

CIVIL AIR PATROL
SAN DIEGO CADET
SQUADRON 144

SPECIAL
POINTS OF
INTEREST:

- Check out up-coming events on Page 2
- Explore Cadet Programs on Page 1—3
- Meet your cadet staff on Page 3
- Learn about aerospace current events on Pages 4 & 5
- Achievements and Accomplishments on Page 7

INSIDE THIS ISSUE:

January Calendar	2
February Introduction	2
Theme/Logo Contest	3
Aerospace Knowledge	4
Aerospace Current Events	5
Deadlines and Events	6
Safety	6
Achievements & Accomplishments	7

Squadron 144



News



VOLUME 2, ISSUE 1

SAN DIEGO CADET SQUADRON 144

CAP visits Classic Rotors Museum

By: 1st Lt Sonya Petty



Howard Northrop explains how they repair and rebuild the rotorcraft.

On 11DEC2010, Squadron 144 cadets and senior members went to Classic Rotors—The Rare and Vintage Rotorcraft Museum in Ramona, CA. They invited family and friends in an effort to foster community awareness and aerospace education. This museum is the only one like it in the world because not only do they preserve these historic rotorcraft, they also repair and fly them. Their mission is to preserve rotorcraft as a tribute to the pioneers who risked so much to develop



Mark DiCiero discusses various rotorcraft with CAP and its guests.

vertical flight technology.

Upon arrival at the museum, the group was met by Mark DiCiero and Howard Northrop. Mark is the museum founder/curator and both him and Howard are the H-21B pilots and both have their Airframe and Powerplant repair license.

Attendees quickly learned they both had an infinite fountain of knowledge when it came to these fascinating rotorcraft.

We were taught the difference between various forms of rotor technology: tandem, co-axial, conventional (single rotor blade setup, sync (intermeshing blades), and tip powered. They were also shown examples of each to put the new education to practical use.

Everyone was wowed by the broad spectrum of rotorcraft. There were many one-of-a-kind and very rare rotorcraft—the DuPont DP-1 vertical take-off jet, the MonteCopter Model 15 tri-phibian car/boat/helicopter, the Hiller Hornet which is ramjet powered, and many more.

The queen of the museum is the Vertol H-21B Shawnee/Work Horse. Often referred



Cadets and guests check out the inside of the Vertol H-21B—the Flying Banana.

to as the “Flying Banana”, this is the last H-21 still flying in the world. It is a great example of a tandem rotor helicopter.

Overall, the event was an outstanding success. A total of 5 cadets, 5 senior members, and 8 guests attended the tour. Squadron 144 would like to extend a very big thank you to Classic Rotors for hosting us.



Howard Northrop explains how the jet tip propelled/paddle rotor system works on the Hiller H-32 Hornet. C/SSgt Jacob Veta learns and demonstrates the controls.

Upcoming Events

- ⇒ January 4
Tour of VMFAT 101 Sharpshooters F-18 Simulators
NO REGULAR MEETING
Location: Miramar
Meeting EARLY at 1700 hrs
- ⇒ January 15
Orientation Rides
El Cajon, CA
- ⇒ January 15
Deadline for NCSA Applications
Cost: Varies per activity
- ⇒ January 29
Squadron 144 Annual Banquet
Carmel Mountain Ranch, CA
Cost: \$30 each
- ⇒ February 4-6
Southern California Combined Squadron Winter Bivouac
Big Bear, CA
Cost: \$25
- ⇒ March 5
Titan Phase Rocket Launch
Time and Location TBD
- ⇒ March 11-13
CAWG Cadet Competition
Vandenberg AFB, CA
- ⇒ March 25-27
Basic Cadet School (BCS)
Escondido, CA
- ⇒ March 26
Riverside Air Show
Riverside, CA

