 14 to officially launch the project. Lt. Col. Anthony Hamill, the Squadron 157 AEO, will be working with the cadet team to build the model of the P-38 from balsa wood with a 48-inch wing span. This team will design and build the permanent display for the P-38. Maj. Morison will work with the adept team researching, designing, and building the permanent exhibit on Major Bong. The Richard Bong Veterans Historical Center in Superior, WI, has committed to collaborating with the squadrons on the project. The National P-38 Association and Lockheed Martin Corporation will also be approached to see if they are willing to collaborate on the project. We are looking at these organizations as resource partners to help provide interesting and esoteric background information, stories, photos, or video clips that can be used in the exhibits. Maj. Morison will facilitate




Cadet Airman Edward Lewis, Squadron 157, learning about the engineering design characteristics of the P-38 by assisting with the building of a balsa model of the aircraft. The aircraft will be part of the permanent exhibit. Photo credit: Lt. Col. Anthony Hamill



Lt. Col. Anthony Hamill, Squadron 157 AEO, describing the donated P-38 Lightning fighter airspeed indicator and engine temperature gauges to squadron cadets. Photo credit: Chaplain Morison

the introductory meeting between the museum directors, and he will fly to the Bong Center in March to visit and perform some research with one of our resource persons.

Chaplain Morison emphasizes that the Bong memorial will be built at “zero cost” to the Squadron and Wing. 

Noncommissioned Officers School Central, Fresno

1st Lt. Jillian Restivo and Cadet Master Sgt. Jacob Grissum, CAP

The Civil Air Patrol California Wing (CAWG) held its third Noncommissioned Officers School (NCOS) of the year on November 16-18, 2018. NCOS Central took place at the California Army National Guard 1106th Theater Aviation Sustainment Maintenance Group (TASMG) Armory in Fresno. Twenty senior members and thirty cadet cadre worked together to train 34 cadet noncommissioned officers representing seven CAWG groups.



Students waiting in line to check in at NCOS Central. Photo Credit: Cadet Master Sgt. Jacob Grissum



Students in one of the many weekend classes. Photo Credit: Cadet 2nd Lt. Leon Lam

CAWG Cadet Programs offers NCOS three to four times a year throughout the Wing in different locations to maximize participation. *The goal of NCOS is to provide cadets with a foundation for the intermediate phases of CAP cadet training. NCOS stresses the fundamental aspects of instructional techniques, evaluation*



The students and the seminar cadre during the graduation ceremony. Photo credit: 1st Lt. Jillian Restivo




Cadet Capt. Andrew Hockel, Cadet Commander, and Cadet 1st Lt. Nikolas Koehn, Cadet Deputy Commander for Operations, discussing the progress of the school. Photo credit: 1st Lt. Jillian Restivo

methods, and intermediate leadership laboratory skills. The Wing also encourages cadets to attend Integrated Leadership Program (ILP) schools to further aid their cadet education and grow as leaders, applying the acquired leadership skills in future CAP activities. Alpha Seminar Leader Cadet 1st Lt. Eric Beal said, “Noncommissioned Officer School offers the cadets a safe environment by giving them a controlled laboratory to learn about leadership and to have somewhere that they can fail and learn from their mistakes. From this weekend, cadets learn valuable lessons that stick with them for the rest of their lives and ultimately assists them throughout their time in Civil Air Patrol.”

Over the course of the weekend, cadets received a variety of instruction which consisted of classroom lectures, drill labs, direct feedback, and a formal leadership evaluation from their seminar leaders. Capt. Brent Restivo, the NCOS project officer said, “Students are educated on instructional techniques, evaluation methods and intermediate leadership laboratory skills which they can immediately implement at their home squadrons. They are learning life skills and regardless of where they go, they will have these fundamental leadership experiences to take with them.” Not only does NCOS introduce the students to their new responsibilities as NCOs and how to be effective in that capacity, but it also helps strengthen the training ability of the cadre as instructors, cross-functional team members, and mentors.



Cadet Senior Airman Jerry Avalos from Delta Seminar in formation as the guide. Photo credit: 1st Lt. Jillian Restivo

In addition to the cadre, students, and staff, NCOS was made successful through the support of the California Army National Guard 1106th TASMG in Fresno, California, providing an area for CAP to train, sleep, and eat comfortably. A special thanks to the executive staff of NCOS-- Commandant Lt. Col. Shawn Lawson, Executive Officer Capt. Brent Restivo, Cadet Commander Cadet Capt. Andrew G. Hockel-- and the support from CAWG. 

***SUPPORT OUR CADETS . . .
THEY ARE OUR FUTURE!!!***

CAP 3.0: Civil Air Patrol's Future, and Small Unmanned Aircraft Systems

Capt. Jeff Rayden, CAP

Small drones are rapidly changing the civil and military aviation domain.

“Drones overall will be more impactful than I think people recognize, in positive ways to help society.”

- Bill Gates

Drones are spurring a technical revolution within the aerospace community at an explosive rate. Unlike the era of the early aviation pioneers, unmanned aerial systems (UASs) are being developed and deployed at an amazing pace. The hastily shifting UAS environment, plus astonishing economics, are creating value that places the reach of the sky into the hands of nearly all. Government agencies face a heavy burden in creating the regulations and enforcement programs needed to protect airspace and the public while promoting commerce.

