

PIREPS

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NEBRASKA
Good Life. Great Journey.
DEPARTMENT OF TRANSPORTATION

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Aviation Art Contest 2024, Air Sports For A Peaceful World

Since 1986, the Department of Transportation - Division of Aeronautics has sponsored an annual Aviation Art Contest for the benefit of our youth. The program goal is to motivate and encourage young people to become more familiar with and participate in aeronautics, engineering, math, and science. There are three age categories of contestants: 6-9, 10-13 and 14-17 for boys and girls.

Our young folks were challenged to show people enjoying air sports at a friendly competition, helping others at the airfield, or even working together in space. Air sports bring people together, no matter what they think about politics, religion, or race.

For youngsters from ages 6 thru 17, it was time to get out their favorite artist supplies and give free rein to their imagination by creating a poster that represents their thoughts when they think about the theme of "Air Sports for a Peaceful World" for the Aviation Art Contest 2024.

We want to recognize and congratulate the following individuals for their accomplishments:

Category I Junior (age 6-9):
Laney Trausch, Bladen - 3rd place; Addison Biba, Lincoln - 2nd place; Ashton Crowe, Bladen - 1st place.

Category II Intermediate (age 10-13):
Asha Murdoch, Elmwood - 3rd place; Amelia Farris, Murdock - 2nd place; Kiersten Hans, Wynot - 1st place for the second consecutive year.



Ella Kobza First Place, Senior (Ages 14-17)
Falls City High School, Falls City

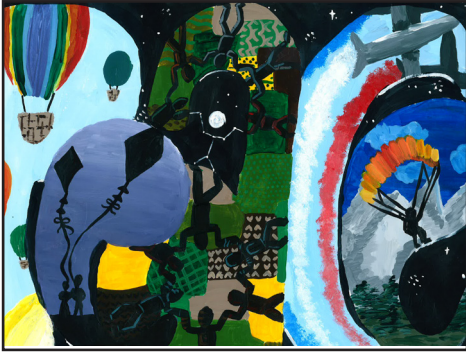


Kiersten Hans First Place Intermediate (Ages 10-13)
Wynot Public Schools, Wynot

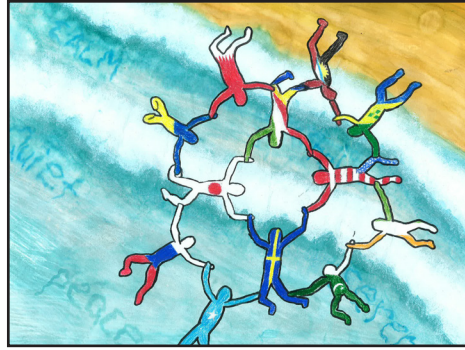


Ashton Crowe, First Place, Junior (Ages 6-9)
Silver Lake Elementary, Bladen

Aviation Art Contest 2024, Air Sports For A Peaceful World, Continued



Allison Boettcher Second Place, Senior (Ages 14-17) Franklin High School, Franklin



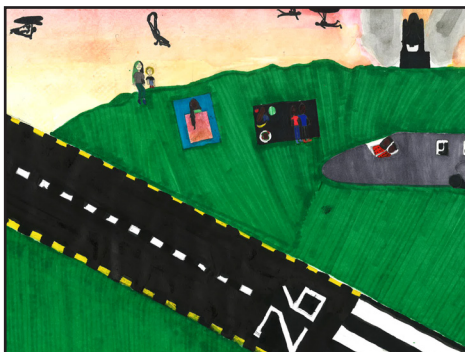
Sarah Hindal Third Place, Senior (Ages 14-17) Franklin High School, Franklin



Emily Stewart Honorable Mention, Senior (Ages 14-17) HTRS, Humboldt



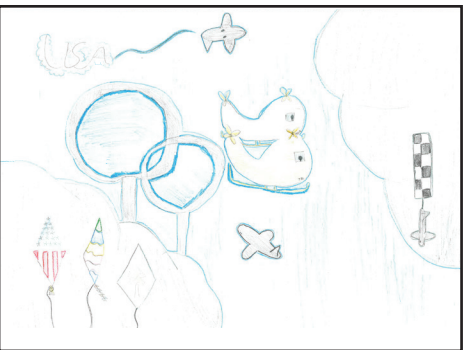
Amelia Farris Second Place, Intermediate (Ages 10-13) Elmwood-Murdock Public, ElmwoodWynot



Asha Murdoch Third Place, Intermediate (Ages 10-13) Elmwood-Murdock Public, Elmwood



