



ON GUARD

SAN FRANCISCO BAY GROUP 2

Group 2's Monthly Magazine

Welcome to On Guard

By Lt Col Noel Luneau, Public Affairs Officer
Group 2

Welcome to the fourth edition of the Group 2 Magazine - On Guard!

In this edition we have a special section on our remembrance of 9/11, an article, and videos from the 2021 Ultimate Bear and Wings Challenge, an article on C/CMSgT Telli's flying training, two great articles on sUAS, and many updates to our Aircraft Professionalism and Safety section.

Article Submissions. This is your magazine, and we welcome all of your contributions to it with short stories, photos, and short videos of your Squadron or event. We are looking for articles for the **November** edition, due 31 Oct 21. Please submit all articles to the Group 2 website [Here](#).

Also please tag Group 2 on Instagram, Facebook, and Twitter and we will collect posts, stories, and reels there. Tag us on **Instagram** and **Facebook** here: @civilairpatrolgroup2. Tag us on **Twitter** here: @CAPGroup2CA.

Just a reminder that we have a new [YouTube channel](#) for the group so send us any videos that you want to share with the world!

The QR Code to the right is a link to an online version with viewable video clips.



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GENERAL

WING CONFERENCE SEPT 29 – OCT 3

BY CAPT JOE SPEARS

The 2021 California Wing Conference was presented in-person this year September 30 – October 2 at the Hyatt-Regency in Sacramento. Presenters from Group 2 included Maj Kathy Brown, Capt Joe Spears, Capt Keith Breton, Capt Van Henson, Lt Col Chris Suter, LMaj Jeff Ironfield,

During the Wing Conference the 24 Group 2 Of the Year Award winners, the following CAWG Of the Year awards were presented to Group 2 members:

1. Distinguished Aviator Award – Sq. 80 – Capt Stephen Swale
2. Pilot of the Year – Sq. 188 – Capt Karin Hollerbach
3. Communicator of the Year – Sq. 80 – Capt Stephen Swale
4. Character Development Instructor of the Year – Sq. 10 – Ch, Capt AnnaMae Taubeneck
5. Aerospace Education Officer of the Year – Sq. 156 – Capt Joseph Spears
6. Frank G. Brewer Aerospace Education Award (Senior) – Sq. 10 – 1st Lt Kailash Kalidoss
7. Frank G. Brewer Aerospace Education Award (Cadet) – Sq. 192 – C/2d Lt Preston Kwok
8. Unit Operations Staff Member of the Year – Sq. 10 – Capt Louise Mateos
9. Aircrew Member of the Year – Sq. 10 – 1st Lt Michael Gross
10. Legal Officer of the Year – Sq 188 – Capt Christopher Fenolio
11. Health Services Officer of the Year – Sq. 80 – 1st Lt James Bird
12. Airborne Photographer of the Year – Sq. 80 – 1st Lt Richard West
13. Cadet of the Year – Sq 44 – C/Col Andrew Hockel
14. Composite Squadron of the Year - Sq. 10



National Commanders Unit Citation Award

During the formal Award Banquet, California Wing was presented with the National Commander's Unit Citation. This award, established in 2006, is awarded to "units providing services or achievements above and beyond those normally recognized by a Unit Citation Award." Awards are made at the sole discretion of the National Commander of Civil Air Patrol. The ribbon of the award is worn by all cadets and officers who were members of the unit during the time for which the citation is awarded. Once the award has been made, members may continue to wear the ribbon even if they transfer out of the unit later.



Brigadier General Regena Aye, presents the prestigious National Commander's Unit Citation to California Wing Commander Col Ross Veta, at our CAWG Conference this past weekend.

ON GUARD SAN FRANCISCO BAY GROUP 2

GENERAL

9/11 20TH ANNIVERSARY COMMEMORATION

On the 20th anniversary of 9/11, Group 2 members honored those who lost their lives, those who answered the calls for help, and those who supported in the recovery and rebuilding efforts by proudly displaying the US Flag (Old Glory).

Members of Group 2 flew in CAP aircraft, flew in civilian aircraft, served on a CAP ground team, attended and recruited in San Martin, CA, and stood in front of US Flags at half staff.



GENERAL

9/11 20'TH ANNIVERSARY COMMEMORATION

CONTINUED...

Squadron 36's Color Guard presenting the US Flag at the San Martin Food Truck Fly-in on 9/11.



Maj Kathy Brown at the Group 7 SAREX with other CAWG members and holding Old Glory.



Capt John Heldt with cadet members and Old Glory at the San Martin Food Truck Fly-in on 9/11



Capt Van Henson in front of Old Glory at half mast.



Maj Bhaskar Reddy with Old Glory at Livermore airport after his 9/11 flight.



Lt Col Chris Suter and Capt Louis Rivas pose with Old Glory at Livermore Airport after their flight in CAP424



Lt Col Randy Pesce with Old Glory at Livermore airport after his 9/11 flight.



Lt Col Noel Luneau and Maj Joshua Edwards pose with Old Glory at Livermore Airport after their flight in CAP424



GENERAL

9/11 20'TH ANNIVERSARY COMMEMORATION

CONTINUED...

USS Iwo Jima (LHD-7) captured by Maj Bhaskar Reddy and Lt Col Randy Pesce on 9/11



Group 2 aircraft CAP483 flew on 9/11 at the Group 7 SAREX and Old Glory was carried.



Lt Col Eric Meinbress flew his own aircraft on 9/11 and carried Old Glory.



Lt Llia Shabalin carried Old Glory on 9/11 while flying a private aircraft.



Lt Col Doug Crawford, flew at work with a student and carried Old Glory on 9/11.



Lt Antonio Forenza, Lt Tommaso Bartalucci and IFR Instructor Drew Kemp flew on 9/11 and shared this picture.



Capt Tony Stieber flew with a friend on 9/11 and carried Old Glory.



SM Raymond Buenaventura shared this great photo of him posing with Old Glory.



GENERAL**9/11 20'TH ANNIVERSARY COMMEMORATION****CONTINUED...**

A Civil Air Patrol aircraft crewed by Lt Col Randy Pesce and Maj Bhaskar Reddy from San Francisco Bay Group 2 overflew the USS Tripoli (LHA-7) on 9/11/2021.

USS Tripoli (LHA-7) is the second America-class amphibious assault ship built for the United States Navy. Tripoli is the third U.S. Navy ship named for the Battle of Derne in 1805. It was the first recorded land battle of the United States fought overseas. The ship was commissioned in 2020.



GENERAL

43 FACTS ABOUT THE CIVIL AIR PATROL

CHECK OUT THESE REMARKABLE FACTS ABOUT THIS REMARKABLE ORGANIZATION.

Desiree Kocis (26, September 21). *43 Facts About The Civil Air Patrol*. Plane & Pilot.

<https://www.planeandpilotmag.com/news/pilot-talk/2021/09/14/civil-air-patrol-facts/>

Pilots know what the Civil Air Patrol is, but very few of us understand the scope and scale of the work it does. Since the 1940s, it has done its part to keep American citizens safe, though that role has changed a good deal over the years. These days, the mission is predominantly search and rescue, but there are numerous other mission types you probably didn't know about—it has hot air balloons, you know! Check out these remarkable facts about this remarkable organization. We're betting you'll be as surprised by many of them as we were!

Founded: 1941

Original Name: Civil Air Defense Service (CADS)

Motto: "Semper Vigilans" (Always Vigilant)

Headquarters: Maxwell AFB, Alabama

Purpose: Mobilize civilian pilots for national defense

Became Civilian Auxiliary Of The U.S. Air Force: 1948

Primary WWII Duties: Coastal patrol

Members Awarded Congressional Gold Medals: Approximately 200,000

Current Commander: Maj. Gen. Mark E. Smith (24th)
The New Guy: Brig. Gen. Edward D. Phelka, who will assume command from Smith in late August

Modern Duties: Search & Rescue (SAR), Aerospace Education, Disaster Relief

Annual Missions: Approximately 50,000

Percent Of Inland SAR Missions Involving CAP: 90

Lives Saved Per Year: More than 100

Current Membership: 65,927

Percent Female: 15-20%

Senior Members: 38,000

Cadets: 27,926

Aircrew: 6,850

Member Earnings: \$0

Annual Dues: \$82

U.S. Squadrons: 1,442

Overseas Squadrons: 8

Fleet Size: 560

Primary Aircraft: Cessna 172s and 182s

Glider Fleet: 54

Hot Air Balloons: 2

Drones: 1,500

Hourly Flight Costs: \$120-\$165

Average Hours Flown/Year: 95,000

Percent USAF-Assigned: 80

Value Of Annual Operations: Approximately \$200 million

Federally Funded: \$40-\$50 million

Provided By USAF: \$2.4 million

Advertisement

Cadet Program Initiated: 1942

Goal: Prepare teens for military service

Focus Areas: Aerospace, character, fitness, leadership

Age To Join: 12-18

Weekly Commitment: 2 hours

Length of Summer Encampment: 1 week

Cost: Approximately \$200

Recent Goal Of Civil Air Patrol: Addressing pilot shortage

Orientation Flights Given Each Year:

Approximately 35,000

GENERAL - BRANDING

NEW CAP BRANDING

CAP HAS A NEW BRANDING SITE - [HTTP://BRAND.GOCIVILAIRPATROL.COM](http://brand.gocivilairpatrol.com)

There is a new CAP mission Statement: **Volunteers serving America's communities, saving lives, and shaping futures.**

Here are some of the changes:

