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The Scratching Post

VT-10
Falling Out of the 100
Days of Summer Edition

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CDR Brian “Baja” Solano
Commanding Officer

CDR Ken “Lurch” Froberg
Executive Officer

LCDR Brad “GOM” Gilbertson
Safety Officer

LT Steve “Dbus” DeLeonibus
Aviation Safety Officer

LT Andrew Will
Ground Safety Officer
& Editor in Chief

TRAINING SQUADRON TEN
250 SAN CARLOS ROAD
SUITE H
PENSACOLA, FL 32508

PHONE:
(850) 452-2385

FAX:
(850) 452-2757

We’re on the Web!
See us at:
https://www.cnatra.navy.mil/tw6/vt10/
Questions?
Email the Program Leader
andrew.d.will@navy.mil

Words from the Skipper

CDR Brian "Baja" Solano VT-10 Commanding Officer

Wildcat Instructors, civilian staff, and students – THANK YOU! This will be my last opportunity to speak to you via the Scratching Post and I just wanted to say how proud I am to have served as your Commanding Officer. Your daily performance is without question top notch and you do it in a safe and professional manner. I know you'll do the same for Commander Froberg as he steps up from the XO role and takes command of this stealer unit.

This past year has brought many challenges and changes. One of which is fewer Student Naval Flight Officers to train. One would think that having fewer students to train would lead to a safer operating environment vs. that of a higher operational tempo but, I look at it in the opposite view. Fewer students to produce mean fewer events flown and fewer fight hours to share amongst all our outstanding instructors. Proficiency in the cockpit is one of our highest priorities when it comes to operating safely and completing our mission of SNFO production. Less time in air can lead to less proficient pilots and aircrew which as a unit we have managed very well and I thank you for that. We will continue to maintain proficiency as it is the one thing that if let to atrophy will lead you to a mishap very easily.

Whether it be safety airborne or on the ground the basic principles are the same…see where risk for a hazard exist and avoid it. If you were to reference the CO Safety Policy ….There is NOTHING in our mission set on or off-duty that exceeds the value of YOU. We are all professionals and with that are charged with taking care of each other and speaking up when you see something that is unsafe. "When there is doubt there is no doubt" is not a saying I created but it is one I truly believe in and whether you are about to walk to the plane or walk to your desk, every time you walk across the hangar deck you should be reminded of that.

Continue to strive and reach for new heights for the Wildcats to obtain. I know you will do it right, do it professionally, and do it safely.
Wildcats, it has been an honor and a privilege to serve as your Commanding Officer.

Skipper "Baja" Solano

The XO Snarl

CDR Ken "Lurch" Froberg VT-10 Executive Officer

WILDCATS,

This edition of the Scratching Post has stories from across the safety spectrum. Off-duty to on-duty, we continue to emphasize one of the major tenets of ORM; accept no unnecessary risk. With this continual theme I'd like to also highlight another key tool we can use on and off the clock – *CRM*. In it's most basic form Crew Resource Management is about teamwork. The pillars of CRM (Decision Making, Assertiveness, Mission Analysis, Communication, Leadership, Adaptability/Flexibility, and Situational Awareness) are applicable at work, in the air, on the ground, and at home too. Think how much stress you take out of your day, when you foster stronger teamwork with your family or friends?

The research that brought us our current CRM fundamentals occurred at NAVAIR Orlando TSD (Training Systems Design), when Carolyn Prince and Eduardo Salas worked with Naval Aviation to learn about what makes teams fail and what makes them succeed. They found that situational awareness and decision-making were the two most cognitively complex skills in teamwork. Think about it this way, situational awareness (personal or team-based) is like inflating a balloon with a hole in it. You need to constantly inflate your SA bubble, to keep SA, but can lose it quickly without knowing it. SA feeds the quality of our decisions, good or bad. The better SA we have, the better the decision we can make. This applies individually, within our flight crew, air-ground with the SDO, and even when planning large endeavors across organizations. The better SA you can develop and maintain, the better decisions you can *collectively* make. But Team SA requires solid communication, both direct (send/acknowledge), and broadcast (by negation). The latter is a key tenet in our way of Naval Warfare – *execution by negation*. We don't always need to ask for permission to act, if we understand the CO's intent, SOPs, NATOPS, and practice good headwork. Just like in flight you probably heard your instructor say at some point "you don't need to ask me to do everything, you can just tell me and I'll weigh in if we should do it differently."

As you read through this edition of the Scratching Post, think about how you can learn from the stories and improve your own ORM disciplines, while expanding your CRM potential!

