



Newport News Composite Squadron

May 2011 Safety Briefing
10 May 2011





Overview

- Safety Education Reminders
- Wildfires-Are You Ready?
- Pilot Deviations
- Stay Safe in Unfamiliar Aircraft
- Up Up and Away
- Slow Steady and Sure
- Temporary Flight Restrictions



Safety Education Reminders

- Active members are required to **complete safety education monthly and have it documented**. Documentation **required for participation in activities**. SAREX safety briefings **don't** count (ORM based).
- **Operational Risk Safety Briefings are mandatory**. Documentation not required.
- **All current members** must complete, *Introduction to CAP Safety for New Members*, **by the new extended date 31 May 2011**.
- Online Safety Education
 - Intro to CAP Safety Program for New Members and many other subjects



Wildfires-Are You Ready?

- Practice wild fire safety
- Before wildfires threaten
- Beware of hazards
- Assess psychological effects
- Details are in the May Safety Beacon



Pilot Deviations

- Pilot Deviations are on the rise
- Arm yourself with simple tools
- Request for a deviation
- Some terms to anticipate

Descend and maintain
Climb and maintain
Turn to a heading of....



Stay Safe in Unfamiliar Aircraft

- Focus is on experimental aircraft
- CAP missions put us in similar situations
- Consider such a flight as a test flight
- Review hazards and risks and complete recommended training
-



Up Up and Away

- Watch your sink rate during landing
- Maintain a constant landing attitude
- Excessive ballooning requires a go around



Slow Steady Sure

- Knowledge: Lift, load, speed
- Skill: Aeronautical tune up
- Attitude: Focus, focus, focus



Temporary Flight Restrictions

- Its' all about balance
- Getting the word out
- Please check NOTAMS

Slow Steady Sure



Photos by Tom Hoffmann



Avoiding Loss of Control in Maneuvering Flight

Pilot lore is replete with reminders about the importance of airspeed. We hear “speed is life.” Instructors chant a “watch your airspeed” mantra. Comedians quip that flying requires only two things: airspeed (there it is again) and money. Airspeed is a frequent topic because sufficient airspeed is essential to generating the lift needed to establish and maintain flight. We also hear about airspeed for tragic reasons: Loss of control in maneuvering flight, the number one cause of fatal general aviation accidents, often results from inattention to airspeed.

Maneuvering flight is one of the four topic areas for the 2nd Annual FAASafety Team Safety Standdown. This year’s standdown includes an event on April 2 in conjunction with the Sun ‘n Fun International Fly-in and Expo, more than 90 events around the country during the month of April, and special material on www.FAASafety.gov starting on April 2. Here are some basic airspeed awareness points as background for Safety Standdown.

Knowledge: Lift, Load, and Speed

When it comes to maneuvering flight, what you don’t know *can* hurt. Sound knowledge of basic aerodynamic principles, including a grasp of why airspeed is so important, is an essential foundation

for avoiding loss of control in maneuvering flight.

To begin with, maintaining control of an airplane during flight requires maintaining lift. Lift is produced by the dynamic effect of air—in effect, airspeed—acting on the airfoil, or wing. The pilot controls lift by controlling airspeed and the angle of attack (AOA), which is the acute angle formed between the wing’s chord line and the relative wind, that is, the direction of the air striking the wing.

The pilot also controls lift by controlling the speed and direction of the relative wind. Lift is proportional to the square of the aircraft’s velocity (speed), so doubling the speed will quadruple the lift. Pilots learn that for every AOA there is a corresponding airspeed required to maintain altitude in steady, unaccelerated flight. An airplane flying at a higher airspeed can maintain level flight with a lower AOA, while the same airplane flying at a slower airspeed must have a higher AOA to generate enough lift for level flight. The curriculum for primary flight training includes airspeed change maneuvers designed to demonstrate this relationship.

Student pilots learn that there are limits at both ends of the lift-velocity continuum. At the upper end, the amount of thrust produced at full throttle limits the pilot’s ability to increase lift by increasing airspeed. At the lower end, the ability

to increase lift by increasing AOA is limited by the wing's critical angle of attack. As you recall from ground school and from practicing aerodynamic stall entries and recoveries, increasing the AOA increases lift until the wing reaches the maximum (critical) AOA. Increasing AOA beyond this point results in a large loss of lift, an increase in drag, and a wing said to be stalled.

It is crucial to remember that airspeed is not the only consideration in loss of control from an aerodynamic stall. As discussed in the [March/April 2010 issue](#) of *FAA Safety Briefing* (“Getting it Right in Maneuvering Flight”), the pilot must also consider the impact of physical weight and aerodynamic weight (load) on the airplane.