1. There is a new About CAP introduction here: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/introduction/welcome>
2. Where you can and cannot use the various CAP logos and seals: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/logos-graphics/overview>
3. The five official colors of CAP to be used in all marketing communications: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/logos-graphics/overview>
4. The three official CAP Fonts: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/colors-typography/typography>
5. When to use our name: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/style-guide/civil-air-patrol-name>
6. General Terms, Abbreviations, etc: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/style-guide/general-terms-abbreviations-syntax>
7. CAP Specific Terms and Abbreviations: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/style-guide/cap-specific-terms-abbreviations>
8. Grade/Rank abbreviations: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/style-guide/grade-rank-abbreviations>
9. Email Signature guide: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/resources-tools/email-signature>
10. Mission, Vision & Core Values: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/resources-tools/mission-vision-core-values>
11. PAO Templates and Files: <https://company-214080.frontify.com/d/crhrf1Aw1Ci9/brand-guide#/resources-tools/templates-files>

Some Changes/Highlights:

- Squadron names may be further shortened by using abbreviations for the type of unit. Squadrons may use "Cdt. Sq.", "Comp. Sq.", or "Sr. Sq." as appropriate. The shorter abbreviation "Sq." may be used for all squadron types. Groups may use the abbreviation "Gp."
- Grades: For external publication Lt. Col. for Internal publication Lt Col
- When spoken, Civil Air Patrol will be referred to by its full name or by its initials C-A-P, which are verbalized as letters "C", "A", "P" and not spoken as a single word "cap."
- The word "headquarters" will not be used with squadron or flight names, as those units do not have headquarters elements.
- The terms "congressionally mandated missions", "three missions", or variations thereof will not be used to describe the internal program areas; **aerospace education, cadet programs and emergency services are our three main "programs".**

CADET PROGRAMS

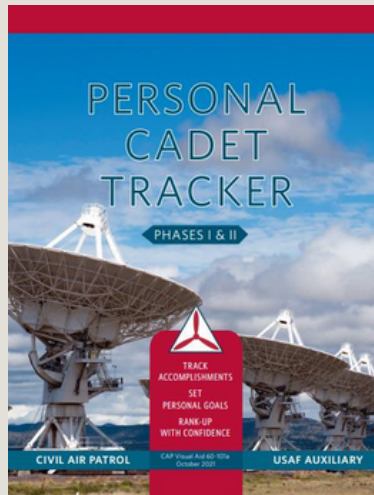
CADET PROGRAM CHANGES – NOW EFFECTIVE OCTOBER 26TH

BY CAPT JOE SPEARS

Last month, National Headquarters announced changes to the cadet program which go into effect in October. The effective date of these changes has been moved to October 26th to accommodate logistical challenges associated with the new program rollout.

ALL CADET PROGRAM CHANGES

Checkout all of the changes coming to Cadet Programs. Click [Here](#) for the Cadet News and Innovations publication, dated August 2021.



CADET NCO SCHOOL – OCT 22 – 24

BY CAPT JOE SPEARS

The goal of the Noncommissioned Officers School (NCOS) is to provide the cadet with a foundation for the intermediate phases of the cadet training in Civil Air Patrol. NCOS stresses the fundamental aspects of instructional techniques, evaluation methods and intermediate leadership laboratory skills.

The graduate of Noncommissioned Officers School will demonstrate:

- • The ability to instruct a class or make a presentation on a CAP related subject.
- • The ability to drill a flight.
- • The ability to evaluate another cadet in drill and in inspection.

The October Cadet Noncommissioned Officers School will be hosted at San Francisco Squadron 86 at the Armory (near San Francisco Zoo). Cadets are eligible to attend if they are in the grades C/SrA to C/CMSgt. Cost is \$60 and includes meals, billeting, training materials and an NCOS T-shirt.



CADET PROGRAMS - ULTIMATE BEAR AND WINGS

2021 ULTIMATE BEAR AND WINGS CHALLENGE

CADET PROGRAMS
17-19 SEP, 2021

From CAWG post on Facebook:

Last weekend on September 17-19, Squadrons across California sent teams to the Sierra Christian Camp in Posey to compete in the Ultimate Bear and Wings Challenge (UBWC). In 2010, cadets of the California Cadet Advisory Council worked to develop an event that was not training focused but one that aimed to have cadet and seniors come together to socialize and have fun. The initial concept was voted on and approved by the cadet council and then sent to the Wing Commander where it was also approved. The cadets involved in its creation continued to develop the program. Through development and the years of execution the mission and priorities of the activity have not changed.

Priority #1: For Cadets and Senior members from local squadrons to come together at a Wing level activity to socialize, have fun, renew relationships built at other activities, and create new relationships that will last for a lifetime.

Priority #2: The competition.

This year, Squadron 44 took first place overall, Squadron 18 took second place overall, and Squadron 121 won the Warrior Spirit Award. Squadron 394 placed first in the Emergency Services Challenge, Squadron 44 placed first in the Leadership Challenge, and Squadron 45 and Squadron 3 tied for first in the Aerospace Challenge. Squadron 44 placed first in the Volleyball Competition, Squadron 10 placed first in Aquatic events, and Squadron 44 placed first in Ground Events. C/2d Lt Annabel Doherty was awarded the Wingman Award for Individual Contribution. C/1st Lt Ava Fontanilla and C/1st Lt Mark Hockel were awarded commanders commendations.



Sierra Christian Camp in Posey, CA.
Photo by C/SMSGT Benjamin Lee, UBWC
Public Affairs NCO



Sq. 10 Team Falcon preparing to cross the "lake" in the Leadership Challenge. Pictured are C/SrA Hall, C/SrA Manokhin, C/SrA Kapur, C/2dLt Doherty, and C/A1C Manokhin. Photo by Capt Louise Mateos, Sq. 10.

From Maj Tim Albert's post on Facebook

This year, Squadron 44 was represented by C/Amn Davies, C/SSgt Martin, C/2d Lt Durling, C/1st Lt Acevedo, and C/SSgt Conway. While the Los Diablos team was never "between a rock and a hard place" not everything was easy or went as expected. To change their perspective and provide some inspirational thoughts. C/1st Lt Acevedo, team captain, invited the team to climb up on some large rocks.

During a Leadership Challenge event involving crossing the pond, the Los Diablos team devised a winning strategy following our Squadron's motto, "No Challenge Unchallenged".

C/1st Lt Acevedo set an event record for the first Ground Challenge event, the Crabwalk, and C/Amn Davies set an event record for the Drogue Chute Sprint. Los Diablos finished first in the final Ground Event, the Team Relay.

Continued...



Sq. 44's Los Diablos poses with "My Liege" after winning the first round of the volleyball competition. Pictured L to R: C/Amn Davies, C/SSgt Martin, C/2d Lt Durling, C/1st Lt Acevedo, C/SSgt Conway. Photo by Maj Tim Albert, Sq. 44

CADET PROGRAMS - ULTIMATE BEAR AND WINGS

2021 ULTIMATE BEAR AND WINGS CHALLENGE

CADET PROGRAMS
17-19 SEP, 2021

From Maj Tim Albert's post on Facebook - Continued

Sunday was filled with some tension, stress and disappointment for Los Diablos as the final round of the volleyball competition did not go as desired for Sq. 44.

At the end of the day, Los Diablos received 1st Place medals for the CAP Mission Challenges and Ground Challenges. The team also received the Gold Cup 1st Place Overall for the 8th year in a row.

The UBWC Cadet Commander this year was Sq. 44's own C/1st Lt Hockel. He was acknowledged and awarded for his leadership of the 2021 UBWC.



For the 8th year in a row a Sq. 44 team accepts the gold cup for 1st place overall. This year the Los Diablos team posed for their acceptance photo with the UBWC Commandant of Cadets (2d Lt Kendal Grossgold, left) and the UBWC Cadet Commander (C/1st Lt M. Hockel, right). Photo by C/SMSGT Benjamin Lee, UBWC Public Affairs NCO



Cadets take part in the Crab Walk Race as part of the Ground Team event. Video by 1st Lt Lumen Hurst, Sq. 18



Water relay race. Chief Dakota Yang and C/A1C Sruthy Sabasen swimming. Video by 1st Lt Lumen Hurst, Sq. 18



C/SMSGT Sima Sadaghani coming forward in the relay race. Video by 1st Lt Lumen Hurst, Sq. 18

CADET PROGRAMS



Sept 24th was National Girls In Aviation Day. As part of that day On Guard Magazine is highlighting our women cadets that are training for Private Pilot.

TELLI, GIULIA F C/CMSGT



I started flying with Civil Air Patrol through the NorCal flight school under my flight instructor, Major Ironfield.

So far not much to report, I'm working on getting my solo but I'm too young to fly it currently. But that will change in 4 months! My goal is to solo on my birthday.

My most recent lesson was on stalls. It was definitely an experience. The motions of recovering from a stall aren't difficult, but they became harder when under stressful conditions. Maybe the hardest part about it is actually getting into the stall- I've asked myself why anyone would ever do this to themselves. In the end, however, it's actually quite fun.

The thrill (also applicable to flying in general) is better than anything you can get on a roller coaster.

Flying is an activity I mostly do because of my love for airplanes. But I would also like to go to the Air Force Academy one day, so that's a definite motivator!

CIVIL AIR PATROL ORIENTATION FLIGHTS – STEM ALOFT

BY MAJ KATHY BROWN

What is Civil Air Patrol (CAP) Orientation Flight Program (O-Flights):

"CAP gives cadets the opportunity to experience the wonder of flight. Orientation flights are among the most exciting aspects of cadet life." Each cadet gets five power and five glider O-Flights before their 18th birthday.