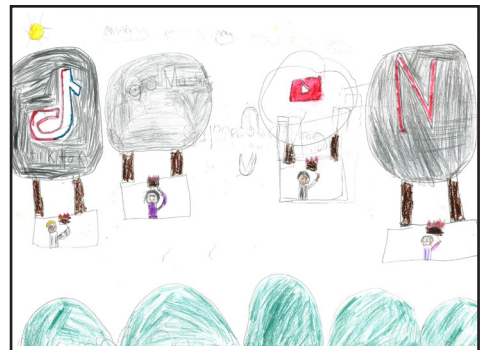
Bella Schmidt Honorable Mention, Intermediate (Ages 10-13) Silver Lake Elementary, Bladen



Addison Biba Second Place, Junior (Ages 6-9) St. Peter Elementary, Lincoln



Laney Trausch Third Place, Junior (Ages 6-9) Silver Lake Elementary, Bladen



Jairo Martinez Honorable Mention, Junior (Ages 6-9) Silver Lake Elementary, Bladen

Category III Senior (age 14-17):
Sarah Hindal, Franklin - 3rd place;
Allison Boettcher, Franklin - 2nd place;
Ella Kobza, Rulo - 1st place.

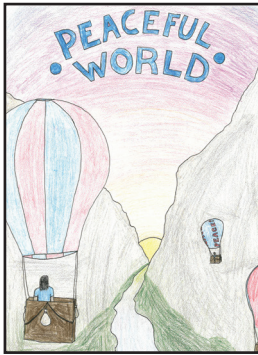
Congratulations to the following individuals who won Honorable Mention: Stetson Trausch, Alaia Gomez, Jairo Martinez, Kyle Pankoke, Ella Klein,

Serenity Rinne, Emma Livermore, Lane Meister, Keylee Norris, Bella Schmidt, Kellen Nielsen, Kinley Dorr, Sawyer Fritz, Shiree Oetjen, Diana Scott, Emily Steward, and Hannah Lindsey.

We, at the NDOT - Division of Aeronautics, want to send a special "Congratulations" to all the contestants.

Your work was outstanding and this made for tough decisions of the judging committee. To the parents, teachers and mentors, the Division wants to say a special "Thank You" for all the time, hard work and support you have put into this program. Without your continual generous support, this program simply would not exist. ■

Aviation Art Contest 2024, Air Sports For A Peaceful World, Continued



Hannah Lindsey Honorable Mention, Senior (Ages 14-17) HTRS, Humboldt



Lane Meister Honorable Mention, Intermediate (Ages 10-13) Elmwood-Murdock Public, Elmwood



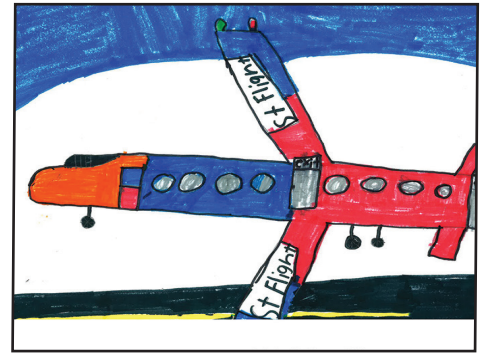
Alaia Gomez Honorable Mention, Junior (Ages 6-9) Silver Lake Elementary, Bladen



Diana Scott Honorable Mention, Senior (Ages 14-17) Osmond Community, Osmond



Keylee Norris Honorable Mention, Intermediate (Ages 10-13) HTRS, Humboldt



Stetson Trausch Honorable Mention, Junior (Ages 6-9) Silver Lake Elementary, Bladen

Intersection Names

By David Moll

In a prior article, I wrote FAA Intersections had “weird names,” and in my opinion that is a very accurate statement, but do you know how they got those names? Assuming everything on the internet is exactly true, let’s see what the criteria is.

Occasionally local FAA employees will recommend a name be assigned to a fix. The Office of Aeronautical Information Management will check to make sure it is five letters long, unique, pronounceable, not obscene or controversial. Sometimes a fix can be named after an individual. An example of this is a fix while flying into the Dekalb-Peachtree KPDK airport in Atlanta, Georgia where there is DEHAN intersection, plus the RNAV arrival procedure is named DEHAN3. This was named after an ATC controller who was also a corporate pilot by the name of Michael Dehan.