This point is especially important for pilots of airplanes with high wing loading, a value derived from dividing the loaded weight of the airplane by the area of the wing. Engineers use wing loading as a measure of an airplane's basic maneuvering performance because the greater the velocity (airspeed), the more lift is generated by each square foot of wing area. A slower airplane with a large wing area (low wing loading) will be able to generate more lift at any given speed. A faster airplane can use high wing loading to generate the same amount of lift with a smaller wing. The trade-off comes in the form of higher take-off and landing speeds and decreased maneuverability, especially at lower airspeeds. Pilots who own or fly some of today's fastest GA aircraft—including experimental and amateur-built models—need to have rock-solid knowledge of these principles.

Skill: Aeronautical Tune-up

Knowledge is the foundation, but skill is the structural scaffolding for safety in maneuvering flight. You may have thought your instructor was cruel when he/she made you practice maneuvering at minimum controllable airspeed (slow flight),

followed by aerodynamic stall entries and recoveries from both takeoff (power on) and landing (power off) configurations. However, your instructor was merely trying to develop and strengthen your ability to maintain control in all phases of flight.

No matter how much you study maneuvering flight and airspeed control, the only way to develop the actual skill is to get into the airplane and practice to proficiency. To start your maneuvering flight skill tune-up, grab or download a copy of the FAA's *Airplane Flying Handbook* ([FAA-H-8083-3A](#)) and review Chapter 4, “Slow Flight, Stalls, and Spins.”

If you do not feel proficient enough to practice on your own, hire a flight instructor to help you remove the rust. Ask to start with a review of the airspeed changes exercise from the private pilot training syllabus. A few minutes of practice will strengthen your airspeed perceptions, insights, and flying skills. Your maneuvering skill tune-up should also include practice in recovering from unusual attitudes, which can easily develop from loss of control.

Attitude: Focus, Focus, Focus

Now, more than ever, many of us operate in multi-tasking mode. Multi-tasking is an inescapable part of life and pervades aviation as well. It is both necessary and appropriate in some phases of

The only way to develop the actual skill is to get into the airplane and practice to proficiency.



Photo by Tom Hoffmann



Photo by James Williams

flight, but dangerous in others. Maneuvering flight, especially operations that require flight in the lower range of the airspeed indicator, is one phase of flight that deserves your full attention. A few tips:

Priorities. Remember that the iron law of aeronautical priorities is aviate, navigate, communicate. The slower you go, the more you should narrow your focus to priority number one: Flying the airplane.

Distractions. When engaged in maneuvering flight, especially the takeoff–initial climb and

approach–descent–landing phases, do everything you can to minimize distractions from every source. If you have passengers aboard,

Sufficient airspeed is essential to generating the lift needed to establish and maintain flight.

explain sterile cockpit practices during the preflight briefing and again when you conduct the pre-landing briefing. Even if you are alone, it is a good idea to self-brief. Verbally reviewing sterile cockpit procedures can help you establish the focused, no-nonsense mindset you need for critical phases of flight.

Briefings & Checklists. Be meticulous in reviewing critical requirements, procedures, and

numbers before you need to use them. Maintain the habit of self-briefings or, if you regularly fly with another pilot or a savvy non-pilot, develop standard operating procedures for conducting operational briefings and running checklists.

And, always watch your airspeed! ✈️

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For More Information

Airplane Flying Handbook (FAA-H-8083-3A)

www.faa.gov/library/manuals/aircraft/airplane_handbook/

“Maneuvering: Approach and Landing” course on FAASafety.gov (requires FAASafety.gov account login and password)

https://www.faasafety.gov/gslac/ALC/course_content.aspx?pf=1&preview=true&CID=34

FAA Safety Briefing, March/April 2010

www.faa.gov/news/safety_briefing/2010/media/MarApr2010.pdf

We're on a Mission

Taking the Mystery Out of Temporary Flight Restrictions

Since Temporary Flight Restrictions (TFRs) are a fact of life for today's pilots, it was clear that the topic had to be included in an issue devoted to the National Airspace System (NAS) and air traffic control. But, rather than repeat the tried, true, and admittedly tired explanations of *what* constitutes a TFR, we decided to focus instead on another angle: *who* constitutes a TFR, and *how* do they decide to establish such restrictions.

Even though I work for the FAA, I confess I started with the notion that "they" must be evil men and women in dark capes and masks, intent on curbing our fun in the sky. I set up an interview and, at the appointed time, walked through the doorway.