Fly, Fight, Lead!
WILDCAT TWO SENDS

Aviation Milestones

The following professional aviation milestones were recently reached:

<u>2000 Total Flight Hours</u>
LT Kumm

<u>3000 Total Flight Hours</u>
LtCol Boersma
LCDR Dewitz
LCDR Jones

<u>4000 Total Flight Hours</u>
CAPT Saindon
CDR Chang

Congratulations Wildcats, these milestones were accumulated with tremendous preparation and vigilance that all started on deck!

Well Done!
Safety O Sends

ZIKA IN FLORIDA

-By DOC Goodrich

What is Zika Virus? It is structurally related to Dengue, yellow fever, and West Nile viruses.

How is it transmitted? Through mosquito bites (*Aedes* species), maternal-fetal transfer, sex, and possibly blood transfusion. It can be transmitted sexually even if your partner does not have symptoms.

What are the symptoms? The most common symptoms are fever, rash, joint pain, and conjunctivitis. **Most** patients do not have symptoms. The symptoms last for several days to a week.

What effect does Zika have on a fetus? Zika virus has been confirmed to cause congenital microcephaly and other significant brain defects in the 1st through 3rd trimester.

**The CDC recommends that pregnant women should not travel to an area with active Zika virus transmission. **

The current recommendations for prevention of sexual transmission of Zika virus for couples in which one or both partners have traveled to or resided in an area with active Zika transmission:

- **Couples in which a woman is pregnant –** use barrier method consistently and correctly to reduce transmission of infection or abstain from sex for the duration of pregnancy.
- **Couples who are not pregnant and are not planning to become pregnant**
  - Couples in which a partner had confirmed Zika virus infection or clinical illness consistent with Zika virus disease should consider using barrier methods against infection consistently and correctly or abstain from sex as follows: men with Zika virus infection for at least 6 months after onset of illness; women with Zika virus infection for at least 8 weeks after onset of illness.
  - Couples in areas without active Zika transmission in which one partner traveled to or resides in an area with active Zika virus transmission but did not develop symptoms of Zika virus disease should consider using barrier methods against infection or abstaining from sex for at least 8 weeks after that partner departed the Zika-affected area.
  - Couples who reside in an area with active Zika virus transmission might consider using barrier methods against infection or abstaining from sex while active transmission persists. [1]