"The goal of the cadet orientation flight program is to help America continue its aerospace supremacy by using cadet flight experience to increase cadet comprehension of and enthusiasm for STEM topics." There are syllabus for each of the five flights which build on each other to give a broad overview of how planes fly and what it is like to be a pilot. The CAP program motto is "Safe, Fun, Educational"

Continued...



Maj Kathy Brown and a cadet in front of the CAP aircraft following an O-Flight at Livermore Airport.

CADET PROGRAMS - O-FLIGHTS

CIVIL AIR PATROL ORIENTATION FLIGHTS – STEM ALOFT

BY MAJ KATHY BROWN
CONTINUED...

Why do I fly CAP O-Flights

When I was first asked to be an orientation pilot, I was nervous because I was not a flight instructor and wanted to get the cadets to get the most out of their five flights. After reviewing the syllabus and realizing the syllabus are the basic flight maneuvers and concepts, I accepted the awesome opportunity. I say opportunity because it is extremely rewarding. I am honored that parents trust/entrust us with their kids and take this responsibility seriously.

I still get excited with each O-Flight like it is the first and I think this helps the cadets feel comfortable and often extends to their excitement. It is exciting to see the light bulb moments when cadets first understand a concept or get a maneuver. The cadets excitement makes it all worth it and a few have are even going on to start flight training.

Sometimes the cadets even get a bonus experience, on a recent o-flight, I was asked by Air Traffic Control if I could take a short approach to land because there was faster aircraft behind me. This is a maneuver we practice often so I agreed and executed the maneuver. Once we were on the ground, I debriefed with the cadet what we did and why. The cadet just thought that was the coolest thing and was excited to continue with the program.

I will continue to volunteer as an o-pilot and even sometimes consider becoming a flight instructor as I have found a new passion for teaching and facilitating aviation to youth.



Maj Kathy Brown and cadets of Squadron 156 conduct a pre-flight of the CAP aircraft at Livermore Airport.

If you are a cadet who is under 18 and has not taken an O-Flight, please ask someone in your squadron how to get them coordinated and if you would like a pilot to come talk to your squadron for anyone who might be nervous, I am happy to do so as I would imagine many other pilots would be as well.

Finally, in exciting news, our glider has come back online as of the end of September so start getting those glider o-flights.

CADET PROGRAMS - FLIGHT TRAINING



LEARN TO FLY

BY CAPT JOE SPEARS

Many of our cadets join Civil Air Patrol for the opportunities that it gives to jump-start a career in aviation. For cadets who are interested in one of the many flight scholarships available (including the CadetInvest scholarships that will open in the fall), one way to be more competitive is to complete the FAA Knowledge Test.

To take the FAA knowledge test, students must complete a study course either in a classroom or through one of many multimedia presentations. Our cadets are eligible for the Sporty's Pilot Shop "Learn to Fly" course for free (which is a \$249 value). In addition, your fee for the FAA knowledge test is reimbursable.

CAP is partners with EAA, the Experimental Aircraft Association. When cadets complete their first CAP orientation flight, EAA considers them one of their "Young Eagles."

A cadet's status as a "Young Eagle" comes with zero obligations, but some great benefits, including:

- FREE access to Sporty's Learn to Fly Course (\$199 value)*
- FREE first flight lesson (\$130 value)**
- FREE Soaring Society of America Cadet Membership
- FREE admission to 400+ science and technology museums
- FREE Academy of Model Aeronautics Student Membership
- FREE electronic copy of EAA Sport Aviation magazine
- FREE access to EEA Virtual Flight Academy - Stage One: Fundamentals of Flight (\$29.95 value)
- Access to valuable flight training awards, education scholarships, and Air Academy camperships

For more information, please visit the CAP Cadets & Young Eagles webpage on the NHQ Website.



FLIGHT SCHOLARSHIP SEASON BEGINS

BY CAPT JOE SPEARS

Flight Scholarship Season Begins
As the school year starts, many organizations begin to offer annual flight training scholarships. Many cadets and cadet families are particularly interested in available flight scholarships and how to best apply for them.

In general, the best way to apply for a flight training scholarship is to demonstrate the desire and ability to successfully complete a flight training program. Your membership and progression in Civil Air Patrol is one great way to demonstrate this. Beyond that, you should consider taking advantage of the flight training opportunities available to you as a member.

First and foremost, take advantage of the Cadet Orientation Rider program. By getting in the air, you will demonstrate your commitment to pursue flight training. Completing all five powered O-rides, and if possible all five glider O-rides, you will set yourself apart from other scholarship applicants.

CADET PROGRAMS - FLIGHT TRAINING



LEARN TO FLY

BY CAPT JOE SPEARS
CONTINUED...

Second, last month's newsletter described how to complete free ground training through CAP's partnership with EAA. By completing your ground training, you will demonstrate the drive and initiative needed to complete flight training.

Finally, build a personal plan. Speak with flight instructors, either inside of CAP or outside, to set goals and objectives to help you meet your goals. Often the scholarship applications will ask for your personal plan so having this document completed will help set you apart.

CURRENT FLIGHT SCHOLARSHIP POSTINGS

BY CAPT JOE SPEARS



The Experimental Aircraft Association – will open applications

for their Flight Training Scholarships from September 1, 2021 until November 1, 2021 for training that starts Jan 1 – June 30, 2022. For more information, keep watching the [EAA website's scholarship page](#).



CadetInvest – Civil Air Patrol's single-application for opening scholarships and grants for Flight Training, Career Exploration through things like Cadet Special Activities and undergraduate education, CadetInvest applications are expected to open in September.

Cadets are encouraged to [review the application process](#) in advance of the application window opening. Once the application window opens, act quickly because most application deadlines occur on December 31st. The best opportunities in CadetInvest are available to cadet officers, so gain rank quickly to unlock the best scholarship opportunities.



Aircraft Owners and Pilots Association (AOPA)

AOPA Foundation's You Can Fly 2022 Scholarship period opens November 1, 2021. The AOPA Foundation's You Can Fly Scholarships are available in four categories:

- High School Flight Training Scholarship
- Teacher Flight Training Scholarship

- Primary Flight Training Scholarship
- Advanced Rating Scholarship

The High School Flight Training Scholarship, Teacher Flight Training Scholarship, and Primary Flight Training Scholarship provide funds for winners to apply toward training for their private, sport, or recreational pilot certificate.

There are certain criteria that must be met to qualify for You Can Fly Scholarships. Those requirements will differ for each specific scholarship, but the three basic requirements to be awarded a scholarship are:

- Must be an AOPA member - both at the time of application and when the scholarship is awarded
- Must be a U.S. Citizen or U.S. Permanent Resident
- NEW THIS YEAR: Must have passed the FAA Knowledge Exam prior to submitting an application. More information is on the [national website](#).

2021's scholarship winners included a diverse group of pilots and future pilots, ranging in age from 15 to 62. More than 40 percent of the recipients are women, and more than 20 percent are people of color.

The 2022 You Can Fly Scholarships will open November 1, 2021 and close February 11, 2022. More details will be provided at a later date. [Be sure to bookmark this page.](#)

SQUADRONS



SQUADRON 10 PALO ALTO

STRATO-STAR AUG 21, 2021

On Saturday morning, 21 August 2021, Cadets from Civil Air Patrol - Jon E. Kramer Composite Squadron 10 - Palo Alto competing in the StratoStar High-Altitude Balloon experiments gathered to watch the live launch feed and then discuss next steps. The balloon carrying their experiments reached over 103k ft!



SQUADRON 13 WATSONVILLE

FIRE IN THE SKY SEPT 4, 2021

The Watsonville Airport "Fire in the Sky" community event included aerial demonstrations, an outdoor movie, and fireworks display. Squadron 13 cadets and senior members manned the Group 2 recruiting booth to great effect.



CAP Group 2 recruiting booth is a game-changer for recognition and public interest. We had people commenting that they saw the booth from across the field and wanted to see what it was all about.



SQ13 members engaging with members of the public



SQUADRON 18 HAYWARD

FIFTH TUESDAY

East Bay Cadet Squadron held some fun activities on their Fifth tuesday of the month. Members had fun taking time to bond and get to know each other better. Activities held were O-Flights, Guess the Truth About Me, Musical Chairs, and a Bearing test.



SQUADRONS



SQUADRON 36 SAN JOSE



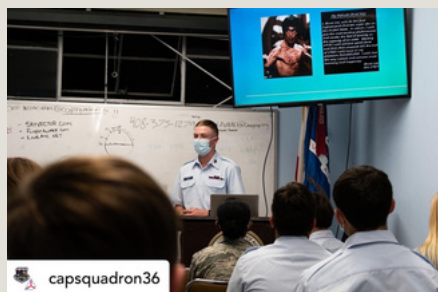
SQUADRON 44 CONCORD



SQUADRON 80 SAN JOSE

LEADERSHIP MEETING SEPT 7, 2021

In this week's Leadership meeting, phase 1 and 2 cadets were split into two groups. Phase 1 class, about Self Management, was taught by C/SSgt Owen and C/SrA Duval. Phase 2 class, taught by C/CMSgt Pham, covered line staff duties. During opening ceremony, we had a few cadets promote!



CAP COMMUNICATION SESSION SEP 30, 2021

Sq 44's very own Lt Col Chris Suter (pictured, presenting), delivered a key session on the various ways members use equipment during CAP operations at the California Wing conference on September 30, 2021 in Sacramento.

