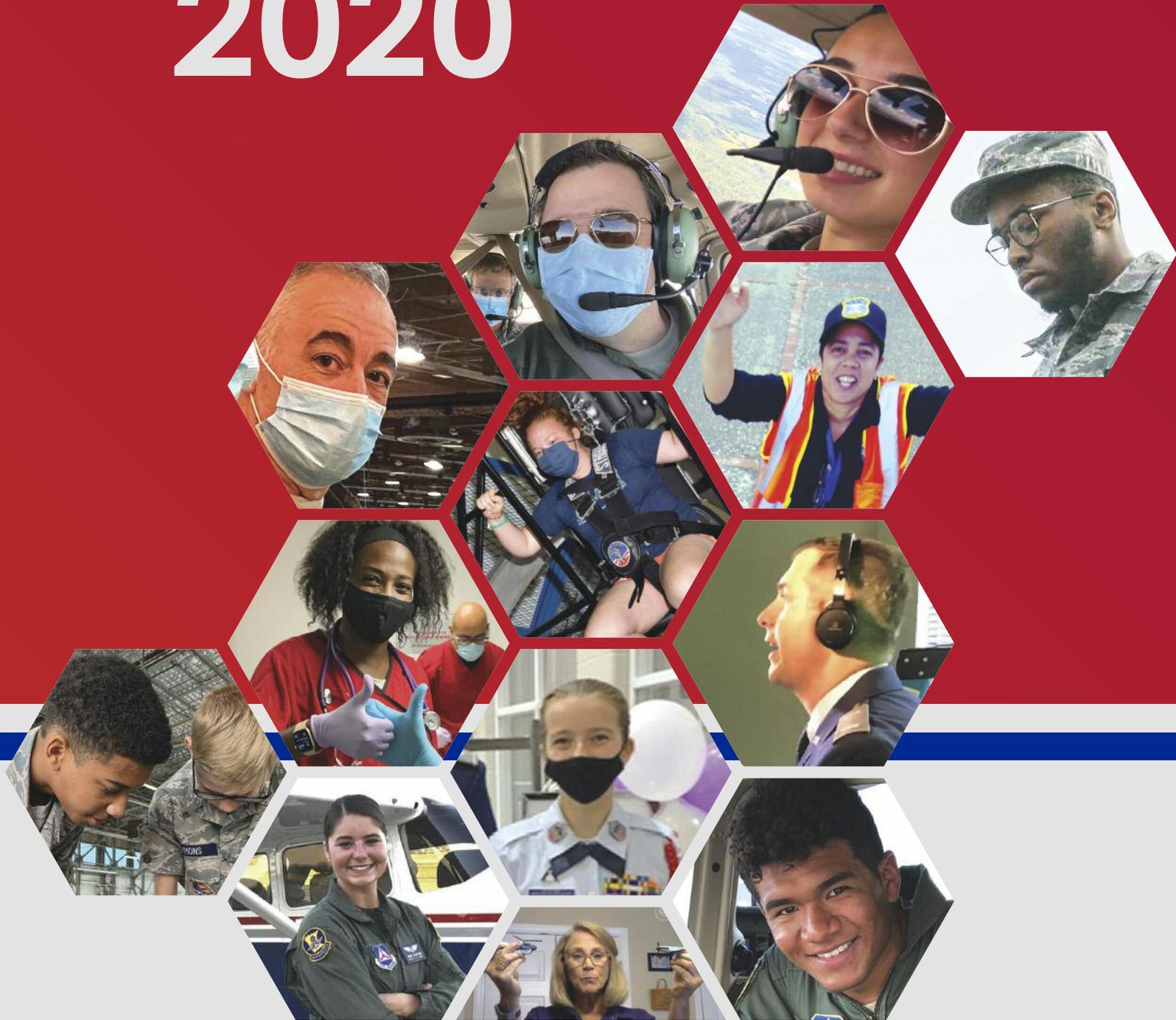


# 2020



REPORT TO CONGRESS



**Civil Air Patrol**  
U.S. Air Force Auxiliary

# COVID-19

'Our Largest Campaign Since World War II'

## COVID-19 RESPONSE By the Numbers

**92 MISSIONS**

CONDUCTED OVER 190  
DAYS OF CONTINUOUS  
OPERATIONS

**NEARLY  
7 MILLION**

MEALS SERVED IN FISCAL 2020

**32,000+**

VOLUNTEER DAYS OF SERVICE  
PROVIDED BY CAP MEMBERS



Lt. Col. Mario Accardo (left), commander of the Michigan Wing's Southeast Michigan Group, and Col. Leo Burke, former wing commander, were part of the CAP contingent assisting the incident command post at the TCF Care Center in Detroit — a 1,000-bed field hospital erected in the city's largest convention center to handle COVID-19 patients.

The U.S. Air Force's newest Total Force partner proved its worth as a force-multiplier in 2020, more than living up to its reputation as one of the nation's premier humanitarian service organizations. During the COVID-19 pandemic, Civil Air Patrol stood out by providing emergency services,

humanitarian relief, educational programs and a variety of youth development initiatives amid unforeseen challenges.

Initially, not knowing how it would be asked to respond, CAP took the necessary steps to protect its 60,000 members by socially distancing and eventually curtailing in-person meetings and activities. Soon, calls began coming into the National Operations Center at Maxwell Air Force Base, Alabama.

At first the missions were fairly basic, like taking aerial photographs of temporary drive-through testing facilities to document traffic flow. Then came requests to transport test kits by air to expedite the virus detection process, along with many more missions assigned by the Air Force — some of which required new processes and procedures, like sanitizing vehicles and aircraft between missions and safely loading and transporting kits to labs before and after testing.

"Given the scope and diversity of missions assigned in a Defense Support of Civil Authorities capacity, CAP's capacity as a Total Force partner has proven to be an invaluable resource.

The nation heavily relies on the CAP's ability to support community, state, and federal agencies during this pandemic," said Lt. Gen. Kirk S. Pierce, commander, First Air Force, Air Forces Northern, which approves most CAP operational missions performed in its role as the Air Force auxiliary.

Through September, more than 40 wings were tasked with COVID-19 duties, such as decontaminating ambulances, delivering personal protective equipment (PPE) to rural locations, building temporary hospitals and other facilities, staffing emergency operations centers, delivering or serving meals, making PPE, hauling mobile command centers, expediting test >>



**CAP has successfully risen to meet the needs of the nation during the pandemic. As a Total Force partner, CAP seamlessly complements our efforts. They provide exceptional capability and capacity to assist the Air Force and our citizens during this national crisis." — Lt. Gen. Kirk S. Pierce, commander, First Air Force, Air Forces Northern**

samples to labs, conducting aerial photography and using unit locations for blood drives for the American Red Cross.

“No matter how you slice it — duration, level of effort, or scope — Civil Air Patrol’s COVID-19 response is our largest campaign since World War II,” CAP’s national commander, Maj. Gen. Mark Smith, told CAP members less than four months into their response to the pandemic. “I am

so impressed with our volunteers and our staff for the amazing work that is being done across the organization, from working points of distribution to flying test samples to virtual meeting aerospace activities to wing administrators to our national staff.”

Preparations were also being made in September to transport COVID-19 vaccines to rural areas of the country, once they were approved by the U.S. Food and Drug Administration. ▲

## Making Deliveries



In April 2020, 2nd Lt. John P. Laramie (left) and his daughter, Cadet Tech. Sgt. Kathleen Laramie, help set up a point of distribution for personal protective equipment for New Hampshire first responders and healthcare workers in Epping.



A delivery of personal protective equipment sits outside a CAP GA-8 aircraft in Alamosa, Colorado, ready for pickup by hospital staff. The May 21 delivery was made by an aircrew from the Colorado Wing.

**DID YOU KNOW?** Nearly 2½ million masks were among the personal protective equipment delivered by CAP volunteers in fiscal 2020.

## Collecting Blood



Of over 17,000 blood drive sponsors from March–June of 2020, the Arizona Wing of Civil Air Patrol was in the top 500 sponsors for blood collections.” — Jason Benedict, regional donor services executive for the American Red Cross Arizona/New Mexico Region



Even squadron meeting and training facilities were pressed into service for COVID-19 missions. When the American Red Cross experienced a loss of facilities to host blood drives, CAP’s Arizona Wing, led by incident commander Lt. Col. Robert Ditch (pictured giving a unit of blood), responded. By the end of fiscal 2020, the wing had collected more than 600 units in 18 blood drives.

## Aerial Photography



Col. Darin Ninness, New Hampshire Wing commander, prepares to capture digital aerial photographs from the back seat of a CAP Cessna 182 near Alton Bay on June 13.

**DID YOU KNOW?** In the past year, aircrews took 9,351 images as part of CAP's COVID-19 missions.

## Getting the Word Out



CAP's impressive national COVID-19 response was big news throughout 2020, beginning with a national Fox News report that aired in late March and again in April. More than 9,100 news stories were generated that reached hundreds of millions of Americans, garnering unprecedented publicity for the organization.



