Vigilant
The Journal of the 143rd

143rd Composite Squadron, Waterbury, CT — *JULY 2012*

Squadron Schedule

04AUG12 New England Air Show
Westover Air Reserve Base
Uniform: BDU/Polo

07AUG12 Squadron Meeting
ES/Safety/Character Dev.
Uniform: BDU/Polo

11AUG12 CTWG Cadet Ball
USCGA Officers' Club
Uniform: Formal

14AUG12 Squadron Meeting
AE
Uniform: BDU/Polo

16AUG12 MEWG Encampment
Bog Brook Training Facility
Gilead, ME

21AUG12 Squadron Meeting
CPFT/Fitness Activity
Uniform: PT/BDU/Polo

23AUG12 CAP National Conference
Baltimore, MD
Uniform: Blues/Corporate

24AUG12 Squadron Meeting
Leadership
Uniform: Blues/Corporate

31AUG12 Squadron Meeting
Leadership
Uniform: Blues/Corporate

01SEP12 Squadron Picnic
Hop Brook Lake
Uniform: Casual

04SEP12 Squadron Meeting
ES/Safety/Character Dev.
Uniform: BDU/Polo

11SEP12 Squadron Meeting
AE
Uniform: BDU/Polo

18SEP12 Squadron Meeting
CPFT/Fitness Activity
Uniform: PT/BDU/Polo

25SEP12 Squadron Meeting
Leadership
Uniform: Blues/Corporate

CAP Cadet Encampments

An encampment can be the most significant and worthwhile training experience of a CAP cadet's membership. Encampments are conducted under CAP supervision with Air Force advice, assistance and cooperation. They may be conducted at active duty, National Guard, or Reserve bases. They may also be conducted at any community, state, or other national facility (including DoD installations). It is preferred that they be conducted over a single time period, not to exceed 14 days; however, they may be conducted over three weekends, spanning a period of up to 60 days.

C/TSgt Aiden Moran (far right) marches with his flight at the NYWG encampment.

The encampment curriculum may be delivered via any format – tours, briefings, guest speakers, informal lectures, job shadowing, duty performance, simulations, games, etc. – making use of the particular strengths and resources of the host installation and local aerospace industry. Interactive, experiential methods of education and training are preferred to static, lecture-based instruction. The encampment curriculum is integrated with the Air Force's force development program and consists of a minimum of forty hours of instruction that include Air Force Fundamentals, Civil Air Patrol Fundamentals, Leadership & the Cadet Ethic, and Aerospace.

This year Connecticut Wing did not sponsor an encampment, so cadets from the 143rd attended encampments in neighboring wings.

C/TSgt Christain Tynan (far left) prepares to board a Blawkhawk helicopter at the MAWG encampment.

C/TSgt Christain Tynan (right) and his bunk mate stand at attention during a barracks inspection.

The 143rd Composite Squadron

Squadron Commander:	**Maj Timothy McCandless**
Deputy Commander for Seniors:	**Maj Thomas Litwinczyk**
Deputy Commander for Cadets:	**Capt Sarah Lange**
Cadet Commander:	**C/Lt Col Matthew McCandless**
Cadet First Sergeant:	**C/CMSgt Matthew Belval**

Regular Meetings every Tuesday 7-9pm
Connecticut National Guard Armory
64 Field Street, Waterbury, Connecticut

www.gocivilairpatrol.com

Cameron Foster is promoted to C/2nd Lt by Maj McCandless and his mother, 2nd Lt Kelly Foster.

Alec Beliveau is promoted to C/CMSgt by Maj McCandless and his father, 2nd Lt Paul Beliveau.

Karen Litwinczyk is promoted to C/SSgt by C/Lt Col McCandless and her father, Maj Tom Litwinczyk.

Alan Hinkson is promoted to C/SMSgt by Maj McCandless and C/Lt Col McCandless.

Cadet of the Quarter

In his last official act as Cadet Commander, C/Capt Testman instituted a Cadet of the Quarter Award at the 143rd. This award will recognize a cadet each quarter who has made a special contribution to the squadron. The Cadet Commander shall choose a recipient for this award in March, June, September and December.