Lt Col Suter, who is also the California Wing Director of Communications, explored current equipment and practices and previewed significant improvements that his team are making to enhance the CAP communications network while improving the cost effectiveness of CAP-managed facilities. Col Suter's presence at the Wing conference underscored the contribution that key members of individual squadrons make to the delivery of CAP missions statewide.

Article and photos by 2d Lt David McCrossan.



CLt Col Suter of Sq 44 reviews new equipment with members at the CAP communication session of the CAP California Wing conference, September 30, 2021

SAN MARTIN FOOD TRUCK FLY-IN SEPT 11, 2021

San Jose Senior Squadron 80 and John Montgomery Memorial Cadet Squadron 36 spent this 20th Anniversary of 9/11 at the San Martin Food Truck Fly-In as a featured display. CAP445 piloted by Sq36's Capt John Heldt flew down with a folded American flag in the aircraft window. Sq36's Color Guard presented and posted the colors at the start of the main stage event. Sq80's commander, 1st Lt Richard West, spent much of the day showing young members of the public the inside of the aircraft with all its buttons and switches.



SQUADRONS



SQUADRON 86 SAN FRANCISCO

NEWEST STAFF MEMBERS SEP 7, 2021

Say hello to our newest staff members on line and support staff from Squadron 86!

LINE STAFF

First Sergeant: C/TSgt Peter Nascimento (not pictured)

Alpha Flight Commander: C/SSgt Ryaan Raissi

Alpha Flight Sergeant: C/MSgt Toby Lee

SUPPORT STAFF

Deputy Commander for Support: C/SMSgt Ainsley Wong

Public Affairs: C/SSgt Emily Loo

Logistics: C/A1C Izabella Chan

Administration: C/SrA Benjamin Chow



capsquadron86



capsquadron86



SQUADRON 156 TRI-VALLEY

SEPTEMBER FIFTH WEDNESDAY SEP 29, 2021

On September 29th, Squadron 156 hosted its "Fifth Wednesday" social which consisted of a pot-luck dinner, a plane/van wash, board games, and the Great Uniform Giveaway of 2021. Senior members and cadet members got the opportunity to work together, relax, and focus on an evening of fun and food. Photos by LtCol Noel Luneau



Sq. 156 cadets and senior members clean CAP424 and the CAP van. Photo by Lt Col Luneau.



Sq. 156 cadets after cleaning. Photo by Lt Col Luneau.



SQUADRON 188 OAKLAND

CHANGE OF COMMAND SEPT 9, 2021

On September 9, 2021, Lt Col Shawn Lawson officiated over the Change of Command at Squadron 188. Maj Jordan Hayes relinquished command of the squadron and turned it over to Lt Margaret Salimi.

Congratulations Maj Jordan Hayes! What a fantastic four years you've had! Through ups and downs you persevered and kept the Squadron strong!

Welcome Lt Margaret Salimi!



Incoming Squadron Commander Lt Salimi accepts command while outgoing commander, Maj Hayes and Group Commander Lt Col Lawson observe. Video by Lt Jose Alvarez.

SQUADRONS



SQUADRON 192 SAN CARLOS

PHYSICAL TRAINING SEP 28, 2021

At his weeks meeting, cadets took part in a night of physical training. Cadets refreshed and learned extended rectangular formation, the traditional formation used during physical training. They went on to test for their physical promotion requirements, doing push-ups, curl-ups, and a mile run.



capsquadron192



capsquadron192

EMERGENCY SERVICES - SUAS



CAWG's sUAS IN ACTION

BY MAJ JEFF IRONFIELD

On Saturday, September 4 I had the opportunity to observe and learn about CAWG's growing small unmanned aerial systems (sUAS) program by accompanying Capts Karin Hollerbach and Hank Andruss on a field sortie. The sUAS program is CAP's effort to use small unmanned aerial systems in Disaster Relief, Search and Rescue and Homeland Security missions. The objective for the day was to gather sUAS performance data and conduct training in a real-world setting to help prepare for sUAS deployment on exercises. The plan was to step through the typical exercise flow of planning a sortie, flying the sortie and returning with the results.

Capt Hollerbach defined a target area of interest some 35 miles from Livermore Airport in a remote area of Mines Road based on imagery from the burn scar of 2020's SCU Lightning Complex fire. The team brought three systems to test: a Skydio X2D, a Skydio S2 and an older DJI Phantom. Capt Hollerbach flew each model through the target area while Capt Andruss completed the technician duties for a total of about one and a half hour flight time.

"I am excited to be moving from initial qualification training to mission training where we will work in real life mission settings and at ops tempo," Capt

Hollerbach said. "I'm looking forward to exercises where sUAS participates in Group 2 exercises." She went on to explain to me the initial training phase is when pilots



Captains Hollerbach and Andruss launch the Skydio X2D.

EMERGENCY SERVICES - SUAS

CAWG's sUAS IN ACTION

CONTINUED...

develop proficiency on the maneuvers on the CAP Form 5U and ultimately pass a form 5U evaluation to earn the pilot rating, followed by a 91U evaluation to earn the mission pilot rating. You can see from the CAPF 5U excerpt these are specific maneuvers designed to demonstrate control of the sUAS.

VI. MANEUVERS	S	U	V	N ^P
A. Straight & Level Flight.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Square Pattern.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Point of Interest.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Approach to Landing.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Recovery from Unusual Flt Attitudes.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. Landing and Shut Down.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Launching is fairly straightforward. After completing a preflight check and a final flight brief the sUAS takes off from the launch pad with the pilot at the controls. From there it's a matter of either manually flying the flight profile or, if equipped, letting the "autopilot" manage the flight. During the flight the pilot is watching the sUAS and maneuvering through the sortie elements while the technician is watching the flight, taking notes and keeping tabs on battery power.

Flight time is typically in the 15-30 minute range depending on the sUAS model and battery power. In CAP's aviation regulations the pilot must land with one hour of fuel remaining. The rule in sUAS flying is to return to "home" (the takeoff/landing zone) with 30% battery remaining.

The flight management software keeps track of progress throughout the flight. When battery power is running low the sUAS returns to base for a battery swap and continues from where it left off. This automation makes planning the flight easier (i.e. larger areas can be planned) since the planners do not have to consider battery power when developing target areas of interest. Sortie progress and power management are managed by the software.

Aerial imagery is a feature of sUAS and will be one of CAWG's mission profiles. Highly detailed images with a resolution of 1 cm can be captured with sUAS by using the high-resolution camera systems and flying within a couple hundred feet of the ground. (See **Why is image resolution referred to as a number of centimeters?** for a more detailed explanation).

Lost person search in a confined area is an example where sUAS can be deployed on imaging sorties with an expectation of good results. Recently, there was a missing person search conducted in Pleasanton for a missing trail runner. A sUAS and crowdsourcing was used (not by CAWG) to aid in the search.

Crowdsourcing is an approach used to assign many people the job of searching through images looking for a target. If each image area is searched enough times and the target not found there is a high likelihood the target is not in the image. This is one mission where sUAS can have a positive impact.



Skydio S2



DJI Phantom



Skydio X2D

EMERGENCY SERVICES - SUAS

CAWG's sUAS IN ACTION

CONTINUED...

The Skydio X2D sUAS has both visual and infrared image sensors. An IR camera records different temperatures. In the infrared image below you can clearly see the CAP van.



Developing a deeper understanding of how sUAS fits into the broader Emergency Services mission was my reason for spending the day with Capt Hollarbach and Andruss. From what I observed sUAS will play an important role in CAWG's ES mission. In addition to the sortie types discussed above, Capt Hollarbach spoke about several other potential sortie types under development. Ground team support for example. Imagine a ground team accompanied by a sUAS team where the sUAS is used to scout areas providing real-time imagery to help decide if the area needs to be searched by foot.

The CAWG sUAS program is still very much in the growth stage. Capt Hollarbach discussed the need to move members through the pilot and technician tracks, determine an initial set of mission types, develop a real-world training program and begin integration with the broader ES training program. We discussed ideas ranging from a coordinated disaster recovery exercise (DREX) including both Waldo and sUAS elements to an sUAS team embedded with a

ground team on a traditional SAREX. Today brought the sUAS program a step closer to real-world deployment in Group 2.

One final quote from Capt Hollarbach, "All the hard work by so many of the CAWG team has brought us on the brink of operational readiness in the sUAS program. That is a tremendous achievement. I look forward to the day we deploy sUAS to fly real world missions with field grade equipment."

WHY IS IMAGE RESOLUTION REFERRED TO AS A NUMBER OF CENTIMETERS?

Digital images are made up of a number of pixels, or picture elements. Sensors vary greatly in resolution, for example a Nikon D5100 camera has a 16.2 megapixel resolution sensor in a rectangular format. Your phone has something similar. The lens will project an image onto this sensor and each pixel will record a tiny part of that image, in all 16.2 million tiny parts. If a camera with that sensor is mounted to an airplane 10,000 feet in the air that tiny piece of the image might be a 20 cm square and cover many acres. Similarly, if a camera with that sensor is mounted to a UAS at 100 feet that tiny piece of image might be a 1 cm square but cover a much smaller area. Google satellite imagery is about 15 meter resolution covering a much wider area at a much lower quality. Any image will become blurred when zoomed enough...when detail is lost it is because the pixels are becoming apparent. The tradeoff on aerial imaging is high image quality versus large areas imaged as high quality requires low resolution and large areas will have low resolution. When planning to image an area it's imperative to know how much detail is required to determine the resolution which leads to the imaging platform to use to capture the images.