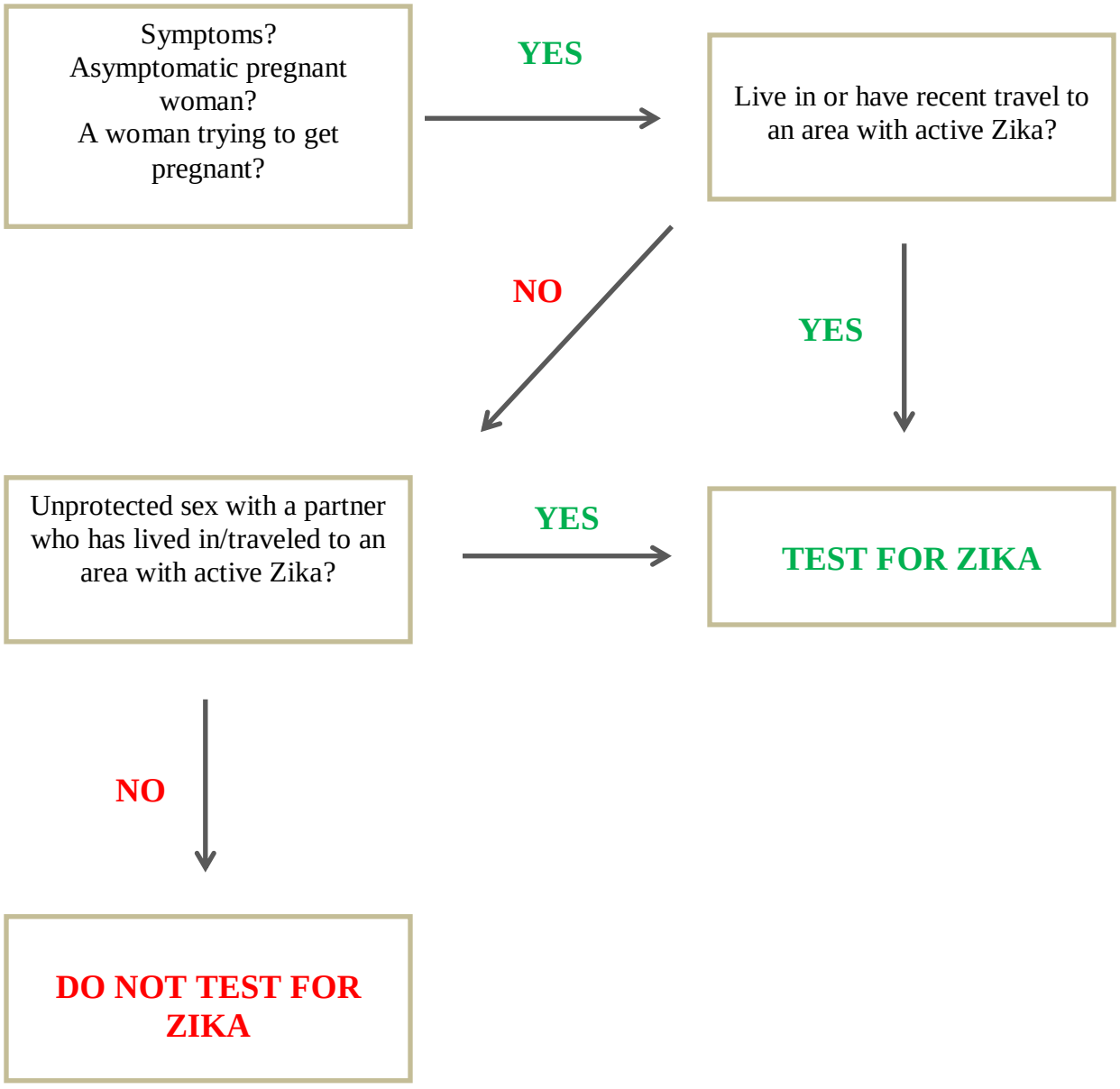
Mosquito Repellents

- Use EPA-registered insect repellents with one of the below active ingredients. They are proven safe and effective, even for pregnant and breastfeeding women.
- DEET (Off!), Oil of lemon eucalyptus or para-menthane-diol (Repel), or picaridin (Skin so Soft Bug Guard Plus). **Do not use insect repellent on infants 2 months or younger or OLE/PMD on children under 3.**
- Remove standing water outside your home and spray outdoor insect spray to treat prone areas.

Is there a vaccine? Not yet. It may take up to 2 years for it to be approved.

Is Zika in Pensacola? There have been three travel related Zika cases in Escambia county & one in Santa Rosa country, but none due to local infections. Majority of all FL cases are located in Miami.

Who should get tested?



CDC recommends against testing asymptomatic men, children, and women not trying to get pregnant. [2]

Stay safe out there!

References:

1. Brooks JT, Friedman A, Kachur RE, LaFlam M, Peters PJ, Jamieson DJ. Update: Interim Guidance for Prevention of Sexual Transmission of Zika Virus – United States, July 2016. *Morbidity and Mortality Weekly Report*. 2016 July 29;65(29): 745-7.
2. http://www.cdc.gov/zika

ARE YOU PREPARED?

Natural-Disaster Emergency Kit

SafeTips from the Naval Safety Center

Quick and easy summaries to find out about something new you're doing or as a refresher for something you haven't done in a while. They're a great training tool to pass around at meetings, through e-mail, or post on bulletin boards.

1. Things to eat and drink if you lose power and the streets are closed.
   - ☐ Bottled water (having a supply of water-purifying tablets is also a good idea)
   - ☐ Canned and dried food
   - ☐ A can opener
   - ☐ Vitamin pills
   - ☐ Packaged crackers, cookies and other snacks
   - ☐ Powdered or canned milk
2. First-aid material
   - ☐ Prescription refills
   - ☐ Bandages
   - ☐ Safety pins
   - ☐ Scissors and tweezers
   - ☐ Antiseptic
   - ☐ Rubbing alcohol
   - ☐ Disposable gloves
3. Other important items
   - ☐ Raincoats, ponchos and umbrellas if you have to walk or work in the rain
   - ☐ Blankets and sleeping bags if you lose heat or have to sleep somewhere else
   - ☐ Heavy-duty work gloves
   - ☐ Flashlights
   - ☐ Portable radio (weather radios are ideal)
   - ☐ Batteries
   - ☐ Toilet paper
   - ☐ Sunscreen
4. If you have to evacuate, you'll have to be ready to grab some important papers: insurance information, identification, money, and a list of names and phone numbers.
5. If you put together an emergency kit, store it in something that is easy to find and carry, such as a large, zippered bag.

www.public.navy.mil/comnavsafecen/pages/media/index-safetips.aspx

Naval Safety Center
375 A Street
Norfolk, VA 23511-4399

Contact the Media Division
(757) 444-3520 ext. 7870
safe-mediafdbk@navy.mil

Beyond Formal Risk Management

Excerpt from Aviation Safety Magazine by Joseph Burnside --

Back in the day, the formal risk management techniques applying to contemporary general aviation hadn't been invented yet, so most pilots were on their own. How did they survive? Here are the main factors the author attributes to his success.