Imagine my surprise to be greeted by life-sized statues of Jake and Elwood Blues, denizens of the classic 80s comedy “The Blues Brothers.” I first assumed it was just an unexpected spark of quirky personalization in an otherwise drab government office. But, after speaking with members of the staff, I realized the statues were strangely appropriate. If you’ve seen the film, you might recall that Jake and Elwood Blues repeatedly insist that “We’re on a mission from God.” While no one in the Office of System Operations Security lays claim to a divine mandate, it is nonetheless clear that they have a strong sense of mission.

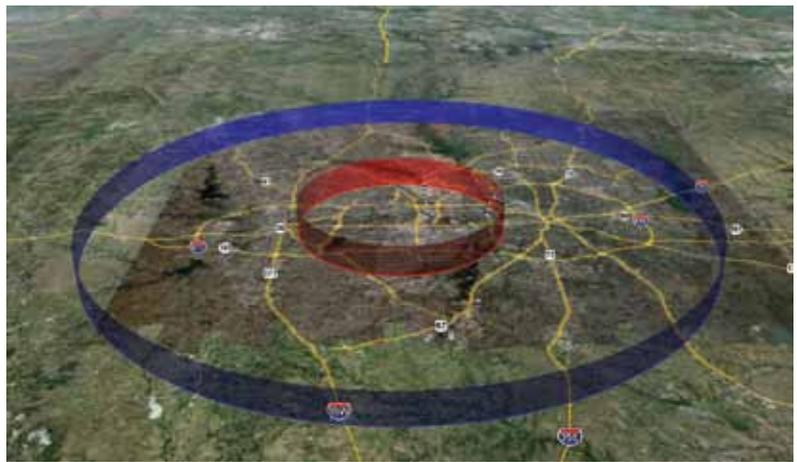
“We are truly GA’s last advocate,” says Frank Hatfield, director of System Operations Security. His office has the responsibility to work closely with various national and regional security agencies and organizations and determine how best to balance security requirements with the public’s need for access to airspace. It’s not an easy job. Hatfield and his staff face a daily challenge to balance very real security needs with the GA community’s equally real need for access to the NAS.

For better understanding of how the TFR process works, I sat down with Brian Throop, Darrell Hood, and Rick Hostetler. “The main things we work in this shop are the Presidential and National Special Security Event (SSE)-type TFRs,” Throop explains. “Darrell is our Homeland Security and law enforcement program manager, and so he works with the Secret Service on a regular basis to design and negotiate the airspace involved in VIP movements.”

It’s All about Balance

“Our overarching goal is balance,” Throop continues. “We get requests from our law enforcement partners or security partners who say ‘we need a TFR over X event.’ We look at that request from an impact standpoint and coordinate with our local facilities. We try to apply an air traffic control or FAA filter to [the request]. If the initial request was 60 miles, could they work with 58? Could they start the TFR 10 minutes later? Could we get a cut-out area for this airport on the fringe? Our work is all about the many details and considerations involved in trying to lessen the impact on airspace users.”

There is no question about the reality of security concerns. “We get a lot of requests for TFRs,” Throop observes. “GA pilots may feel like TFRs pop up everywhere, but the number they actually see is probably only a tenth of the total requests. We get requests from virtually every police department, city



A graphical depiction of the TFR surrounding the Dallas/Fort Worth area for Super Bowl 45 in February 2011.

council, mayor, or town manager with an event that they think merits a TFR.”

Happily for GA pilots, most requests simply do not meet the System Operations Security Office’s criteria. The staff starts by reviewing the potential threat against the benefit of a free and open society. As Throop stresses, though, the FAA does not make this decision in a vacuum. “We go to our contacts at TSA and FBI, and we ask if they have credible threat information about the event in question. They reach out to their field offices and, in most cases, the answer is no. So we go