EMERGENCY SERVICES - SUAS

1st NORTHERN CALIFORNIA sUAS MISSION AIRCREW SCHOOL

BY 2D LT JOSE ALVAREZ

The first Northern California sUAS Mission Aircrew School was held on September 18 and 19, 2021 at the Alameda County Sheriff's Office Regional Training Center in the City of Dublin, CA.

The objectives for this training weekend were to complete all requirements for Technician Rating for senior members and cadets, and for sUAS pilots to complete their advanced training, practice and sharpen their skills on search and rescue maneuvers and automation, and, for those who were able to, complete their form 91u.

The training began Saturday morning with Captain Karin Hollerbach delivering a university level quality class instruction laying the foundation for 16 hours of intense training. The group moved from classroom instruction to flying back and forth with the goal of completing their required mission participation. The last sortie on Sunday afternoon was set to be the pilots' choice to practice on anything they felt they needed.

All the objectives were accomplished according to Captain Hollerbach. This mission aircrew school accomplished more than just the objectives of the training in regards to technicians and pilots. Squadron 188 Commander, 1st Lt Margaret Salimi accomplished two of her objectives as well: one, to establish better and stronger relationship with the County of Alameda, and, two, the integration of cadets in the squadron's activities. Lt Salimi acquired a three-year access to one of the best training facilities in the region, the Alameda County Sherriff's Regional Training Center in Dublin, CA. One cadet participated in this aircrew school and was successful in completing his sUAS Technician rating.

Our guest, Captain Robert Surwill of the Nevada Wing stated, "I am impressed by the quality of this training and the facility your group acquired in this County. I am looking forward to future training and I will try to replicate it in Nevada."



Instructor Capt. Hollerbach. Photo by Lt Alvarez.



Classroom at Alameda County Sheriff's Office Regional Training Center in the City of Dublin, CA. Photo by Lt Jose Alvarez.

EMERGENCY SERVICES - SUAS

**1st NORTHERN CALIFORNIA sUAS MISSION AIRCREW SCHOOL
CONTINUED...**



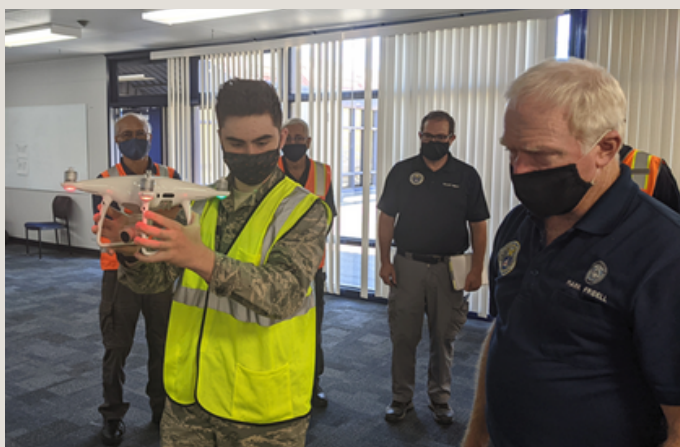
Capt. Hollerbach, Lt Salimi, Lt Irvine. Photo by Lt Alvarez.



Lt Col Hamill, Capt Rivas. Photo by Lt Howard.



Capt Surwill, Lt Gross, Lt Howard. Photo by Capt. Rivas.



*Maj Fridell, Lt Fenech, Capt. Rivas, C/SrA Devine, Lt Alvarez.
Photo by Capt Devine.*

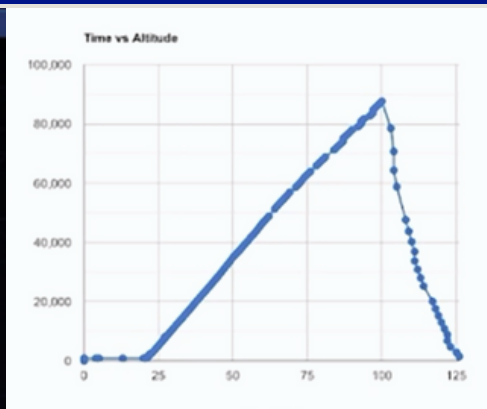


Maj Fridell, Lt Salimi, Capt Rivas, Capt Swale, C/SrA Devine, Capt Devine, Capt Hollerbach, Lt Howard, Lt Gross, Lt Col Fernandes, Lt Guaiumi, Capt Surwill, Lt Col Hamill, Lt Irvine, Lt Fenech. Photo by Lt Alvarez

AEROSPACE EDUCATION



Cadets assist the launch of Balloon 1



Time & altitude of Balloon 1

HIGH ALTITUDE BALLOON CHALLENGE FLIES

BY CAPT V. HENSON

Completing the CAP High Altitude Balloon Challenge required the Cadets to make a one-slide report for each of the experiments they sent to space, giving the scientific analysis and conclusions for the experiment. While several Group 2 squadrons participated in the Challenge, the outstanding performance in Group 2 was turned in by Squadron 10, completing and reporting on nine experiments! Here, and on the next page, are their one-slide reports.

SPACE BREAD

"Sending yeast to space and eating space bread"
Est. 2021, Palo Alto, CA

Mission Name: #StratoStar0436
Launch Date / Time: (08/21/2021) (15:48 GMT)
Maximum Altitude: (103,058 ft)
Flight Duration: (03:37)
Team Number: 207-21
By: Annabel D.
Materials Used: Yeast, milk, water, flour, golden syrup

Testable Question: How will the impact of the environment of space on yeast affect the texture, taste, and other qualities of bread?

Hypothesis: The environment will have minimal effect on the bread due to yeast's ability to survive harsh conditions.

Hypothesis supported by data: YES - There were little to no effects on the yeast, meaning it is able to survive in space. Space bread!

How would you improve your experiment? We would measure the yeast to be exactly the same amount so that changes would be easier to detect. We would also send more yeast so that we can run multiple experiments to account for potential systematic errors such as if conditions during the baking process affect anything.

Procedures:

- Remove yeast from bag, add 150ml, warm milk, butter, and golden syrup
- Leave to activate for 15 minutes
- Add bread flour, knead and leave for 40 minutes
- Add to bread pan, leave for 30 minutes
- Bake!

Qualitative Observations:

- Yeasts were similar in appearance, texture, shape
- Experimental yeast mixture was stickier when kneading, required more flour
- Both breads looked and felt similar while rising and baked-similar texture, elasticity, etc.
- Space bread was reportedly saltier than regular even though no salt was added

Change in mass over time (g)

Time (min)	Control	Space	Temperature
0	100	100	25
15	105	105	28
30	110	110	30
45	115	115	32
60	120	120	35

Change in temperature over time

Grade HS Subject: Chemistry, Life Science
Mission Link: <https://tracking.stratostar.net/mission0436>

Radish Seeds in Space

Mission Name: #StratoStar0436
Launch Date / Time: (08/21/2021) (15:48 GMT)
Maximum Altitude: (103,058 ft)
Flight Duration: (03:37)
Team Number: 207-21
By: Kai K. Cayden G.

Testable Question: How will radiation exposure at a high altitude affect the germination and growth rates of radish seeds?

Hypothesis: The radish seeds will germinate albeit at a slower rate than the control seeds.

Hypothesis supported by data: (NO)
Both the control and flight seeds germinated at roughly the same rate. The data indicates that space had no effect on the radish seeds.

How would you improve your experiment? Not all seeds in both control and flight respectively germinated at the same rate. I would add more seeds to account for the natural variability in seed growth and make sure that errors in the planting stage do not affect the data.

Materials Used: radish seeds, dirt, water

Grade HS Subject: Life Science
Mission Link: <https://tracking.stratostar.net/mission0436>

Coffee Beans in Space

Mission Name: #StratoStar0436
Launch Date / Time: (08/21/2021) (15:48 GMT)
Maximum Altitude: (103,058 ft)
Flight Duration: (03:37)
Team Number: 207-21
By: Sam S.

Testable Question: What is the impact of altitude on coffee beans?

Hypothesis: The beans will grow in size during the experiment.

Hypothesis supported by data: (NO)
The FLIGHT group did not increase in size. They stayed the same size as the CONTROL beans. Changes in other factors were observed and recorded.

How would you improve your experiment? Include at least ten beans in each group to reduce uncertainty (there were only two per group). Label their containers more clearly. Conduct three trials if possible.

Experimental Factor	Space (Experimental)	Earth (Control)
Color	Slightly paler brown, yellow tint	Darker brown
Scent	Similar to Earth, no strong coffee smell	*Both test groups too small
Density & Floatation	Low density, floated	Low density, floated
Texture	Quicker to crumble, brittle and fragile	Stiffer, more pressure to crush

Materials Used: four coffee beans, ziploc bags, water (to test density)

Grade HS Subject: Chemistry
Mission Link: <https://tracking.stratostar.net/mission0436>

Popcorn Kernels in Space

Mission Name: #StratoStar0436
Launch Date / Time: (08/21/2021) (15:48 GMT)
Maximum Altitude: (103,058 ft)
Flight Duration: (03:37)
Team Number: 207-21
By: Christy L.

Testable Question: How is the composition of a popcorn kernel affected by changes in temperature, humidity, radiation levels, and pressure after exposure to conditions in space?

Hypothesis: The hull of a popcorn kernel will rupture after exposure to conditions in space.