## Distributing Food



On April 17, Indiana Wing members help volunteers with the Midwest Food Bank and the Salvation Army as well as soldiers with the Indiana National Guard at a food distribution center. The mission was one of many CAP volunteers participated in over the past year, distributing close to 7 million meals nationwide in fiscal 2020.



First Lt. Kim Mueller provides logistical support to the Maryland National Guard's COVID-19 response. The Guard provided food at a distribution point in the greater Baltimore area in June with help from Mueller and other members of the Maryland Wing.



Civil Air Patrol members, led by National Vice Commander Brig. Gen. Ed Phelka (center, in yellow vest), load the 3 millionth meal into a vehicle during a food distribution event in May at Indianapolis Speedway. With Phelka are (from left) Gleaners Food Bank Chief Operating Officer Joe Slater, Indiana Wing Commander Col. Robert Freese, Cadet Col. Kamryn Schmidt and Indiana Army National Guard Lt. Nicole Wurm, who was coordinating logistics for the day's events.

**DID YOU KNOW?** During the past year, CAP volunteers helped deliver 6,815,818 meals nationwide and 858,883 pounds of food — nearly 430 tons.

## Service Animal Transport



Idaho Mountain Search and Rescue Unit (IMSARU) dog handlers pose with CAP mission staff assistants — (from left) Cadet Senior Master Sgt. Ethan Alexander, IMSARU staffer Tom Kearney, Terabyte, IMSARU staffer Rory Olsen, Daytona and Cadet Chief Master Sgt. Owen Klein. The search dog transport from Boise to Ogden, Utah, aboard a CAP Cessna 206 was one aspect of a broader Air Force-authorized training exercise in September for responding to large-scale disasters.

**DID YOU KNOW?** In addition to air sorties, Civil Air Patrol completed more than 3,650 ground sorties in response to the pandemic. CAP operates a fleet of more than 1,000 vehicles.

## Logistics



Maj. Timothy Bagnell of the North Carolina Wing and other CAP volunteers like him have donated thousands of hours of service in Emergency Operations Centers nationwide. Here, Bagnell works in a North Carolina Emergency Management warehouse where COVID supplies were staged and routed by CAP members and the North Carolina National Guard.

## Transporting Test Kits

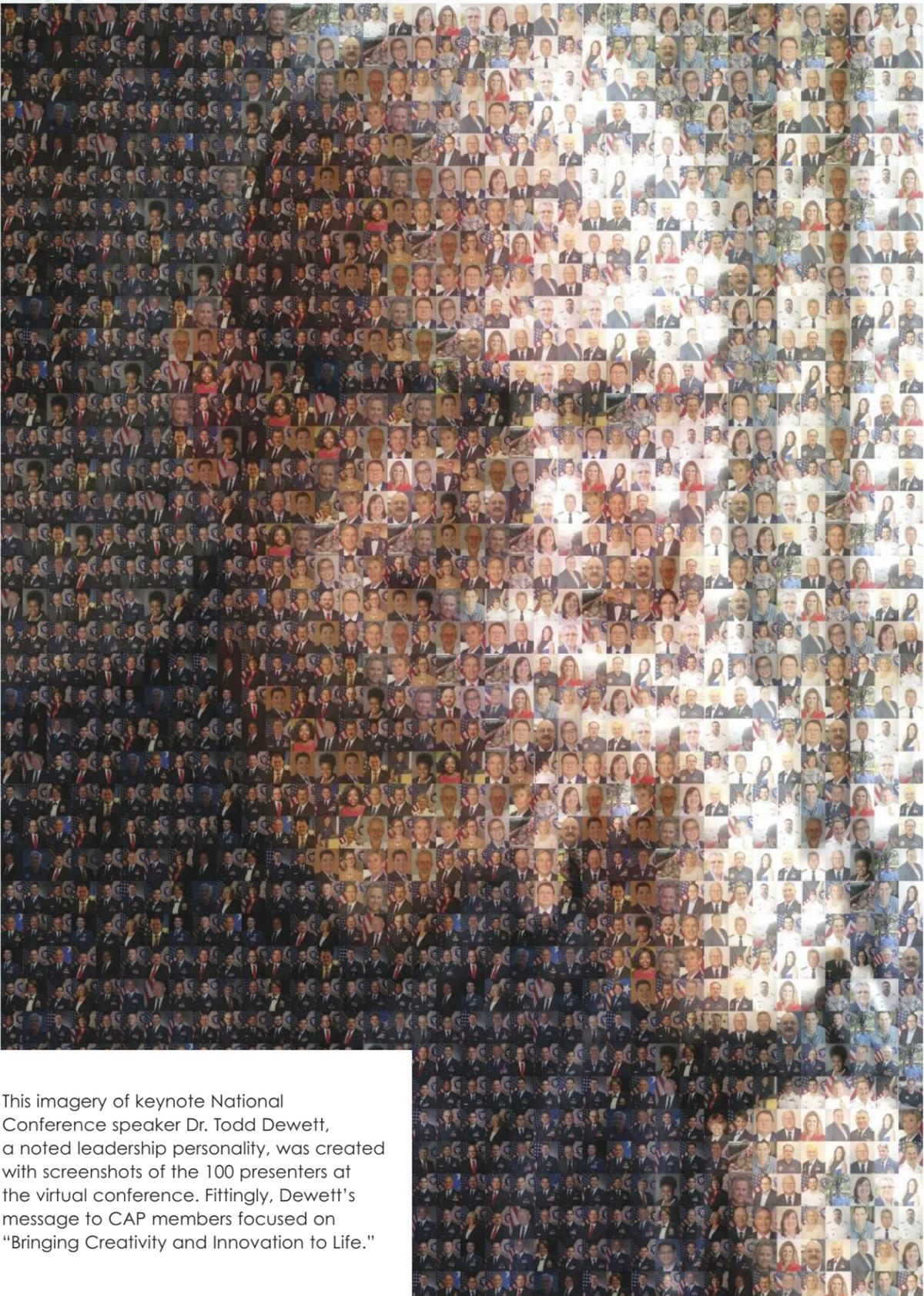


Members of CAP's Virginia Wing — 1st Lts. Andrew M. Morrison and When Dee A. Morrison — load COVID-19 test kits for air transport to Chesterfield on the state's Eastern Shore. The Virginia Wing was one of many CAP units that transported test kits and test samples in their states in 2020.



(From left) Maj. Chris Ballard, 1st Lt. Bill VanderMolen and Lt. Col. Chris Felton participate in a COVID-19 test kit flight from Lansing to locations in the state's Upper Peninsula. Such missions put new emphasis on training all CAP members to incorporate risk management to guarantee their safety.

**DID YOU KNOW?** In 2020, CAP members contributed 32,363 volunteer days of service to pandemic-related missions. The value of these efforts is estimated at \$6,583,029.



This imagery of keynote National Conference speaker Dr. Todd Dewett, a noted leadership personality, was created with screenshots of the 100 presenters at the virtual conference. Fittingly, Dewett's message to CAP members focused on "Bringing Creativity and Innovation to Life."

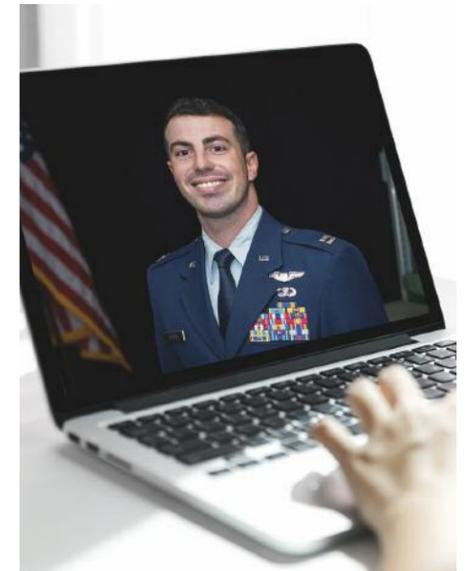
## Virtual National Conference



*Without a doubt, this event was the best virtual event I have seen so far ... period. It was not just good, it was exemplary." — Maj. Erik Koglin, a media specialist for CAP's National History Program and also a creative director for a company in the Nashville, Tennessee, area*



Comedian and CAP 1st Lt. BJ Lange hosted activities throughout the conference in a virtual meeting space known as The Hangar.



U.S. Air Force Capt. Julian Gluck was front and center to deliver a virtual keynote speech at Civil Air Patrol's 2020 National Conference. CAP's first virtual conference attracted its largest audience ever — 10,478 registered participants who accounted for 1,102,358 desktop views, 520,163 mobile page views and raised over \$9,000 for cadet scholarships.

## Test Kits Delivery



### DID YOU KNOW?

Air and ground crews transported 21,785 testing kits and 93,357 test samples.

Alabama Wing Cadet Capt. Tabitha Berry (left) and Cadet 2nd Lt. Lydia Berry deliver unused COVID-19 testing kits to a waiting aircrew, represented by 1st Lt. Nick Madison under the wing of a Civil Air Patrol Cessna 172. Madison was mission observer for the delivery flight to Choctaw County. Over the past fiscal year, CAP volunteers transported nearly 22,000 testing kits and more than 93,000 test samples to and from rural areas nationwide. Toward the end of the year, air and ground crews were preparing to deliver vials of the COVID-19 vaccine.

