



THE **TALON**



Falcons Visit Capital

WASHINGTON, D.C. - A delegation from The Batavia Composite Squadron was on Capitol Hill on March 2 briefing congressional members on how the U.S. Air Force auxiliary's primary missions - emergency services, aerospace education and cadet programs - make a difference in their communities. The organization's 52 wing and eight region commanders, as well as youth involved in the cadet program, took part in Legislative Day - an annual CAP networking event on Capitol Hill. Legislative Day is part of a full slate of activities for CAP members gathering in the nation's capital for the organization's Winter National Board meeting, that was held March 2-3 at the Marriott Crystal City in Arlington, Va. The National Board, which meets twice a year - in the winter and the summer - consists of 67 members representing each state, along with Puerto Rico and the District of Columbia, within the organization's eight regions. The board is CAP's policy-making arm and, in conjunction with the CAP Board of Governors, proposes amendments to the governing constitution and

bylaws. Representing the Falcons this year were; C/Maj. Shaun Coburn, C/Capt. Meghan Duell, C/2nd Lt. Rachel Hyatt and C/CMsgt. Derel O'Sullivan. Senior Members 1st Lt. Valerie Duell and Capt Diana Hyatt accompanied the contingent.



1st Annual Falcon Air Race a Success

On Thursday march 15th, the squadron held the 1st Annual Falcon Air Race. The squadron was divided up into four- 4 person teams to take on a set of challenging activities centered around aeronautical knowledge and skills. Each team was responsible for calculating the correct answers for a series of problems that involved basic aviation math related skills such as length of flight, fuel calculations and average speed of flight. Using small balsa gliders, the teams had to transfer the measurements of the aircraft into 1/72nd scale .

The performance part of the race were completed in the form of how the cadets flew the

glider for distance, speed and accuracy. The challenge for the cadets consisted of three mission; a relay race for speed, a total distance flown and the very difficult precision landing event. In the end it was a hard fought and fun competition that exposed the cadets to aviation skills and teamwork.

This Month in Aviation History

- In 1911... With Capt. Benjamin D. Foulois navigating a course and Phillip Parmelee at the controls, the Wright Type B on loan from Robert F. Collier sets an official U.S. cross-country record from Laredo to Eagle Pass, Texas. It flies the 106 miles in 2 hours 10 minutes.
- In 1912... Bob Fowler flies from Los Angeles to Jacksonville, Florida. The west to east coast-to-coast journey has taken four months to complete.
- In 1962... A Convair B-58 (serial no. 59-2458) of the Forty-third Bombardment Wing breaks three records during a round trip between New York and Los Angeles in 4 hours 41 minutes 14.98 seconds. The fastest trans-continental crossing between Los Angeles and New York is accomplished in 2 hours 58.71 seconds at an average speed of 1,214.65 mph. The third record notches the fastest time between New York and Los Angeles.

Beacon Light Bio



Dr. Sally Ride

On June 18, 1983, Dr. Sally Ride became the first American woman to fly in space. Ride was born in suburban Encino, California. At Stanford University she double majored in physics and English literature. Her doctoral dissertation studied the theoretical behavior of free electrons in a magnetic field. While at the University she saw an announcement that NASA was looking for young scientists to serve as mission specialists, and she immediately applied. She passed NASA's preliminary process and became one of the 208 finalists. Three months later, she was an astronaut and one of six women selected for the class of 1978. While learning to use a new Shuttle remote manipulative arm for a future mission, Ride acted as backup orbit Capsule Communicator (CAPCOM) for STS-2 and prime orbit CAPCOM for STS-3. She was named a mission specialist on the seventh flight of the Space

Shuttle Challenger in 1983 and flew on a second mission in 1984. Following the 1986 Challenger disaster, Ride served on the investigation committee. She left NASA in 1987 to pursue an academic career.

(Courtesy nasm.sa.edu)



Aerospace Hangar

The Aircraft Propulsion System

What is it?



An airplane engine is the propulsion system for the aircraft. It supplies the power for the airplane and is called the powerplant when a portion of its energy is used to run other accessories, such as the electrical, hydraulic and environmental systems. Modern aircraft engines come in a variety of sizes and types based on the aircraft design. The Wright brothers used a simple horizontally opposed in-line internal combustion reciprocating engine on their 1903 Flyer. Today we have turbojets, fanjets, turboprops, fuel injected, supercharged and rocket motors. Even though each has a different design, they all share the same purpose - create thrust. In developing thrust they all must convert chemical energy to mechanical energy. This conversion of energy takes place during combustion. Combustion occurs when a mixture of fuel and air are mixed and ignited. During this process, a chemical reaction called oxidation occurs and energy is released. The energy released in the power that drives the mechanics of the engine. In common reciprocating airplane engines, the most efficient mixture of fuel and air is called the stoichiometric ratio. This ration is 15 parts air to 1 part fuel. Depending on temperature this ration is not desirable. An example would be during initial startup when the outside temperature is cold. A rich mixture works better because there is more fuel than air. A lean mixture contains less fuel and more air. A leaner mixture works better after the engine is warmed up. One problem exists with a stoichiometric ratio. It can get very hot, and over a long period of time too much heat can damage an engine. Modern engines are designed to operate most efficiently with a mixture of 12 to 1. Pilots can control this in the cockpit with the mixture control.



