

EAA
Chapter 175
May 2011 Newsletter



**Meeting
this
Saturday;
June 25th,
2011**

**@ 0900
Breakfast at 0800**

PROGRAM for Saturday, May 28th, 2011

The program for Saturday will be presented by Dennis Whitley, Lead Representative, from the FAASafety Team. His topic is Landings and Take-offs. I got a glimpse of this program at his presentation to flight instructors and assure you, you will learn something. Looking forward to seeing everyone this Saturday.

Smoke Signals Editor Substitute this Month

Everybody needs a break now and then so Steve Reisser will be filling in for Jeff Kaloostian as acting editor of Smoke Signals this month.

**EAA CHAPTER 175 MONTHLY MEETING
MINUTES**

DATE: May 28, 2011

LOCATION: EAA Chapter House, Tampa Executive Airport (KVDF)

ATTENDANCE: 16

Business Meeting

The meeting began at 0900. President Bud Yerly thanked Charlie and Dolores Henwood for providing breakfast this morning.

Minutes of the April meeting were approved as published in the May newsletter. Since Treasurer Tom McLinskey was out of town this holiday weekend, there was no financial report.

Guests were introduced and Bud reported the "Planes, Trains and Automobiles" open house at Plant City Airport last month, held the same day as our chapter meeting, was a success. It was the first such event the airport has done in a number of years, sponsored by the Plant City Chamber of Commerce and HCAA, and attracted approximately 3,000 visitors. Chapter 175 members Ginger and Leon Adelstone, Art North and Mike "Z" Zidziunas participated in flying some of the two hundred Young Eagles given introductory flights that day, Mike taking 15 up, while Leon flew 18. Seventy Boy Scouts earned aviation merit badges and the airport plans to host a Scouting event in the fall. PCM will do another open house next year, moving the date to just prior to Sun 'n Fun. In other PCM news, EAA Chapter 1178 has been reactivated. Gordon reminded our members that we have supported the Destination: Aviation summer camp program at Sun 'n Fun for a number of years by donating to the scholarship fund that enables youngsters to participate who would not otherwise be able to afford to attend. A bucket was passed around and monies collected toward the fund. Gordon noted we'll take one more collection next month and then Tom will send in our annual combined donation. Bud said checks to EAA Chapter 175, with the notation "Destination: Aviation" are also a good way to make contributions through the chapter. He also noted that in the past we have supported the EAA summer youth programs before Sun 'n Fun and the Florida Air Museum began similar efforts here at home and that several of the young people we sponsored are now active pilots in the military or in aviation careers. All money donated to the summer camp program is tax deductible.

Moving to new business, Bud noted that EAA had promoted International Learn to Fly Day, May 21st, to

chapters , but that it was too short a turnaround time for our chapter to become involved in that “take a friend flying” event, having just completed our major annual effort during the Sun ‘n Fun Fly-In. At the chapter Board Meeting on May 20th, however, it was recognized that we need to find a way to reach out to prospective new pilots, not only for the chapter, but the overall goal of promoting the continued growth of general aviation. Our last chapter open house type event was about a decade ago and we need to do something like it again. The question is how best to do that?

Bud pointed out that because of greater airport security since 9-11, it is difficult for people curious to learn about flying to simply get on an airport to walk around, looking at the aircraft, talking to pilots or just be an “airport kid”, as many of us were. So, we need to find ways to reach out to these people and invite them in. Members of the Board engaged in a wide-ranging discussion of types of events we might host, from a “big concept” effort proposed by Vice President Steve Reisser that would involve inviting in various flight schools, vendors, exhibitors, CAP, AOPA, HCAA, FAA, Angel Flight, Women in Aviation, HCAA, the ultralight association and so on to a Community Aviation Day down to a more modest scale event involving just our chapter.

Considering financial risk, up front funding, long lead-time planning, insurance and safety, facilities, parking, advertising, sponsorship, staffing, crowd control and other issues attendant to a major program, the Board decided to focus our efforts on a much smaller event that we can do with our own resources out of the chapter house at little cost. October 22 was selected as our target date, as that gives us plenty of time to plan and organize a modest event over the summer, is a regular meeting date, and is beyond the peak of hurricane season. The following weekend would be our adverse weather date.