Flying into Orlando International (KMCO) Disney World clearly has some impact on intersection names. There is the MINEE5 arrival, with an intersection named MINEE. I can only guess this is a reference to Minnie Mouse. I’m also familiar with arrivals named GRNCH and GOOFY.

One article I read from aerosavvy.com had a reference to one fix I was not familiar with. At the Louisville Muhammad Ali International airport, on the ILS to 35L

is an intersection called AWLEE. This is clearly showing respect to a Louisville native and the greatest boxer of all time, Muhammad Ali.

Even Omaha has an intersection on the ILS 14L named BUFFT, also showing respect to the Oracle of Omaha, Warren Buffett.

While the above intersection names fit the requirement of being pronounceable, there are many that are not as easy. RNAV14 here in Lincoln have ZUBTO as its Initial Approach Fix, followed by OPIZU and HAGTI. These are not normal words anybody would use in their daily conversations, so how do you pronounce them if you are unsure. First of all, this is where a preflight briefing on the route, its intersections, crossing altitudes, speeds and their names, especially if this is a new route to the crew. Assuming the SIC is the non-flying pilot handling the radio, he or she must be totally familiar with these names. A simple procedure is to pronounce the intersection name just as ATC pronounces it, and pretty soon it makes perfect sense. The PIC retains full responsibility the crew understands what intersection ATC assigned you. This relates back to following your route using charts originally developed by Elroy Jeppesen. ■

1977 IFR in Saudi Arabia

By David Moll



Northrop Aircraft Corporation Lear 35 based in Dhahran, Saudi Arabia

In 1977, I was leased to the Northrop Aircraft Corporation flying a Lear 35 as PIC based in Dhahran, Saudi Arabia. At 25 years old, I had the experience of a lifetime. What was really interesting was the airspace structure of Saudi at that time. It was a true non-radar environment

that worked extremely well after you understood it. I'm sure it's different now and probably looks like the IFR system here in the U.S. Fortunately, while the Learjet was being approved to fly in country, I had the honor of flying as a SIC in Northrup's King Air 200 to learn the IFR system from their very experienced flight crews. After the Learjet was approved,

we normally flew 5 days a week starting at our home base of Dhahran, sometimes landing in Riyadh, but normally landing at Khamis Mushayt (just north of the country of Yemen) and Al Taif (near Mecca) before heading back to Dhahran. This typically required 5 hours of flying every day.

Around each major airport was a 60 DME airspace line called the TMA. If I remember correctly, TMA stood for Terminal Maneuvering Area, or some may now call it a Terminal Control Area. On the airway between Dhahran and Riyadh there were a couple of compulsory reporting points, plus we had to report the TMA inbound, overhead Riyadh and TMA outbound. This sounds easy, but as soon as we took off, we had to give estimates for each fix on our entire route.

In the Learjet we did not have a Flight Management System (FMS) because they weren't available yet. Instead we had a long-range navigation box that used the Loran System and not GPS. Nor could we input the name of intersections and the database would know its exact location because the navigation box did not have a database. We had to type in the exact latitude and longitude of our departure



David Moll

airport, arrival airport and each reporting position. For example, the ARP (Airport Reference Point) at Lincoln is N4051.1/W09645.5. On several occasions we flew from Dhahran to Athens, Greece and Geneva, Switzerland. Since our long-range navigation box only held 9 positions, we always put #9 as our destination so we could monitor time and fuel remaining. The other 8 positions were constantly changing because we may have 20 or more intersections in or out of radar contact on the high altitude airways.

To say we were busy in the cockpit at times is an understatement. But we were at the top of our industry and proud of it ■

Aviator Of The Year Drone Pilot

By AVweb



Shane Gentry, has been named the Corps' Marine Aviator of the Year.

The Marine Corps' top pilot for 2024 never leaves the ground. For the first time, a drone pilot, Maj. Shane Gentry, has been named the Corps' Marine Aviator of the Year. He was also named recipient of the Alfred A. Cunningham Award by the Marine Corp Aviation Association. Gentry is a member of the Marine Unmanned Aerial Vehicle Squadron 3 and

has flown the RQ-21, RQ-7 B and MQ-9A. "It's a great honor, it's humbling—absolutely pioneering for the Marine Corps unmanned community," he told USNI News.

Gentry said he chose drones after graduation 10 years ago because they were the "most deployed" units. He said since he began, drones have become increasingly important to operations of all kinds. "We're not coming to take like manned aviation jobs," he said. "If anything, we're enhancing lethality of the aviation enterprise. We're enhancing survivability of the manned aircraft, we're enhancing their roles and duties in aviation. So we are an enhancing aspect of Marine Corps aviation." ■

Division of Aeronautics – Who we are and what we do.



