AVIATION SAFETY NEWSLETTER

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University of Dubuque Aviation Safety Philosophy

A perspective from the Chair of the Aviation Department

By Prof. Steven Accinelli

I am soliciting your support for the University of Dubuque's Aviation Safety Program. I need your help, energy, and caring attitude to ensure we operate all our flights and ground operations in a safe and efficient manner. Our safety program, for which you are a critical component, is designed to provide you with reasonable procedures and practices that enhance safe training, information sharing, and feedback.

The Aviation Department has an aviation safety reporting form, mandatory CFI and student safety meetings, a flight safety program manger, numerous SOPs, and a qualified supervisory staff. While these are important, they simply are not enough! We need a foundation for our safety program built on solid pillars. A few of these pillars include:

People:
Safety is people; individual responsibility is the foundation of an efficient safety program. Everyone here at the Dubuque Regional Airport and at the University of Dubuque is part of our safety environment and culture.

Team:
Safety is a team effort; lapses in individual and supervisory responsibilities often cause catastrophic injuries or even death. Assist, suggest, or seek change. Use the Aviation Safety Reporting Form. Doing nothing is not an option.

Risk Management:
Analyzing and minimizing risk is what safety is all about. Adopt aeronautical decision making rubrics, techniques, and procedures for use on every flight.

Caring:
Caring pilots and managers always produce fewer incidents and accidents. Take care of all those in the aviation industry; you have to rely on them taking care of you.

Set the Example:
The attitudes and conduct we portray, set the standard for our future workforce. It is our obligation to produce pilots and managers who strive for excellence with safety intertwined into their very being. To do less is an injustice to those we teach.

In summary, people are safety. Learn to identify risk and develop appropriate counter measures. Caring
for fellow aviators and our passengers is an imperative. We set the example; do not abrogate your responsibility

Winter Safety Concerns:

The Kinds of Ice and their effects on safety

By Kyle Jones and Corbin Montgomery

With the changing of the season and the transition from fall into the winter months, there comes a completely new set of factors that influence the way aircraft operate and how pilots fly. Ice in flight is bad news. It destroys the smooth flow of air, increasing drag while decreasing the ability of the airfoil to create lift. Ice can also cause engine stoppage by either icing up the carburetor or, in the case of a fuel-injected engine, blocking the engine's air source. It is important that pilot's take extra care in noting where the freezing levels are, understanding UD aircraft are not certified for known icing conditions, and have knowledge of what to do when one encounters ice. Students should understand ice's effects on the pitot- static system as well as the impact ice has on the overall flying characteristics of the airplane. If ever unsure, about what to do in icing conditions consult a CFI and are briefed. Pictured above are three main types of ice one may encounter while flying in icing conditions, or while the aircraft is parked outside.

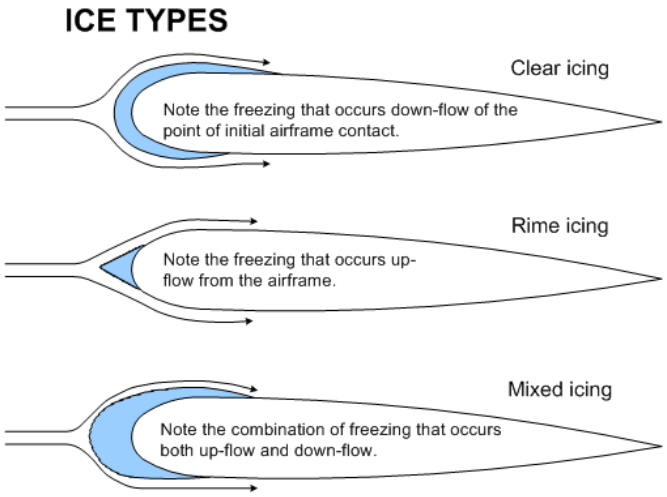
Clear (or glaze) ice is sometimes clear and smooth, but usually contains some air pockets that result in a lumpy translucent appearance. The larger the accretion, the less glaze ice conforms to the shape of the wing; the shape is often characterized by the presence of upper and lower "horns." Clear ice is denser, harder, and sometimes more transparent than rime ice, and is generally hard to break.

Mixed ice is a combination of rime and clear ice. Ice can distort the flow of air over the wing, diminishing the wing's maximum lift, reducing the angle of attack for maximum lift, adversely affecting airplane handling qualities, and significantly increasing drag.