JANUARY 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Happy New Year
2	3	4 F-18 Simulators/Tour	5	6	7	8
9	10	11 Weekly Meeting	12	13	14	15 O-Rides & NCSA Deadline
16	17	18 Weekly Meeting	19	20	21	22
23	24	25 Weekly Meeting	26	27	28	29 Sq 144 Banquet
30	31					

FEBRUARY 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Weekly Meeting	2	3	4	5 Winter Survival Bivouac
6	7 Winter Bivouac	8 Weekly Meeting	9	10	11	12
13	14	15 Weekly Meeting	16	17	18	19
20	21	22 Weekly Meeting	23	24	25	26
27	28					

Theme/Logo Contest for 2011 National Conference and CAP's 70th Anniversary

CAP is looking for your help and creativity!

We invite you to submit your idea for a theme and/or a logo for the 2011 National Conference that will be held in Louisville, KY on 17-20 August as well as for the 70th anniversary of CAP's founding. The challenge is to tie your National Conference theme/logo to CAP's 70th anniversary, which will also be celebrated in 2011.

Please e-mail your entry to paa@capnhq.gov no later than 1 February 2011. Please type "theme/logo" in the subject line of the e-mail and include your full name, rank, CAPID, full mailing address and e-mail address in your entry.

This contest is open to all CAP members.

Members with winning entries will receive a free registration to the 2011 National Conference.

The 2011 theme and logo will be announced on the Volunteer Now website, <http://www.capvolunteernow.com>, by 15 April.

Happy New Year and good luck!

Next Month is the Cold Weather Bivouac

Are you ready for the Cold Weather Survival Training Bivouac on 4-6FEB2011?

A very exciting and fun filled weekend has been planned for you! Classes will include Cold Weather Safety and Precautions, First Aid Training, Avalanche Awareness, Cold Weather Air Operations, Improvising Equipment with Natural Materials, How to Perform a Line Search in Cold Weather, and much more!

This is a once in a lifetime event and you DO NOT want to miss it. Make sure to get your Form 150's in by 31JAN2011. There are limited slots and they are filling up fast since this activity is opened up to the entire California Wing so don't wait to sign up.



If you're unsure about this activity because it's at Big Bear and it will be cold and there will be snow, please don't be. We will be sleeping indoors, and modifications to the uniform will be allowed to help you stay extra warm. For answers to questions please contact Captain Ross Veta.

Getting to Know Charlie Flight Commander

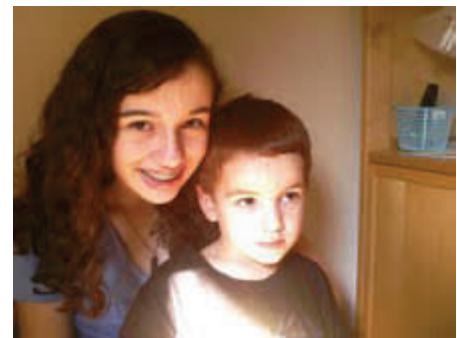
By: C/TSgt Zoe Horton

As any other kid, Zoe Horton wakes up at 7 and goes to school every morning. She goes to Literacy First Charter School in El Cajon, a school with strict teachers and generally happy people. When Zoe gets home Sofia, her sister and the two little troublemakers greet her. Her two little brothers make life exciting. She loves search and rescue missions, which Zoe tries to participate in as much as she can. In the summer she wants to go to Hawk Mountain Ranger School, again for a more advanced course.

Zoe joined CAP as soon as she could, at 12. She joined a squadron in New Mexico that had 7 cadets including herself. When she moved to

San Diego, 144 looked big and scary in comparison. After a while of being there and meeting everyone she grew to love it and that continues to this day.

In the future she plans on going to the Naval or maybe the Air Force Academy. In the meantime she busies herself with CAP and school. In school she plans on graduating high school with good grades. In CAP she wants to get the Earhart and see more people recruited because she firmly believes that her flight gets smaller every week. She would also like to see them grow as people in the program and enjoy activities, like she has.