The prospects for this get-together are Adult Eagles---some wise guy said “buzzards”---who have always wanted to fly, but just haven’t had the time or resources until now or those who started at one time or have flown for awhile, but dropped out for various

reasons: retirees and semi-retirees; business owners and professionals. They are ready to pursue their interest, but don’t know how to get started/re-started or what is involved. We would not advertise to the general public, but contact friends, associates and acquaintances and civic groups like Kiwanis, Rotary and local Chamber of Commerce directly for prospects. In addition to civic organizations, we can contact local flight schools, EAA chapters and aviation organizations to encourage them to invite people to attend. Spouses are encouraged to participate, because wives are often key to the husband’s participation in hobbies. Members of the various law enforcement organizations are good prospects for this event, as are CAP Senior Aviation Cadets, Silver Wings members. We’ll think of others as we get more involved in this project. We will control the number of people attending. Gordon pointed out we would rather have a small number of truly interested, mature people attend than lots of families, gawkers and “tire kickers”.

We will keep the event limited to our area of the airport, which means we don’t need to involve outside airport security, can utilize EAA chapter event insurance and keep costs low. EAA and AOPA have publications that provide guidelines for this type of event we can incorporate in our planning. We will invite “friends of the chapter” to exhibit such as Mike “Z” with his Breezer, a Europa motor glider, Dr. Dan Greenwald’s Extra aerobatic aircraft, an ultralight, the Silver Lady Ercoupe, the Sheriff’s Department helicopter and so on. Members of the chapter will be encouraged to put their aircraft on display for the day. We could invite representatives of the National Aviation Academy, HCAA, CAP, Leading Edge, Tampa Bay Aerosport, even Patty Wagstaff, and others. The focus will be on light sport and general aviation. Mike “Z” said a FBO in Vero Beach does this sort of thing regularly and would be a good “how to” reference. We can offer breakfast and lunch and speakers throughout the day from our own members (former airline and military pilots) and other aviation people we know. Rather than formal presentations, Bud envisions we will probably encourage brief vignettes on specific topics and “roundtable” discussions with pilots going on all day. Brief presentations could be on: This is why I fly (several speakers); Light Sport vs. Private Pilot

requirements (Steve); Types of general aviation aircraft (Don Miller); Places you can go in your plane (Mike "Z" on flying to the Bahamas, for example) and so on. Videos are encouraged. The atmosphere will be low key, relaxed and FUN, with courtesy flights available. We can get brochures and promotional material from EAA and AOPA to hand out. We do not want to run newspaper ads or broadcast the event to the general public. Word of mouth and personal invitation will be our method of getting the word out.

Bud said he anticipates 20-40 prospects. The idea is to engage them in depth in exploring their interests and questions "one on one". Some of these folks may spend several hours with us, unlike the Young Eagles rallies we are accustomed to running, in which a group of kids is processed through and done quickly without follow up.

Gordon noted the foregoing concept was endorsed by the Board with the intent to get chapter support before proceeding further with the plan. Bud then asked the members for a motion to approve hosting a chapter open house with an "invite a friend to fly" program on October 22nd. The motion was made by Mike "Z", seconded by Jeff Kaloostian, and unanimously approved.

The next step, Bud noted, was to get members working on event, establishing a planning committee and lining up speakers and exhibitors. Membership Director and Program Co-chair, Ginger Adelstone, sent around a sign-up sheet. Bud will begin contacting chapter members for specific assignments. Steve and Jeff have already agreed to work on promotional ideas. Member enthusiasm was high for this fall event.

The meeting ended at 1010.

Submitted by Gordon Knapp, Secretary

Plant City Airport Notam Issued for New Taxi Lighting System.

PROJECT 5720 11 RWY AND TWY EDGE LIGHTS REHABILITATION – PCM

The [Aviation Authority](#) has started a project at Plant City Airport to rehabilitate the Runway and

Taxiway lights to new LED lighting. Today the taxiway lights have been demolished and reflectors have temporarily been installed. NOTAMs have been issued...please see attached emails. The project is scheduled to be substantially completed by the beginning of September.

Please use caution when using Plant City Airport and remember to check for NOTAMs.

Notam# 05/007

LAL Partial Taxiway Closure. The south portion of Taxiway Hotel will be closed for construction for several months. Taxiway Hotel will be closed from the Parkland Properties hangar north to the entrance of Gate # 62 (new gate number). This will require every tenant along Hotel except Parkland Properties to enter and exit at Gulf to the east. Please use caution for opposite direction traffic on the taxiway.