Rime ice has a rough, milky white appearance, and generally follows the contours of the surface closely. Much of it can be removed by deice systems or prevented by anti-ice

"When ice is encountered, immediately start working to get out of it. Unless the condition is freezing rain, or freezing drizzle, it rarely requires fast action and certainly never panic action, but it does call for positive action."

- Capt. Robert Buck



Based on depiction found in Fig. 9-5 of *Air Command Weather Manual*

Like all safe and organized flights the planning begins on the ground. For VFR pilots remain clear of clouds and maintain VFR at all time. It is important to understand airspace and the cloud requirements within that airspace. Staying away from moisture is the first step in not encountering ice. Use all resources available to you, such as Duats, adds, the weather desk, and pireps. These are all services that will help pilots understand where the ice is and how to avoid it. Proper preflight preparation is key in caring out a safe and smooth flight.

Some aircraft are equipped with de-icing and anti- icing equipment. It is important that pilots are briefed and understand how to operate these systems should they run into ice or icing conditions. Carrying extra fuel will allow for multiple diversions and a wider variety of alternates to choose from should u need one. Upon preflight inspection of the aircraft make sure all frost, ice, snow, or any other build up is scrapped off and properly moved.

When taxing, taxi slowly on icy taxiways. The wind may become a limiting factor because the ability to steer and counteracting tendencies is poor. Tap the brakes lightly and briefly. Hard braking pressure will lock the wheels, resulting in a skid. These are a few of the ways to make sure ice is avoided both on the ground and in flight. Remember good pilots are always vigilant, and have a great understanding of the aircraft and its systems. The preflight is the most important phase of flight. Adequate knowledge of the weather, aircraft systems, and fuel planning are the difference between a successful flight and a tragic ending.

The readiness to blame a dead pilot for an accident is nauseating, but it has been the tendency ever since I can remember. What pilot has not been in positions where he was in danger and where perfect judgment would have advised against going? But when a man is caught in such a position he is judged only by his error and seldom given credit for the times he has extricated himself from worse situations. Worst of all, blame is heaped upon him by other pilots, all of whom have been in parallel situations themselves, but without being caught in them. If one took no chances, one would not fly at all. Safety lies in the judgment of the chances one takes.

— Charles Lindbergh, journal entry 26 August 1938, published in The Wartime Journals, 1970.

Avoiding Traffic Conflicts

A perspective from the Safety Manager

By Tony Foster

Traffic conflicts have been an area of concern since the beginning of the semester. Several safety reports have been submitted pertaining to close-calls between company and non-company traffic. These are preventable when utilizing proper techniques to avoid these situations: position reports, use of company frequency, and situational awareness.

Position reports are a key aspect of avoiding near midair collisions. In the Cessna 172SP (C172) aircraft, perhaps the quickest and easiest method to give position reports is through utilization of the bearing pointer system. The bearing pointers, blue needles displayed on the horizontal situation indicator (HSI), provide and quick and easy reference to whatever navigation aid (NAVAID) that has been selected.

Ensuring that you know how to setup and use this system can prove to be beneficial in providing the necessary position reports in the C172 aircraft. The Trinidads (TB-20) and Seminoles (PA-44) do not have this particular system, however, they do have several other systems which could serve the same purpose. The TB-20s and PA-44s both have Garmin 430 GPS systems. These devices have a particular page within the NAV function of the GPS that provides magnetic bearing from a nearby NAVAID. If you are doing local area training, this will likely always be slaved the DBQ VOR. While neither the TB-20s nor the PA-44s have a bearing pointer system, they both have two NAV radios which can be used to determine your radial off of the DBQ VOR. Simply tune in the DBQ VOR and center one of your course instruments with a FROM indication to get your radial. Also be sure to include distance, altitude, and future intentions with these reports. Be as specific as possible.

Company frequency is a paramount aspect of avoiding each other in the practice area. There are some operational pitfalls within this area though. Simply making calls and not actively monitoring the frequency is not sufficient. Diligent monitoring of company frequency when other aircraft are transitioning to and from the airport, changing altitudes, or even transitioning from one practice area to another are all potential threats which could lead to conflicts. Do not be complacent on the company frequency. If you hear someone coming into the same practice area as you, be sure to arrange a plan to avoid each other. Communication is key here. Also be sure to keep in mind position reports made by individuals practicing instrument approaches. These reports can be tricky in the sense that they may not explicitly include the direction of the flight. For example, “UD Traffic, 140UD is outbound for the ILS 36 at 3,500 feet.” This report does not say what practice area the aircraft is transitioning towards and someone in the south practice area may not realize the impending threat. Proper use of this frequency and communication will provide the necessary means to avoid each other while training.