## Disaster Relief Act



In August, Georgia Gov. Brian Kemp signed the Robert Argo Disaster Relief Act, granting state employees who are members of Civil Air Patrol paid leave to help the organization with natural disasters. From left are Lt. Col. Joel Sieband, commander of the Georgia Wing's Peachtree City Composite Squadron; Col. Jeffrey Garrett, wing commander; Gov. Kemp; Marnie Kemp, Georgia's first lady and the daughter of Robert Argo; and State Rep. Josh Bonner, a member of the wing's Legislative Squadron and sponsor of the legislation. The bill was named after longtime State Rep. Robert Argo, a recipient of CAP's Congressional Gold Medal as a founding member who served during World War II.

## 2020 RECOGNITIONS

### Seal of Approval



Civil Air Patrol reached the pinnacle of national nonprofit recognition by achieving the GuideStar 2020 Platinum Seal of Transparency and the BBB Accredited Charity Seal. These recognitions assure transparency in how CAP makes an impact. In earning these designations, CAP continues to foster public confidence in the way CAP is governed, expends funds, exhibits truthfulness of representation, and demonstrates willingness to disclose basic information.



Civil Air Patrol volunteers have a rich history of service to country. Their record-breaking performance during this time of crisis has heightened CAP's emergency services profile, confirming our commitment to our communities, states, and nation. I am so proud to be their national commander." — Maj. Gen. Mark Smith, CAP's national commander/CEO



We are accustomed to missions, such as search and rescue, that last no longer than a couple of weeks. A mission this long is completely new to us, and I'm very proud of how resourceful and resilient our members have been in adapting to this challenging new reality." — Col. Annette Peters, New Mexico Wing commander

## IAEM Awards



In August, the International Association of Emergency Managers awarded CAP with its Volunteer Emergency Management Organization of the Year award for its lifesaving efforts using cellphone technology. In addition, Lt. Col. Eric Templeton (left) received the U.S. Uniformed Services Auxiliary Emergency Manager of the Year award, and the Volunteer Emergency Manager of the Year award went to Lt. Col. Rick Woolfolk.

# EMERGENCY SERVICES

## Technology Ushers in New Capabilities

### EMERGENCY SERVICES By the Numbers

**70K+**

70,919 HOURS WERE FLOWN IN CAP'S FLEET OF 560 AIRCRAFT

**91%**

CAP-DEVELOPED RADAR/CELLPHONE FORENSICS SOFTWARE HELPED SAVE 119 (91%) OF THE 130 LIVES SAVED

**\$193M+**

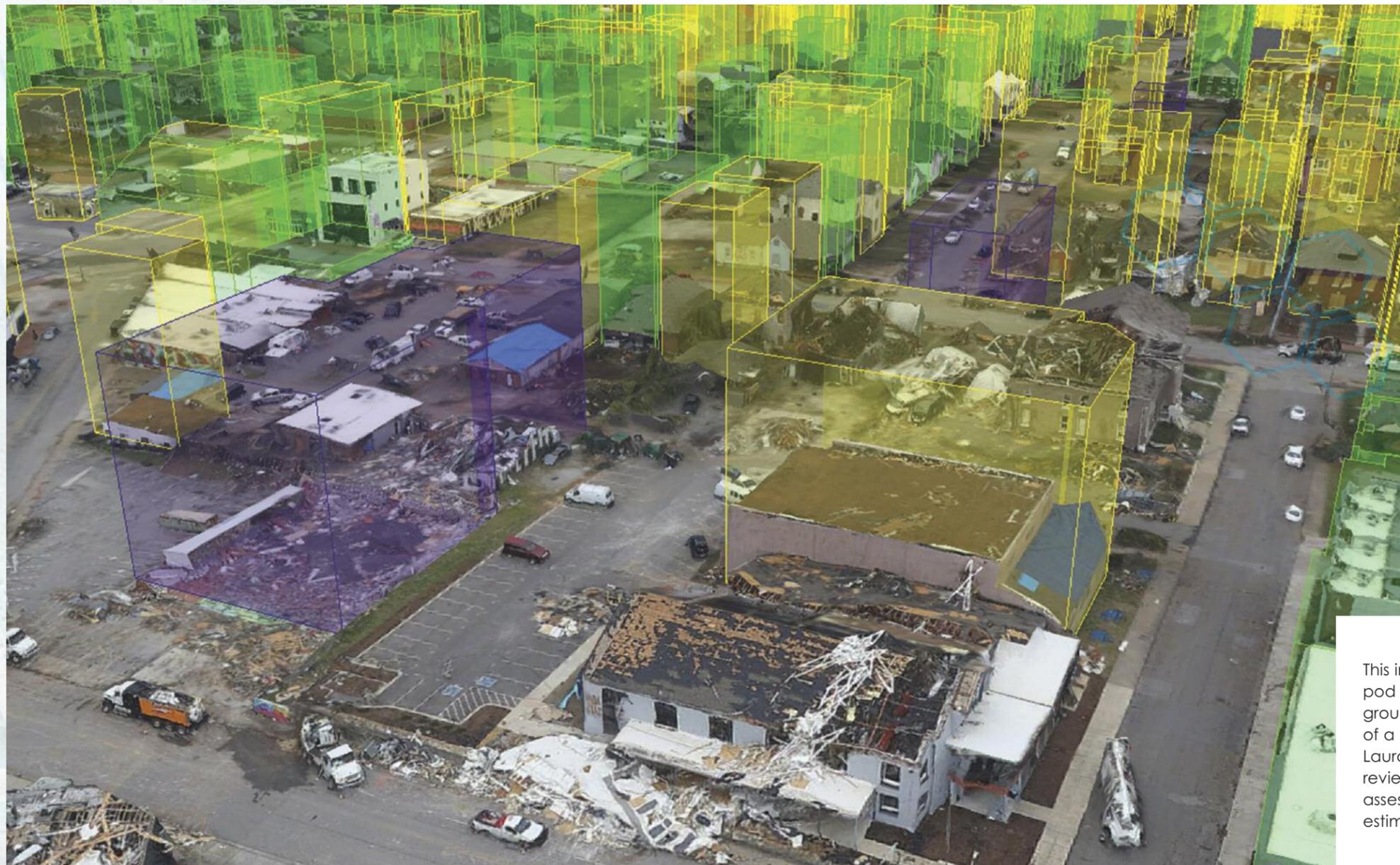
2020 VALUE OF CAP MEMBERS' SERVICE TO AMERICA — \$193,721,863

Civil Air Patrol's search and rescue capabilities were elevated in 2020 through the use of cellphone forensic software and radar analysis tools developed and updated by CAP members. Using this technology, CAP finished the fiscal year with 130 lives saved, making it one of the most productive years ever for the organization's search and rescue efforts.

In its role as the U.S. Air Force auxiliary and as a Total Force partner, CAP also conducts disaster relief, air defense training and other critical missions for America. Aircrews flew more than 70,000 hours in 2020 in CAP's large and capable fleet of single-engine planes. More than 75% of these flying hours came on Air Force-assigned missions.

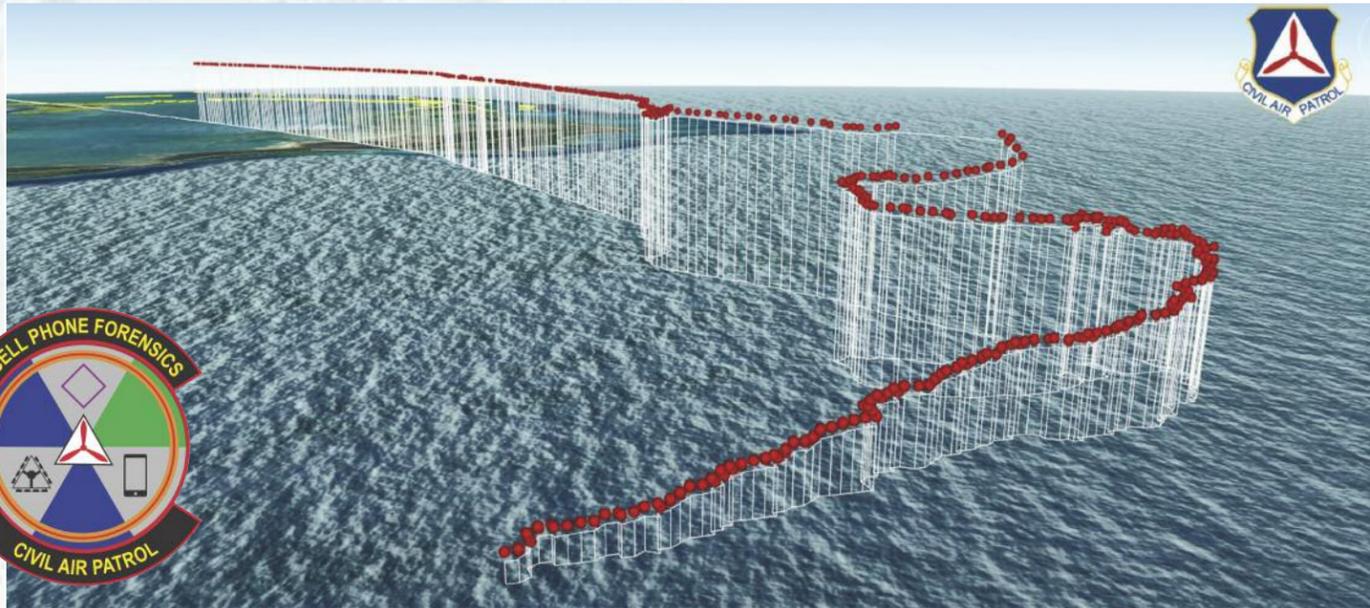
Technology, both old and new, helped in the performance of these missions, some related to the COVID-19 missions mentioned earlier in this report. Recent advances in aerial photography greatly enhanced CAP's disaster relief responses in 2020, helping aircrews provide valuable 3D imagery to the Federal Emergency Management Agency. WaldoAir camera pods were used early in the fiscal year as part of the Puerto Rico Wing's earthquake response and continued into a busier-than-usual hurricane season along the Gulf of Mexico before ending with wildfires in California, Oregon and Washington state.