RWSL – RUNWAY STATUS LIGHTS, If you did not get the announcement of the Runway Status Lights now being installed at 22 airports (KORL now installed), then check this website.

http://www.faa.gov/air_traffic/technology/rwsl/

See "Say Intentions" safety advisory on pages following advertisements

Interesting Reads!

Flying a Century-Old Design for the First Time

<http://www.wired.com/autopia/2011/06/flying-a-102-year-old-design-for-the-first-time/#more-36045>

Liberty Belle's Very Last Landing.

<http://www.chicagotribune.com/news/local/breaking/chibr-knews-crews-responding-to-incident-involving-wwii-bomber-20110613,0,5852034.story>

World's Fastest Helicopter

<http://www.wired.com/autopia/2011/06/kevin-bredenbeck-sikorsky-x2/>

Trans-Atlantic BioFuel Flight

<http://www.wired.com/autopia/2011/06/transatlantic-biofuel-flights-kick-off-paris-air-show/#more-36138>

RECYCLE REMINDER---DOING OUR SHARE

The new recycle bin in the janitorial area of the chapter house is working out well. We've emptied it several times since putting it into use earlier this year.

Please continue to rinse your aluminum cans and plastic and glass bottles before putting them in the bin, so it won't attract roaches and ants.

Don't simply toss them in the trash or someone has to "dumpster dive" to pick them out. Yuck! Be considerate. It's easy. And if you see someone discarding a drink container that should be recycled, politely show them where to find the bin.

DESTINATION: AVIATION DONATION- "TURNING ONTO FINAL"

Chapter 175 members have generously contributed funds for a number of years to enable one or more youngsters who would not otherwise be able to attend the Destination: Aviation summer camps at Sun 'n Fun do so by our donations to the program's Scholarship Fund.

Last month, we made our first pass to collect funds with moderate results. This month will be our second and last opportunity this year to contribute as a chapter. Let's continue to keep our support for this youth aviation program going strong in 2011. Your contribution will make some youngster's summer most memorable.

If you can't make it to the chapter meeting, please send your donation directly to chapter Treasurer, Tom McLinskey, so he can add it to the others and forward all our funds to the summer camp headquarters soon. Personal checks should be made out to EAA Chapter 175, with the notation "Destination: Aviation" on the memo line.

All donations are fully tax deductible.

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EDITOR'S CORNER

If you are not an active participant, I would like to highly recommend the monthly meetings of the FAASafety Team, presenting programs the second Tuesday of each month at the Museum of Science and Industry (MOSI) in Tampa. It has many benefits. As part of the *Wings Program*, you can earn credits towards your next biannual review in part by attending these safety seminars. Even if that is not your motive, I find that the programs are extremely beneficial, interesting, and surely we can all benefit from others aviation experiences and training. Hope to see you there.

Steve Reisser, VP

A Celebration of Duty to All

I have had the misfortune of mourning the loss of young men killed in accidents and operations in my military career. Of course we all never think of our own mortality as we all believe we are all immortal when we are young. Many times we ask ourselves why we survived as young men and joked we wanted to die in the arms of the love of our life as robust white haired pilots. We mourn the loss of those struck down in their young lives and celebrate those who soldiered on to long loving lives, and wondered, what is the secret to a long satisfying life.

I believe the key to a long and a satisfying life is devotion to the duty of serving our fellow man, and a bit of luck. Wes Caum served as more than a decorated WWII veteran. He never stopped serving. He personified what we all aspire to: to serve our fellow man. People like Wes served every day of their lives and not just to their families, but also to their church, their neighbors and their community. We are all thankful that we are part of the service to our community in the EAA, our neighborhoods, church, community and country. If you ever wondered how you will be remembered, then you are not serving. The duty of service means being there when needed, keeping your word, honoring your name, and serving your family and friends without reservation. It means holding out a helping hand to a person in need and assisting them on to their objective. Those who believe service is a duty, a personal commitment in their lives, will be remembered forever, sorely missed, and have left an indelible mark on mankind. We will all miss Wes Caum, but we will not mourn him, we celebrate his life of service, to us.