The first recipent of the 143rd Composite Squadron Cadet of the Quarter Award is C/SSgt Carlos Aponte.

C/Capt Testman presents the Cadet of the Quarter Award to C/SSgt Carlos Aponte.

Ryan Brown (center left) and Xavier Jeffries (center right) are promoted to C/Amn by Maj McCandless and C/Lt Col McCandless.

Sawyer Collins is promoted to C/A1C by Maj McCandless and C/Lt Col McCandless. Cadet Collins earned his promotion in June.

Christain Tynan is promoted to C/TSgt by Maj McCandless and C/Lt Col McCandless.

July Promotions

The following members of the 143rd Composite Squadron were promoted in July:

Cameron Foster has completed the Billy Mitchell Achievement and has been promoted to C/2nd Lt.

Alec Beliveau has completed the Dr Robert H Goddard Achievement and has been promoted to C/CMSgt.

Alan Hinkson has completed the Gen Jimmy Doolittle Achievement and has been promoted to C/SMSgt.

Matthew McCarthy-Calabrese has completed the Charles Lindbergh Achievement and has been promoted to C/MSgt.

Tomas Ramirez has completed the Capt Eddie Rickenbacker Achievement and has been promoted to C/TSgt.

Christain Tynan has completed the Capt Eddie Rickenbacker Achievement and has been promoted to C/TSgt.

Karen Litwinczyk has completed the Wright Brothers Achievement and has been promoted to C/SSgt.

Ryan Brown has completed the Gen J F Curry Achievement and has been promoted to C/Amn.

Eric Hutzelman has completed the Gen J F Curry Achievement and has been promoted to C/Amn.

Matthew Hutzelman has completed the Gen J F Curry Achievement and has been promoted to C/Amn.

Xavier Jeffries has completed the Gen J F Curry Achievement and has been promoted to C/Amn.

Adam Young has completed the Gen J F Curry Achievement and has been promoted to C/Amn.

Stripes to Diamonds

Interactive Webpage Maps Cadet Achivements

Cadets can review the requirements for each cadets achievement by going to the Stripes to Diamonds web page available on CAP's national website under Cadet Programs. The page sorts each achievement by phase with detailed information for each achievement available by clicking on the cadet grade insignia associated with each achievement.

Left: The Stripes to Diamonds page at capmembers.com
Above: The Jimmy Doolittle Achievement detail page explains the requirements to earn the achievement.

The Cadet Programs section of the CAP website also includes news and information for cadets, parents, and senior members working with cadets. Learn more about Cadet Programs here:

capmembers.com/cadet_programs

Cadets Complete Great Start Training

The squadron completed a Cadet Great Start class in July that included twelve cadets new to CAP and many cadet staff members who taught the classes.

CAP's Cadet Great Start Program is detailed in CAP Pamphlet 52-9. The program includes classes on all aspects of the CAP Cadet Program and is organized to be conducted either at weekly squadron meetings or over a weekend.

The 143rd Composite Squadron has had success with both the squadron meeting and weekend schedule. The last Cadet Great Start weekend was held in March at Camp Niantic in Niantic, CT.

Cadets learn how to march.

Capt Sarak Lange, Deputy Commander for Cadets, explains the requirements for completing cadet achievements.

C/SMSgt Devin Moore (left) and C/CMSgt Rebecca Lange (right) were primary instructors during this Cadet Great Start cycle.

C/CMSgt Lange Attends Hawk Mountain Ranger School

Hawk Mountain Ranger School has a proud history of providing outstanding SAR and emergency services training. The school is conducted in the mountains of PA under mission field conditions and is very physically demanding. Curriculum includes but not limited to: navigation, search techniques & equipment, communication skills, woodsmanship, campsite selection & equipment, first aid, patient evacuation, specialized equipment, health & nutrition, and survival skills. In addition to the practical skills, leadership and character development are also emphasized.