The public generally perceives that most UAS applications have recently been developed, and that they range from military to hobby uses. Most are unaware that the practical development came from a historical figure: Nikola Tesla, the famed Serbian-American inventor, received a civil patent over 120 years ago for a remote-controlled vehicle system-- long before powered aircraft emerged. Tesla's 'teleautomation' (i.e., the first ever radio-controlled device in the form of a miniature boat) was the basis for today's UASs.

'Fast-forward' to less than a decade ago when drones were either considered very expensive or just a variation on model aircraft. With their game-changing ability to enhance reconnaissance, surveillance, and attack functions, the Global Hawk and Predator military unmanned aerial vehicles cost tens of millions of dollars each. On the other hand, most remote-controlled aircraft you might have found on any weekend at the local model airport had a limited range of a few hundred yards at best, let alone the ability allowing an operator to view the vehicle's surrounding environment as if a pilot was sitting in the cockpit.

Today, low cost small unmanned aircraft systems (sUASs) are proliferating, and their impact are widespread. From monstrous online sellers to local brick-and-mortar retailers, inexpensive and highly capable aircraft are within the financial and operational grasp of almost anyone who has the interest.

Civilian and commercial aerial applications are enjoying new markets, with a potential for economic opportunities and job creation as the burgeoning sUAS industry evolves. Government and military have developed many programs to exploit opportunities and challenges afforded by the advancements. sUAS use can include search and rescue, long-duration scientific research, remote sensing, firefighting, aerial photography, package delivery, land and crops surveying, pipeline monitoring, emergency management, and airborne communications. Implications for security, law enforcement, border patrol, and the military are far-reaching. For instance, over the last 50 years the United States has enjoyed an air superiority that had only been contested by a handful of rivals. Yet, dozens of foreign states are now building unmanned airborne forces that have the potential to threaten American air superiority in ways that once seemed the realm of science-fiction.

Civil Air Patrol, the United States Air Force Auxiliary, has roots stemming from 1940s-era national security and civil defense. After World War II, CAP morphed into an organization focused on emergency services, leadership programs to transform America's youth, and aerospace education geared to the general public. CAP is now poised to undertake yet another makeover by implementing a nationwide set of initiatives to match the changing aerospace environment. While CAP operates one of the largest fleets of single engine piston aircraft (with about 560 aircraft in service), most are unaware that CAP's sUAS contingents have amassed over 1000

airframes. Additionally, CAP has placed hundreds of sUASs within Science, Technology, Engineering, and Mathematics (STEM) training programs and educational devices in classrooms and squadrons throughout the country.

The National Emergency Service Academy, CAP's summer training program, offers an extensive two-week resident unmanned aerial training curriculum for cadets that is taught by top instructors. Expanding the curriculum to senior members and to the wing level is under consideration: for example, CAWG is seriously considering adding a sUAS curriculum to its Mission Air School. These programs emphasize training toward a Federal Aviation Administration Commercial Small Unmanned Aircraft System pilot certificate toward providing rigorous training for CAP sUAS missions. Simultaneously, CAP national headquarters is preparing regulations, rules, and procedures for training and for prosecution of missions, along with integration of a coast-to-coast information technology system.

Member tasking is foreseeable in the near future within all three CAP missions, depending on their ability to prepare for the new roles. Current and potential assignments include:

Aerospace Education

CAP has furnished over 1,050 STEM training kits with flyable drones, including about 500 to schools and local organizations. The CAP Quadcopter STEM kits teach beginners the joy of flying. While cadets and students are learning to navigate the skies, they also will become skilled in teamwork activities, hand-eye coordination, motor skills, and a variety of aeronautical disciplines. Users can even experiment with simple modifications of the quadcopter for drone racing and flying obstacle courses. An adaptation of CAP's materials might be used in teaching UAS foundations of flight, basic aviation, regulations, navigational skills, and safe operation. In addition:

- Outreach to local Academy of Model Aeronautics (AMA) chapters would provide additional resources. CAP already has established a national memorandum of understanding with AMA.
- Commercial enterprises, large and small, are seeking guidance in implementing training for commercial certification, safety programs, and operational procedures similar to those CAP is developing for its fleet and missions.
- Local agencies are seeking to learn how to integrate unmanned aerial systems into their programs while standardizing training, safety programs, and effective operational techniques.

CAP's AE program is well organized, and its leaders are well respected across the nation. Existing CAP and STEM operational training resources are adequate for yet increased public outreach. CAP's aerospace education members present a great asset and might be best suited to rapidly reach a larger public audience and help it prepare to penetrate this rapidly expanding aeronautical field.

Cadet Programs

CAP youth potentially have the most to gain from USAF-guided training and mission operation support opportunities. Small unmanned aircraft skills may be learned at squadron and wing events, or even at CAP's summer National Emergency Service Academy's Mission Aircrew School, towards sUAS Mission Technician or sUAS Mission Pilot ratings. At 16 years of age, cadets qualify for FAA sUAS pilot certification and CAP sUAS pilot ratings. 18-year-old cadet U-MTs and U-MPs are able to play an active role in mission prosecution. Training or CAP mission hours, properly logged, may also accumulate towards future civilian employment or military recognition. Given the demand for (and shortage of) appropriately trained sUAS pilots, cadets who seek spending money or summer jobs might find that CAP instruction in airborne photography, aerial inspection, or orthographic mapping can supply them with respected skills and compensation well beyond minimum wage earnings.