Flight Planning

I am a planner. As I began using GA airplanes for more and more of my travel, I found I needed to begin the flight planning process about 10 days ahead of time to avoid cancellations. Tending to the airplane's maintenance needs, trip logistics and, above all, the rolling 10-day weather forecast were crucial to making schedule. If the weather trend was really poor for flying a non-ice protected airplane, I had time to make an airline reservation or reschedule meetings.

-Here at VT-10 we don't usually have the luxury of flight planning 10 days in advance. In fact, most of our decisions are made within an hour or two of our takeoff time. We are required to diagnose and assess the weather, flight route, and any other contingencies that might present themselves during the flight. What type of ORM do you think that we use as opposed to the author?

Time Critical, Deliberate, or In-Depth?

Caution

I became a chicken. I tended to add extra margins to almost any threat situation, even when a proper risk analysis would have shown I added excessive protection. Like most of us who had no formal risk management training, I learned this the hard way early on, as a result of situations like scud-running, flying in icing conditions and other "unwanted adventures," as my friends John and Martha King would say.

- Have you ever been in a situation where you just wanted to get home from a cross-country or you were on the out portion of an out-and-in? Little did you know that the weather was going to get bad and start building between your current location and home, and all of a sudden the question "Am I going to get home tonight?" presents itself. Well whether you have been in this situation before, or you will find yourself in this situation in the future, remember that we have plenty of tools to help you with risk identification as well as assessment. The SDO, any number of websites, as well as 1-800-WXBRIEF are all provided to assist in these types of situations.

Flexibility

I adapted to conditions. It was not unusual for me to leave on a Sunday or even a Saturday, rather than Monday, when the long-range weather forecast indicated the approach of a deep winter low or other no-go condition. I would also add hundreds of miles to the trip route at the drop of a hat, if it allowed me to avoid weather, fly in smooth air or avoid other hassles.

Technology

Ongoing conversations about automation certainly affirms that it can be a double-edged sword. However, I wouldn't own or fly a high-performance GA airplane without an autopilot. I had them on the Mooney and both Bonanzas and they are both essential safety tools and range extenders, by greatly reducing fatigue. I was also among the first to use graphic weather devices in the cockpit, in an FAA test program in the mid-1990s. Given my abundance of caution, the weather devices mostly added to my utility, but I will also make the case that they have become important safety features on new and old aircraft.

- How much automation do we have in the T-6A? "Not any" is the answer that I would reply with. However, what do we have that can enhance our SA and help us to make decisions in the air? Electronic devices such as the iPad coupled with electronic flight planning software can be a major factor in lowering our task saturation in the cockpit and allow us more brain power to exercise the ORM process, especially in a high-workload environment. However, be aware that these programs can also be a distraction if you are not familiar with them, especially if they are not working as advertised.

Discipline

Your best intentions are only as good as your willingness to carry them out. Your ability to conduct effective risk management and safe flight operations depends on good, timely decisions at the tactical level. In 52 years of flying, I can only recall a few instances where stick-and-rudder skill was influential in saving the day or avoiding risk. The majority of those instances occurred while I was giving instruction and the student was unintentionally trying to kill us. In the few instances where I applied stick-and-rudder prowess, it usually was because I made a bad decision or still hadn't learned the nuances of effective risk management.

If all of the above points sound suspiciously like sound, effective risk management, it's because they are. It's just that it took me a large part of the past 52 years to realize that I was using crude risk management all along.

- Remember we are all empowered by the "Front Office" to make our own decisions when it comes to the conduct of our flights. Using the ORM process to keep ourselves, our students, and our aircraft safe is something that we should always keep in the forefront of our mind during training.

From The Naval Safety Center

ORM is a systematic way to manage risks so that you increase the likelihood of a successful mission and minimize losses. The ORM process involves identifying and assessing hazards, controlling risks, supervising and revising. The terms "hazard" and "risk" aren't interchangeable. A hazard is something that can injure or kill someone, damage property, or interfere with a mission. Risk is an expression of possible loss in terms of severity and probability.

The importance of staying vigilant, and expecting the unexpected.