ADS-B has a Missing Link

Posted on June 8, 2011



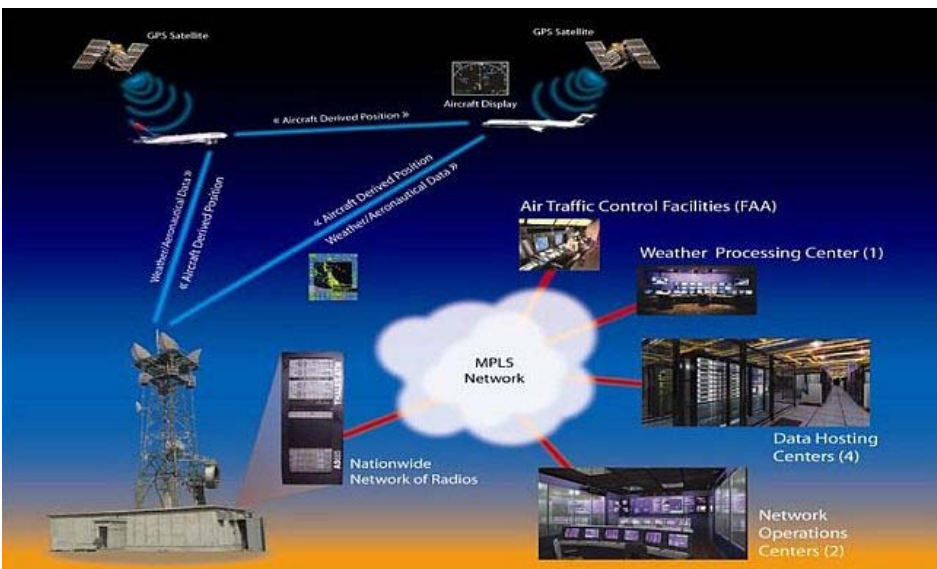
The FAA's ADS-B requirement moves the bulk of air traffic control hardware and technology from the ground and puts it into the airplane. Instead of using a radar network on the ground to locate the position of aircraft, ADS-B relies on equipment in each airplane to broadcast its location, altitude, and movements.

ADS-B will provide a more accurate picture of the location and velocity of aircraft than radar can because new position reports will be broadcast from every aircraft at least once each second. Radar antennas take many seconds to complete a sweep so aircraft position can only be updated as often as the radar beam scans each aircraft within range.

The ADS-B acronym stands for automatic dependent surveillance-broadcast. The reporting of aircraft position, altitude, and so on is automatic. The system is dependent on every aircraft reporting its location accurately based on a common grid, which will be supplied by GPS. The dependent part of ADS-B also means that each airplane must have equipment functioning properly or it will be invisible to controllers.

But the FAA has taken this concept of every airplane broadcasting its location to every other airplane and to the controllers and divided the sky in half. The ADS-B equipment in some airplanes can communicate with other cockpits, but other pilots will not be able to receive this information even though they have fully functioning certified ADS-B equipment installed.

The reason some ADS-B equipped airplanes will be invisible to other equipped airplanes is that the FAA has created a two-tier system. Actually, it's a dual language system. Depending on what type of airplane you fly, your ADS-B won't talk to other airplanes without an FAA-supplied ground station in between to translate the two languages.



The ADS-B languages are actually radio frequencies. The ADS-B in all higher performing airplanes – both airlines and GA – will broadcast on 1090 MHz, the frequency used by all transponders. Lower performing airplanes that do not fly above 18,000 feet can opt to install a universal access transceiver (UAT) that broadcasts on 978 MHz. If the UAT-equipped and 1090-equipped airplane are flying high enough so that the line-of-sight signals can reach an FAA ground station, be translated, and rebroadcast, the pilots in each airplane can see each other. If the airplanes are too low, or too far from a station, each is invisible to the other.

How did this dual ADS-B system develop? Obviously, the UAT is not really “universal” because it can’t receive the 1090ES (extended squitter) position broadcast that all higher-performing airplanes will make. The move to ADS-B will eliminate the need for ground-based radar, but replaces radar with a ground-based translating system so all airplanes and the controllers can see each other.

The long road to the current ADS-B rules and dual system go back decades to when the technology for TCAS, the airborne traffic warning system, was being developed. ADS-B was a contending technology to provide TCAS. But, as is still true, for ADS-B to provide useful collision warning every airplane must be equipped with compatible participating avionics.