C/TSgt Zoe Horton with one of her little brothers, Joseph.

"This project exemplifies the promise that a future generation of robots can have both in space and on earth, not as replacements for humans but as companions that can carry out key supporting roles."

— John Olson

Director of NASA's Exploration Systems Integration Office

Robonaut—Robot Turned Astronaut

By: C/CMSgt Jesse O'Keefe



During the last school semester, no doubt there were some chemistry classes that involved producing hydrogen gas from muriatic acid and zinc combinations, or producing both hydrogen and oxygen gas from water using electrolysis. Whether these students ignited the gas or not, we don't know in all cases, but I'm sure it happened. But while these students were having fun with this element in gas form, professionals at Kennedy Space Center were playing with hydrogen on a much larger scale. You see, liquid hydrogen fills the lower portion of the external fuel tank on the space shuttle Discovery. For this launch there was a "significant" hydrogen leak that has delayed the mission until at least 3 February 2011.

Looking at this mission from a distance,

it may appear as a routine maintenance mission for the ISS (International Space Station). However, further investigation reveals a most unusual crew member. It's name is Robonaut. Humanoid robots have been existent in sci-fi magazines and comic books since at least the early 1960's, and still play a major role in such outlets. However, there have always been those who saw the robot as a utility item. The team at iRobot corporation essentially threw out the humanoid stereotype and built the robot that really does clean your room. Or the floor at least. The military has used robots for IED

"management", auto production companies for fabrication and assembly, and NASA for space exploration.

Robonaut, at first glance appears to be another humanoid robot built for the sake of

building a robot, but really it is designed for work in space. The design was optimized so that Robonaut could use the same workspace and equipment as humans. Even though it doesn't have any legs, it weighs in at a surprising 300 LBS and will perform tasks that are " Too difficult or dangerous for humans to perform". It was developed by General Motors under the Space Act Agreement with NASA, and though it will be



on the Discovery at launch time, it is still in the testing phase. While in space, Robonaut will be subject to radiation and extreme temperatures to determine if the design is up to the extreme space environment. Though

still in the testing phase, Robonaut resembles the idea that the comic books predicted; and though it can't make decisions of its own, you wouldn't know it by looking at the pictures.



SpaceX's Dragon Spacecraft Launches and Re-Enters Successfully

SpaceX Press Release December 8, 2010 . More info at <http://www.spacex.com/press.php?page=20101208>



Cape Canaveral, FL – Today, Space Exploration Technologies Inc. became the first commercial company in history to re-enter a spacecraft from low-Earth orbit.

SpaceX and NASA will have a post-mission press conference at 3:30 PM EST at the press site at NASA's Kennedy Space Center in Florida.

SpaceX launched its Dragon spacecraft into low-Earth orbit atop a Falcon 9 rocket at 10:43 AM EST from Launch Complex 40 at the Air Force Station at Cape Canaveral.

The Dragon space-
craft orbited the
Earth at speeds

greater than 17,000 miles per hour, reentered the Earth's atmosphere, and landed in the Pacific Ocean shortly after 2:00 PM EST.

This marks the first time a commercial company has successfully recovered a spacecraft reentering from low-Earth orbit. It is a feat performed by only six nations or government agencies: the

United States, Russia, China, Japan, India, and the European Space Agency.

It is also the first flight under NASA's COTS program to develop commercial supply services to the International Space Station. After the Space Shuttle retires, SpaceX will fly at least 12 missions to carry cargo to and from the International Space Station as part of the Commercial Resupply Services contract for NASA. The Falcon 9 rocket and Dragon spacecraft were designed to one day carry astronauts; both the COTS and CRS missions will yield valuable flight experience toward this goal.



Robotic Drone Flies Itself by Looking at Landscape

By: ERICO GUIZZO . Full article available at: <http://spectrum.ieee.org/automaton/robotics/robotics-software/robotic-drone-flies-itself>



Robotic aircraft have taken to the skies, finding increasing use in military applications, law enforcement, environmental monitoring, and also becoming popular among hobbyists who want to build their own drones.