CAP also purchased and fielded new small Unmanned Aerial Systems, boasting nearly 2,000 sUAS toward year's end — all meeting Department of Defense standards that allow for expanded mission support in the future. CAP operates the largest fleet of service sUAS in the nation and is a leader in the growing remotely piloted aircraft world. ▲



This imagery taken with a WaldoAir camera pod provides a multi-spectral view of the ground, resulting in 360-degree, 3D images of a neighborhood affected by Hurricane Laura in Louisiana in August. Specialists can review the imagery from all angles in assessing damage and generating estimates for debris collection.

# Saving Lives



## Top 5 Years of Lives Saved

Fiscal Year	Lives Saved
2018	158
1983 & 1994	154
1986	136
2020	130

Forensics provided by CAP's National Radar Analysis Team helped the U.S. Coast Guard and Bahamian authorities find an aircraft down in the Atlantic Ocean near the Bahamas. The pilot was rescued by the Coast Guard. The 130 lives CAP was credited with saving in 2020 ranked fifth behind the total for fiscal 2018 (a record 158 saves).



Using cellphone data, CAP's National Cell Phone Forensics Team guided U.S. Coast Guard searchers to this "most likely area" in Washington state, where they found a missing 39-year-old hiker who had fallen into the subfreezing Hoh River. Most of the 130 lives saved in 2020 resulted from the cellphone forensics team's efforts.



The WaldoAir technology used by CAP's well-trained professional volunteers provided damage assessment both in the air and on the ground. WaldoAir's ground camera was first used to provide imagery following earthquakes in Puerto Rico. CAP's sUAS were also used to collect Lidar damage assessment and comparison.



**This is a top-five-of-all-time save year for us. Technology has really changed how we operate. What once took days of laborious searching is now done remotely using our cellphone forensics and radar analysis.** — *John Desmarais, CAP's director of operations*

# Hurricane Response



**Although a little unusual, this mission is just the sort of thing we're ready to take on.** — *Lt. Col. Mickey Marchand, Louisiana Wing incident commander*

The Louisiana Wing carried out a new and unusual mission in August — helping the coroner of storm-devastated Cameron Parish find caskets washed out of their above-ground vaults by Hurricane Laura's surging floodwaters. A wing aircrew took photographs showing the extent of damage to 26 cemeteries, then turned the images over to parish officials who retrieved the displaced caskets with airboats and marsh buggies.



Aircrews using CAP's high-resolution precision digital cameras with embedded GPS capabilities provided tornado and hurricane imagery to the Federal Emergency Management Agency and to state emergency managers in Arkansas, Tennessee, Texas and Louisiana. They also used the Waldo cameras to provide FEMA with 3D imagery of affected areas in Louisiana while providing automated intelligence of damage, thereby reducing FEMA's need for visual inspections.

## Small Unmanned Aerial Systems Program



CAP is developing a remotely piloted aircraft path for cadets operating sUAS to the service academies or universities and beyond. To that end, CAP is expanding its partnerships with NASA, the FAA and multiple universities nationwide. This fledgling program is just the beginning and provides the opportunity for CAP in the rapidly evolving world of RPA.

CAP, acting in its role as the U.S. Air Force auxiliary, provides counter-sUAS mission support for military bases throughout the U.S. Members use established capabilities, like aerial photography illustrated here, to conduct these missions.

A photo taken from a CAP sUAS captures 1st Lt. Emmary Webb preparing to catch the InstantEye quadcopter being flown by Lt. Col. John Webb, both of the New York Wing. The landing gear had to be removed so it wouldn't be seen in the camera images because of the way the camera was positioned. The incident commander can authorize an experienced technician to catch the aircraft when the landing gear is removed.

**DID YOU KNOW?** With 1,944 small Unmanned Aerial Systems now in its fleet, CAP is the largest operator of service sUAS in the nation.

## Wildfire Response



As part of wildfire mission responses in California, Oregon, and Washington state in August and September, CAP used WaldoAir camera pods on high-altitude flights to provide vital damage assessment imagery needed by CALFire.



Cadet 1st Lt. Joshua Vanrenterghem keeps a detailed log of the sorties worked by his ground team in the aftermath of wildfires that swept through Oregon in September.

## Rated Preparatory Program



CAP Capt. Thomas O'Connor (left) speaks with Air Force Lt. Sedacy Walden as Air Force Capt. Kayla Pipe pilots their CAP plane. The lesson aloft was part of CAP's Rated Preparatory Program for active-duty Air Force officers. Conducting the program safely during the COVID-19 pandemic, CAP trained 42 Air Force officers to enhance their aeronautical knowledge for future selection by Air Force pilot boards.



Air Force Capt. Kayla Pipe practices on a CAP flight simulator during her Rated Preparatory Program session. Two sessions are scheduled in fiscal 2021 to support not only officers but also enlisted personnel, with plans to expand to three sessions in fiscal 2022 and four in fiscal 2023 while also expanding to Air Force Reserve and Air National Guard participation.

“CAP is providing a crucial service for the Air Force and our nation. Some great airmen got their start in CAP, and we are committed to maintaining that tradition.” — Brig. Gen. William Betts, vice commander, First Air Force, AFNORTH

## RPA Training



The Syracuse, New York-based Air National Guard's 174th Attack Wing presented CAP with a "Thank You" picture signed by the wing's members in tribute to CAP's more than three years of support for the U.S. Air Force's MQ-9 Reaper RPA pilot training. CAP continues as a reliable backup in New York for the 174th's Ground Based Detect and Avoid radar system while also actively supporting MQ-9 Reaper escort missions in Texas at Ellington Joint Reserve Base with the 147th Attack Wing.



**DID YOU KNOW?** Through August, CAP aircrews provided Federal Aviation Administration-required escort flights for MQ-9 Reapers out of Syracuse, New York. In all, CAP conducted 1,746 escort flights totaling 2,879 hours, aiding in the graduation of 345 RPA pilots.

## Operation Bird Dog



A Connecticut Wing Cessna 172 flies over Long Island Sound and the Atlantic in the wake of a U.S. Navy submarine from Naval Submarine Base New London. The training exercise, Operation Bird Dog, was conducted in May to demonstrate CAP's ability to support the Navy as another Department of Defense partner.

“The potential to develop a new partnership with a valuable homeland security mission with the U.S. Navy's submarine base here in Groton, with the goal of extending their Force Protection procedures, is exciting.” — Col. James Ridley, Connecticut Wing commander

## Green Flag Exercises



### DID YOU KNOW?

During fiscal 2020, CAP's surrogate remotely piloted aircraft (SRPA) missions helped train:

- 22,577 military troops in Green Flag East exercises; and
- 27,080 military troops in Green Flag West exercises.

CAP supports U.S. and combined military operations and training through its Special Missions program. With dedicated sensor-equipped CAP aircraft in Louisiana and Nevada, CAP's Green Flag program continues to support Joint Service (Air Force, Army, Marines and Navy) as well as coalition forces and partner nation MQ-1 (Predator) and MQ-9 (Reaper) RPA training objectives in up to 24 major exercises/events annually. This photo shows Green Flag West aircrews and aircraft gathered at Nellis Air Force Base, Nevada, from which CAP provides training support to the 57th Operations Group in exercises flown over California.



Capt. Karin Hollerbach of the California Wing receives her certificate of training completion from Lt. Col. Harvey Irby, Green Flag West unit commander and Nevada Wing vice commander, after attending CAP's Green Flag University. Upon completing the training in March, Hollerbach became the first female CAP member to fly as a mission pilot in the organization's Green Flag program.