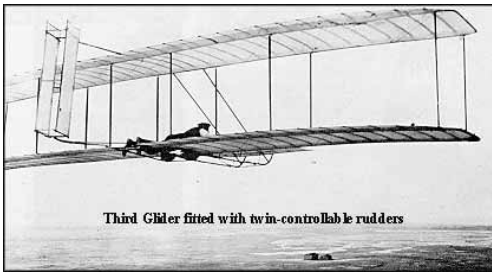
C/CMSgt Rebecca Lange looks at the camera while her flight passes out Hawk Mountain Ranger badges.

Cadets negotiate a swing obstacle on the confidence course.

C/CMSgt Rebecca Lange completed the one week course in July. Cadets interested in attending this activity should ask her about her experience.

Success!

Orville's and Wilbur's 1902 Glider Flights

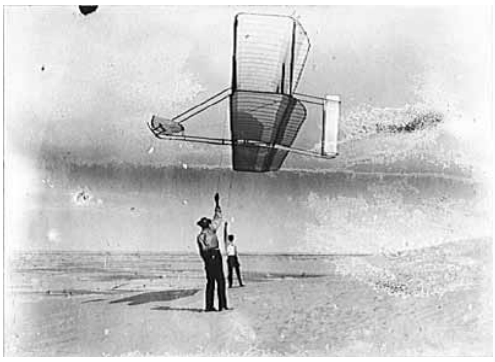


The Third Glider fitted with twin-controllable rudders (US Air Force Photo)

By the beginning of 1902, Orville and Wilbur Wright were confident they were correct in their aerodynamic calculations and wing designs. The brothers returned to Kill Devil Hills on August 27, 1902, and spent their first week there repairing the aircraft hangar and setting up camp. They then began to assemble their new machine.

Both brothers spent most of the 1902 flying season learning to become pilots. Orville flew for the first time and the two practiced gliding until they became equally proficient in controlling the aircraft's balance. The athletic skills they had developed in bicycle riding helped with this task. As Wilbur had done with earlier machines, Orville smashed up the glider in a spectacular crash, resulting in "a heap of flying machine, cloth, and sticks…with me in the center without a scratch or a bruise." But it took more than a crash to discourage the brothers at this point—they put the glider back together and continued to fly.

One problem persisted. The glider still slipped in turns. The tail did little to stop it; in fact, Orville suspected it made the problem worse. When the wings were warped and the plane began to turn, the set of wings inside the turn was moving slower (and therefore generating less lift) than the wings on the outside. At the same time, the fixed tail—no longer parallel to the air stream–presented a broad surface that dragged in the air, increased the skid, and further slowed the inside wings. The wings dropped as they lost more and more lift, and the glider went into an uncontrolled spiral and struck the ground. The brothers called this "well-digging." Orville determined that they could avoid "well digging" if the fixed tail was changed into a movable rudder with its own separate control. This would allow the pilot to adjust its angle during a turn to overcome the drag from the high wing, keep the inside wing from losing too much lift and



Dan Tate and Wilbur Wright flying 1902 glider as a kite, September 19, 1902. (Library of Congress photo)

prevent the aircraft from skidding. Wilbur accepted the idea but suggested the pilot already had enough to do without the addition of another control. Instead, the brothers coupled the wires that turned the rudder with the wing warping mechanism. On October 6, 1902, they replaced the double rudder with a single movable rudder.

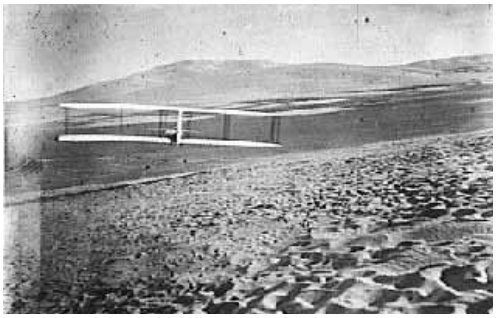
They had finally solved three-dimensional control. The movable rudder, which had an area of 5.7 square feet (0.5 square meter), made the 1902 Wright glider the first aircraft capable of being precisely balanced in flight. The elevator controlled pitch, turning the glider's nose up or down. The wing warping controlled roll , raising or lowering a wing; and the rudder controlled yaw, moving the nose left or right.