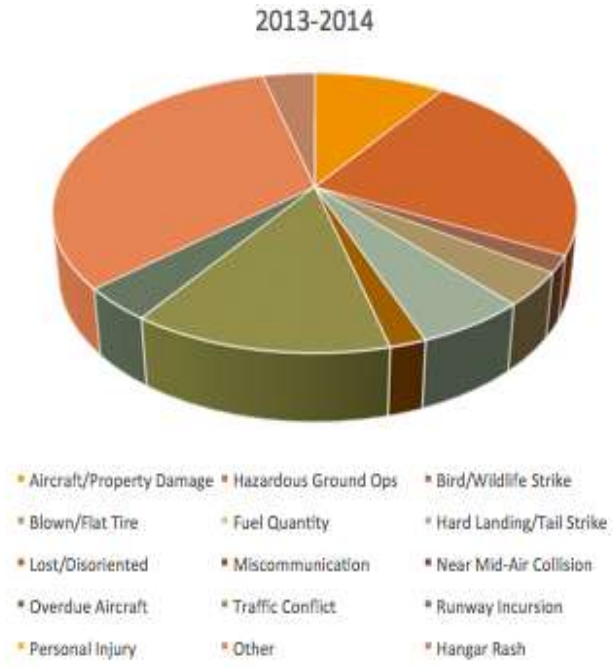
Maintaining situational awareness while training will prove to aid in avoiding traffic conflicts as well. Situational awareness is a special emphasis area within the Practical Test Standards (PTS) and it says an applicant should “state the current situation at any time during the flight in such a way that displays an accurate assessment of the ***current and future*** status of the flight, including weather, terrain, ***traffic***, ATC situation, fuel status, and aircraft status.” Note the inclusion of traffic status in the PTS description of situation awareness. Operating in the vicinity of an airport is certainly an area where situational awareness will be key in avoiding traffic conflicts. Also note how the PTS emphasizes current and future status. Using your current assessment of the traffic situation and using this information to predict future problems is essential to safe operations. If you just overheard tower clear an aircraft for takeoff and approved them for a turn

westbound, you now know where this aircraft is and will be in the near future.

Understanding how traffic is likely to flow in and out of the airports you are utilizing will aid in avoiding these conflicts. For instance, traffic departing are generally climbing for higher altitudes and therefore it should be a priority to establish an altitude closer to that of pattern altitude when transitioning back to Dubuque. This simple descent planning technique can aid in avoiding traffic conflicts. Additionally, when you know there are aircraft performing practice approaches, try to avoid the approach corridors all together.

We have a safe operation here at the University of Dubuque and we want to keep it that way. The techniques discussed in this newsletter are just a few ways to aid in reducing traffic conflicts. Spend some time with your flight instructor to ensure you understand how to use the technology and methodology discussed. Keep an eye and an ear out for each other while training and fly safe.

	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Aircraft/Property Damage	4	1	3	6	3	5
Hazardous Ground Ops		2	9	12	9	12
Bird/Wildlife Strike				4		1
Blown/Flat Tire	1	1	1	5	1	2
Fuel Quantity	1					
Hard Landing/Tail Strike		2	1	2	1	3
Lost/Disoriented						1
Miscommunication	2				1	
Near Mid-Air Collision	2	1		1	1	
Overdue Aircraft		1	4	2	1	
Traffic Conflict			2	1		7
Runway Incursion	1			1	1	2
Personal Injury	2	1		1		
Other	6	5	15	10	9	17
Hangar Rash	3	5	2	4	6	2
Maintenance	3		1	1		
Exceeding Limitations						4
Severe Weather						5
Total Reports Received	25	19	38	50	33	52



	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Aircraft/Property Damage	4	1	3	6	3	5	
Hazardous Ground Ops		2	9	12	9	12	2
Bird/Wildlife Strike				4		1	1
Blown/Flat Tire	1	1	1	5	1	2	1
Fuel Quantity	1						
Hard Landing/Tail Strike		2	1	2	1	3	
Lost/Disoriented						1	
Miscommunication	2				1		1
Near Mid-Air Collision	2	1		1	1		3
Overdue Aircraft		1	4	2	1		
Traffic Conflict			2	1		7	5
Runway Incursion	1			1	1	2	1
Personal Injury	2	1		1			
Other	6	5	15	10	9	17	5
Hangar Rash	3	5	2	4	6	2	
Maintenance	3		1	1			
Exceeding Limitations						4	
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