CAP has modified this Cessna T206H with a Wescam MX-15HDI imaging camera and retractable mount. This SRPA based in Nevada is one of three CAP SRPAs now in use for Green Flag exercises. The other two SRPAs are located in Louisiana at the Green Flag East location, where they also support Green Flag exercises. The camera pod protrudes from the belly of the SRPA. This modification was a nearly \$3 million expense, funded with Air Force procurement funds.

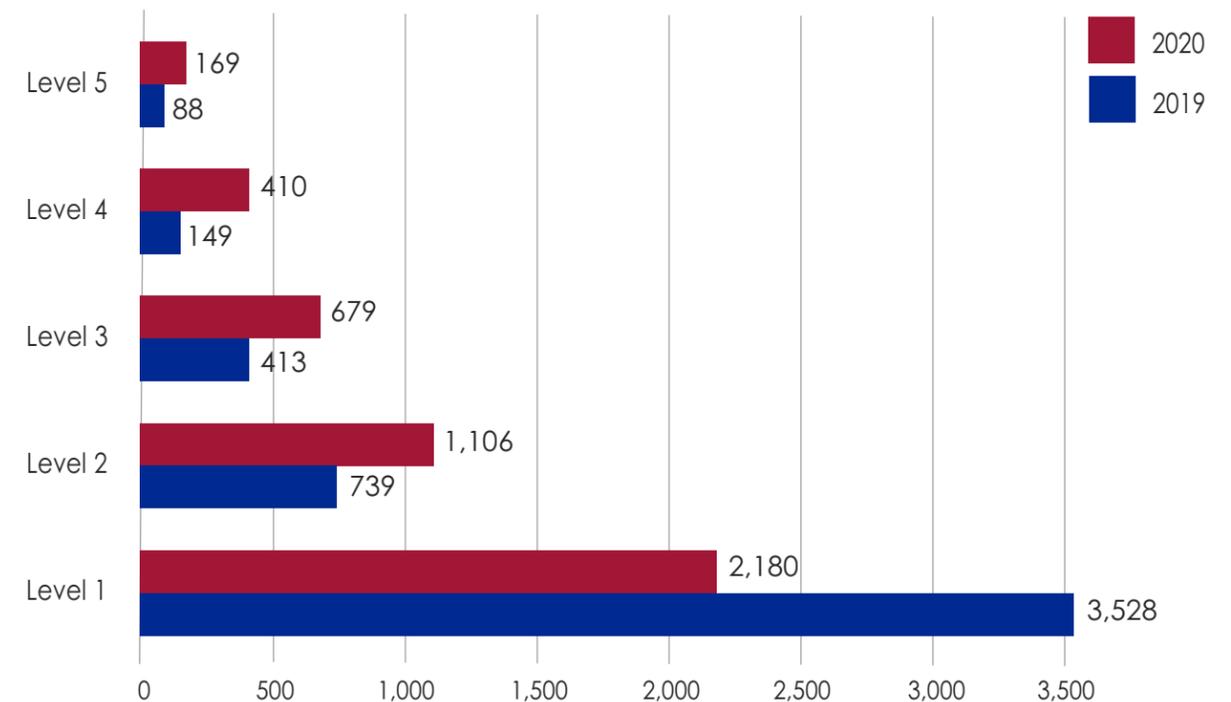
## Volunteer University

The opening of CAP's much-anticipated Volunteer University became a reality Aug. 4 as the cornerstone of CAP's new Senior Member Education and Training Program. Volunteer University offers online and on-site courses and schools to enhance the education and training opportunities for CAP's more than 35,000 adult volunteers.



**This is a new era for Civil Air Patrol education and training. We've prepared for over a year now, and to see it finally happening is really exciting." — Col. Regena Aye, chief of Senior Member Education and Training Program**

Level Completions



The launch of Volunteer University resulted in record-setting completions in all but one of CAP's five professional development levels. This graph shows the engagement and growth from 2019 to 2020.

**DID YOU KNOW?** In preparation for the new Senior Member Education and Training/Volunteer University Program, over 150 online modules were created. Each module includes at least three documents (student guide, instructor guide, and presentation) — an impressive amount of content to develop and deploy.

# AEROSPACE EDUCATION

Aviation/STEM Education  
Fuels Imaginations

## AEROSPACE EDUCATION By the Numbers

**500,000**

CADETS/STUDENTS IMPACTED  
BY AEROSPACE/STEM  
PROGRAM

**80%**

CADETS/STUDENTS MORE  
INTERESTED IN AEROSPACE/  
STEM CAREERS AFTER USING  
CAP'S 20 STEM KITS

**7,000**

TEACHER MEMBERS USED  
CAP CURRICULA TO REACH  
400,000 STUDENTS IN THEIR  
CLASSROOMS

**76,500**

STUDENTS IN 517 SCHOOLS  
PARTICIPATED IN CAP'S  
AEROSPACE CONNECTIONS  
IN EDUCATION K-6 PROGRAM

**S**TEM (science, technology, engineering and math) education with an aerospace theme is the cornerstone of Civil Air Patrol's Aerospace Education mission, laying a firm foundation for CAP cadets and students nationwide.

Of the 20 STEM Kits designed by CAP for squadrons and K-12 educators, three of them are focused on the skills,

techniques and science behind remotely piloted vehicles. Students as young as 10 can begin using CAP's Ready-to-Fly Quadcopter, where they can also apply skills learned through that kit and the other sUAS-related STEM Kits. There is also Flight Simulator, which provides cadets and students the opportunity to practice their flying skills they can apply later to earn Federal Aviation Administration private pilot certificates.

These STEM Kits — available to Civil Air Patrol cadets and a growing number of students taught by CAP's aerospace education members — inspire imagination and are making an

impact on hundreds of thousands of students each year. The kits are increasing interest in STEM as well as aviation, and more are in the works.

The STEM Kits and other AE curricula products are also used in CAP's Aerospace Connections in Education (ACE) program, which now involves more than 76,500 kindergarten through sixth-grade students in more than 500 schools nationwide. Every CAP wing now has at least one ACE program. **△**



## DID YOU KNOW?

Aerospace Connections in Education (ACE) provides 1,200 K-6 teachers with grade-specific lesson plans on character development, physical fitness and academics, all revolving around aerospace themes. The program impacts 76,500 students in 517 schools across America.

Cadet Chief Master Sgts. Spencer Seaborne (left) and Henrick Hammon, both of the Maryland Wing, explore "Snaptricity" during a Royal Air Force-Civil Air Patrol joint STEM event in Washington, D.C. Snaptricity, which teaches cadets and students how electricity and magnetism are used in daily items, is one of 20 STEM Kits now available to CAP's aerospace education members. Three more STEM Kits — Bridge Building, NewBee Drone and VTOL — were added in 2020.

## Using STEM Kits



First Lt. Justin Strait (left) uses his personally built "Star Wars"-style R2-Q5 droid to introduce National Capital Wing cadets to robotics. Every fifth meeting night of the month at Strait's Challenger 1 Cadet Squadron is devoted to STEM activities, with the whole focus on exploring STEM Kits. "We bring out all the droids, drones and flight simulator," said Capt. Rachael Norberg, who often brings her Sphero BB 8 droids. "It's like a mini open house, and anyone interested in joining CAP can come out."



The skills learned by youth using STEM Kits provide a foundation of knowledge they can apply later as cadets and in their careers. Here, Cadet Capt. Payton Mercer, a pilot himself, uses the Flight Simulator STEM Kit to demonstrate flight principles to young visitors at the annual Girls in Aviation Day hosted by Women in Aviation's Palmetto Pride Chapter in South Carolina.



Capt. Rachael Norberg (left) of the Virginia Wing works with cadets to program mini droids, part of CAP's STEM Kit program. The kits are available to cadets and students of all ages and offer youth the opportunity to work with hands-on activities to learn, grow and gain knowledge of aerospace/STEM careers.

## ACE Liftoff



Civil Air Patrol's Aerospace Connections in Education (ACE) program for grades K-6 launched the 2020-2021 academic year in the fall with a national liftoff held at Silver Sands School in Fort Walton Beach, Florida. Silver Sands School hosted the liftoff after being named CAP's 2020 National ACE School of the Year out of 517 schools. The school, which serves special needs students from pre-K through 12th grade, interwove the ACE program throughout its classes, adjusting lessons to accommodate all students during the pandemic.

## STEM Kits Available to Cadets and Students



**Bee-Bot/Code & Go Mouse** Ages 4+  
Allows young children to apply skills, such as sequencing, estimation, control and problem-solving, as they begin a path to early cyber-knowledge.



**Astronomy** Ages 6+  
Allows beginning astronomers the opportunity to begin an interest in space and observational astronomy.



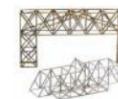
**Build & Learn Geometry** Ages 7+  
Helps cadets and students to practice identifying shapes, solving area and perimeter equations, and finding the volume of geometric figures.