Hypothesis supported by data: (NO)
The popcorn kernels did not rupture after exposure to conditions in space. However, through further experimentation, we found that the space kernels had a significantly faster pressure buildup and pop time compared to the control kernels. Some taste testers also concluded that the control popcorn was more moist, whilst the space popcorn was "much drier" and like a "dry tablet". Others claimed the differences in taste were not drastic.

How would you improve your experiment? I would include a few more kernels in the capsules to increase the sample size.

kernel #	control	space
1	1:59	2:05
2	2:57	2:11
3	3:09	2:13
4	4:15	2:44
5	4:30	2:51

Materials Used: Popcorn kernels, microwave, stopwatch.

Grade HS Subject: Physics, Chemistry
Mission Link: <https://tracking.stratostar.net/mission0436>

AEROSPACE EDUCATION

HIGH ALTITUDE BALLOON CHALLENGE FLIES...

...CONTINUED

Battery Voltage in Space

Testable Question:
Will sending a battery into space affect the voltage difference that it provides?

Hypothesis:
The conditions in space will degrade the batteries and overall cause permanent damage due to the long exposure in decreased temperatures, UV radiation, and loss of pressure.

Hypothesis supported by data?
The hypothesis is not supported by the data; there was no significant difference between the voltages of the two batteries, and the batteries suffered no permanent damage.

How would you improve your experiment?
The experiment can be improved by sending more batteries to space, or by using different types of batteries such as AA, AAA, or D batteries.



Left (Control): 3.23V
Right (Experimental): 3.24V

Both batteries worked in car keys. Neither battery showed signs of permanent damage. There was more voltage left in the battery that was in space than the control battery

Grade HS Subject: Physics
Mission Link: <https://tracking.stratostar.net/mission/0436>

Mission Name:
#StratoStar0436
Launch Date / Time:
(08/21/2021)
(15:48 GMT)
Maximum Altitude:
(103,058 ft)
Flight Duration
(03:37)
Team Number: 207-21
By: Zhaowei Q.

Materials Used: Two batteries



STRATOSTAR

Poppy Seeds in Space

Testable Question: How will radiation exposure at a high altitude affect the germination and growth rates of California poppy seeds?

Hypothesis: The poppy seeds will germinate albeit at a slower rate than the control seeds.

Hypothesis supported by data: (YES)
The control poppy seeds germinated in 6 days while the flight seeds took 7. It took the flight seeds 2 more days to reach the same numbers of seeds germinated as the control.

How would you improve your experiment?
Not all seeds in both control and flight respectively germinated at the same rate. I would add more seeds to account for the natural variability in seed growth and make sure that errors in the planting stage do not affect the data.



Left: poppy seeds
Right: poppy plant



Mission Name:
#StratoStar0436
Launch Date / Time:
(08/21/2021)
(15:48 GMT)
Maximum Altitude:
(103,058 ft)
Flight Duration
(03:37)
Team Number: 207-21
By: Kai K. Cayden G.

Materials Used: poppy seeds, dirt, water



STRATOSTAR

Green Bean Seeds in Space

Testable Question: How will radiation exposure at a high altitude affect the germination and growth rates of green bean seeds?

Hypothesis: The green bean seeds will germinate albeit at a slower rate than the control seeds.

Hypothesis supported by data: (NO)
The flight seeds germinated in 6 days while the control seeds took 12 days to germinate. The flight seeds also grew faster, reaching 16 inches in the same amount of time it took the control seeds to reach 12 inches.

How would you improve your experiment?
Not all seeds in both control and flight respectively germinated at the same rate. I would add more seeds to account for the natural variability in seed growth and make sure that errors in the planting stage do not affect the data.



Grade HS Subject: Life Science
Mission Link: <https://tracking.stratostar.net/mission/0436>

Mission Name:
#StratoStar0436
Launch Date / Time:
(08/21/2021)
(15:48 GMT)
Maximum Altitude:
(103,058 ft)
Flight Duration
(03:37)
Team Number: 207-21
By: Kai K. Cayden G.

Materials Used: green bean seeds, dirt, water



STRATOSTAR

SPACE TIC TACS

Testable Question: Does the low pressure of space change the amount of mint in the taste?

Hypothesis: I hypothesize that the tic tacs will be mintier staying on earth than the ones sent to space. I also think the Space tic tac will be bigger because there will be less compression

Hypothesis supported by data: (NO)
Our hypothesis was not supported by data. The control tasted a little sweeter, but not as minty. The Earth one was also bigger.

How would you improve your experiment?
I would use more than one subject and control, because tic tacs are made through rolling up and compression, and not molds that are consistent.

Main Differences:
Color, Mint taste, size



	Earth	Space
Minty-ness	Less	More
Size	More	Less
Brightness	More	Less

Grade: M Subject: Physics
Mission Link: <https://tracking.stratostar.net/mission/0436>

Mission Name:
#StratoStar0436
Launch Date / Time:
(08/21/2021)
(15:48 GMT)
Maximum Altitude:
(103,058 ft)
Flight Duration
(03:37)
Team Number: 207-21
By: Djeni M

Materials Used: Tic Tac, Water, Color Picker



STRATOSTAR

SPACE GUMMY WORMS

Testable Question:
Does the low pressure of space change the gummy's texture?

Hypothesis:
We believe that the low pressure of space will not have a large impact on the gummy's external appearance, but it is possible that low temperatures could freeze what water exists in the candy, potentially changing the appearance or texture. Due to freezing, the gummy likely could become more brittle.

Hypothesis supported by data: (NO)
Our hypothesis was not supported by data. The control and flight subject had no discernible difference in texture, and when stretched the control came to 5.5 cm and the subject to 6.75 cm

How would you improve your experiment?
I would use more than one subject and control, because gummies are not the most consistent in size and texture so a larger sample size might create more definite results.



Grade HS Subject: Chemistry
Mission Link: <https://tracking.stratostar.net/mission/0436>

Mission Name:
#StratoStar0436
Launch Date / Time:
(08/21/2021)
(15:48 GMT)
Maximum Altitude:
(103,058 ft)
Flight Duration
(03:37)
Team Number: 207-21
By: Grace M.

Materials Used: Haribo gummy worms, ruler



STRATOSTAR

The cadets were also tasked to create a video describing their process, methods, and results. Again, Squadron 10 showed the way for Group 2, and their video can be seen [HERE](#)



Squadron 10's "Space Bread" Logo

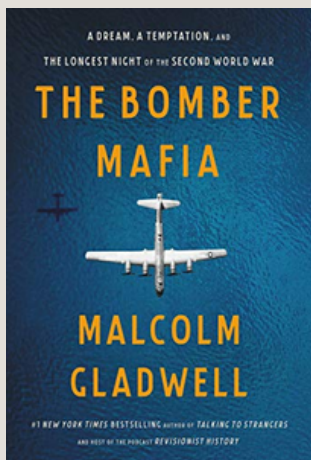
Other participating squadrons in Group 2 included Squadron 156, who sent Orbeez, colored construction paper, and baking soda to space, Squadron 18 sent broccoli seeds, a polaroid photo, and a penny cut in half, and Squadron 86 sent a digital watch, AAA battery, dental X-ray film, mini marshmallows and sea monkeys.

AEROSPACE EDUCATION

AEROSPACE EDUCATION READING CORNER -

"THE BOMBER MAFIA" BY MALCOLM CALDWELL

REVIEW BY CAPT V. HENSON



AE Editor's Note: *I am an aficionado of books on aviation and space, and plan to include, each month, a brief description/review of an AE related book. Review contributions welcome!*

When I was 10 years old I came down with a serious case of the flu and was bedridden for several weeks. Seeking to entertain me, my sister gave me a copy of the novel "12 O'clock High," which had been the inspiration for the movie and TV series of the same name. I became entranced, with the B-17, with the concept of daylight precision bombing, and became a devoted fan of the idea that such strategies could (and did, in WWII) shorten wars and save lives in the long run.

It was years later that I learned that reality had differed dramatically from the theory, and that in the end the USAAF had largely turned away from precision bombing in favor of carpet bombing, resulting in the firebombings of Dresden, Tokyo, and 60+ cities in Japan.

"*The Bomber Mafia*," by Malcolm Caldwell, is a mere 256 pages in length but packs a punch worthy of a much longer deep analysis. It is the story of how that transition from daylight precision bombing to nighttime carpet bombing (something the Germans and the British both practiced) came about, and the implications that change held for the future of aerial warfare. It is a riveting tale populated by fascinating characters. It features a small and fervent cadre (the Bomber Mafia) of "true believers" who held that if only truly accurate bombing could be done, aerial bombardment of key industries could break the enemy's *ability* to wage war. This theory was ardently opposed by the majority of air officers, who believed that carpet bombing of civilian populations could break the enemy's *will* to wage war. The controversy remained theoretical until Carl Norden, an eccentric Dutchman, invented the Norden bombsight, with the claim that it could "put a bomb in a pickle barrel from thirty thousand feet." The Mafia won the argument and when the US entered the war the Air Force operated a precision daylight bombing campaign, eventually sending many hundreds of planes deep into Germany, twice losing on the order of a hundred planes and a thousand men on a single raid, and achieving very little success.

"*The Bomber Mafia*" details why precision bombing didn't work and explores the personalities on both sides of the controversy, especially General Haywood Hansell, devoted to the Bomber Mafia's cause, and General Curtis Le May, who unilaterally implemented incendiary carpet bombing in Japan (Le May went on to become the head of Strategic Air Command and eventually the Air Force Chief of Staff). And yet, who won the argument in the long run? The answer is rather surprising, but inescapable. A highly recommended book!