The Division of Aeronautics is one of sixteen Nebraska Department of Transportation (NDOT) divisions. The division administers the State Aeronautics Act as defined in Nebraska Revised Statute 3-102. The Aeronautics team is comprised of 19 full-time positions divided into four sections: Administration, Aviation Aids, Aviation Operations, and Engineering. Each of these sections is responsible for performing specific functions in support of the State Aeronautics Act.

The Administrative section is responsible for administrative, legal, and financial management functions, including budgeting, acquisitions and sales, accounting, and managing federal grants. The members of this team serve as a support mechanism for airports as they navigate the complexities of grant administration. This team is located at NDOT Central Headquarters in Lincoln and includes five full-time employees headed by the Deputy Director and Legal Counsel, Andre Aman.

The Navigational Aids section supports the system of non-federal navigational aids and weather observation equipment across the state. These systems provide critical information to pilots navigating our airways. The status of these systems is continuously monitored, and FAA certification is required to perform maintenance functions. This team is located at the Kearney Regional Airport and is comprised of three full-time employees headed by the Navigational Aids Division Manager, Marcy Meyer.

The Aviation Operations section supports state government air transportation using the state-owned King Air C90GTx. The aircraft is available to all branches of state government for business-related travel. This section operates out of NDOT Central Headquarters and the Lincoln Airport, where the King Air is housed. It is the smallest team, comprised of only two full-time employees and led by the Aviation Operations Chief, David Morris. The Aviation Operations Chief position is currently advertised, as Mr. Morris recently announced his retirement.

The engineering section is the division's largest team and directly supports the state's public-use airports. Primary functions include system planning, support, development, and execution of airport projects, inspection and licensing, airport education, and management of the state-owned airfields (Fairmont, Harvard, and Scribner). The team operates primarily from NDOT Central Headquarters, with two Airfield Managers at the state-owned airfields. The eight full-time employees of the section are supervised by the Engineering Division Manager, Anna Lannin.

Each section is also responsible for a wide variety of non-primary responsibilities that they carry out each day. The division works closely with a wide range of internal and external partners to meet the needs of our aeronautical system. As the Division Director, I am privileged to be able to help shape the team and ensure that they have the necessary resources to meet our obligations to the State of Nebraska. The team at the Division of Aeronautics is genuinely passionate about aviation and dedicates themselves daily to our vision: "A dynamic aviation system which enhances quality of life through infrastructure and services that meet the diverse and evolving needs of all Nebraskans". ■



OUR VISION
A dynamic aviation system which
enhances quality of life through
infrastructure and services that meet the
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Nebraskans.

Wind Shear & Turbulence, When and Where They Can Occur.

By Mark A. Sheldon, University of Nebraska-Omaha, Aviation Institute

As a pilot, there are times when you are going to run into wind shear and/or turbulence. And as a General Aviation pilot, they might be the weather conditions you experience the most. In today's article, I will discuss the different types of wind shear and turbulence you can expect to experience. I will also provide you with information on AIRMETs and SIGMETs, and where you can find these forecasts.

Wind shear is a change in wind speed and/or direction over a short distance. This can be either horizontally or vertically. **Low-level wind shear (LLWS)** occurs below 2,000 ft. Look for LLWS with the passage of fronts. LLWS can occur up to 3 hours behind a cold front, and 6 hours ahead of a warm. The time differential is because the cold front has a steeper slope than a warm front, so the shear will not last as long. Thunderstorms can also cause LLWS when gust fronts are created. Gust fronts are the leading edge of cool air that moves down and away from a thunderstorm. (Foot Stomp: Stay at least 20NM away from thunderstorms). LLWS can also occur because of radiational inversions. This sets up in the evening when the lower atmosphere cools and an inversion develops and will continue to occur until the lower atmosphere warms and the inversion dissipates. NWS and military TAFs will forecast LLWS. It will look like this: WS012/18040KT. Decoded, the WS just denotes Wind Shear. The height is 1,200 ft., and the winds are 18040KT at that level.

Turbulence is caused by irregular or abrupt movement of air that causes the atmosphere to be rough. The degree of roughness depends on the aircraft's size and speed. Increased speed, decreased weight, and increased wing surface area means more turbulence is possible.

