



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.

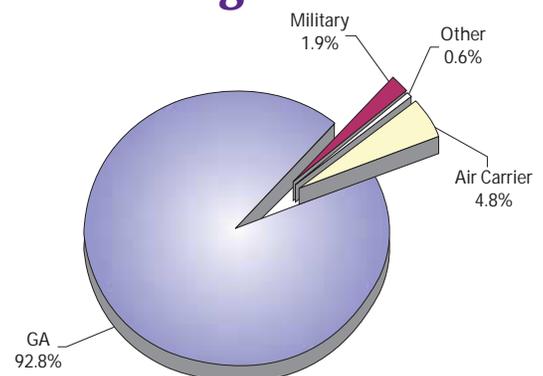
Flight planning, in theory, handles the foreseen challenges but *diverting* from the plan should become a reality when circumstances change. Descending to remain VFR as the ceiling lowers, or proceeding on a heading when you are uncertain of location, could result in the need for a flight assist from 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 ADE, 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.



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.

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.





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.



EXPLORE ASF'S SAFETY PRODUCTS

Safety Advisors • Safety Highlights • Nall Report
Videos • Seminar-in-a-Box® Program



and many more...

421 Aviation Way • Frederick, MD 21701 • 800/638-3101 • www.asf.org • asf@aopa.org

These ASF products were made possible through contributions from pilots like you.

Seminar-in-a-Box® Program

If it's not convenient for you to attend the Air Safety Foundation's free safety seminars, why not have one in your own community?

It's easier than you think!

Topics include:

- Ups and Downs of Takeoffs and Landings
- Collision Avoidance
- Spatial Disorientation
- and many more



View ASF's web site for more information: www.aopa.org/asf/schedules/sib.html

Copyright 2003, AOPA Air Safety Foundation

421 Aviation Way, Frederick, MD, 21701

Phone: (800) 638-3101

Internet: www.asf.org

E-mail: asf@aopa.org



Publisher: Bruce Landsberg

Writer: Brock Sargeant

Editor: Kathleen Roy

SA19 - 04/03