By: LT Raleigh "Meat Sauce" Worcester

So, there we were. It felt about 120 degrees on the tarmac of KHBG as I strapped into the aircraft for the return leg of a Section Low flight. The first leg had gone well and we were gearing up for what we hoped would be an uneventful and flawlessly executed second leg to head home for the day. So, we fastened our seatbelts and completed strapping in (all 6 points per the checklist) and ran through the checklists to get the engine started and the aircraft ready to taxi. As we finish our checklists, the OBOGS FAIL light illuminates. Three minutes and 20 seconds after the system was turned on, to be exact. We open up the PCL, and decide to troubleshoot the issue. Troubleshooting steps include setting both regulators to draw the maximum flow, then advancing the PCL to MAX. We complete the procedure- and the light stays on. So, we taxi back to the FBO and shut down. We decided to start up again and try one last troubleshooting technique. We half-heartedly put on our gear "just in case" and climbed in, already thinking about whether or not the rental car we had reserved had an audio aux input for the three hour drive home.

Much to our surprise, the OBOGS system worked excellently and we found ourselves in a fully functional aircraft. So, we quickly re-caged our mental gyros and prepared for the flight. We taxied to the hold-short, finished our checklists and formation procedures, and proceeded to take off.

Thinking we were out of the woods and the problem was resolved, we took off. With two positive rates of climb, we brought the gear up, and with airspeed above 110 KIAS, we brought the flaps up, and the aircraft was clean above…. We had three red unsafe gear indications. Crap. We had the other aircraft in the formation join on us as we circled overhead the field, and they reported the nose gear was stuck at a 30 degree angle from the fuselage. Double crap. We maintained 140 KIAS (with excellent backup from the student) and brought out the PCL for the second time that day to run the appropriate checklist. It directed that we put the gear back down, and so we tried to lower the gear hoping no linkage was broken or jammed. Fortunately, the gear came back down and we had safe indications for all three gear. After one last look from the other aircraft, we flew home with the gear extended, and landed normally.

All is well that ends well, but there are a number of important takeaways from this series of issues for the day. First and foremost, CRM is no joke. The presence of another crewmember in the aircraft, one that was involved and proactive, was crucial to getting the aircraft home safely and efficiently. Secondly, just because one problem is solved, doesn't mean no others will arise. Most flights in the T-6A go without incident- it's a simple and reliable aircraft that is maintained to an amazing degree of reliability. But, things can and will break- be ready for anything. Lastly, never get into an aircraft without being ready to fly. We were absolutely expecting to start up a second time, then to shut down and drive home. We were, frankly, taken aback when we found ourselves strapped into a perfectly good airplane that we weren't expecting to fly home. No matter what, be ready to fly and make smart decisions, and don't take anything for granted.

As a postscript, the nose gear door was out of adjustment and had moved inward to the point the nose gear itself impacted the door as it retracted. I later found this issue on a different aircraft on preflight. This issue has been addressed by our maintenance team, but never allow yourself to gloss over the preflight or any other portion of the flight. Each day, each aircraft, and each mission is different, it's when you stop recognizing and planning for that fact that complacency sets in and bad things happen.

"Aviation in itself is not inherently dangerous. But to an even greater degree than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect."

-Captain A. G. Lamplugh

NEW GUIDANCE

On Preflight:

Be sure to <u>gently</u> check that the nose gear doors do not move inwards with the gear down. This problem may cause an unsafe gear indication on takeoff. As the gear door mechanisms wear, play can develop in the retraction mechanism to allow the mechanism to over-center and not hold the door in position if light force is applied to it. Forcing the doors inward with too much force <u>will cause damage</u>; only a light push with no more than two fingers is required to see if the door mechanisms are out of alignment and could possibly impede nose gear retraction.

T-6 A Texan II NATOPS

CAUTION

Treat any landing gear not fully extended as retracted.

Distracted Driving Triple Threats

Excerpt from DMV.org by Bridget Clerkin--

In an endlessly connected world—where our cars talk to us nearly as much as our passengers do, vehicle entertainment systems are racing to be the best and biggest, and a text, tweet, or status update is no further than a pocket or purse away—there are plenty of ways to drive distracted.

There are three main categories of distraction that encompass most of the bad habits causing trouble on the road.

Cognitive Distractions

Driving, especially for long distances, may seem mundane or monotonous, but it's an act that requires constant attention and care to be done right. When a wandering mind takes over at the wheel, it's called a cognitive distraction.

These thoughts can be fleeting—perhaps just a daydream—or more substantive, focusing on the issues and pressures of everyday life.

Feeling the fatigue of such stress, some people don't remember driving at all, only to realize after arriving at their destination that they have no idea how they got there. Others more actively participate in cognitive distraction, making phone calls while driving, which can be just as dangerous as driving drunk, whether using a hand-held or hands-free device.