Emergency Services, National Security, and Agency Tasking

Perhaps the most significant and crucial demand for CAP members fall within the scope of the Emergency Services mission. It is here that CAP should be able to quickly respond to emerging needs and expand into such roles as:

Fixed Wing Aircraft Search and Rescue (SAR). Drones have special capabilities that augment our Cessna

fleet. They may easily and safely be flown without the same restrictions as aircraft. They may be launched by ground teams at search locations, missions can be flown at night with infrared sensors or below overcast, prosecute searches at much lower elevations, and perform preprogrammed, autonomous, self-guided missions. Ancillary functions currently include instantaneous data, picture, and video downloads. It is easy to also envision the ability to drop cell phones or rescue supplies to those in need, perform direction-finding electronic searches, and high-bird communications relays.

Air Force Assigned Tasking. CAP performs an important functions for the USAF beyond SAR missions. For instance, support to counter drug and other Homeland Security functions may be enhanced by the ability to deploy more CAP assets and teams to supply reconnaissance support in critical areas. CAP Cessna teams also provides services to train the USAF using both friendly and aggressor simulations. As threats continue to develop with readily obtainable, inexpensive, and highly capable drones, CAP has been recently tasked to begin development of drone teams to serve in capacities similar to the Cessna teams.


Federal, State, and Local Agency Tasking. Besides SAR, security, and training missions, agencies look to CAP for airborne photography, mapping, surveys, and inspection of areas and assets. Small, nimble, UASs can monitor areas with very high resolution imagery, help establish and monitor environmental baselines, assist in facility management of critical infrastructure, and produce digital elevation models and more in conjunction with agencies at incredibly low cost. CAP equipment and volunteer teams already provide cooperative expert assistance to government customers at a very great value. In the case of sUAS operation, an hour of operational service to another agency might be provided for less than twenty-five dollars. Compared to the thousands of dollars per hour to operate their own or contract helicopters, agency reliance on CAP may help perform many of the same functions with higher efficacy while saving enormous amounts of taxpayer funds.

Should you wish to train to become a sUAS professional, note that CAP and FAA requirements are in a state of flux as the industry evolves. CAP members should seek guidance within their squadrons, groups, and wing to obtain training from manuals, regulations, books, practical experience, and exercises. Experience (hours) required for CAP sUAS pilot ratings is much less than required for fixed wing pilot certification. However, many find piloting a drone for an hour to be more demanding than flying fixed wing aircraft.

A CAP fixed wing pilot rating requires a FAA Private Pilot certificate with at least 100 hours of experience. That might cost one in excess of \$15,000. To become a CAP mission pilot requires additional hours of logged flight time, which could double the cost. At this time, however, the FAA sUAS Pilot Certificate requires as little as online training, a short 60-question FAA test, and no practical experience or flight testing. The basic CAP rating requires only 7 hours of logged time and has a flight check-out that can be performed in as little time as it take to drain a battery-- about 20 minutes. Obtaining the training from a commercial training school, test fees, and acquiring a drone capable for the basic training and experience (15 hours) needed to become a CAP sUAS Mission Pilot, may be obtained for hundreds of dollars versus tens of thousands required for the CAP fixed wing mission pilot qualification.

CAP missions are operated professionally to military standards and precision. CAP will employ its strict criteria and regulations as well as mission operational technology such as its Web Mission Information Reporting Systems (WMIRS). Flight release procedures to assure safety and coordinated efforts are also in effect. Those desiring to join CAP's sUAS airmen must expect to train and gain experience with systems similar to those aircrews must master.

Deploying a drone for CAP is not a one-person job. Members must acquire crew resource management skills to work as a team, just as aircrews do. Two, if not three, rated members must staff the flight crew as the work is as complex and tiring. Reducing fatigue and maintaining effectiveness may require two pilots so that the pilot-in-command position can be rotated every thirty minutes. Pilots should consider training and CAP ratings for both the common quadcopter and fixed wing drones. Each has its operational advantages, and skill in both types of equipment may provide enhanced value to CAP's sUAS missions.

CAP stands today as a leader in community services with a unique synergy deriving from emergency services, national security, youth guidance, and technology training. In the emerging field of unmanned flight, CAP (and its over 60,000 members) might serve as a catalyst, making a positive impact in new ways. 

NorCal Winter SAREX 2019

*Lt. Col. Brett Dolnick, CAP
California Wing Vice Commander (North)*

During the February Super Bowl weekend, 21 CAP members-- 10 seniors and 11 cadets hailing from Costa Mesa to Auburn-- came together for training in both search and rescue and outdoor survival. This was also a joint exercise with Scouts, B.S.A., with one Scout and Scout parent joining the 21, as well as many CAP cadets and seniors who are both CAP and BSA members. Training was performed in Ground Team Member-3 (GTM-3), Urban Direction Finding (UDF), and Ground Team Leader (GTL) tasks, and many Scout merit badges including the Search and Rescue merit badge.



Maj. Sharif teaching map and compass practical skills. Photo credit: Lt. Col. Brett Dolnick

With a base camp at 3,500 ft. altitude in Pioneer, CA, and field training at 8,000 ft., everyone got practical hands-on training in many different areas. Beginning Saturday morning, training was performed in map & compass use, proper clothing and gear for winter operations, direction finding, GPS use, camp stoves, snow shelters, and search line operations. Everyone got a lot of practice using snow shoes, required with the significant snow pack at the Sno-Park, an abandoned ski resort. All attendees got sign-offs at the Search and Rescue Exercise (SAREX), and two seniors got GTL sign-offs.