Name This Aircraft

Figure It Out!

**A Lockheed SR-71 could travel at 2200mph. Using this speed, how long would it take to travel 11,000 miles?
($d=r*t$)**

Convert 2200mph into kts.

What do each of the following stand for?

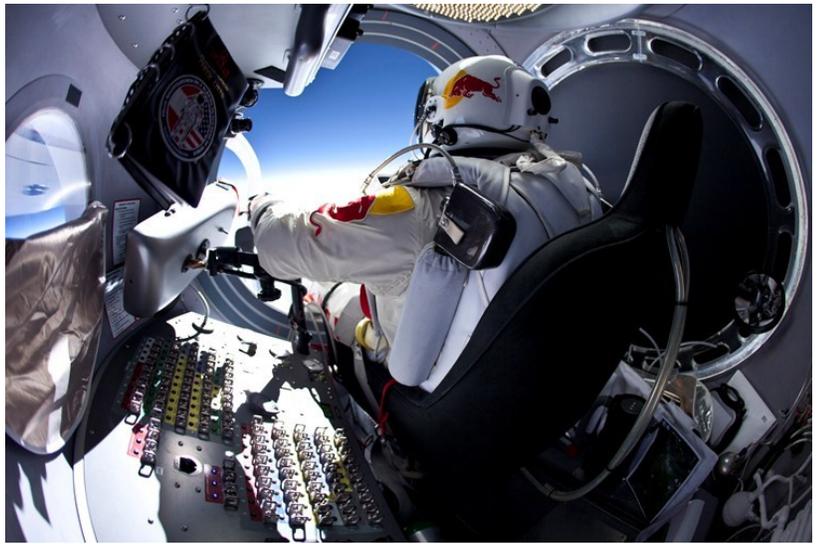
MSL AGL

**Explain the difference between the two
What is this number usually associated with? 29.92**

Aviation News

High Altitude Attempt

On March 15, 2012, Felix Baumgartner rode inside a pressurized capsule to 71,581 feet — 13.6 miles — and then jumped. He parachuted to a safe landing after reaching speeds of up to 364.4 mph and was in free fall for three minutes and 43 seconds, before pulling his parachute cords. The entire jump lasted eight minutes and eight seconds. With this successful test, Baumgartner is believed to be only the third person ever to jump from such a high altitude and free fall to a safe landing, and the first in a half-century. Red Bull Stratos, a mission to the edge of space,



will attempt to transcend human limits that have existed for 50 years. Supported by a team of experts Felix Baumgartner plans to ascend to 120,000 feet in a stratospheric balloon and make a freefall jump rushing toward earth at supersonic speeds before parachuting to the ground. His attempt to dare atmospheric limits holds the potential to provide valuable medical and scientific research data for future pioneers. The Red Bull Stratos team brings together the world's leading minds in aerospace medicine, engineering, pressure suit development, capsule creation and balloon fabrication. It includes retired United States Air Force Colonel Joseph Kittinger, who holds three of the records Felix will strive to break. Joe's record jump from 102,800 ft in 1960 was during a time when no one knew if a human could survive a jump from the edge of space. Joe was a Captain in the U.S. Air Force and had already taken a balloon to 97,000 feet in Project ManHigh and survived a drogue mishap during a jump from 76,400 feet in Excelsior I. The Excelsior III mission was his 33rd parachute jump. Although researching extremes was part of the program's goals, setting records wasn't the mission's purpose. Joe ascended in helium balloon launched from the back of a truck. He wore a pressurized suit on the way up in an open, unpressurized gondola. Scientific data captured from Joe's jump was shared with

U.S. research personnel for development of the space program. Today Felix and his specialized team hope to take what was learned from Joe's jumps more than 50 years ago and press forward to test the edge of the human envelope. (*Redbullstratos.com*)

Career Corner

Agricultural Aviation

Being an ag pilot is one of the most exciting jobs in aviation. It requires tremendous skill and precision. If you are good at and enjoy aviation video games, or enjoy the outdoors and rural living, you may be a perfect addition to the agricultural aviation industry. Agricultural aviation is not an easy job. It takes a significant amount of training, and the hours can be long during the busy flying season. For most pilots, agricultural aviation is a fulfilling job. Ag pilots provide an essential service to farmers, foresters and the public at large. Ag pilots love their ability to soar through the skies in beautiful and serene farm and forestry country. In many areas across the country it is also a seasonal job, which can allow for other leisure or professional opportunities in the offseason And thanks to new products used to fight late-season diseases and combat pests, it's a sight becoming even more common, with the Federal Aviation Administration reporting the number of hours flown by crop dusters climbed 29 percent between 2003 and 2007 to more than 1.4million. Iowa, Illinois and Wisconsin have seen the numbers of certified ag pilots almost double.



For more information on flying in the agricultural aviation field visit the National Agricultural Aviation Association at agaviation.org

O-Flight!