Mechanical turbulence is caused as wind flows across the Earth's surface and is slowed due to friction, which causes the wind to swirl and create eddies. This can be enhanced by buildings, trees, or irregular terrain. The intensity of the turbulence will increase as the wind speed increases, and generally occurs below 2,000ft. See Figure 1 below.

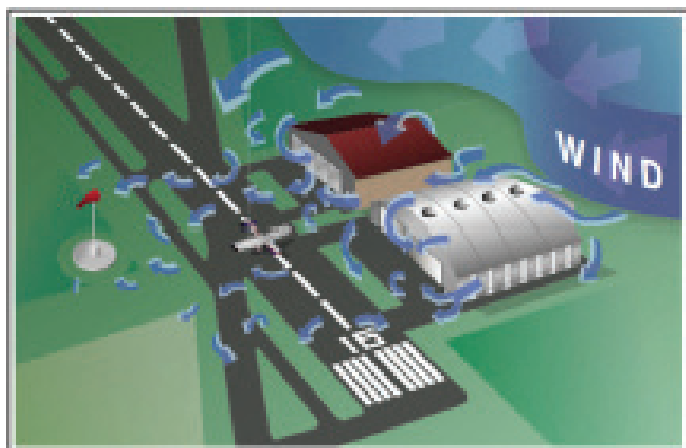


Figure 1: Image Credit weather.gov.

Thermal turbulence is caused by surface heating. Solar radiation is absorbed by the Earth's surface and the air adjacent to it will be heated from below. Warmer air is less dense, so it will want to rise vertically. Normally thermal turbulence is restricted to the lower atmosphere and occurs most frequently during the afternoon hours. It will impact flights mostly during take-off and landings, as well if you are flying at low altitudes. The intensity will depend on the amount of heating that is occurring and the associated wind speeds in the lower atmosphere. To give you an idea of the strength, look at the cloud types: Cumulus clouds - Expect light turbulence, Towering Cumulus - Moderate turbulence, Cumulonimbus (Thunderstorms) - Severe/extreme turbulence.

Another type of turbulence that can affect an aircraft is **Wake turbulence**. Wake turbulence is vortices that are created behind an aircraft that is generating lift and will continue to be created until the plane lands. The size and strength of the vortices will depend on the speed, wing configuration and the size/weight of the aircraft creating them. Generally, the vortices are 25 to 50 feet in diameter. The vortices normally stay close together. If the winds are light, the vortices will stay along the runway until they dissipate. See figure 2 below.

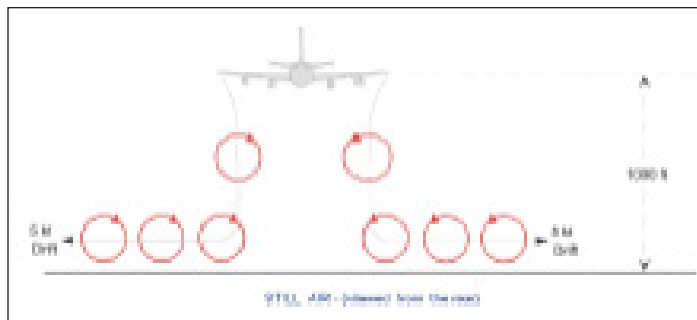


Figure 2: Image Credit simpleflying.com.

If there are crosswinds, the vortices can be pushed by the wind, causing them to move over the runway, or toward a parallel runway if it is down wind. See figure 3 below.

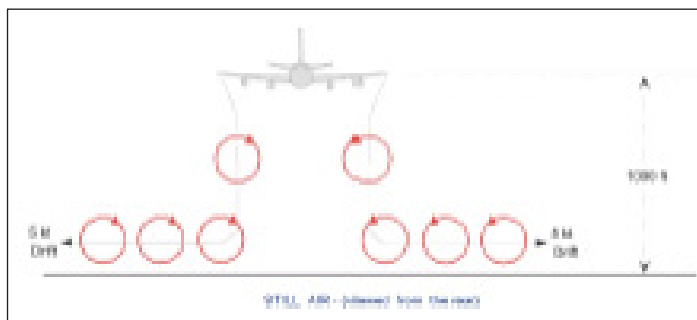


Figure 3: Image Credit simpleflying.com.

Vortices sink at about 500 ft per minute, and level out at about 900 ft below the aircraft and start to dissipate, lasting up to 15 minutes. To avoid wake turbulence, stay at

a flight level above an aircraft in front of you. When taking off, lift off prior to the aircraft in front of you, and when landing, touchdown at a point beyond the aircraft in front of you. Helicopters, especially those that are flying slow (20 – 50 knots), generate very intense wake turbulence.