This is an activity which has been conducted throughout northern California (NorCal) for over 10 years when snow conditions have permitted. This year's activity was the largest, and it was the first winter exercise to include non-CAP members. It was an excellent opportunity to share training with the Scouts, as many members are active in both organizations and there are numerous similar requirements. It provided a great way for members of both organizations to achieve excellence in winter outdoor skills more rapidly.

In addition to being the largest NorCal winter SAREX held, it was also the wettest. It rained at base camp and snowed at the Sno-Park the entire weekend. When the teams arrived at the Sno-Park on Saturday afternoon, a foot of fresh powder had already been deposited. While we were there, an additional 4 to 5 inches were received. Unfortunately, this led to reduced time at the park and also curtailed flight operations: in prior years we had an aircrew overhead to support training in ground-air and air-ground signaling and coordination. Much to the cadets' chagrin, we also couldn't do the typical sledding exercise conducted at the end of the outdoor training.

After arrival at the Sno-Park, the members were split into two teams to perform a search exercise using a practice beacon. One team rapidly located the beacon, and the team led by Technical Sgt. Dimel from Squadron 68 found the simulated missing person. The second team, led by Capt. Warmkessel from Squadron 13, had headed the opposite direction to be able to assist in triangulating the beacon. Once that team found the beacon, they initiated a search line and used attraction techniques to find the simulated missing person. Once both teams had the opportunity to discuss different snow shelter types, the teams headed back to the vehicles, as it was snowing over two inches per hour. It had snowed so much since leaving the vehicles that the snowshoe

prints had already been covered.



Team members getting snowshoes on and preparing to depart for field exercise. Photo credit: Lt. Col. Brett Dolnick



Technical Sgt. Dimel and Team 1 find Lt. Col. Dolnick, the "missing person." Photo credit: Lt. Col. Brett Dolnick



Maj. Sharif, Cadet Senior Master Sgt. Moore, and Team 2 find Lt. Col. Dolnick, the "missing person." Photo credit: Lt. Col. Brett Dolnick

Returning to the cabin, the teams conducted refit, got warmed and dry, had a great spaghetti dinner, and attended a class and practical demonstrations on the pros and cons of different types of camp stoves. Maj. Sharif taught classes on site security and turning over a site. The members then relaxed and watched a movie and had snacks and dessert. Everyone slept well!

Sunday morning, the members split into two teams, with two vehicles each, to look for a practice beacon. After packing up and receiving their briefing from Maj. Sharif, the teams moved out. They had been provided coordinates which allowed them to split the teams east and west of the suspected location. Using triangulation and communicating between teams using radios, the teams converged on the beacon.

Once the teams properly secured the beacon, everyone assembled for a debrief and demobilization.




Lt. Col. Dolnick, the "missing person", in his snow shelter. Photo credit: Lt. Col. Brett Dolnick



Maj. Sharif teaching about cold weather clothing and gear. Photo credit: Lt. Col. Brett Dolnick



Maj. Sharif briefs teams for Sunday morning electronic beacon UDF search. Photo credit: Lt. Col. Brett Dolnick

Everyone had a great time, much training was conducted, and new experiences were had! Hopefully next year will bring enough snow for us to continue the tradition! 

CAPabilities and Aircraft

INTRODUCTION

The Civil Air Patrol (CAP) is the Air Force Auxiliary and a national community service organization made up of professionally trained civilian volunteers. CAP has a modern, well-equipped fleet of aircraft, vehicles and equipment that is exercised and utilized daily. CAP is a locally-available talent and asset pool for federal, state and local government entities.

CAP'S BENEFITS

◆ Professionally trained National Incident Management System (NIMS) qualified personnel ◆ Rapid response ◆ Low cost ◆ Located in all 50 states plus Puerto Rico and the District of Columbia

CAP'S CUSTOMERS

◆ DoD ◆ FEMA ◆ USCG ◆ CBP ◆ USFS ◆ USGS ◆ EPA ◆ DEA ◆ BLM ◆ NOAA ◆ NWS ◆ NGA ◆ plus hundreds of state and local agencies

CAP ASSETS/RESOURCES AVAILABLE

◆ 31,000 trained volunteers ◆ 550 aircraft and over 900 vehicles owned by CAP
 ◆ Over 10,000 VHF-FM and HF interoperable radios ◆ Fixed digital nationwide radio network with over 500 repeaters ◆ 133 tactical (portable) repeaters
 ◆ 900 ground teams ◆ Over 500 chaplains

CAP MISSION TYPES

◆ Search and Rescue ◆ Disaster Response ◆ Drug Interdiction ◆ Law Enforcement Support ◆ Homeland Security ◆ Environmental Monitoring and Response
 ◆ Air Intercept and Radar Evaluation Targets ◆ Low-Level Route Surveys
 ◆ Fire Spotting ◆ Traffic Monitoring ◆ Ground and Aerial Digital Imaging & Reconnaissance ◆ Hyperspectral Imaging ◆ Endangered Species Tracking
 ◆ Air and Ground Communications Support