These unmanned aerial vehicles, or UAVs, have varied degrees of autonomy, though typically they depend on GPS and also on supervision from a human operator, who can send commands to the aircraft and receive images from its on-board cameras.

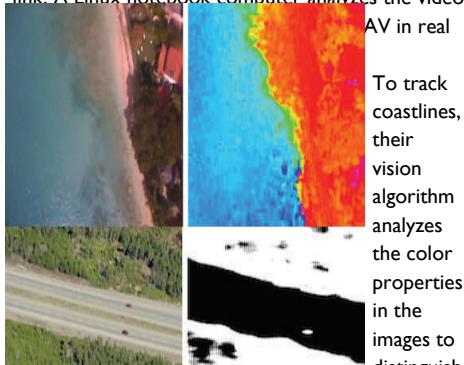
Now researchers at McGill University's Mobile Robotics Lab, in Montreal, Canada, are making these smart aircraft a bit smarter. They've developed a UAV control system that uses aerial images to identify visual cues on the landscape and steer the aircraft autonomously.

Aerial vehicles guided by advanced vision capabilities could help track wildfires, oil spills, and even animal herds. The aircraft would carry out monitoring and mapping missions requiring no human supervision or GPS coordinates.

Anqi Xu, a PhD student, and his advisor, Professor

Gregory Dudek, director of the Mobile Robotics Lab, say that their current system is capable of following a coastline or a road surrounded by forests.

They used a fixed-wing UAV called the Unicorn from Procerus Technologies, which they can control via software. The aircraft carries a gimbal-mounted camera that streams video over a radio link. A Linux notebook computer analyzes the video



between water and land. To track a highway in a wooded region, it analyzes textures cues. Once the algorithm has identified the boundaries between different areas, it then determines a heading to follow.

To test their system, the researchers took their UAV to the beach. The test area consisted of a 1-kilometer long "S" shaped tropical coastline. After

manually aligning their UAV, their control system took over and successfully steered the aircraft along the stretch of the shore. The UAV traveled at an altitude of 150 meters with an average ground speed of 13 meters per second with lateral wind speed of 7 meters per second.

How would that performance compare to a human operator piloting the UAV using the same visual information?

The researchers asked five volunteers to watch the recorded images and specify headings to keep the UAV following the coastline. Though there were discrepancies between the headings produced by the algorithm and by the volunteers, the researchers concluded that their system can perform nearly as well as a human operator.

In a next phase of the project, the researchers plan to use their aerial tracker to transmit navigation data to another of their sys-

tems,
an amphibian
robot de-
signed to
study coral reefs.



Images: Mobile Robotics Lab/McGill University

NCSA

Applications are DUE 15JAN2011

[GO ONLINE TO E-SERVICES TO APPLY TODAY!](#)

Squadron 144 Annual Banquet

The Squadron 144 Annual Awards Banquet will be held Saturday, 29JAN2011. This is an opportunity for us to reflect on 2010, award those who had outstanding service and accomplishments, and enjoy camaraderie with our fellow CAP members, friends, and families. Please plan to attend this great celebration!

SAFETY



A little known fact is that there are over 4,000 explosions involving automobiles at gas stations in the United States every year. These explosions have caused over 70 people to be injured and over \$7,000,000 in damages. What causes these explosions? What can be done to prevent such explosions while pumping gas into your car? This month's Safety corner will address tips to reduce the dangers of explosions while pumping gas.

The following tips are provided by the National Fire Protection Association (NFPA). More information can be found at the NFPA's web site www.nfpa.org.