But an alternate technology we used to call BCAS, for beacon collision avoidance system, was adopted as the traffic warning standard. BCAS operates on the transponder frequency – 1090 MHz – and it can interrogate any transponder-equipped airplane and calculate the relative position of that airplane from the BCAS-equipped airplane. The first airplane to install BCAS – since called TCAS – gained collision protection from every transponder-equipped airplane. That was an obvious and winning advantage for BCAS. All traffic awareness systems use this same basic technology.

Meanwhile, ADS-B technology remained in the background, hanging around waiting for an application. The FAA really didn’t want ADS-B messing around with the transponder frequency so it was assigned 978 MHz. That dedicated frequency also allowed bandwidth for ADS-B to receive useful information such as weather reports and other alerts. It was the 978 UAT version of ADS-B that the FAA deployed in Alaska for its reasonably successful Capstone Program to demonstrate that ADS-B could work in a non-radar environment. It is also UAT that the helicopters are using for traffic separation over the Gulf of Mexico, and that UPS is using in its fleet of freighters and that several major aviation flight academies have installed to keep track of their fleets.

But when the FAA and other national aviation authorities decided to convert to an ADS-B Nextgen world, it became clear that UAT was the wrong choice for many aircraft. The reason is that the traffic warning systems already installed in all jets and many propeller airplanes – TCAS – must remain as a final collision warning system in case the ADS-B system in an airplane fails. TCAS operates using a Mode S transponder on – you guessed it – 1090 MHz. So it makes perfect sense to send out the ADS-B position and other information on 1090 MHz since the traffic warning systems are already using that frequency.

That left the FAA in a pickle because it has been promising GA that a change to ADS-B would provide free weather and traffic warning display, but that is only possible on UAT because of bandwidth crowding on 1090 MHz. At the time of the original “free weather” promotion there was no XM Weather or Sirius satellite weather, so it sounded like magic to us in GA. The “free” part of weather in the cockpit still sounds good, but any pilot who flies much at all for transportation already has at least a handheld device that can receive satellite weather. Heck, even an iPhone gets a good Nexrad radar picture in the cockpit.

We’re all required to install an approved ADS-B “out” system to broadcast our location and velocity in order to fly in regulated airspace after January 1, 2020. GA pilots have the choice of selecting a UAT system, or a transponder type of system operating on 1090 MHz. If you go with a 1090 system you play with the big boys and all higher-performance airplanes can see you without need to be within range of a ground station. If you go with UAT you will be able to receive weather and other information from those same FAA ground stations.



I can't predict how the cost of UAT versus a 1090 system will play out over the next eight years. The 1090 system has some advantages because all airplanes will need to keep the same transponder capability required now and have it tested for accuracy and performance every two years as we do now. But there will almost certainly be some clever UAT designs that meet the basic requirements while minimizing costs.

But the bottom line is that I find it to be frustrating that a system – ADS-B – that is supposed to show every pilot the location of all aircraft around him ends up being divided into an A system and a B system that needs ground-based intervention to link us together. This system is a little better than the current radar system, but not nearly as good as it should be.



Say Intentions...

When you need ATC's help

There are several reasons that pilots do not call air traffic control (ATC) for help: They feel in control of an out-of-control situation, fear of embarrassment or enforcement action, or simply a lack of knowledge. But avoiding that radio call can turn a small problem into a big one, or turn a big one into a disaster.

Flight planning, in theory, handles the foreseen challenges but *diverting* from the plan should become a reality when circumstances change. Descending to remain VFR as the ceiling lowers, or proceeding on a heading when you are uncertain of location, could result in the need for a flight assist from ATC. Then it's time to change the plan. That may include a call for help before it is too late.

- Have a plan
- Know when it's not working
- Ask for help, if needed

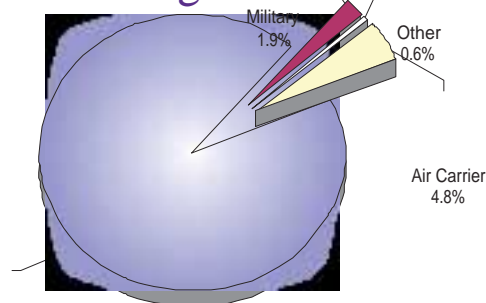
What Is a Flight Assist?

ATC, flight service stations (FSS), and occasionally other pilots, provide help to aircraft in potentially dangerous

situations. Pilots usually think of ATC in terms of

providing aircraft separation and traffic guidance. But controllers can also request search and rescue, coordinate direction-finding facilities, and gather information on weather and missing aircraft.