Mountain Wave turbulence is another type of turbulence pilots need to be aware of, especially in western Nebraska. These are waves that are situated downwind of mountains as stable air is forced over the mountain. As the air is forced up over the mountain, it will want to return to its equilibrium level. But because gravity is also acting on it, it will move down, past the equilibrium level. As it moves downward, it will warm due to compression. Now it is warmer than the surrounding air, so it will start to rise. Once again, it has enough momentum to pass the equilibrium level. These oscillations will continue until the airflow finally reaches equilibrium. Think of this situation as throwing a rock into water. The rock will cause waves to move away from the where it impacts the water. The higher waves will be near the impact point (mountain top) and lessen as the waves move away from the center. Again, look for the clouds to identify that the turbulence is occurring. Altocumulus Standing Lenticular (ACSL), Rotor Clouds, and Cap Clouds, can all be created by the mountain wave. See figure 4 below.

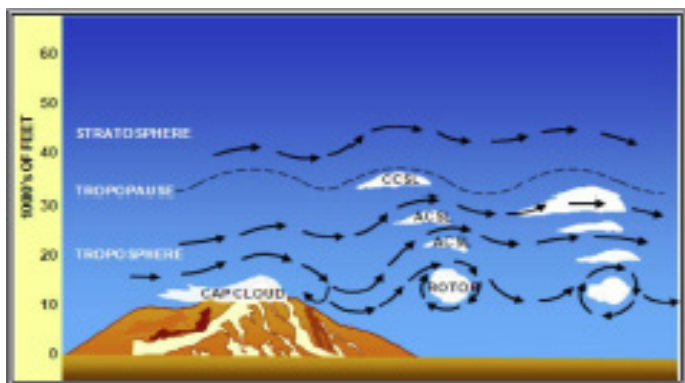


Figure 4: Image Credit fly8ma.com.

Clear Air Turbulence (CAT) is turbulence that occurs above 15,000 ft and away from visible convective activity. CAT occurs in/around the jet stream, troughs, areas of low pressure, and areas of strong temperature gradients. This can be some of the most severe turbulence that airplanes can encounter. It can cause structural damage to the aircraft and severe physical injuries to those who are on the aircraft.

To help you identify areas of potentially dangerous weather conditions, even beyond turbulence, you can go to the Aviation Weather Center (AWC) website. They provide **AIRMET** (Airmen Meteorological Information) and/or **SIGMET** (Significant Meteorological Information) that have been issued. **AIRMETs** are in-flight weather advisories that warn pilots of potentially hazardous conditions. **AIRMETs** are of significant to all aircraft, but light aircraft, aircraft with limited capabilities, and pilots who are not very experienced or are flying under visual flight rule (VFR)

should pay particular attention to them. **AIRMETs** are not only issued for moderate turbulence, but they will also be issued for moderate icing, LLWS, surface winds that are sustained at 30 knots or greater, ceilings less than 1,000 ft and/or visibilities less than 3SM, and extensive mountain obscurations. **AIRMETs** are issued at 0300, 0900, 1500 and 2100 UTC and will be amended as needed. **SEGMETs** will be issued for the most severe conditions that affect all aircraft. These include severe icing (not associated with thunderstorms), severe or extreme turbulence and/or CAT (not associated with thunderstorms), volcanic ash, tropical cyclones, and dust or sandstorms lowering visibility to less than 3SM. Convective **SIGMETs** are issued for severe thunderstorms (winds > 50kts, hail > 3/4in or tornadoes). They are also issued to identify embedded thunderstorms, and lines of thunderstorms. **SIGMETs** are issued for a 4-hour period, but tropical cyclone **SIGMETs** will last for a 6-hour period. To find these on the AWC page, go to the Products Tab, and you will see the links for G-AIRMET and SIGMET there.

Hopefully this article has helped you gain some knowledge on the different types of wind shear and turbulence there are, how they form, and how to avoid them if necessary. I would also suggest if you have not been to the AWC webpage in a while, go look at it. The page was redesigned late last year, so there are some changes in the location of the products they provide.

Safe Flying Everyone!! ■

A General Review for Pilots

David Morris

When we as pilots enter the aircraft, we become an integral part of the man-machine system. We are just as essential to a successful flight as the control surfaces. To ignore ourselves' readiness would be as senseless as failing to inspect the integrity of the control surfaces or any other vital part of the machine. We have the responsibility for determining our reliability prior to entering the aircraft for flight. When piloting an aircraft, we should be free of conditions which are harmful to alertness, ability to make correct decisions, and rapid reaction time.