**Weather Station** Ages 8+  
Teaches cadets and students to measure rainfall, barometric pressure, wind speed and more.



**AngLegs** Ages 8+  
Teaches cadets and students how to classify shapes and angles.



**Bridge Building** Ages 9+  
Teaches cadets and students to build and test their very own bridges while learning the properties of physics and its place in structural engineering.



**Sphero Mini/Sphero SPRK+** Ages 9+  
Helps youth apply skills such as sequencing, estimation, control and problem-solving as they begin their path to early cyber-knowledge.



**Hydraulic Engineering** Ages 9+  
Introduces students to levers/linkages and hydraulic fluid power.



**Rocketry** Ages 10+  
Teaches cadets and students about the use of rocket propulsion — the pathway to space.



**Snaptricity** Ages 10+  
Teaches cadets and students to explore how electricity and magnetism are used in daily items.



**Ready-to-Fly Quadcopter** Ages 10+  
Gives cadets and students the opportunity to explore the thrill of potential careers in remotely piloted aircraft.



**Renewable Energy** Ages 10+  
Provides a hands-on approach to the understanding of solar, hydro and wind energy.



**Robotics** Ages 11+  
Allows youth to explore careers in robotics such as manufacturing, unmanned space exploration, prosthetic engineering and other medical applications.



**VTOL** Ages 12+  
Short for vertical takeoff and landing aircraft, this kit teaches cadets to vertically takeoff and land the aircraft.



**NewBeeDrone** Ages 12+  
Contains everything cadets and students need to build and fly a NewBeeDrone AcroBee Lite.



**Raspberry Pi** Ages 12+  
Teaches cadets and students basic computer science like programming and coding.



**Cross Country Navigation** Ages 12+  
Prepares cadets and other youth for flight planning prior to any orientation flight and/or further flight experience.



**Flight Simulator** Ages 12+  
Offers a hands-on approach to aviation, especially for CAP cadets, ages 12 and above, who are given opportunities for orientation flights and flight training in CAP, especially through the Youth Aviation Initiative.



**Quadcopter** Ages 12+  
Gives cadets and students the opportunity to explore the thrill of potential careers in the use of remotely piloted aircraft or unmanned aerial systems.



**Remote-Controlled (RC) Aircraft** Ages 12+  
Promotes a beginning interest in aviation and/or remotely piloted aircraft vocations and avocations.

## AE Outreach



AE Outreach originated in 2020 to help support the mission during the COVID-19 pandemic. As part of the initiative, the AE national staff developed and presented 10 aerospace/STEM-related videos, including hands-on activities for youth to learn from and use. A website research page was also created for additional videos and lesson plans covering aerospace/STEM topics.

**DID YOU KNOW?** As is true throughout Civil Air Patrol, diversity is central to the Aerospace Education mission. Of the more than 7,000 teacher members, 34% are minorities and 61% are involved in Title 1 schools.

## Award-Winning ACE Program

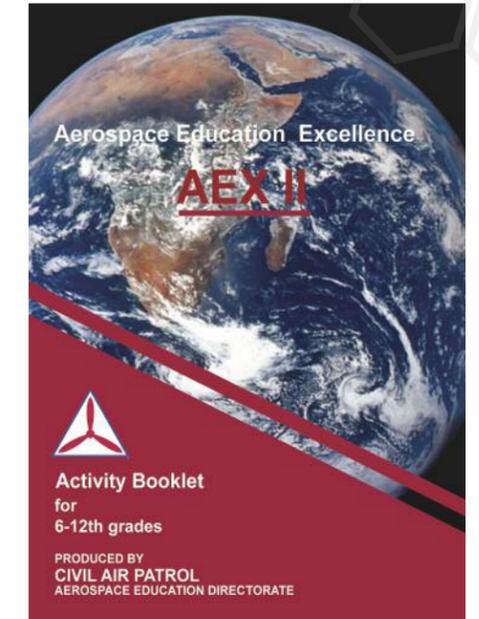
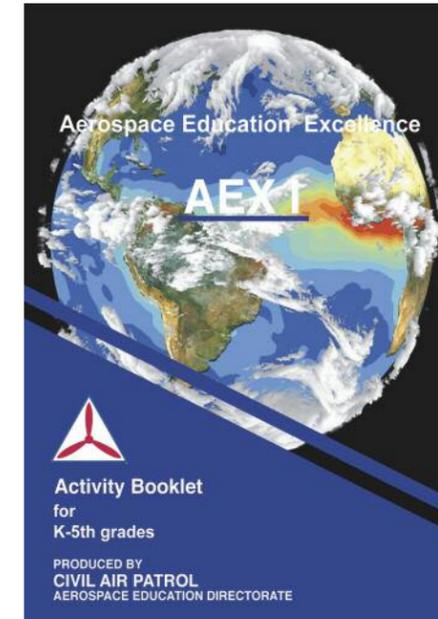
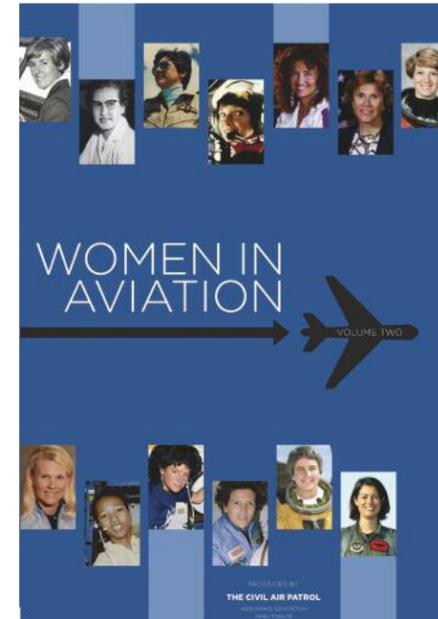


Thrive, a CAP Aerospace Education outreach program that originated in Mount Vernon, Indiana, was recognized with the 2020 Civil Air Patrol National Aerospace Connections in Education Collaborative Point of Light Program Award. Thrive is a nonprofit organization dedicated to providing kindergartners through eighth-graders at West Elementary and Mount Vernon Junior High with enriching after-school programming. Thrive worked closely with Lt. Col. Brian Schmuck (in photo with his daughter, Cadet Chief Master Sgt. Rylee Schmuck) and the Indiana Wing's RiverCity Cadet Squadron to launch the ACE program at Thrive for

the 2019-2020 school year using a strong collaborative approach that incorporated local CAP and Air Force Association members. Joy Millay (right), Thrive's executive director, described the program's approach as seeking "to foster curiosity and discovery in our students, because that is how you create lifelong learners."

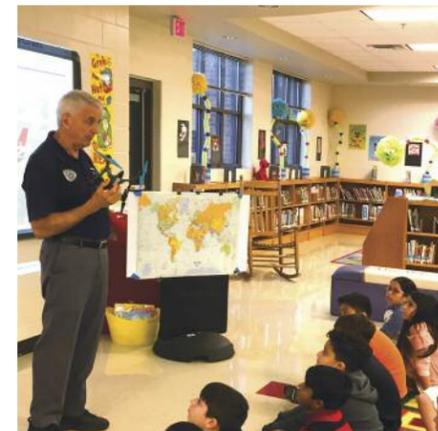


## AE Curricula



AE's impressive catalog of curricula was greatly enhanced over the past year. The staff developed a second Women in Aviation curriculum module, including biographies and hands-on activities. They also developed two additional AE Excellence curriculum modules with over 25 hands-on activities and updated over 150 new curriculum lesson plans to accompany the ACE program for elementary teachers.

## Career Day



Maj. Mike Kotula of the Georgia Wing spent Career Day at a Cobb County STEM school discussing aviation careers, STEM subjects and pilot shortages. The students learned a bit about Amelia Earhart and practiced plotting latitudes and longitudes.

## Women In Aviation



Capt. Sandra Locascio, commander of the South Carolina Wing's Lexington Composite Squadron, works with youth at the Drone Rodeo station on Girls in Aviation Day in Charleston. Locascio is also her squadron's aerospace education officer — one of the thousands of CAP members dedicated to the AE mission.



U.S. Air Force Maj. Gen. Jeannie Levitt, who became America's first female fighter pilot in 1993, poses for a photo with cadets at the Florida Wing booth at the 31st Annual International Women in Aviation Conference in Orlando. The booth featured the diversity in CAP's ranks and what the organization has to offer cadets and senior members interested in advancing their knowledge, skills and opportunities in aviation and aerospace.

# CADET PROGRAMS

Our Cadets Learn to Fly,  
Even in Challenging Year

## CADET PROGRAMS

By the Numbers

**24,000+**

RISING LEADERS  
82% ACHIEVE B'S OR  
BETTER IN SCHOOLS

**19,184**

CADET ORIENTATION FLIGHTS

**95**

ACADEMIC/FLIGHT  
SCHOLARSHIPS WORTH  
\$155,500 AWARDED

Cadet Master Sgt. Juliana Bohley of the Virginia Wing's Prince William Composite Squadron takes control of the plane during an orientation flight provided by her unit. For thousands of youth, CAP provides their first aviation orientation experience with these flights, or O-rides, within their first year of cadet membership.