1996-2002 Flight Assists



More than once
per day, air
traffic controllers
help a pilot by
performing a
“flight assist.”



Likely, you will be asked to ident and keep the transponder code you already have. That reduces errors and workload.

A call on 121.5 may not receive a response in an unpopulated or mountainous area. Try the nearest tower or approach frequency. The limitations of VHF line-of-sight apply regardless of whether you're having a bad day or not.

Emergency Terminology

Informal phraseology often fails to convey the urgency of a situation. ASF recommends using terminology in the Aeronautical Information Manual (AIM), including:

- **Immediate** – Used when a situation is imminent.
“Orlando Approach, Cessna 158 Romeo Mike, we’re IFR over Titusville at 8,000 feet, minimum fuel advisory, request immediate vectors to nearest suitable airport.”
- **Urgent** – Used when action is needed to avoid an emergency situation. Urgent situations have priority over all other radio traffic, except for distressed aircraft.
“Pan-pan, pan-pan, pan-pan, Denver Approach, Piper 4537 Lima, we’re VFR 10 miles south of Centennial at 6,000 feet, in severe turbulence, request vectors out of the weather.”
- **Emergency** – Declaring an emergency will get you priority over other aircraft.
“Mayday, mayday, mayday, Boston Center, Bonanza 213 Alpha Zulu is declaring an emergency. We’re IFR over Pittsfield at 8,000 feet with a rough running engine, need to divert.”

VFR Flight Following

Flight following is frequently overlooked by some VFR pilots. It provides an extra set of eyes for traffic or terrain hazards. This allows VFR pilots to enjoy some traffic separation and guidance similar to those provided to IFR aircraft. However, it does NOT take the place of see and avoid. The pilot in command is responsible for terrain and collision avoidance.

Flight following may be requested on the ground or in the air. It is optional, except within class C or B airspace, and available only if radar service is present. However, ATC may deny flight following requests due to workload.

Declaring an Emergency

When in an emergency situation, the earlier it is declared to ATC the better. If you are in radio contact with ATC, use that frequency. Do not switch to 121.5 unless instructed. Additionally, only squawk 7700 if the flight is not in radio contact, or if a controller requests it.

When time permits, the pilot should provide additional information, as requested, such as altitude, fuel remaining, position, people on board, and planned destination. The controller will use your answers to determine what course of action ATC will suggest.

Though the controller is an essential member of the team, you're in charge. If a suggested vector, altitude, or airport is not appropriate, tell ATC. Don't make a bad situation worse by blindly obeying – take control. For example, VFR pilots should refuse a clearance that will put them into the clouds.

Understand that there are some things ATC cannot do to help. If you wait too long to call and the situation is critical, they may not be able to provide a safe heading or vector in time. Controllers cannot fly the airplane. ***You are the pilot-in-command and are responsible for the safety of the flight.***

Tips for Successful Communication:

- Busy with the aircraft? Advise ATC to stand by. There will be time to communicate later.
- If you don't understand an ATC instruction, ask the controller to "say again," slowly, if necessary, in language you understand.
- Tell ATC as much about the situation as possible, keeping in mind that not all controllers are pilots. Don't worry about "official phraseology."
- Climb if conditions permit, to improve radio reception.

Lost Pilot

If you don't see a planned checkpoint after five minutes of searching, it's not a big deal—yet. After 20 minutes it's time to get help. It's better to overreact than underreact. Pilots who keep flying a heading hoping the



situation will improve are asking for trouble. Ask for help before a bad situation turns worse.

ATC can provide vectoring to get the flight back on course, using a variety of methods to determine an aircraft's position and heading:

- Radar determines aircraft position and direction. Note: In some areas of the country, radar service may not be available at low altitudes.
- Some FSSs provide DF steers to lost pilots. This method has been phased out from most terminal facilities and replaced by radar, but is still used in mountainous areas and other areas without radar coverage.
- ATC may ask nearby aircraft to assist aircraft in need.

Low Fuel

A minimum fuel advisory alerts controllers that if delays are encountered, the situation may become an emergency. The controller will then minimize ATC delays. ASF recommends landing with at least one hour of fuel on board.

The student pilot of a Cessna 150 called Fort Worth Center requesting assistance. He was on his first solo cross-country flight, and was attempting to find the airport.