back to the requesting organization and explain that the event doesn’t meet our

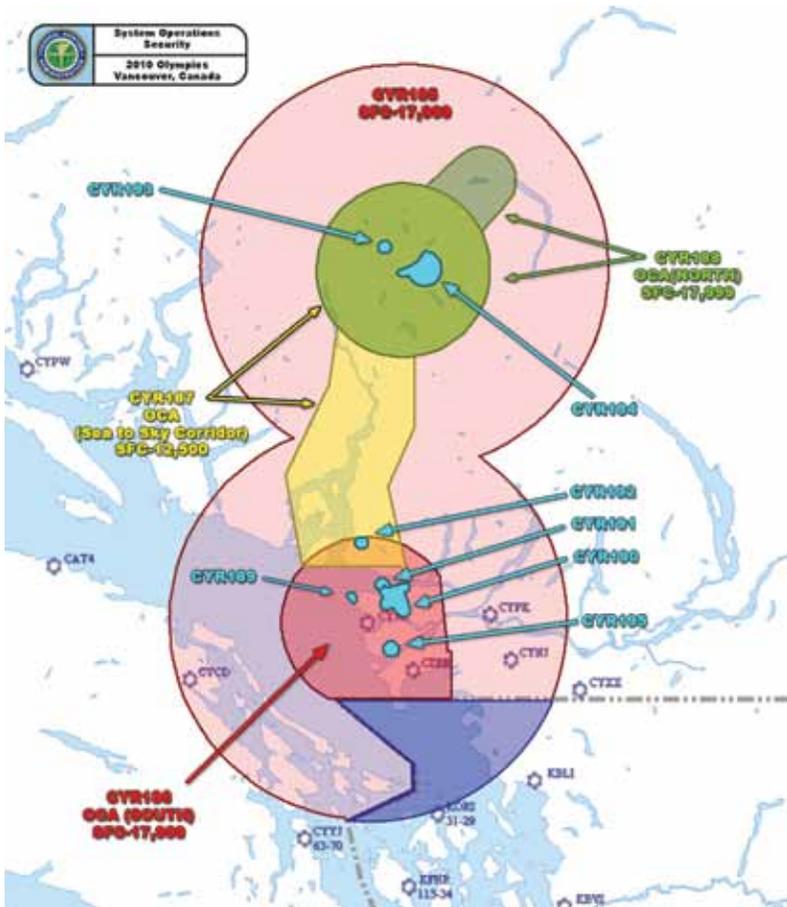
The staff of the System Operations Security Office clearly has a sense of mission to ensure maximum access for GA pilots.

requirements for shutting down the airspace. On those rare occasions when TSA or FBI contacts do say that there is credible threat, we establish a TFR. But once we agree to the TFR, our priority becomes determining how quickly can we take it down and restore access to the airspace.”

Throop and his colleagues also stress that their advocacy is not confined to larger airports. “If there are pilots out there with a Maule or a Cessna with tundra tires taking off from a grass strip on their 250 acre farm, they have a need to use the airspace. So we advocate for that.” Throop says. “We will do everything we can to get them in the air. We never, ever dismiss a restriction as ‘well, it’s just one person or just one airport.’ Those people have an absolute right to access the airspace as much as possible.”

Getting the Word Out

In addition to getting TFRs in place, the System Operations Security Office also has the challenge of notifying the pilot community in a timely way, explains Darrell Hood, Homeland Security/law enforcement liaison. An example the staff aims to avoid repeating is the TFR established in Hawaii during the President’s vacations.



A graphical depiction of the TFR around Vancouver and the surrounding area for the 2010 Winter Olympics.

“In 2009, the President’s visit to Hawaii virtually shut down much of the GA activity in the islands. For 2010, we worked with the General Aviation Council of Hawaii and the Secret Service to allow a lot more activity without compromising security,” says Hood. “We’re really proud of that.”

I asked Hood what kind of flexibility the FAA has when it comes to issuing or denying a TFR. The answer: It depends. In some cases, legal requirements leave little, if any, flexibility. Short of that, though, the FAA tries to balance the competing and often conflicting needs of security and access.

“The threat is probably the most important thing we look at,” notes Hood. “Is there a threat to either those in attendance, or to the event itself?”

Then we make a determination based on our analysis, along with input from law enforcement agencies, FBI, TSA, and Secret Service. They all have opinions, and they all have input. But then we make a decision.”

Though it may not always appear this way to pilots looking at a TFR in their home airspace, Hood stresses the mission: “The FAA’s mandate is free access to the airspace, so we try to honor that mandate on every request.”

Happily for GA pilots, most requests for TFRs simply do not meet the security criteria required to establish such restrictions.

Rick Hostetler, manager of Classified Operations, gave me a good example of an instance when the FAA declined to act on a request for a TFR. “Last spring, the Masters was the first big golf tournament Tiger Woods played after his personal difficulties. The Masters tournament organizers wanted a TFR over Augusta because they were concerned about aircraft flying over for curiosity and press. As we saw it, though, the request did not meet our primary criteria. There was no credible threat, so we denied their request for a TFR. More often than not, that’s how TFR requests are answered.”

PLEASE Check NOTAMs!