This glider was the world's first aircraft with three-axis control—control around the longitudinal, lateral, and vertical axes—and was the heart of the Wrights' first pioneer "flying machine" patent. This breakthrough was so basic every aircraft and spacecraft flying today still use the same fundamental controls of roll, pitch, and yaw first developed by the Wright brothers.

Altogether, the brothers flew their glider almost 1,000 times during September and October. The best flying came in late October, after all the visitors had left. Wilbur made a glide covering 622 feet (190 meters) with a duration of 26 seconds; Orville's best was 615 feet (187 meters), staying aloft just over 21 seconds.

They returned home to Dayton on October 28, ready for the next step, powered flight. They had solved the key problems of flight: the lifting ability of the wings and the perfection of three-dimensional control. The 1902 glider was, for all practical purposes, the first true airplane. It was this machine that would form the basis of their 1906 patent. All that was now needed for powered flight was a propeller and an engine.

-Story and Photos taken from blog.nasm.si.edu
The blog of the National Air & Space Museum



Orville Wright making a turn, October 24, 1902. (Library of Congress photo)

Douglas B-18

Formation of Douglas B-18s. (U.S. Air Force photo)

The Douglas B-18 was originally designed and built as the DB-1 (Douglas Bomber #1) for the Army Air Corps 1934 requirement for a long range bomber. The DB-1 was based on the Douglas DC-2 and retained many of the latter aircraft's features, including the wing and aft fuselage. The DB-1 was in competition with the Martin Model 146 (an enlarged B-10) and the Boeing Model 299. Although the Boeing entry was clearly superior, the DB-1 was initially favored by the Army General Staff for two reasons. First, the Boeing Model 299 crashed during testing. The crash was the result of pilot error but was technically disqualified from the competition. Second, the DB-1 could be built for about half the cost of the Model 299 (B-17). The General Staff considered the B-17 too expensive and opted for an order for 99 B-18s and only 13Y1B-17s in 1936.

Thirty-five more B-18s were ordered in 1937, including the last B-18, which had a power nose turret and was designated DB-2 by Douglas. The Army continued to favor the B-18 into the late 1930s when 217 more were ordered as improved B-18As in 1937-1939.

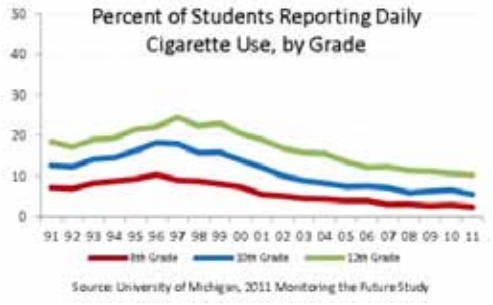
-Taken from www.nationalmuseum.af.mil

This B-18 was a test aircraft for the 3rd Attack Group, Barksdale Field, La. Note the wing-like structure mounted forward of the vertical stabilizer. (U.S. Air Force photo)

View of the flying field during an open house. Note the lines waiting to view the B-18 aircraft interiors. (U.S. Air Force photo)

Tobacco Addiction

According to the Centers for Disease Control and Prevention, there has been a 50 percent decline in the number of smokers since 1965.



Still, in 2011, 6.1 percent of 8th graders, 11.8 percent of 10th graders, and 18.7 percent of 12th graders reported smoking cigarettes in the in the 30 days prior to being surveyed; and 2.4 percent, 5.5 percent, and 10.3 percent of 8th, 10th, and 12th graders, respectively, were daily smokers (figure; MTF, 2011).

In 2010, almost 70 million Americans aged 12 or older reported current use of tobacco in 2010 (NSDUH, 2011):

- 58.3 million smoked cigarettes, 13.2 million smoked cigars, 2.2 million smoked pipes, and 8.9 million used smokeless tobacco
- Women represent almost 28 million of the current tobacco users

Although tobacco use has declined among the general population, this is not the case for patients with mental illnesses, where use remains high—smoking among patients with schizophrenia is as high as 90 percent.