The pilot had difficulty in interpreting the ADF, VOR, and altimeter. ATC provided vectors toward Corsicana (CRS), and approved a frequency change when the pilot reported the airport in sight.

Minutes later, Waco TRACON and Longview TRACON advised Fort Worth Center that the same C150, now low on fuel, was calling on 121.5. By relaying through another aircraft, Center got the aircraft back on frequency. The Cessna pilot reported that he was disoriented and advised, by his calculation, he should not have any fuel left. The pilot then switched to CRS Unicom, as did the assisting aircraft to monitor the C150's progress, as requested by Fort Worth ATC.



If the fuel situation is dire, declare an emergency to receive priority ATC handling. Don't wait too long to ask for help. For more information, see ASF's *Fuel Awareness* safety advisor online, www.aopa.org/asf/publications/sa16.pdf.

VFR into IMC

If you are a VFR pilot and the weather ahead is deteriorating, it's time to change the plan. Divert to an alternate or reverse course back to better weather. Did you wait too long? Becoming disoriented or lost? Call for help before entering instrument meteorological conditions (IMC). Speak out. The controller will provide vectors to an airport with VFR weather, if possible. They will try to avoid radio frequency, heading, or altitude changes if the flight encounters IMC.

Many pilots, when caught in deteriorating weather, will descend to remain in VMC. But, aside from terrain hazards, descending may eliminate radar and communication contact. If you waited too long to exit the conditions, call ATC for assistance. It may be safer to make a controlled off-airport landing than continue on to an airport in solid IMC.

IFR into Storms and Turbulence

ATC can sometimes offer assistance to pilots without on-board weather detection. New equipment such as the weather and radar processor (WARP) overlays precipitation areas onto controllers' displays. ATC can vector an aircraft around storms, particularly those with heavy rain that reflects radar energy quite well. Flight Watch and FSS can also help in this situation.

A student pilot flying a Piper PA38 Tomahawk requested ATC help 45 minutes after departing Sussex, Delaware (GED). He thought he was somewhere over Delaware Bay, heading 301 degrees, and said he had not seen land in "a while." Conditions were hazy with low visibility and no visual references. ATC located the aircraft over the Atlantic Ocean, 60 miles southeast of Atlantic City, NJ, tracking northeasterly.

The pilot reported 1/4 fuel in the left tank and 3/4 on the right. ATC attempted to vector the aircraft towards land, but the pilot flew farther off shore. A C130 crew in the area offered to help. Another pilot who was familiar with the particular aircraft in distress claimed its navigational instruments were not reliable. ATC vectored the C130 towards the Tomahawk. On establishing visual contact the C130 attempted to lead the PA38 pilot towards the shore. However, the C130 had to circle the PA38 several times to stay with the smaller plane. Each time the C130 circled, the Piper turned northeast.

A Coast Guard helicopter found the PA38 just as its fuel supply reached 1/8 tank of fuel on the right and 1/4 tank on the left. The Piper followed the helicopter to Atlantic City Airport (ACY), and guided the pilot until he saw the runway at 900 feet. The Piper landed safely, with less than 15 minutes of fuel remaining.





While WARP is helpful, it has limitations. Precipitation areas may be avoided, but heavy turbulence also occurs outside of precipitation areas, such as near towering cumulus clouds.

If you are flying an aircraft not approved for icing conditions, alert ATC at the onset of ice accumulation. Even if it is not an emergency yet, controllers can help you exit the conditions **before** the situation turns worse.

For more information, view ASF's safety advisor, *Aircraft Icing*, online at www.aopa.org/asf/publications/sa11.pdf.

If the weather ahead looks bad, it probably is. Start gathering information early and discuss it with ATC **before** getting into areas of hazardous weather. Help ATC to help you.

For more weather information, view ASF's safety advisors online at www.asf.org.

Mechanical Problems

Mechanical situations range from a broken fuel gauge to engine stoppage. Obviously, not all require emergency action. An attitude instrument failure is not an emergency for VFR pilots, but is critical for pilots in IMC. Alert ATC, but delay answering questions if flight duties require. The first priority is to fly the airplane.

The pilot of a Cessna 210 diverted to Richmond after stating the aircraft was losing oil pressure. Oil covered the Cessna's windshield, and conditions at Richmond were 1/2 mile visibility in fog with a 200-foot ceiling. ATC vectored the pilot to final and cleared him for an ILS to Runway 34. Unable to locate the runway, the pilot executed a missed approach, and then reported that the aircraft was out of oil. The controller provided the pilot immediate vectors to Runway 16 and activated the ILS and approach lights. The pilot landed safely on Runway 16.