Even music, which can help make even the longest car rides more bearable, can be a factor. A comprehensive study conducted in 2014 by the AAA Foundation for Traffic Safety that focused on the driving habits of 1,700 teenagers found that singing or moving to music was an issue in 8% of the crashes that occurred during the analysis.

Visual Distractions

The same AAA study focusing on what diverted the attention of teenage drivers found that looking at something inside the vehicle played a part in 10% of the crashes that happened during the observation. Not far behind was the distraction of looking at something outside of the car, which was a factor in 9 percent of the accidents the teens were involved in.

Part of the problem is the sheer speed at which our vehicles can move—and how much we can miss in the blink of an eye. At 60 miles per hour—which isn't even reaching the highway speed limit in many states—diverting

one's gaze for just 2 seconds could mean missing out on 176 feet of road, or about half a football field (including the end zones).

Two seconds may not seem like much, but one recent study on the subject suggested that it is just about the extent of how long someone can safely look away while driving. The longer someone's eyes were focused on something else, the study concluded, the more dangerous the driving became.

Manual Distractions

Physical separation from the steering wheel or pedals is called "manual distraction," and, like the other two distraction categories, it's easy to fall prey to it without realizing.

Manual distractions can be as innocuous-seeming as buckling a seatbelt, adjusting the temperature, or changing the radio station. Of course, they can also be more involved, like eating a meal, drinking, or putting on makeup—dangerous activities that some surveys show have become more commonplace over the years. Back in 2010, nearly 41% of drivers admitted to the Pew Research Center that they've eaten a meal behind the wheel, with 16% saying they combed their hair or applied makeup while driving.

In the teen-centric AAA study, "reaching for an object" and the catch-all category of "grooming" were each a factor in 6% of the crashes that happened during the research period.

Worst of the Worst – The Triple Threats

The human imagination has always outpaced human capabilities. And despite how much modern culture and technology design begs to differ, our minds do not multitask very well.

This case is especially true when it comes to the triple threats of driving distracted: those actions that incorporate aspects of cognitive, visual, and manual distraction.

Ironically, the most common type of triple threat derives from one of our basest desires as humans: the need to bond with each other.

Interacting with others, whether through the phone or in-person, consistently ranks as the most dangerous driving distraction in studies done on the subject—and understandably so. Socializing forces us to divide our mental attention, thinking about what to say or how to react to our conversation-mates. Using phones requires both hands and eyes, and similarly, we tend to look at the people we talk to in person and often turn our bodies to face them, as well.

In the AAA teen study, "interacting with passengers" played a role in more crashes than any other distraction, at 15%. Cell phone usage clocked in second, as a factor in 12% of the accidents.

But it's not just teens who are on their phones while driving. In 2013, AT&T conducted a study that showed 49% of adults also texted while driving—despite the same study finding that 98% of the participants believed it wasn't safe.

All that time on the phone is not only mentally distracting, it's also taking eyes off the road and hands off the wheel for precious seconds—4.6 of them, on average, which is more than twice as long as the "safest" recommended time for drivers to divert their gazes.

Interacting with passengers face-to-face doesn't fare much better in many studies, especially when the fellow travelers are babies, children, pets, or those who otherwise need extra attention.

One interesting caveat emerged in a survey conducted by the University of Illinois. The research conducted there found that a passenger with knowledge of what's going on in the car could actually cut down on the likelihood of crashing—although the probability of being involved in an accident was still much higher in that situation than if the driver were alone and in silence.

Other triple threats are less common but certainly still play a role in distracted driving. Many can be found under that umbrella category of "grooming," such as applying mascara, eyeliner, or foundation, and even shaving (a phenomenon that an increasing number of traffic cops have reported over the years.)

And while newspapers, magazines, and road atlases may be on the decline in general, busting out such physical reading material while in the driver's seat is another triple threat—one that 6% of those surveyed by the Pew Research Center in 2010 copped to doing.

Still, our world is nothing if not fast-paced, with new technologies—and opportunities for distraction—being developed every day. But as much as we may want connected cars or constant communication, driving safely is yet another situation where, it seems, we become victims of our own biological limitations.
If it were to pass in New York, the first state to propose such an idea, it could well spread in the same way that the hands-free rules did after New York adopted them.

Ms. Lightner said the intensifying efforts around distracted driving "are the equivalent of the early '80s" in drunken driving, when pressure led to tougher laws and campaigns emphasizing corporate responsibility.

The Impossible Turn?

Adapted from Aviation Safety Magazine Article by Jeb Burnside--
By - The Editor

Unless you've practiced it, land straight ahead if the engine fails shortly after takeoff.