CAP MISSION DETAILS

◆ Airborne reconnaissance of border and coastal areas, ports and harbors, and critical infrastructure as "presence" missions; impact and damage assessment and recovery support for disaster areas
 ◆ Damage assessment and disaster recovery with trained ground teams able to augment civil and military authorities
 ◆ Aerial transportation of personnel, equipment, blood, tissue, organs and various customer-supplied sensor packages (subject to FAA reimbursement rules)
 ◆ Communications support, nationwide VHF-FM and HF capability to include fixed site and tactical (ground and air) repeaters
 ◆ CAP has ICS/NIMS trained emergency services personnel available to serve at all levels in the Incident Command System mission organization
 ◆ Chaplain and critical incident stress management support



Gippsland GA-8 (16)

Cruise speed 110-135 kts

Range 520-730 NM



Cessna 206 (22)



Cessna 182 (285)

Can operate with 2500' runway
 VHF AM and FM radio
 100 aircraft have satellite phones



Cessna 172 (195)

A Leadership Profile: Brig. Gen. Ed Phelka, National Vice Commander

“Cadet Programs Laid a Foundation for Me for a Future of Service”

Russell Slater, Contributing Writer

Editor’s note: This article appeared in Silver Wings Over Nevada, the magazine of the CAP Nevada Wing.

Brig. Gen. Ed Phelka has experienced an inspiring journey during his Civil Air Patrol career. From being a cadet in the late 1980s, Phelka has advanced in the organization, shouldering greater and greater responsibility as commander of a wing and a region and now as national vice commander.

The lessons he learned while a cadet have remained with him throughout his career, both in the private sector and public service, and he continues to give back to the organization and cadet program that helped shape him into the leader he is today.

Stood Out from His Peers

As CAP celebrates 75 years of its internationally renowned cadet program, Phelka looks back fondly at his humble beginnings as a Michigan Wing cadet. “I first joined CAP when I was 14, in April 1987,” he said. “I had my sights set on the United States Air Force Academy, and I thought CAP would be a great place to get my start. It certainly helped! I received an appointment to USAFA in late 1990. Though the Air Force Academy was ultimately not for me, Civil Air Patrol certainly was.”

Phelka describes Col. William S. Charles II, the former commander of the Michigan Wing (1995-1999) and Great Lakes Region (1999-2003), as “a mentor and significant role model.” Charles recalled, “I first met Ed in 1988 when he attended his first basic encampment and I was the encampment commander. I really took notice of Ed when I watched him progress as a cadet leader, becoming a Spaatz cadet. He had very well-developed and strong leadership qualities that made him stand out from his peers.”

As a cadet Phelka earned the Gen. Billy Mitchell Award in 1988 and went on to receive the Amelia Earhart Award in 1989 as well as the Gen. Carl A. Spaatz Award in 1993. That summer he participated in the International Air Cadet Exchange to Germany.

After he became a senior member, Phelka graduated from National Staff College and the Wing Commander Course, and also served as a seminar adviser at both the staff college and the National Cadet Officer School-- both at CAP National Headquarters at Maxwell Air Force Base, Alabama.

“CAP’s Cadet Program laid a foundation in me for a future of service,” Phelka said. “I have built upon the leadership principles and core values taught in the cadet program, and put them to use in the business world, as well as in Civil Air Patrol leadership.”

Creating Opportunities

After Phelka graduated from the University of Michigan and embarked on a career in the airline industry, “I was also switching gears in my Civil Air Patrol service to a platform of giving back to the program that taught me so much,” he said. “Even while in ‘giveback mode,’ I was still learning a great deal through the unique opportunities that Civil Air Patrol provided for me.



Brig. Gen. Ed Phelka. Photo credit: cap.news

“Looking back, I can say with certainty that the CAP cadet program laid the foundation for me to be successful in the aviation industry,” he said.

In 1995, Phelka got a job with Northwest Airlines and began working his way up to management, eventually serving as manager of the Hub Control Center for Detroit Metropolitan Airport.

Despite his busy schedule, then-Capt Phelka found time to serve in CAP as a senior officer. In 1996, Charles appointed Phelka to command the Livonia Thunderbolt Cadet Squadron, one of the Michigan Wing’s top units.” Also that year, I assigned him as an escort for cadets for legislative visits,” Charles said. “Michigan was the first wing to bring cadets to Legislative Day (in Washington, D.C.). I did this because of Ed’s vast knowledge of the cadet program and his leadership abilities.”

Phelka, who earned his private pilot’s certificate in 1998, later spent two years in command of the Southeast Michigan Group. “As a senior leader in CAP, it is my job to create opportunities for others to succeed, recalling that we are an organization made up of people, coming together to do important work,” Phelka said. Just before Charles’ departure as Michigan Wing commander in 1999, he brought then-Maj Phelka on as the wing’s director of cadet programs, a position he would also hold later on in Colorado.

Phelka joined Frontier Airlines in 2004, eventually becoming the airline’s senior manager for operations at Denver International Airport. In 2006 he successfully initiated and for two years directed a new CAP National Cadet Special Activity at Denver International, designed for cadets interested in exploring potential careers in the airline industry. He also earned the Gill Robb Wilson Award in 2007 upon completing Level V of the Senior Member Professional Development program.

Phelka went on to become Colorado Wing commander from 2007-2011. During his command cadet membership increased by 77 percent. Under his leadership, the wing flew over 10,000 hours and was responsible for 90 finds and 24 lives saved.