THE REGION LEVEL AEO SCHOOL AT THE WING CONFERENCE WAS A BIG SUCCESS

BY CAPT V. HENSON

A region-level AEO School was held, both in-person and virtually, at the Wing Conference on Thursday, Sept 30. The school, aimed mostly at those seeking a Technician rating in the AE specialty track, covered most of the moderated portion of the curriculum to obtain a Technician rating in Aerospace Education.

The course was attended by twenty-nine students, approximately 1/3 of whom were in-person with the rest attending virtually.

Most of the instructors were from Group 2. The instructors were:

- Lt Col Ken Endrizzi
- Capt Van Henson
- Maj Mark Fridell
- Lt Col Roger Dunn
- Capt Joe Spears
- 1st Lt Richard West
- Capt Louise Mateos

Subject areas included:

- History of CAP
- AE book/AEO appointments/Specialty Track
- AE Products and Programs
- AEX program
- AE Awards
- Budget, Grants and Funding
- Inspections

AIRCREW PROFESSIONALISM AND SAFETY



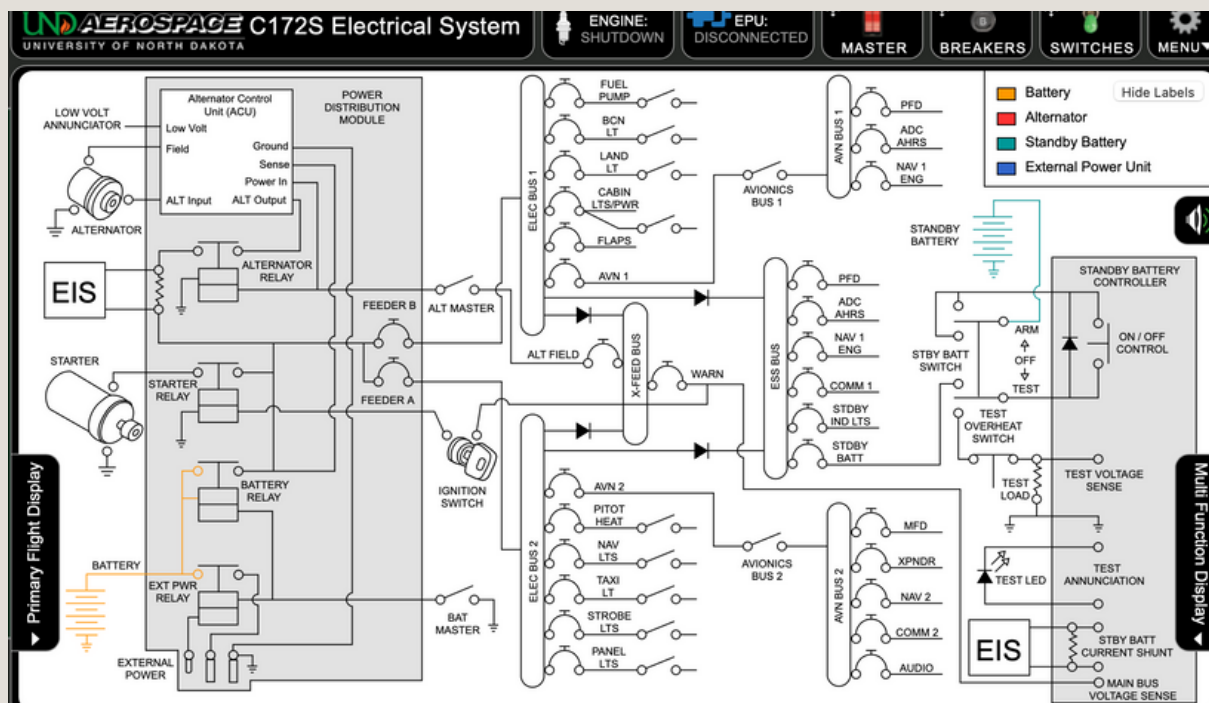
REVIEW OF UND CESSNA 172S ELECTRICAL SYSTEM SIMULATOR

BY MAJ JOSHUA EDWARDS

The electrical system has been a popular focus area for questions in our F5 interviews. While Cessna does provide some useful diagrams to depict what systems are attached to the various busses and the POH describes how switch settings affect those systems, the University of North Dakota's aviation program has created an interactive simulator for a C172S (with G1000) electrical system where you can experiment with pulling CBs and understand how a given system could be impacted by the loss of a bus, a switch configuration, or other setting. You can also mouse over specific items and get a detailed description of each system, what it connects to, and more.

If you click on the PFD/MFD fly out panels you can see how those displays adjust in most situations (I did notice that the MFD doesn't appear to show the correct warning symbology).

Check out the University of South Dakota's C172S Electrical System simulator [Here](#).



University of South Dakota's C172S Electrical System simulator

AIRCREW PROFESSIONALISM AND SAFETY

FAA'S "FROM THE FLIGHT DECK" VIDEOS

1ST LT MICHAEL GROSS

The FAA has made a few "from the flight deck" videos about local airports where we have Group 2 aircraft stationed. You may find these convenient for avoiding incidents from some of the more complex airports we operate at regularly. There is nothing about RHV or PAO, but all the other airports we have airplanes at are covered. Some of them are extremely complex.

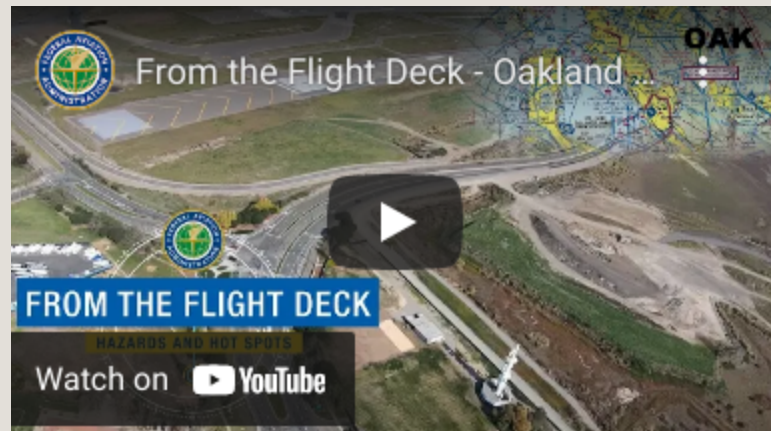
Pilots are reminded that one should only taxi after inspecting an airport diagram, if one exists. It is particularly important at these airports, especially at night or in heavy traffic.

"The FAA is occasionally adding additional airport videos. There is updated interactive map at https://www.faa.gov/airports/runway_safety/videos/"

Below are the Videos for Livermore, Oakland, and Concord.



LVK: [HTTPS://YOUTU.BE/TUYMRE1GW](https://youtu.be/tuymr1e1gw)



OAK: [HTTPS://YOUTU.BE/CJ-IFGJW68W](https://youtu.be/cj-ifgJw68w)



CCR: [HTTPS://YOUTU.BE/D5QYAWKQBN0](https://youtu.be/d5qyawkqbn0)

AIRCREW PROFESSIONALISM AND SAFETY

THE DARK SIDE OF FOREFLIGHT

CIVIL AIR PATROL STAN/EVAL NEWSLETTER – SEPTEMBER 2021

Many pilots, myself included, regularly fly with an iPad and Foreflight. This is especially true in CAP where Foreflight is provided for free. Foreflight and other EFB's can be invaluable in planning, executing, and analyzing a flight. However, Foreflight can also be a huge distraction, so we need to exercise some judgement.

Many pilots will mount their iPad in some custom mount in the cockpit. I think I've seen them all. Some mount to the yoke, some to the windscreen, and some elsewhere. But in most cases the mounted iPad blocks something. It either blocks the instrument panel or obscures the outside view in some way. The only way to avoid this is to just leave the iPad in the side pocket, on your knee, or on the seat if you don't have someone in the right-hand seat. But in most cases, pilots are ok with this obstruction.

I've even seen pilots carefully mount the iPad and initiate Foreflight for pattern work. Gee whiz.

Do we really need Foreflight for the pattern?

Another problem I've observed is that pilots often "fly by Foreflight" vice relying on the G1000 or other glass cockpit. As good as Foreflight is, it is not certified for flight. The G1000 is. Although I prefer many things about Foreflight over the G1000, the G1000 should be primary, not secondary. In fact, I often counsel pilots to put Foreflight away and focus on the G1000. Only pull out Foreflight as an exception (for example, to brief an approach plate which are hard to see on the G1000). As hard as it is to believe, I've seen flights successfully completed without reference to the iPad and Foreflight (rare but occasionally happens). If you are flying a steam gauge aircraft vice a TAA, Foreflight is a big help.



The worst problem I see is flying by both. Pilots will often put a flight plan in the G1000 and then repeat it on Foreflight. Just doubles heads down time and the workload with no benefit. When you get a modification from ATC it's not necessary to duplicate it twice. Use the G1000. Don't try to make Foreflight and the G1000 perfectly synchronized. You have more important things to do.

If you are in your Piper Cub with no GPS or other electronic aids, using Foreflight makes a lot of sense. In a G1000 cockpit, it still makes sense to do your flight planning and flight analysis on Foreflight. But once in the air, fly by the G1000 and only use Foreflight for those things that can't be done with the G1000. Otherwise, it's a distraction, not a feature.

AIRCREW PROFESSIONALISM AND SAFETY

THE CAP GLIDER IS BACK!