Cigarette smoking kills an estimated 440,000 U.S. citizens each year.

Since 1964, more than 12 million Americans have died prematurely from smoking, and another 25 million U.S. smokers alive today will most likely die of a smoking-related illness.

- Smoking accounts for about one-third of all cancer deaths.
- Smoking causes other lung diseases such as chronic bronchitis and emphysema, exacerbates asthma symptoms and substantially increases the risk of heart disease, including stroke, heart attack, vascular disease, and aneurysm.
- Passive or secondary smoke also increases the risk for many diseases – approximately 3,400 lung cancer deaths and 46,000 deaths from coronary heart disease occur per year among exposed nonsmokers.

Nearly 90 percent of smokers start smoking by age 18. For those who start before 18 years of age, more than 6 million will die prematurely from a smoking-related disease.

What Makes Tobacco Addictive?

NIDA-supported research identified nicotine as the main addictive ingredient in tobacco. Nicotine activates reward pathways in the brain and increases levels of dopamine—a key chemical behind the desire to consume drugs.

But nicotine may not be the only psychoactive ingredient in tobacco. Animal research shows that acetaldehyde, another chemical constituent of tobacco smoke, dramatically increases the rewarding properties of nicotine. This effect may be age-related, with adolescent animals displaying far more sensitivity to it than adults. It may also be a reason why adolescents are more vulnerable to becoming addicted to tobacco than adults.

Smoking and Women

Smoking plays a major role in morbidity and mortality among women. Lung cancer is the leading cause of cancer death among women, surpassing breast cancer in the late 1980s. In 2012, almost 73,000 women are expected to die from lung cancer and an estimated 110,000 women will be newly diagnosed with the disease.

Women who smoke are at higher risk for other cancers as well, including liver and colorectal cancer. They are also at higher risk for infertility, early menopause, and lower bone density and hip fracture after menopause.

It's alarming that roughly 1 in 6 pregnant women aged 15 to 44 were regular smokers in 2010. Women who smoke during pregnancy subject themselves and their unborn children to risks including complications during pregnancy, premature delivery, low birth weight, stillbirth and sudden infant death syndrome (SIDS), as well as compromised fetal growth and development.

Treatments for Tobacco Addiction

Quitting smoking can greatly reduce a person's risk of smoking-related diseases and premature death. While the relative health benefits are greater for people who stop smoking at earlier ages, smoking cessation is beneficial at any age. Some smokers can quit on their own; however many need assistance. Research has shown that treatments for tobacco addiction can help. Unfortunately, even with treatment, long term quit rates are often disappointing – most smokers relapse within 6 months. Thus, relapse prevention remains the priority for tobacco cessation research.

Medications

Nicotine replacement therapies (NRTs), such as nicotine gum, lozenge, and the transdermal nicotine patch, can be used (in conjunction with behavioral support) to relieve withdrawal symptoms—they generally provide users with lower overall nicotine levels than tobacco and thus have little abuse potential. NRTs also do not expose the lungs to carcinogens and gases associated with tobacco smoke.

Other medications include:

Bupropion (Zyban), an antidepressant, which was approved by the FDA in 1997 to help people quit smoking.

Varenicline tartrate (Chantix), which acts at the sites in the brain affected by nicotine, and may help people quit by easing withdrawal symptoms and blocking the effects of nicotine if people resume smoking.

On the Horizon:

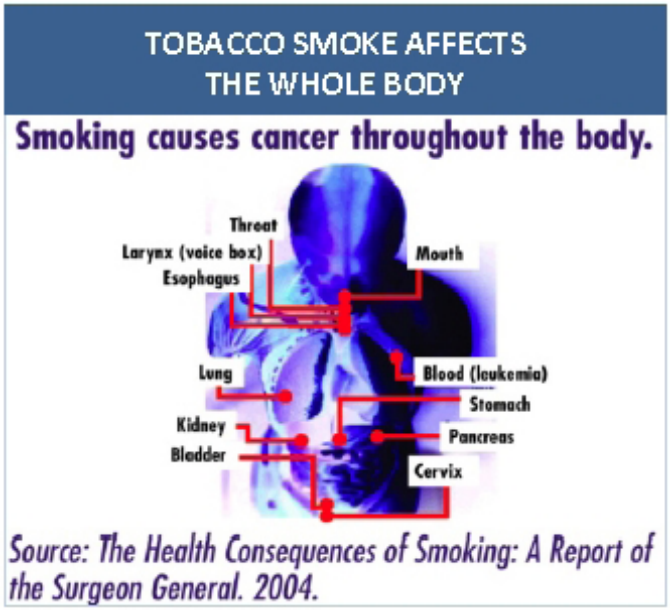
A Nicotine Vaccine: Expected to prevent relapse by stimulating the body to produce antibodies against nicotine, binding it while it's still in the bloodstream and preventing it from entering the brain and exerting its rewarding effects.

New Medication Targets: Advances in genetics research are suggesting new targets for medications development. For example, a cluster of nicotinic acetylcholine receptor genes on chromosome 15 has been linked to nicotine dependence, with the #5 receptor gene shown to affect nicotine withdrawal, a major trigger of smoking relapse.

Behavioral Treatments

Behavioral interventions play an integral role in smoking cessation, either in conjunction with medication or alone. They employ various methods to assist smokers in quitting, ranging from self-help materials to individual cognitivebehavioral therapy. These interventions teach individuals to recognize high-risk smoking situations, develop new coping strategies, manage stress, improve problem solving skills, and increase social support. To make behavioral approaches more accessible, researchers have been adapting them for mobile devices and web formats.

-Taken from www.drugabuse.gov



Safety in Space

USAF Space Safety Division enables full-spectrum combat space capabilities through mishap prevention.

by Maj. Justin White
Air Force Safety Center

7/17/2012 - KIRTLAND AIR FORCE BASE, N.M. -- When it comes to safety in the Air Force, much of the focus on mishap prevention goes into preventing and investigating slips, trips and falls. Ground safety applies to every member, regardless of their primary duty, and all can benefit from practicing prescribed safety methods in their everyday lives.

However, many vital Department of Defense missions have recently come to rely heavily on a variety of capabilities provided by Air Force satellites. To help protect those assets, the Air Force Safety Center stood up the Space Safety Division in 2004. Given the U.S. public's high reliance on satellites for navigation, the high cost and relatively long timeline to build and launch satellites, it's vital that the American taxpayer and warfighter get as much useful life from these assets as possible.

The primary mission of the Space Safety Division is to enable full-spectrum combat space capabilities through mishap prevention. As the lead for Air Force space safety, the division is responsible for overseeing the safe development, operation and maintenance of Air Force space assets, to include ground-based systems. This includes coordination of space safety principles and policies among national and international space-faring entities.

But even with the best safety practices, mishaps occur from time to time. And when they happen with space assets, a significant amount of government time and taxpayer dollars are lost. In the last 10 years, there have been only three Class A space mishaps -- mishaps that have direct costs exceeding $2 million and/or directly caused a fatality. While none of those mishaps contributed to any deaths, they cost more than $24 million combined.

Space mishaps also create capability gaps caused by not having the satellite on orbit for use. Whether the lost capability is communication, surveillance or navigation, there are troops in the field counting on using these space assets. Hence, in addition to costing dollars, space mishaps greatly degrade all missions that had planned to use that satellite.

Maj. Justin White, deputy chief, Space Safety Division, Air Force Safety Center, takes a look at reentered space debris from a Delta II rocket motor recovered in Thailand in 2005. The division is responsible for enabling full-spectrum combat space capabilities via mishap prevention. The potential for a space mishap increases as more debris is added to the 22,000-plus pieces that are tracked. (U.S. Air Force photo)

One very real hazard to satellites is space debris. With more and more countries getting into the space-faring arena, it's only natural that greater numbers of satellites and pieces of space debris have remained on orbit. There are currently more than 22,000 items at least the size of a softball being tracked. Sometimes owners of two live satellites can deconflict their operations to prevent a possible collision. But when two pieces of debris or dead satellites are headed for each other, there is little that can be done. When collisions create more debris, there's even more potential for hazards.