After stepping down from command of the Colorado Wing, the accomplished pilot returned to Michigan as a commercial pilot and flight instructor. He now lives in the Greater Detroit area. “With my business experience, I have instructed several executives who are learning to fly. The commercial flying I am doing now is for small business owners and their families,” he said. “I also volunteer as a pilot for Wings of Mercy East Michigan, flying need-based missions transporting patients to medical appointments.”

And, of course, Phelka has continued his service to CAP. He replaced Charles as national controller in August 2011. As the principal adviser to the national commander and Senior Advisory Group on logistics and financial accountability, he acted as the chief asset manager of CAP’s \$100 million in assets, such as aircraft and vehicles.

“In 2015 Ed became Great Lakes Region commander, a position I held 12 years prior,” Charles said.

Last August newly selected CAP National Commander Maj. Gen. Mark Smith chose Phelka as his national vice commander, citing his commitment and devotion to the betterment of the organization over his 30 years of service. Both Smith and Phelka assumed their current positions during a change of command ceremony on September 2, 2017 at CAP’s National Conference in San Antonio. “All through his career I have done my best to mentor and advise him,” Charles said. “I saw the potential in Ed to be a critical leader in CAP back when he was a cadet. He has proven that faith 100 times over. He has a deep knowledge of all three of our mandated missions, and an understanding of how they all should fit and work together.”

Perpetual Improvement

Phelka’s current work helping to command the 58,000 volunteers of CAP involves long hours and a never-ending dedication to perpetual improvement of all cadets and senior members. Encampments, leadership schools, and other leadership development training help ensure that today’s cadets will be tomorrow’s leaders in CAP and beyond. “I truly believe that Brig. Gen. Phelka is one of CAP’s greatest leaders,” Charles said. “It is fitting that he be highlighted as part of the 75th anniversary of our great cadet program.”

Thousands from CAP Join Wreaths Across America Salute to Nation's Fallen

www.cap.news

On National Wreaths Across America Day, grateful Americans in every state, at 1,640 participating locations nationwide, placed 1.8 million fresh evergreen remembrance rings on the headstones of the nation's heroes. At Arlington National Cemetery, nearly 60,000 rain-soaked volunteers placed 253,000 wreaths.

Nearly 600 truckloads of live balsam wreaths were transported across the country through a network of hundreds of volunteer drivers, donated trucking and diesel, and countless hours of dedicated volunteers committed to the mission to Remember, Honor and Teach.

"Wreaths Across America brings diverse people and communities together across the country to celebrate all that is good and just," said Karen Worcester, executive director of Wreaths Across America. "It is our obligation as Americans to teach our children — and each other — about the value of our freedom and the character of the men and women who serve to protect it."

Cadets and senior members from about 500 Civil Air Patrol squadrons joined in the tribute to the nation's fallen, taking part in the national remembrance ceremony at Arlington as well as at other cemeteries and memorials — from upstate New York to northern Utah. Their roles varied, from presenting the colors to delivering orations and placing wreaths on veterans' graves.

"Today, we show a united front across the United States of America, to honor the fallen," said Cadet 2nd Lt. Hope McHenry, who spoke at a ceremony at Gerald B.H. Solomon Saratoga National Cemetery in New York.

The ceremony preceded the wreath-laying part of the event, when more than 2,000 volunteers braved the cold to place over 12,000 wreaths in memory of veterans buried there.

At Logan City Cemetery in Utah, CAP Capt. Jody Reese said, "We thank those who gave their lives to keep us free, and we shall not forget you. We shall remember."



Members of the Kentucky Wing's Stuart Powell Cadet Squadron place wreaths on graves at Lebanon National Cemetery.

The Cache Valley Composite Squadron of Civil Air Patrol organized the event, garnering sponsorships for each of the wreaths placed in the cemetery. Volunteers placed 95 wreaths on the graves of veterans.

At Tyler Memorial Funeral Home-Cemetery and Mausoleum in Texas, Lt. Col. Charles Williams, commander of CAP's Tyler Composite Squadron, said it was important for the organization to organize the event and honor veterans.

"Civil Air Patrol on a national level supports Wreaths Across America," he said. "It's important to us because a lot of us are former (service members), so we like to come out and pay our respects to people who went before us."

Members of the Southeast Minnesota Composite Squadron trekked through the snow in Rochester to pay their respects. Terry Trondson, who organized the observance at Oakwood Cemetery, said, "I'm very impressed to see all of the youth here with Civil Air Patrol. They are disciplined. This is volunteer stuff — nobody is getting paid. For them to do this and stand over a grave and salute really touches you."

Cadet Airman Basic Randi Malson braved the wind, pausing to salute each veteran's grave, before placing a wreath on headstones at Oregon Trail State Veterans Cemetery in Evansville, Wyoming. She planned to help place wreaths at veterans' graves in two other local cemeteries as well.

"I have five people who have served in the military with my family," the 12-year-old said, "so every one of these is personal to me."

Each live balsam wreath is a gift of respect and appreciation, donated by a private citizen or organization, like CAP, and placed on the graves by volunteers as a small gesture of gratitude for their service and sacrifice.

For centuries, fresh evergreens have been used as a symbol of honor and have served as a living tribute that is renewed annually. Wreaths Across America believes the tradition represents a living memorial that honors veterans, active-duty military and their families.