Fatigue generally slows reaction time and causes errors due to inattention. Hypoxia is a lack of sufficient oxygen to keep the brain and other body tissues functioning properly. We need to keep in mind there is a wide individual variation in susceptibility to hypoxia. Hyperventilation, or over breathing, is a disturbance of respiration that occurs in individuals because of emotional tension or anxiety. Self-medication or taking medicine in any form when we are flying can be extremely hazardous.

These are just ideas on a few of the many factors that can potentially affect our performance as a pilot. We owe it to our passengers, to ourselves, and to ensure a successful outcome of each flight of which we are involved. ■

Dust Devils

Article from General Aviation News



Dust Devil

The National Transportation Safety Board (NTSB) is cautioning on the dangers of dust devils, saying they have been present in more than 170 aircraft accidents it has investigated since 1982.

Noting that dust whirlwinds are often considered a harmless phenomenon, the Safety Board highlighted their hazards to aviation, detailing related accidents involving small fixed-wing aircraft and rotorcraft.

“For pilots unfamiliar with or inattentive to the presence of dust devils, especially when operating at low altitudes, the consequences can be catastrophic,” the agency said in a safety alert, *Dust Devils: Silent Sky Snares*.

Dust devils can occur under clear skies and warm conditions, forming in areas of strong surface heating, NTSB noted, adding that they can be as strong as tornadoes and waterspouts. “Given their often-invisible nature (unless they pick up dust and debris), dust devils pose a risk of sudden and unexpected turbulence for pilots and aircraft, which may lead to rapid loss of lift, uncommanded roll or yaw, or other disturbances,” the Safety Board said.

The NTSB cited related accidents, including a Grumman G-164B Ag Cat that flew through a dust devil after taking off from a dirt airstrip in Saffell, Arkansas. It subsequently lost lift and crashed into a field inverted with substantial damage.

In another instance, an MD-369FF helicopter flew into a dust devil shortly after takeoff in Palm Gardens, Nevada.

The encounter caused a sudden right yaw, loss of lift, and an uncontrollable hop, the NTSB said. “The pilot attempted to maintain control during the descent, but the main rotor struck the tail boom, which sustained substantial damage; the skid gear was also damaged.”

The NTSB provided guidance on detecting dust devils, noting that they can cast a shadow on the ground. “Even if the dust devil doesn’t have visible debris, the vortex itself can cause enough air density and temperature differences to create a visible shadow.” Further, dust devils can leave tracks on the ground, even if they don’t lift debris, the Safety Board added.

“Always be vigilant for the potential presence of dust devils, especially in regions known for them, such as the U.S. Southwest,” the Safety Board advised. “Scan areas thoroughly before takeoff and landing, as well as during low-level flight operations. If operating in areas known for frequent dust devil activity, maintain a higher altitude, when possible, to minimize the encounter risk.”

The NTSB stressed that pilots should not assume visibility equals safety. “Just because a dust devil is not picking up debris doesn’t mean it’s not there.” Additionally, the agency urged pilots to be informed and on the lookout for their potential in weather briefings. Further, if a pilot suspects having flown through one, they should inspect their aircraft. ■

NASA Reports

By Daniel Hassing

As an aviation attorney, one of the first questions I always ask pilots who I counsel is whether they filed an Aviation Safety Reporting System Report (a NASA report) about the incident that led to them contacting me. Too often, my clients tell me “no.” When I ask why, I usually get one of three responses: (1) I don’t know what a NASA report is; (2) Why would I file one when I didn’t do anything wrong?; and (3) I don’t want to burn my “get out of jail free” card. Each of these answers is based on either ignorance or a misunderstanding and, in this article, I hope to explain why.

First, what is a NASA report? In short, NASA administers an aviation safety reporting system for the FAA. The FAA believes that the voluntary sharing of information regarding events will make the skies safer. To encourage people to provide information, NASA administers the program and, in most cases, removes identifying information of pilot before sharing the information with the aviation community. Basically, through the NASA reporting system, the FAA gets anonymous safety reports that help make the skies safer.

NASA reports are good to file for two reasons. For one, a timely failed NASA report will generally result in a waiver of sanction if the FAA pursues enforcement based on the incident. What that means is that while you may have a violation on your record, your certificate will not be suspended or revoked. This is a personal benefit to you and is reason enough to file NASA reports.