The opportunity to fly in a powered aircraft or glider, even a hot-air balloon, is one of Civil Air Patrol's top attractions for young people, providing many young cadets with their introduction to flight. That is especially true today as CAP's Cadet Programs has intensified youth aviation training in

response to a developing worldwide shortage of pilots in both the military and commercial sectors.

The Cadet Wings program offers opportunities for cadets to solo and acquire their private pilot certificates after training with certified flight instructors. Despite the challenges of the COVID-19 pandemic, 22 CAP cadets soloed and earned their private pilot certificates through the program in 2020.

Related CAP programs are offered for youth interested in exploring aviation, including the Take-Off program, which

provides financial assistance for cadets to participate in CAP's weeklong powered and glider flight academies. Though most of those were canceled in the past year, there is optimism that they can be ramped back up in the coming year. In 2019, 25 flight academies were held at 18 locations nationwide. ▲

## DID YOU KNOW?

Cadets must be able to check the following boxes to be considered for Cadet Wings:

- ✓ Cadet in good standing;
- ✓ Aircraft Ground Handling training (within past two years);
- ✓ FAA Student Pilot Certificate;
- ✓ FAA Medical Certificate;
- ✓ Solo endorsement;
- ✓ Passed FAA Airman Knowledge Test; and
- ✓ Participation as a cadet leader.

**CIVIL AIR PATROL**

**the CADET FLIGHT PLAN for AVIATION CAREERS**

**THIRD CADET YEAR & BEYOND**

**SECOND CADET YEAR**

**FIRST CADET YEAR**

- 1 Enter the Cadet Program between ages 12 and 18
- 2 Learn aerospace basics at weekly squadron meetings; ask which STEM kits are available
- 3 Take the controls during your first orientation flight – they're always free to cadets
- 4 Study and advance through the cadet aerospace texts; try to earn the Wright Brothers Award by the end of your first cadet year
- 5 Go to encampment and interact with the Air Force; apply for **CECOT** funds to get help with tuition and uniforms, if needed
- 6 Attend a cadet flight academy and fly solo; compete for the **Take Off Program** to get help with expenses
- 7 Explore an aviation or STEM career at an **NCSC**; compete for the **UM Program** to get help with expenses, if needed; try to earn the **Mitchell Award** by the end of your second cadet year
- 8 Compete for the elite **Cadet Wings** program, which covers expenses leading to a Private Pilot license; you'll want to have earned your **Mitchell Award** to be competitive
- 9 Complete for ROTC and Service Academy appointments; check out the **University Aviation Association**, [uaa.aero](http://uaa.aero); and also apply for the **CAP College Scholarship Program**
- 10 Enter the aviation profession and give back to the next generation of cadets

**ASSISTANCE PROGRAMS**

<b>Cadet Encampment</b>	Head based program helping cadets with tuition and uniform expenses; priority given to first-year cadets.
<b>CECOT</b>	Head based program supporting cadets at week-long summer camp; flight academies; possibly leading to solo flight.
<b>Take Off Program</b>	Head based program supporting cadets at week-long career exploration (WCE).
<b>UM Program</b>	Head based program for cadets pursuing a private pilot certificate; also competitive – the goal is to fly!
<b>Cadet Wings</b>	Head based program supporting cadets at cadet camps and camps at home.

**DETAILS @ [GoCivilAirPatrol.com/Scholarships](http://GoCivilAirPatrol.com/Scholarships)**

**FIRST CADET YEAR**

**SECOND CADET YEAR**

**THIRD CADET YEAR & BEYOND**

**START HERE** Enter the Cadet Program between ages 12 and 18

## Physical Fitness



Chief Master Sgt. Andrew Baltrinic (left) and Cadet Airman Ezekiel Miller square off in a round of Bean Bag Hockey. Through such activities, cadets are motivated to develop a lifelong habit of regular activity.

**DID YOU KNOW?** Through its Youth Aviation Initiative, Civil Air Patrol has had success in reaching the nation's historically under-represented communities. About 30% of our new young pilots are minorities, and a growing number of Cadet Wings graduates are female — about one in four.

## Youth Aviation Initiatives



Civil Air Patrol's fleet of 560 single-engine aircraft and 50-plus gliders give CAP cadets an opportunity to experience flight — many of them for the very first time. In their first year of membership, our cadets are treated to five orientation rides in which they get the opportunity for hands-on learning about piloting the plane. CAP's powered aircraft and gliders are also used at National Flight Academies and in the Cadet Wings program, where CAP youth learn to fly, and many get a chance to actually take solo flights — and some earning their private pilot certificate.

Cadet 2nd Lt. Isaiah Bryant of the Colorado Wing is all smiles after taking his solo flight in August and receiving his Gen. Billy Mitchell Award, one of the 16 achievements earned through the CAP cadet program.

## CadetInvest



As part of its ongoing recruiting efforts, the cadet program distributed this card in September, encouraging CAP cadets to take advantage of its CadetInvest opportunities for flight training and career exploration.

## Attending Space Camp



Cadet Chief Master Sgt. Chloe Gross of the Virginia Wing experiences simulated low gravity on the multi-axis trainer at the Advanced Space Academy at the U.S. Space and Rocket Center in Huntsville, Alabama. Gross and Cadet Staff Sgt. Shannon Moritz (right, seen receiving rocket-launching instruction) were among a select group able to increase their aerospace knowledge at the Advanced Space Academy.

“

America has a real need for pilots and CAP is contributing through Cadet Wings and related programs.” — Curt LaFond, CAP’s director of Cadet Programs

## Cadet Wings



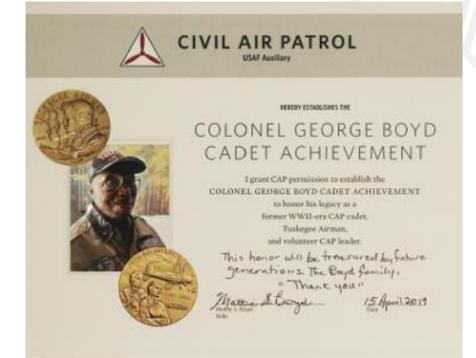
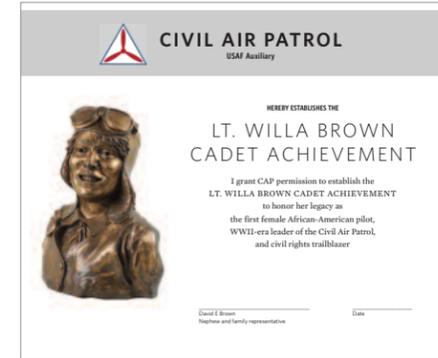
Cadet 2nd Lt. Sarah Skjeveland earned her private pilot’s certificate through CAP’s Cadet Wings program on Aug. 16. Skjeveland overcame significant barriers to achieve her certificate, doing so during the ongoing pandemic. She is a member of the Minnesota Wing’s Mankato Composite Squadron, and one of nearly 20 female cadets to earn their “Wings” through CAP.

## Diversity Pilot Panel



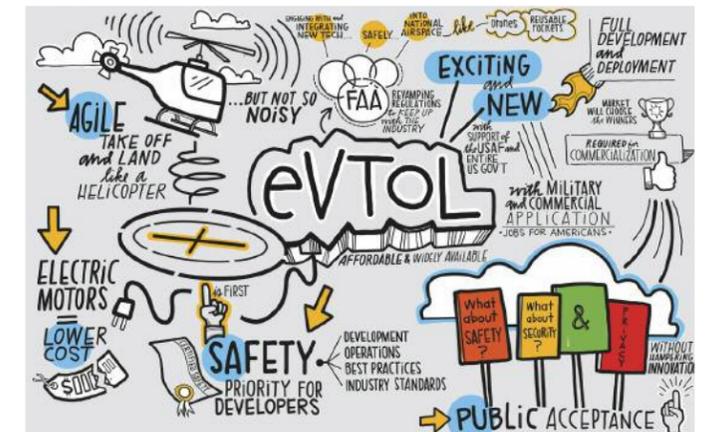
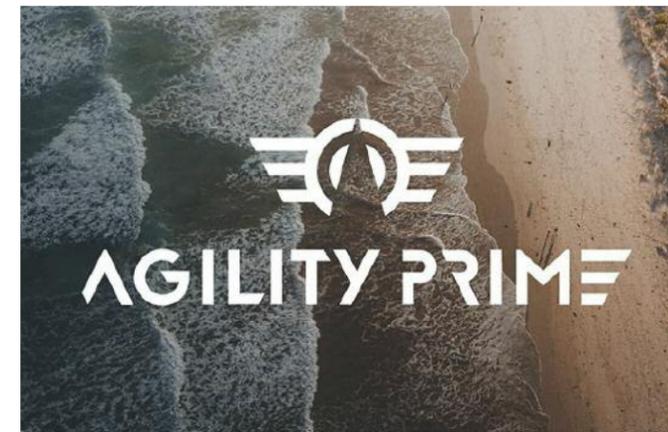
As part of its ongoing Diversity and Inclusion efforts, CAP hosted a series of online presentations this past summer featuring female pilots. Included among the panelists was Cadet Senior Master Sgt. Maria Hall, a CAP and Air Force ROTC cadet.