Volunteers participating in the 1,640 ceremonies across the nation on Saturday were asked to say the




Members of the Florida Wing's Coral Springs Cadet Squadron participate in the observance at South Florida National Cemetery in Lake Worth.

name of veterans out loud when they placed their wreaths to ensure their memory lives on.

“The fact that the cadets do so much of this is a huge honor to them, and they really take ownership of it,” said 2nd Lt. Rebecca Walsh, observing the ceremony at snow-covered Northern Wisconsin Veterans Memorial Cemetery. “It’s really an amazing thing that these kids get to place over 1,000 wreaths, a long with volunteers from all around the area.”

National Wreaths Across America Day is a free event and open to all. More information is available at the campaign’s website.

Community Media Group, LLC, in Olean, New York; KAAL-TV in Rochester, Minnesota; the Herald Journal in Logan, Utah; the Tyler Morning Telegraph in Texas; WDIO-TV in Duluth, Minnesota.; and the Casper Star-Tribune in Wyoming all contributed to this report. 



Springfield Regional Composite Squadron cadets salute after laying wreaths at veterans' graves at Springfield National Cemetery in Missouri.



A Stanton Composite Squadron cadet salutes a veteran's grave in Minnesota's Fort Snelling National Cemetery after placing a memorial wreath at the headstone.



2019 FACT SHEET



OUR MISSION

Supporting America's communities with emergency response, diverse aviation and ground services, youth development, and promotion of air, space and cyber power.

ABOUT CAP

Civil Air Patrol is congressionally chartered and operates as a 501(c)(3) nonprofit corporation. CAP performs services for the federal government as the official civilian auxiliary of the U.S. Air Force and performs other missions as a nonprofit organization. CAP is made up of eight geographic regions consisting of 52 wings (the 50 states, Puerto Rico and the District of Columbia). It is a strategic partner of the Air Force, serving as a member of its Total Force. CAP has three primary missions — Emergency Services, Cadet Programs and Aerospace Education.

The latest technology

WaldoAir camera pods like this were temporarily mounted on CAP aircraft during the Hurricane Michael response in the fall of 2018. CAP aircrews tasked with taking aerial photography in the wake of the Category 4 storm used the advanced imaging sensor to provide high resolution 3-D models of the devastation on the Florida Panhandle and parts of southwest Georgia.



EMERGENCY SERVICES

- Conducts 90 percent of inland search and rescue in the U.S. as tasked by the Air Force Rescue Coordination Center and other agencies.
- Coordinates Air Force-assigned missions through CAP National Operations Center at Maxwell AFB, Ala., at a cost of \$120-\$165 per flying hour.
- Has more than 6,850 aircrew members and nearly 35,000 emergency responders trained to FEMA standards.
- Provides over 450 chaplains to assist during crises to help comfort survivors, render support and aid victims of disaster.
- Performs aerial reconnaissance for homeland security.
- Provides air intercept training, impact assessment, light transport, communications support and low-level route surveys for the Air Force.
- Provides disaster-relief photography and support to local,

Future pilot

Cadet Chief Master Sgt. Emma Herrington of the Texas Wing's Sulphur Springs Composite Squadron is the first of a long list of CAP Cadet Wings graduates. The Cadet Wings program is an Air Force-funded pilot initiative to identify potential young fliers within CAP and help them earn their private pilot's certificate.

- state and national agencies.
- Transports time-sensitive medical materials, blood products and body tissues when commercial resources are unavailable.
- Assists federal, state and local law enforcement agencies in the War on Drugs.
- Maintains an extensive VHF and HF communications network.

MEASURING OUR IMPACT

158

Saved a modern-day high of 158 lives and recorded 712 "finds" through Air Force-assigned search and rescue efforts in fiscal year 2018, thanks in large part to the assistance of CAP's Cell Phone Forensics and National Radar Analysis teams.

560

Operates one of the largest fleets of single-engine piston aircraft in the world, with 560 planes

35,000+

Flew a record 35,316 orientation flights with CAP cadets, as well as Air Force ROTC and Junior ROTC cadets.

61,066

Consists of 1,422 squadrons and more than 61,000 volunteer youth and adult members nationwide.

89,773

Flew nearly 90,000 hours in 2018 nearing or surpassing that CAP flying mark for the fourth straight year.

700,000+

Has impacted more than 700,000 youth over the past six years through CAP's STEM Kit program

\$2.4 Million

Using \$2.4 million from the Air Force to provide CAP cadet training aimed at helping reduce the nation's pilot shortage.

\$187 Million+

Contributed \$187,202,536 in man-hours in past year, serving the emergency services, youth development and aerospace education/STEM needs of communities, states and the nation.





AEROSPACE EDUCATION

- Educates adult and cadet members and the community on the importance of aerospace careers.
- Develops, publishes and distributes national academic standards-based Science, Technology, Engineering and Mathematics (STEM) aerospace education curricula for kindergarten through college classrooms, affecting over 400,000 K-12 students annually nationwide.
- Generates interest in STEM careers through aviation-, space- and technology-focused activities and CAP STEM Kits associated with astronomy, flight simulations, model and remote-control aircraft, robotics, rocketry, weather, hydraulic engineering, computer programming and quadcopters.
- Exposes thousands of cadets to cyber defense careers through CyberPatriot, the Air Force Association's National Youth Cyber Defense Competition.
- Provides educators with 40+ free educational programs and products as well as services that include teacher orientation flights.
- Offers grant and college credit opportunities for adult and teacher members.
- Provides aerospace support for educational conferences and workshops nationwide.