- Turn off your vehicle's engine when refueling.
- Keep gasoline and other fuels out of children's sight and reach. Gasoline is highly toxic in addition to being a fire hazard. NEVER allow a child to pump gas.
- Don't smoke, light matches or use lighters while refueling.
- Pay attention to what you're doing. Pump-

Provided By: Capt Chris Natwick

ing gas is the transfer of a hazardous substance; don't engage in other activities.

- If you must use any electronic device, such as cell phones, computers or portable radios while refueling, follow manufacturer's instructions.
- Use only the refueling latch on the gasoline dispenser nozzle, if there is one. Do not jam the latch with an object to hold it open.
- To avoid spills, do not top off or overfill your vehicle.
- After pumping gasoline, leave the nozzle in the tank opening for a few seconds to avoid drips when you remove it.
- If a fire starts while you're refueling, don't remove the nozzle from the vehicle or try to stop the flow of gasoline. Leave the area immediately and call for help.
- Don't get in and out of your vehicle while refueling. A static electric charge can develop on your body as you slide across the seat, and when you reach for the pump, a spark can ignite gasoline vapor.
- If you must get into the vehicle during refueling, discharge any static electricity

by touching metal on the outside of the vehicle, away from the filling point, before removing the nozzle from your vehicle.

- Use only approved portable containers for transporting or storing gasoline. Make sure the container is in a stable position.
- Never fill a portable container when it is in or on the vehicle. Always place the container on the ground first. Fires caused by static charges have occurred when people filled portable containers in the back of pick-up trucks, particularly those with plastic bed liners. Removing the container will also prevent a dangerous spill of gasoline.
- When filling a portable container, keep the nozzle in direct contact with the container. Fill it only about 95 percent full to leave room for expansion.

By applying these tips we all can reduce the possibility of creating an explosion while pumping gas at our location gas station.





Citizens Serving Communities
Above and Beyond

Civil Air Patrol

San Diego Cadet Squadron 144

Direct questions, comments, and submissions to:

1st Lt Sonya Petty

Phone: 918-361-6730

E-mail: smmrinkrat@yahoo.com

For more information about CAP visit:

<http://www.gocivilairpatrol.com>

<http://www.capmembers.com>

<http://capnhq.gov>

Civil Air Patrol

Citizens Serving Communities: Above and Beyond

Civil Air Patrol was founded in December 1941, one week before the Japanese attack on Pearl Harbor, by more than 150,000 citizens who were concerned about the defense of America's coastline. Under the jurisdiction of the Army Air Forces, CAP pilots flew more than one-half million hours, were credited with sinking two enemy submarines and rescued hundreds of crash survivors during World War II. On July 1, 1946, President Harry Truman established CAP as a federally chartered benevolent civilian corporation, and Congress passed Public Law 557 on May 26, 1948. CAP was charged with three primary missions – aerospace education, cadet programs and emergency services. With the passage of Public Law 106-398 in October 2000, Congress provided that "The Civil Air Patrol is a volunteer civilian auxiliary of the Air Force when the services of the Civil Air Patrol are used by any department or agency in any branch of the federal government."

<http://www.sq144.com/>

Achievements & Accomplishments

December Promotions:

- Madeleine Angquico was promoted to C/Amn
- Lauren Munzenmaier was promoted to C/Amn

December Accomplishments:

- C/Capt Joshua Flewellen was presented the Amelia Earhart Award
- Cadets Jennifer Reid,

Alexander Elwers, Sebastian Tomacelli, Stephenie Reid, Harrison Powers officially joined Squadron 144

- Senior Member Joe Powers and 2ndLt Adam Mutchler officially joined Squadron 144
- Congratulations to C/Amn Madeleine Angquico and C/Amn Lauren Munzenmaier graduates of the BCS

flight

Special thanks to:

- Classic Rotors Museum for hosting a tour for us!
- All of the families and friends of San Diego Cadet Squadron 144 for making 2010 and outstanding year!

Did we miss a promotion, achievement, or accomplishment? Send submissions to 1st Lt Sonya Petty no later than three days before the end of the month.