## Aero Pioneers



Three new cadet awards approved in 2020 celebrate three diverse aerospace pioneers — Lt. Willa Brown, Dr. Sally Ride and Col. George Boyd. Brown and Boyd actually served in Civil Air Patrol — Brown as CAP’s first African-American officer and Boyd as commander of the Kansas Wing.

## Innovation



Civil Air Patrol also joined a U.S. Air Force innovation program in 2020 by competing in Agility Prime, an urgent, exciting new opportunity for cadets to engage with an Air Force initiative to accelerate the move to advanced air mobility vehicles — yes, flying cars. Twenty-seven CAP teams participated in the inaugural competition, with two teams — the National Capital Wing’s Mount Vernon Composite Squadron and the South Carolina Wing’s Coastal Charleston Composite Squadron — receiving first-place honors for their presentations.

“

The Agility Prime team is thrilled to have the cadets of the Civil Air Patrol bringing forward fresh ideas about this exciting new technology as this new generation prepares to fly ORBs into a new age of aerospace.” — U.S. Air Force Col. Nathan Diller, director of AFWERX, and the Agility Prime lead

## Purple Star Schools



John Adams High School Cadet Squadron cadets help honor the nation's fallen as part of the annual Wreaths Across America observation. The South Bend, Indiana, public high school was one of two schools with CAP programs awarded the Indiana Department of Education's inaugural Purple Star School Designation. The other school was Anderson Preparatory Academy in Anderson, a military-style, public charter school academy for girls and boys that focuses on a college preparatory curriculum of liberal arts and sciences. All students in grades six through eight participate as CAP cadets.



## Cadet Protection



Cadets from the Virginia Wing's Prince William Composite Squadron present the colors for the opening formation on Risk Management Night. CAP recommitted to and refreshed its Cadet Protection Program in 2020. Working with an outside expert, CAP completed a comprehensive review of its youth safety policies and practices during the past year and instituted a handful of changes and training updates to further protect cadets, continuing over 25 years of youth protection practices.

## Operation Wolverine



Michigan Wing members participate in an online Operation Wolverine staff meeting using Zoom. Though most worked remotely because of pandemic-related restrictions, over 100 CAP volunteers turned out for the cadet-led training exercise in September that allowed younger members to fill leadership roles.

## Virtual Ranger School



As CAP's only National Cadet Special Activity to move to a completely online format in 2020, Hawk Mountain Ranger School wrapped up its 64th year in August with more than 650 participants from 44 wings. Virtual training sessions featured a widespread curriculum covering the Basic and Advanced Ranger Course, Team Leaders Course and Field Medics Course — training typically provided as part of the summer activity.

## CyberPatriots



The Florida Wing's St. Augustine Composite Squadron team — (from left) Cadet Staff Sgt. Jocelyn Caraway, Cadet Chief Master Sgt. Alex Bitzer, Cadet 2nd Lt. Kelsey Hall, Cadet Staff Sgt. Stephen Parth, Cadet 2nd Lt. Gavin Morton and Cadet Capt. Harrison Keating — made its first AFA CyberPatriot XII National Youth Cyber Defense Competition finals a memorable one, finishing second in the All Service Division and third in the Cisco NetAcad Challenge.



CAP cadets are leaders in the AFA's CyberPatriot program. Each year, about 500 cadet teams participate in the competition. Here, cadets in the Virginia Wing learn more about cyber security in preparation for the 2020 competition.

## StellarXplorers



StellarXplorers is an AFA program aimed at inspiring students to pursue education and careers in STEM fields using space system engineering. Almost half the participants have been under-represented minorities, and over one-third are female — a testament to the exciting and engaging nature of space and the competition. The overall competition included 213 high school teams, with 13 consisting of Civil Air Patrol cadets. The Oregon Wing's Aurora Composite Squadron team — (from left) Cadet Maj. Rhett Miller and Cadet 1st Lts. Joshua Vanrenterghem, Luke Van Sickle and Colton Swift — finished second in the national finals.



**AFA is delighted that each year the students competing in StellarXplorers bring excitement and passion to the competition. With the creation of the U.S. Space Force in December 2019, space has been rightly elevated as a key part of our nation's defense strategy. StellarXplorers is preparing the next generation of space warriors." — retired U.S. Air Force Lt. Gen. Bruce "Orville" Wright, president of the AFA**

# NATIONAL DATA

## 2020 Statistics



### FUNDING

#### Federal Funding (FY20)

\$39.1 million Operations & Maintenance  
\$11.0 million Aircraft Procurement  
\$1.7 million Vehicle Procurement

#### In-State Funding Received by CAP Wings (FY20)

\$2,421,170

#### Federal Funding (FY19)

\$33.6 million Operations & Maintenance  
\$10.8 million Aircraft Procurement  
\$1.7 million Vehicle Procurement

#### In-State Funding Received by CAP Wings (FY19)

\$3,046,427

### CONTACT INFORMATION

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www.gocivilairpatrol.com

### BOARD OF GOVERNORS

Civil Air Patrol's 11-member Board of Governors generates strategic policies, plans and programs designed to guide and support the volunteer service of the organization's 52 wings. CAP's national commander and chief executive officer, the organization's chief operating officer and the CAP-USAF commander serve as advisers to the Board of Governors.

#### Civil Air Patrol-Appointed Members:

Col. J. Bradford Lynn, CAP Member-at-Large (Chairman)  
Col. Curtis Boehmer, CAP Member-at-Large  
Col. Dale Newell, CAP Member-at-Large  
Lt. Col. Thomas S. Vreeland, CAP Member-at-Large

#### Air Force-Appointed Members:

Lt. Gen. Kevin McLaughlin, USAF (Ret), Independent Consultant  
Maj. Gen. Sandra (Sandy) Finan, USAF (Ret), Independent Consultant  
Brig. Gen. William Betts, USAF Vice Commander, CONUS NORAD Region, First Air Force (AFNORTH)  
Robert E. Corsi Jr., RoCor Consulting, LLC (Vice Chairman)

#### Industry, Government & Education Appointed Members:

Cmdr. George M. Perry, USN (Ret), Aviation Safety Advocate, Author and Speaker, United Parcel Service  
Stacey Bechdolt, Engineering & Air Safety, Air Line Pilots Association, International  
Martha King, Co-Chairman/Owner, King Schools

#### Advisers to the Board of Governors:

Maj. Gen. Mark E. Smith, CAP National Commander/CEO  
Col. Mark A. Wootan, USAF, CAP-USAF Commander  
John A. Salvador, CAP, BoG Executive Secretary/Chief Operating Officer

### 2020 VALUE OF CAP MEMBERS' SERVICE HOURS

\$193,721,863

### MEMBERSHIP

#### Volunteer Members

35,043 adult members  
24,225 cadets

#### Squadrons

1,435 locations statewide

### EMERGENCY RESPONDERS

6,711 aircrew personnel  
33,241 emergency responders

### EQUIPMENT

#### Aircraft

560 single engine  
54 gliders  
2 balloons

#### Vehicles

1,098 vehicles

#### Interoperable Communications

729 VHF/FM repeaters  
12,793 VHF/FM stations  
2,067 HF stations

### MISSION ACTIVITY

756 search and rescue missions  
130 lives saved\*  
452 finds\*  
*\* Includes lives saved and finds credited with national team support*  
101 disaster relief missions  
220 air defense intercept training and evaluation missions  
425 CAP, AFROTC and AFJROTC cadet orientation flight missions  
307 other Air Force support missions  
912 training missions  
84 other state support missions  
201 other missions in support of partner agencies and organizations or local municipalities

#### Significant Missions in FY20

Puerto Rico Earthquake; Hurricanes Isaias, Laura and Sally; Wildland Fire Support; Tornado Support; Green Flag; RPA Escort Operations; Air Defense Intercept Training Support

#### COVID-19 Mission Support

5 air and ground recon  
16 augmenting EOCs  
29 distributing food, critical supplies and hosting blood drives  
23 distributing test kits and PPE  
13 transporting completed test kits  
6 transporting personnel

#### Cadet Flying

19,184 CAP, AFROTC and AFJROTC cadet orientation flights

#### Total Hours Flown

70,919

## Mission Statement

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

## On the Cover

Civil Air Patrol members mobilized to provide 40 states and Puerto Rico with COVID-19 support in fiscal 2020. Their critical missions ranged from flying test kits, ventilators, vaccines and critical personnel protection equipment to remote hospitals to serving millions of packaged meals to those in need. While maintaining strict safety protocols, CAP's mobilization in support of the novel coronavirus response was the largest effort since World War II. The support, now approaching 40,000 volunteer days, continues in 2021.

## For More Information

Contact John Swain at [jswain@capnhq.gov](mailto:jswain@capnhq.gov) for more information concerning this 2020 Report to Congress.

[gocivilairpatrol.com](http://gocivilairpatrol.com)