STEM education

CAP's six-year STEM Kit program has already impacted over 700,000 youth, teaching them science, technology, engineering and math through 15 hands-on products geared toward aviation and aerospace education. Here, cadets work with the Rocketry STEM Kit, which introduces them to the hobby and science of model rocketry and associated careers. The rockets included in the kit help cadets progress toward one stage of CAP's rocketry badge.



CADET PROGRAMS

- Attracts over 26,000 members ages 12 through 20 for participation in its cadet programs.
- Educates youth in four main program areas — leadership, aerospace, fitness and character development.
- Enriches school curricula through after-school programs.
- Offers orientation flights in powered and glider aircraft, as well as flight training scholarships.
- Provides activities and competitions for cadets at the local, state, regional and national levels.
- Makes opportunities for community involvement available through color guard/drill team and emergency service missions.
- Challenges youth to be ambassadors for a drug-free lifestyle.
- CAP cadets make up about 10 percent of each U.S. Air Force Academy class.
- Cadets who have earned the Gen. Billy Mitchell Award enlist in the Air Force, U.S. Army and U.S. Coast Guard at a higher pay grade.
- Participates in the International Air Cadet Exchange program.
- Awards college scholarships in several disciplines.



Learning to fly

Here, a cadet flies in one of CAP's 50 gliders, located at squadrons throughout the U.S. These orientation flights, or "O rides," introduce thousands of youth to flight, playing a vital role in the future of American civilian and military aviation.



An opportunity to lead

CAP's cadet program offers more than 1,500 of its members in-depth leadership training through National Cadet Special Activities like Cadet Officer School and the Civic Leadership Academy. The training cadets receive at these weeklong activities, which often includes STEM-based initiatives like the one seen here, enable them to become leaders in their home squadrons, their schools and their communities.



Active lifestyles

Physical fitness and well-being is the primary goal of CAP's Active Cadet Fitness initiative, which is aligned with the Presidential Youth Fitness Program. Through the program, cadets like those seen here attending their wing encampment are motivated to develop a lifelong habit of regular activity.

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CIVIL AIR PATROL

Aerospace Education

Teach

... ordinary subjects in extraordinary ways by becoming a special member of **Civil Air Patrol, the Auxiliary of the U.S. Air Force**- an Aerospace Education Member (AEM)! With help from AEMs, CAP is helping to develop the aerospace/STEM workforce of the future.



Engage

... youth in **captivating lessons and activities** using a variety of more than 40 national standards-based educational materials. Our free resources are available both online and in print to adapt to multiple teaching and learning styles. Additional online references provide an abundance of extra STEM resources.

Experience

...hands-on learning with free programs including

- **(Gr K-12) STEM Kits** in astronomy, robotics, flight simulation, coding, engineering, rocketry, quadcopters, and more
- **(Gr K-12) Aerospace Education Excellence (AEX)** six-lesson award program
- **(Gr K-6) Aerospace Connections in Education (ACE)** program: grade-specific program that enriches cross-curricular academics, physical fitness and character education
- \$250 **grants**

Contact: ae@capnhq.gov



Fly

...on a free **Teacher Orientation Program (TOP) flight** in Civil Air Patrol aircraft at your local airport. Live stream, video, and/or photograph to bring your flying adventure back to your classroom!

Join

...**TODAY as an AEM!** CAP offers this special membership for formal and informal U.S. citizen educators in classrooms, home schools, museums or other youth organizations. A one-time \$35 membership fee brings dozens of **FREE** products and programs. Read more at gocivilairpatrol.com/ae.

JOIN ONLINE
gocivilairpatrol.com/joinaem





Civil Air Patrol/Aerospace Education Member's STEM Kit Program



gocivilairpatrol.com/stem-ed



Astronomy

Gaze into the skies to see planets and stars with this easy-to-use telescope



Bee-Bot

Use arrow keys on a floor robot and gridded mat to introduce programming to early learners



Flight Simulator

Practice flying with yoke, rudder pedals, flight simulation software and training booklet



Hydraulic Engineering

Build simple machines designed as a hands-on introduction to hydraulic engineering



Middle School Math

Explore 2-D and 3-D patterns to demonstrate geometrical shapes and models with this K'NEX kit



Quadcopter

Become an expert at flying an outdoor unmanned aerial vehicle (UAV)



Raspberry Pi

Introduce computer coding, embedded systems, and digital sensors



Ready-to-Fly Quadcopter

Develop experience flying UAVs with this small indoor quad



Remote-Controlled (RC) Aircraft

Build/fly balsa planes; control computer-based RC flights; fly actual RC model aircraft outdoors



Renewable Energy

Bring renewable energy to life by investigating solar, wind and water energy with this K'NEX kit



Robotics

Assemble and program the Robotic Arm and explore numerous paths



Rocketry

Ignite an interest in aerospace by building and launching rockets



Snaptricity

Investigate electricity, closed circuits, switches and more



Sphero

Explore programming with Sphero using a free app and your personal smart device



Weather Station

Record and study aspects of weather using the weather sensor and data collection kit