So have you thought about it? You find yourself in what many would consider the worst case scenario in a single engine aircraft. Low and slow, immediately after takeoff, and just past the departure end with no chance of putting the aircraft back on the runway without some serious maneuvering. So what are you going to do? Make a 180 and land back on the same runway? Make a play for an intersecting runway? Eject?

Chances are that the situation above will only present itself once a year in what we here at VT-10 call the "EP SIM". However, I wanted to take the time to look at an article published in Aviation Safety Magazine called "The Impossible Turn?" and apply it to the T-6 so that we all might take away a little something that might help if we ever find ourselves in this unfortunate scenario in real life.

The article talks about an experimental, amateur-built Sonex that collided with terrain in West Palm Beach, Fla., shortly after takeoff. The solo airline transport pilot/owner was fatally injured and the airplane was destroyed. Witnesses stated the engine "back-fired" and made a "sputtering" sound during initial climb. The pilot entered a steep 180-degree turn back toward the airport. The airplane then stalled and entered a nose-down spiral, descending into a canal. Upon completion of the investigation the NTSB determined the probable causes of this accident included: "The pilot's failure to maintain adequate airspeed following a partial loss of engine power during initial climb, which led to the airplane exceeding its critical angle of attack and experiencing an aerodynamic stall.

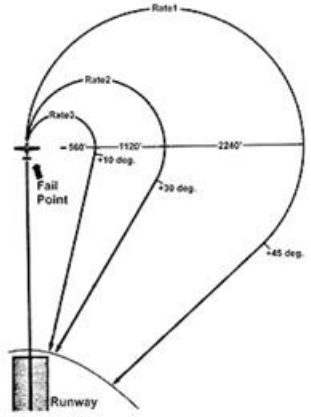


Figure 1- Although doubling turn rate halves turn radius when attempting to turn back to the runway, stalling speed increases dramatically.

So now that we've read the article's case study of what can happen if you make a bad call during this type of scenario, let us take a look at some of the aerodynamics, as well as some techniques, that we can apply to keep ourselves from making the same mistake.

One of the many problems with trying to return to the "departure runway in such an event is the inevitable delay in accepting the engine failure and making the decision to attempt the maneuver. Precious seconds and energy are lost while the pilot processes the situation and decides how to respond. By then, the airplane is even further away from the runway, and perhaps even lower and slower." So how can we combat this tendency in the T-6? Well, by simply having a game plan ahead of time. The brief is generally where we decide how the flight is going to be conducted. Talking about this type of situation in the brief and framing what will be done based on speed and altitude gates can save precious seconds in the air. Knowing that below a certain altitude and airspeed your option is to find a safe place to point the aircraft and eject, and above that same altitude and airspeed it is possible to make it back to the runway is invaluable.

The altitude and airspeed combination that I was introduced to during my EP Sim was that at 800 feet and 180 knots the aircraft can get you back to the departure runway in the event of an engine failure immediately after takeoff. Let's take a look at this with some numbers for reference. Without getting too specific, an aircraft at a

fairly normal weight on its initial departure would get around 700 feet of altitude gain from the aircraft zoom capability in this situation. This gives us a total of 1500 feet of altitude to play with and a final speed of 125 knots at the completion of the maneuver. Now taking some well-known gouge out of the Contact FTI, we know that a 60 degree turn will get us 1000 feet, 45 degrees will get us 1500, and 30 will get us 2000 feet of altitude loss during a 360 degree turn. So in our situation the only real options for returning to the departure runway would be a 60 or 45 degree turn back. Now you might be thinking "Hey we aren't doing a 360 degree turn, we are only doing a 180". Well let's take a closer look at that. As you can see from the figure on the previous page; to return to the departure runway it actually take two turns. One turn at approximately 270 degrees that will reverse your course and place the aircraft at effectively a right angle to the runway. A second turn of approximately 90 degrees in the opposite direction of the initial turn will line the aircraft up with the runway centerline. All together that can effectively be considered a 360 for ease of analysis. Obviously there are different ways to skin this problem in an aerobatic aircraft, but we will stick with the referenced pattern.

Now we know that if we have an engine failure just past the departure end of the runway and we have attained 800 feet and 180 knots of airspeed, if we execute the zoom procedure and get the aircraft configured correctly, we can theoretically make it back to the departure runway if we maintain between a 60 and 45 degree AOB turn while turning. A significant risk to keep in mind is that if you go straight to 60 degrees in the heat of the moment your stall speed will be very near 121 knots. This does not leave much room for error if you accidentally overbank and find yourself in the same situation as the Sonex pilot. And this is where practice and familiarity can help immensely. Something to keep in mind as well is that all of this is in a no wind situation.