When it comes to letting pilots know about TFRs, Hostetler explains that his office works very closely with pilot organizations. Still, it’s a challenge. “There were six violators for the Super Bowl in Dallas. Not one of the violators knew there was a Notice to Airmen (NOTAM) for the Super Bowl because they didn’t check the NOTAMs,” Hostetler says. “All the flights involved originated within 40 miles of the game and five of them actually originated inside the TFR. Despite all of the media coverage and all the outreach we did, we still had six violators.” The goal of course, although an elusive one, is to have no TFR violations.

As I passed the Blues Brothers statues on my way out of the System Operations Security Office, I did feel better about GA’s position in today’s new world of security restrictions. There really are people out there—or rather, in this very building—advocating for GA. They may not win on every decision, but they are on our side, fighting every day to make sure our needs for access to the NAS are not only considered, but advocated and protected. Like the film’s protagonists, this small office keeps on going despite the enormity of the task and the difficulty of the odds. They do it without much recognition and with no fanfare. But, as it turns out, they may well be the best friend GA has in its ongoing struggle to safeguard access to the NAS.

My final question: What would you like the GA world to know?

“I’d like GA pilots to know one thing,” Hood says. “We are their advocate for access to the airspace. But I’d also like to make a request: PLEASE, please check NOTAMs.”

You can find NOTAMs on FAA’s Web site: pilotweb.nas.faa.gov.

James Williams is FAA Safety Briefing’s assistant editor and photo editor. He is also a pilot and ground instructor.

Into the DEN

It started with an impromptu meeting on the morning of Sept. 11, 2001. Members of the FAA’s management team organized a series of conference calls in an attempt to make sense of the confusing and often conflicting information flooding phones and newswires that morning. As the urgency of the events grew, so did the number of participants joining in. Quickly, these calls merged to become a vital communications and planning tool for the FAA and other government agencies.

Now, nearly a decade later, that same merged conference call remains connected to this day and operates around the clock. Officially known as the Domestic Events Network, or DEN, the teleconference helps monitor the security of the National Airspace System (NAS) 24 hours a day, seven days a week, by keeping all relevant authorities notified of emerging safety and security issues.

Although physically housed at FAA Headquarters in Washington, D.C., the DEN is comprised of a network of active listeners in various locations, from such agencies as the departments of Defense and Homeland Security to the thousands of air traffic controllers at control towers, approach controls, and Air Route Traffic Control Centers (ARTCC) nationwide.

“More than 150 groups are actively listening on the DEN at any one time,” says Rally Caparas, FAA acting manager of National Tactical Operations Security. “Having real-time access to just about every resource we need to mitigate an aviation emergency or security-related event means that we’re able to be much more proactive. We can handle a threat well before it becomes a crisis.”

Among the required reporting events the DEN tracks are restricted airspace violations, lost radio communications, changes of destination while on an IFR flight plan, emergencies, and VIP movements involving the President and Vice President of the United States.

Since the DEN relies heavily on interagency coordination, a clear set of policies and procedures is crucial. A 2005 U.S. Government Accountability Office report that looked into the security of the NAS discovered room for improvement.

“Over the years, we’ve greatly enhanced the collaboration among agencies,” explains Caparas. “We now have more unified and more clearly defined roles, and the management structure has adjusted to better meet the needs of supporting our overall mission.” Growth has also been a big part of change to the DEN; FAA System Operations Security staffing for this role has steadily increased during the last three years. According to Caparas, having more hands on deck helps the group to manage the huge responsibility and mitigate issues at an early stage.



That engagement strategy goes beyond regular communication with ATC; it also extends directly to the general aviation community. During special events, such as the Vancouver Winter Olympics or the Super Bowl in Dallas, members of the DEN work with local Flight Standards District Offices to host GA outreach briefings. These sessions help keep pilots aware of upcoming restrictions. The DEN also works with coordinating agencies during a special event to lessen the impact on the flying community, often traveling ahead of time to the area to coordinate in person. “We’re here to try and make things as available as possible,” says Caparas. “We do our best to open routes and minimize limitations by keeping any restrictions confined as close to the affected area as possible.”

Caparas notes that the DEN is not a fool-proof system against airborne threats, but is confident that it adds one more layer to the complex task of keeping the skies safe. “What we have is unlike anything else in the world,” says Caparas, “and it presently serves as a key element for effective NAS security.”

Tom Hoffmann is associate editor of FAA Safety Briefing. He is a commercial pilot and holds an A&P certificate.



Photo and chart courtesy of FAA Air Traffic Organization Office of System Operations Security

The DEN has a network of active listeners who monitor NAS security around the clock.