Mountainous Terrain

Mountainous terrain compounds any problem. Frequently, the weather is going down as the terrain is going up. ATC may be able to use a minimum vectoring altitude (MVA) chart or an emergency obstruction video map (EOVM) to assist an aircraft in distress while vectoring it toward lower terrain. ATC also uses the charts when pilots are unsure of their location, or the altitude of surrounding terrain.



Lost Communications

While IFR, if radio communication is lost, ATC will attempt contact via relays through other aircraft, ARINC (a private aeronautical radio service often used by airline or corporate operators and FBOs), or through FSS using the voice feature of nav aids.

The VFR Cessna 150 pilot called the ARTCC after entering IMC, stating he was at 6,000 feet. Radar showed the pilot dangerously close to Mt. St. Helens. The controller issued a low altitude alert and suggested an immediate climb and turn to the east, toward lower terrain. Center used weather data and pilot reports to find an airport with visual meteorological conditions (VMC) and vectored the plane toward it. ATC informed the pilot of minimum IFR altitudes and vectored him away from the highest terrain. The aircraft encountered VMC, but then again entered IMC. The controller asked a nearby airline crew to locate VMC, which they did: clear weather existed 13 miles west of the C150's position. The Cessna pilot was vectored toward it as ATC reminded him of the 6,000-foot minimum IFR altitude. The flight landed safely at Eatonville airport in VMC. The pilot noted in the de-briefing that just after he had first requested assistance, Mt. St. Helens appeared through the clouds 500-600 yards directly in front of him.

Call the nearest FSS by cell phone for further instructions. (FCC regulations prohibit use of cellular telephones while airborne, except in an emergency.) If two-way communication is not possible, controllers will try to establish one-way communication. For pilots who can receive but not transmit, ATC may ask them to use the "ident" button on the transponder to acknowledge instructions.

If no communication is possible, ATC will anticipate pilot actions, particularly if flying IFR, and will clear out other traffic. FAR 91.185 offers guidance on two-way radio communications failure.

The pilot of an Aero Commander 90 declared an emergency, reporting a problem with the landing gear. Communications from the Commander were garbled. Through use of repeated transmissions and the "ident" feature on the beacon system, it was verified that the landing gear would not extend.

The aircraft owners were contacted, and it was determined that a cell phone was on board the aircraft. This method only worked temporarily. The controller then discovered that they could reach the plane through a hand-held radio on board the aircraft. Shortly after, the pilot lowered the gear. He was vectored to the airport and he landed safely.

Paperwork

Two of the biggest concerns pilots have about using ATC assistance are paperwork and certificate action. Let's consider the options - some paperwork and a chance to have coffee with some FAA inspectors or a damaged aircraft, severe injuries, or worse. The worst outcome from FAA is possibly a suspension of your pilot certificate. The sanction might be only remedial training, or nothing.

What paperwork needs to be completed after an emergency?

- If no deviation from the FARs occurred, none.
- If a deviation from the FARs occurred, the FAA may request a report from the pilot. Usually, this



request comes through the local FAA flight standards district office (FSDO).

- If an aircraft was given ATC priority, a write-up of the circumstances may be requested, but not always.
- It is the pilot's choice to complete a NASA Aviation Safety Reporting System (ASRS) form after any emergency. By completing this form, found online at <http://asrs.arc.nasa.gov>, the pilot is granted relief from FAA disciplinary action.
- If any incident or accident occurs, the operator of the aircraft must file NTSB form 6120.1/2 within 10 days of the occurrence. Each crewmember, if physically able, must attach a written report of his or her point of view in the accident. These reports should be filed with the nearest NTSB office.

AOPA's Legal Services Plan can be an excellent investment to guide pilots through whatever issues may arise from a flight assist.

Obtaining Emergency Assistance

A pilot in a distress or urgency situation should immediately:

- Climb, if possible, to enhance:
 - Communications
 - Radar detection
 - Direction finding
- Squawk
 - Assigned discrete code if in contact with an air traffic facility
 - 7700, if unable to establish communications
- Communicate
 - Transmit an emergency or urgency message
 - Comply with ATC if able, but remember you are the pilot-in-command and can decline any instruction in the interest of safety.



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