BY LT COL NOEL LUNEAU

For those wondering what the status is of CAP glider N420BA, it's now all assembled at Byron Airport. Last month's On Guard featured an article on the new avionics upgrades that were installed. That article is [Here](#) on page 31 and 32.

Volunteers Maj Bob Semans, Capt Robert Gary, Capt John Randazzo, Capt John Heldt, Capt John Stevulak, and Lt Alex Arnoldy worked hard on 18 Sep to assemble it.

Great job all, now let's fly!



Volunteers assembling N420BA. First the right wing is joined to the fuselage. Photo by Lt Arnoldy



Volunteers assembling N420BA. The left wing is joined to the fuselage. Photo by Lt Arnoldy



Volunteers assembling N420BA. The elevator is joined to the glider. Photo by Lt Arnoldy



Volunteers assembling N420BA. The cockpit is ready for flight. Photo by Capt Stevulak.



Some of the team members after the successful assembly. Photo by Capt Stevulak.

AIRCREW PROFESSIONALISM AND SAFETY

New CAWG Pilot:
Maj Bhaskar Reddy,
completed his Initial
CAP Pilot in
California with Capt
Silke Eyles, on
4 Sep 21.



Renewal:
Lt Col Noel Luneau,
renewed CAP Pilot
with Maj Jeff
Ironfield, on
21 Sep 21.



New CAP Pilot:
2d Lt Rami Kanda,
completed his Initial
CAP Pilot with Capt
Keith Breton, on
4 Sep 21.



Renewal:
Capt Orhan Baser,
renewed CAP Pilot
with Capt Keith
Breton, on 22 Sep 21.



Renewal:
Capt Michael Gross,
renewed CAP Pilot
with Capt Keith
Breton, on 4 Sep 21.



Renewal:
Capt Chris Suter,
renewed his CAP Pilot
with Maj Jeff
Ironfield, on
23 Sep 21.



Renewal:
Capt Michael Gross,
renewed Mission
Pilot with Capt Eric
Choate, on
14 Sep 21.



Renewal:
Maj Kathy Brown,
renewed her CAP
Pilot with Capt Keith
Breton, on 25 Sep 21



AIRCREW PROFESSIONALISM AND SAFETY

DOV LINKS

PROFESSIONAL EDUCATION

Aircrew Education

1. Training Tip: Facts for First-time Fuelers
 - a. AOPA - 9/8/2021
 - b. [Link Here](#)
2. Are Your Short Field Landings Checkride Ready? Check Out These 9 Tips To Pass Without A Doubt.
 - a. Boldmethod - 10/9/2021
 - b. [Link Here](#)
3. The No-win Drone Battery Conundrum
 - a. AOPA - Air Safety Institute
 - b. [Link Here](#)
4. Avoiding Gear-Up Landings and Gear Collapses
 - a. AOPA - Air Safety Institute
 - b. [Link Here](#)

Accident/Incident Case Studies

1. Weather or Not to Turn Around
 - a. NASA's Callback - 9/1/2021
 - b. [Link Here](#)
2. Beaver vs. Otter
 - a. AOPA's Air Safety Institute - 9/8/2021
 - b. [Link Here](#)
3. Real Pilot Story: Icing Encounter
 - a. AOPA's Air Safety Institute - 6/13/2016
 - b. [Link Here](#)

Aircrew Professionalism

- CAP Aircrew Professionalism
 - NHQ Aircraft Operations
 - [Link Here](#)
- Aviators Code of Conduct
 - NHQ Aircraft Operations
 - [Link Here](#)
- Aircrew Code of Conduct
 - NHQ Aircraft Operations
 - [Link Here](#)

GROUP 2 CAP AIRCRAFT

SEEN THIS MONTH



CAP424 in Livermore on 9/11



CAP424 at Livermore Airport following an Orientation Flight.



Glider N420BA assembled at Byron Airport.

EDUCATION AND TRAINING

GROUP 2 EDUCATION AND TRAINING ACHIEVEMENTS

BY RICHARD WEST

September Senior Member E&T Program Levels

2d Lt Mohamed-Ali, Ahmed T (634580) [Sq188]

Level 2 — Benjamin O. Davis, Jr. Award
2021-09-23

1st Lt Sauer, Kurt F (660429) [Sq156]

Level 2 — Benjamin O. Davis, Jr. Award
2021-09-15

SM Bonacci, David E (672183) [Sq188]

Level 1 — Membership Award
2021-09-22

SM Goel, Ashish (670901) [Sq80]

Level 1 — Membership Award
2021-09-13

September Specialty Track Ratings

Capt Hollerbach, Karin (533719) [Sq188]

Public Affairs — Master
2021-09-12

Capt Spears, Joseph L (578345) [Sq156]

Public Affairs — Master
2021-09-09

Capt Spears, Joseph L (578345) [Sq156]

Professional Development — Master
2021-09-10

Capt Henson, Van E (534976) [Sq156]

Aerospace — Technician
2021-09-07

1st Lt Sauer, Kurt F (660429) [Sq156]

Communications — Technician
2021-09-13

2d Lt Mohamed-Ali, Ahmed T (634580) [Sq188]

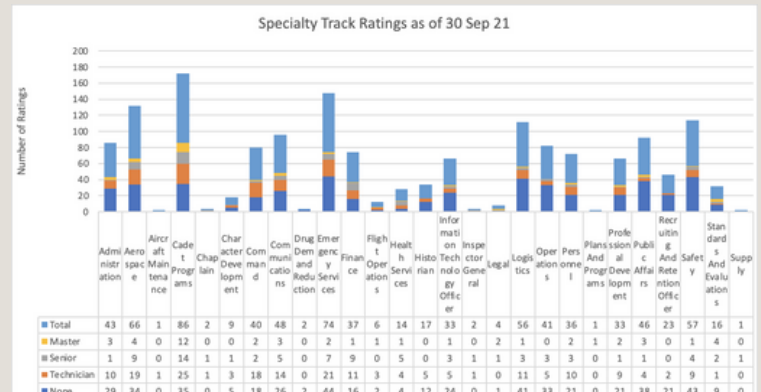
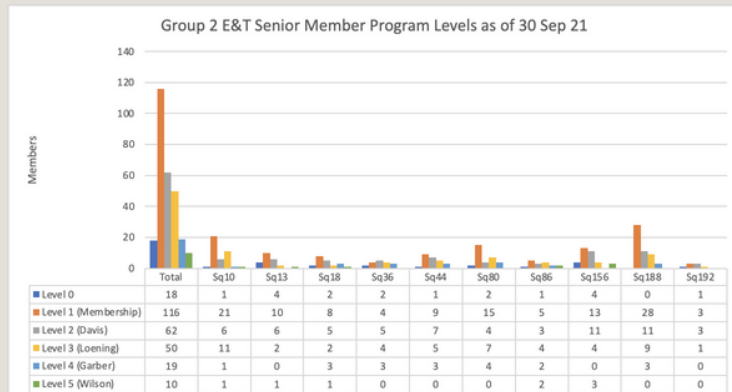
Logistics — Technician
2021-09-22

Lt Col Crawford, Douglas S (330662) [Sq18]

Safety — Technician
2021-09-23

1st Lt West, Richard (594385) [Sq80]

Historian — Technician
2021-09-25



FUN AND GAMES**END OF ON GUARD QUIZ****BY RICHARD WEST**

Due to a lack of participation, we are announcing the end of On Guard Quiz. Two members participated in August's On Guard Quiz, and a different two members participated in last month's On Guard Quiz. We thank those members who did participate in the quiz.

SEPTEMBERS'S ON GUARD QUIZ ANSWERS

On 21 July 1969, he became the second man to walk on the Moon nineteen minutes after Neil Armstrong first touched the surface.

Edwin (Buzz) Aldrin

On 6 August 1961, he became the second man in space four months after fellow cosmonaut Yuri Gagarin and completed seventeen orbits to Gagarin's one.

Alan Shepard

Of the two twin brothers selected by NASA' in 1996 as shuttle pilot candidates, he was the second to fly in space aboard Space Shuttle Endeavor (STS-108) in December 2001. Nineteen years later, he would be sworn in as Arizona's junior Senator after beating Republican incumbent Martha McSally in Arizona's 2020 Special Election.

Mark Kelly

In October 2012, this man sky-dived from 128,100ft and became the first person to break the sound barrier outside a vehicle. Unfortunately, the length of his freefall was eighteen (18) seconds shorter than that of Joseph Kittinger, his mentor and the previous high-altitude record holder.

Felix Baumgartner

On 10 March 1948, this man became the second person to break the sound barrier in the Bell X-1 slightly exceeding the speed of Charles "Chuck" E Yeager's famous first flight. Just don't confuse him with the 31st President of the United States (no relation).

Herb(ert) Hoover

FUN AND GAMES

MYSTERY WORDSEARCH

BY RICHARD WEST

Up for a challenge? How about a wordsearch without an answer key? There are 12 items hidden in this grid which are connected by a common theme. The hidden items can appear horizontally, vertically, and diagonally; possibly in reverse.



SEPTEMBER MYSTERY WORDSEARCH

BY RICHARD WEST

The theme of last September's Mystery Wordsearch? ES ratings. Turns out, there are multiple solutions.

- | | |
|------|-------|
| AOBD | MRO |
| AP | MS |
| CUL | MSA |
| FASC | MSO |
| FLM | OSC |
| FLS | PIO |
| GBD | PSC |
| GTL | TMP |
| GTM | UASMP |
| IC | UAST |
| LO | UDF |
| LSC | |
| MO | |
| MP | |