With the wide variety of hazards to satellites and other space systems, the Space Safety Division focuses on mishap prevention through a variety of ways. For example, the division teaches a space-centric portion of the Board President, Chief of Safety and Mishap Investigation Non-Aviation courses conducted at the safety center. This training provides space professionals the tools needed to prevent mishaps and, in the event of a mishap, identify what happened and why it happened.

The division is also the office of primary responsibility for Air Force Instruction 91-217, Space Safety and Mishap Prevention Program, and performs all necessary reviews, updates and re-writes. In order to achieve buy in from their customers, they gather recommendations for edits from the space acquisition, launch, operations and research units, as they will ultimately have to follow this regulation.

Finally, with consistent interaction and periodic staff assistance visits, the division develops rapport with field units and guides them to safely execute their mission.

When a mishap occurs, the Space Safety Division provides independent guidance to the investigation board in accordance with Air Force Manual 91-222, Space Safety Investigation and Reports. Then, the Air Force Safety Automated System database tracks all mishap findings and recommendations, ideally preventing future occurrences of similar accidents. The division works with the mishap organization to ensure they fix any deficiencies that may have contributed to the mishap.

Space mishaps are relatively rare, but very expensive in terms of dollars, time and capabilities lost. It's important that the Space Safety Division provide independent oversight of the space mission, while ensuring the safest possible use of space assets from cradle to grave.

-Taken from www.afsec.af.mil

CAP Safety Requirements

Individual members will live the CAP motto of "Always Vigilant" in planning, conducting, and participating in all CAP activities. Hazards and potentially unsafe behavior will be addressed immediately and then reported to higher authority to ensure proper leadership follow-up and trend reporting.

Every active CAP member (seniors, cadets, cadet sponsors, 50 year, and life members) who attends CAP meetings, participates in any flight and/or vehicle operation or participates in cadet or any ES missions, shall complete introductory ORM and safety as outlined in Paragraph 4, Safety Education Requirements.

Every CAP member will wear appropriate personal protective equipment (PPE) as outlined in paragraph 7.
6 CAPR 62-1 25 MARCH 2011

Every CAP member is responsible to ensure they receive an Operational Risk Safety Briefing for all activities or sub-activities that they participate in. If they are unsure they have met the requirement, they should contact the appropriate commander, director, or safety officer for the activity. Participation in an activity without completing a required Operational Risk Safety Briefing is prohibited.

Members have a responsibility to know their safety education currency status and to understand that they may not participate in CAP activities unless they are compliant with the safety education requirements as follows:

Introduction to CAP Safety - Level I/Curry Achievement

ORM Familiarization - Annually

Safety Education, Misc. Topics - Monthly

Ask your Chain of Command if you have any questions about the Safety Requirements that apply to you.

Civil Air Patrol
US Air Force Auxiliary

STANDARD OPERATIONAL RISK SAFETY BRIEFING CARD

1. INTRO	a. Greeting. b. Identification of self, if appropriate. c. Scope: Define the coverage of the briefing in terms of time, geographic limits, or specific topics.
2. BODY	a. Weather report or forecast. b. Terrain, if appropriate. c. Facility. Any Safety Constraints. Known Risks and Risk Mitigations. Emergency Exits, Fire Extinguisher Locations, Police/Fire.EMS contact information. d. Ground Operations. Any Safety Constraints. Known Risks and Risk Mitigations. e. Vehicle Operations. Any Safety Constraints. Known Risks and Risk Mitigations. f. Flight Operations. Any Safety Constraints. Known Risks and Risk Mitigations. g. Other Operational Considerations. h. Other appropriate items (i.e., there has been a change in mission, weather, etc.).
3. CLOSE	a. Conclusions, if applicable. b. Solicitation of questions. c. Concluding statement and announcement of next briefing time/location, if any.

CAPF 62, *Mar 11*

CAP provides many tools to help members meet the requirements of the CAP Safety Program such as CAP Form 62, above.