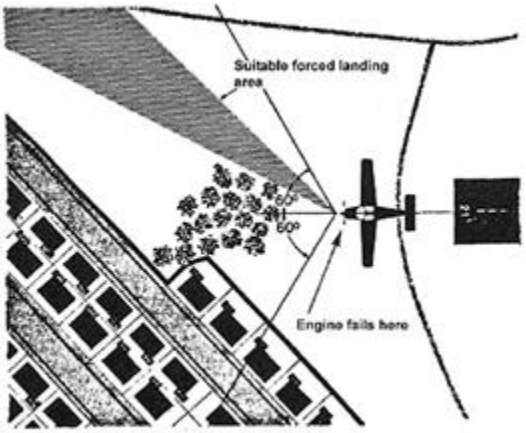


Figure 2-If engine fails at low altitude, it's reasonable to search for a suitable landing site up to 60 degrees either side of aircraft heading.

The situation changes if the power failure is only a partial one. Sufficient power may be available to maneuver the airplane back to the departure runway on a reciprocal heading. Enough power also may be available to fly the traffic pattern and land somewhat normally. It depends, and the pilot's decision on what to do is the definition of a judgment call. In any case, care must be taken to handle the airplane gently and prevent losing control. It's easy to imagine a pilot trying to stretch a glide or turning too steeply. The result too often is a stall/spin from which there's not enough altitude to recover.

Now what if you find yourself below the referenced altitude and airspeed or you determine that there is no way to make it back to the field? Well NATOPS is clear that we only have one choice; and that is to eject. However if you find yourself in the fortunate situation of having intersecting runways or another suitable landing area near your route of flight, the article points out that it is reasonable to find a forced landing site up to 60 degrees either side of the current aircraft heading. This is also applicable in the case that you needed to point the aircraft to an unpopulated area for ejection.

With all that information now fresh in your mind I want to ask, how many of you made it back to either the departure runway or an intersecting runway on the first try in your EP Sim? Obviously those who didn't wanted another try or two. I know that I needed a couple tries to make it work. The point is that without some recent practice or a lot of experience with the situation it is easy to make a wrong decision or delay making a decision long enough to affect the outcome in a negative way. This is why talking about the scenario in the brief, or at least having a good game plan based on whatever information you have deemed acceptable, is better

than not having thought about it since your last time in the Sim. The magazine's view of the impossible turn is that "it is possible, but only with practice, sufficient altitude and some luck. Generally, executing a forced landing straight ahead is preferable to attempting a steeply banked turn at low altitude. This is especially true without engine power or sufficient airspeed above the wing's stalling angle of attack to enable the steep turn." I hope this article was informative and that you never find yourselves in this type of situation.

-From The Editor, Fly Safe!!!

What Does NATOPS Say?

A complete engine failure immediately after takeoff is an extremely critical emergency requiring immediate action and decision making by the pilot. Indications are a total loss of power and a fairly rapid reduction in airspeed. A positive nose down pitch change will be needed to maintain a safe flying airspeed. If sufficient runway remains, the best option is to continue straight ahead and land. If that is not possible, careful consideration of the recovery situation must be made. An early decision to eject may be the best option. Anticipate increased brake sensitivity when braking above 80 KIAS. In all cases, control the aircraft energy state through prudent use of altitude, airspeed, and configuration.

WARNING

• If insufficient runway remains to land straight ahead, consider immediate ejection.

• Do not sacrifice aircraft control while troubleshooting or lower gear with emergency system.

WILDCATS

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CO's Safety Policy

1. **I will push students hard to achieve the confidence and qualifications needed to serve as a Naval Flight Officer, but injured or dead wildcats add zero value to the squadron, the fleet, or the nation. Therefore, we are committed to safety, both on and off duty, 24/7/365. There is NOTHING in our mission set on or off-duty that exceeds the value of YOU.**

2. **By the mere fact that you are here, you are a PROFESSIONAL. Professionals do not gamble with safety. We all shall adhere to published guidance including, Standard Operating Procedures (SOPs), NATOPS and directives governing the execution of our mission.**

3. **THE FOCUS of our safety efforts in VT-10 is increasing individual awareness, proficiency and standardization, as we grow professional Officers and aviators.**

4. **THE GOAL is zero injuries, incidents, and mishaps, on or off-duty.**

5. **The safety department has the lead, but we are all committed and responsible as professionals. Safety is truly a team effort. We must constantly look out for each other, both on and off duty. If you identify a situation, I expect you to speak up. Every Wildcat is charged with making our squadron mishap free.**

B. J. Solano