There is also a benefit to the broader community as well. NASA reports provide information to the FAA that it otherwise might not receive. For instance, if a particular aircraft has a higher incidence of landing gear malfunctions, the FAA can learn

about that through NASA reports. In short, even if you didn’t do anything wrong and don’t need the waiver of sanctions, giving the information to the FAA helps you and your fellow pilots.

Lastly, while the waiver of sanction—the “get out of jail free” card—may only be used once every five years, it is not the filing of a NASA report that “burns” the card. Rather, to use the card, you must not have been found to have committed a violation within the preceding five years. In the era of the FAA’s Compliance Program, where most inadvertent violations result only in counseling or remedial

training, it is increasingly unlikely that the FAA will bring enforcement action. Concern about burning your “card” is not a reason to not file a NASA report.

Long story short, if anything out of the ordinary happens during a flight, you should consider filing a NASA report, except if you were engaged in criminal activity or the flight resulted in an “accident” as defined by the NTSB. Outside of these two narrow exceptions, the filing of a NASA report is a good idea as it provides a level of protection to you and also provides information to the FAA to help it keep the skies safe. ■

Federal Aviation Administration (FAA) Medical Certification Statistics

By David Morris

During a typical year the FAA processes over 400,000 pathological records and considers over 34,000 Special Issuance waivers. FAA statistics reveal that over 90+% of the denied pilots did not provide sufficient documentation. Below is a partial list of conditions being certified by the FAA:

Condition	No. of Medicals Issued
AIDS/HIV	72
Alcohol Issues	38,603
Diabetes	8,252
Cardiology (Complete Heart Transplant)	4
Deafness	4,210
Stroke/Seizures	1,729
Transsexual Surgery	72
Color Deficiency	8,997
Kidney/Liver/Lung Transplant	194
Kidney Stones	22,634
Sleep Disorder	15,876

I thought you might find this partial list of conditions being certified by the FAA of interest as we prepare to establish our eligibility for FAA medical certification. ■

Learjet's Coffin Corner

By David Moll

Here is some history for your reading pleasure: Years ago some pilots believed they were experts on the aerodynamics of the Learjet. My guess is that most of these boisterous "experts" had never flown a Learjet. Or if they had, they confused turbulence or an out of adjustment autopilot with aerodynamic flaws. They would spew out terms like Coffin Corner, Mach Tuck and Aileron Buzz that turns into slamming the control yoke stop to stop breaking pilot's wrists to sound like they are Chuck Yeager. Therefore, in 1984 the engineering test pilot for Learjet, Pete Reynolds, wrote a report on this misinformation and speculation on the aerodynamics of the Learjet. In this report he addresses and refutes the unbelievable claims mentioned above. Excerpts from his report are below:

Coffin Corner:

When somebody says they have flown the Learjet into Coffin Corner (typically at 41,000 to 51,000 feet) it means they think they were within 2 or 3 knots of exceeding redline (Mmo), while at the same time within 2 or 3 knots of stalling. If that were the case, the Angle of Attack would be showing a stall and the "pusher" would have already pushed the control yoke forward as the Learjet safety system to avoid stalls had activated. Then when you go over redline, the "puller" safety system would have pulled the yoke backwards to slow down.

These safety features are never mentioned in their totally falsified story. Reynolds says, "The typical 1G speed margin between low speed buffet and Mmo (redline) in the Learjet is 100 knots at 41,000 feet, and 45 knots at 51,000 feet." He concludes, "no business jets have enough thrust to climb to the 'Coffin Corner' altitudes.

Aileron Buzz

The Learjet is like most airplanes with cables running basically from the control yokes to the ailerons. Reynolds refers to these as reversible where one aileron goes up while the opposite aileron goes down or non-powered flight controls. Reynolds quotes, "Aileron buzz is a transonic phenomenon that will occur on most airplanes that have reversible or non-powered flight controls at high enough Mach number." "At no point do the ailerons slam from stop to stop." "Aileron buzz is not flutter." Only aileron flutter will cause the control yoke to slam stop to stop and will continue to increase until structural failure occurs. All airplanes certified by the FAA are designed to eliminate any and all potential flutter issues.

Mach Tuck

First of all I need to mention the redline in the Learjet models is basically .82 Mach, or 82% of the speed of sound. Reynolds uses a term called True Mach number, which is simply indicated Mach number corrected for temperature and

altitude. Reynolds describes "Mach Tuck" to describe a nose down pitch tendency in the transonic speed range. "In the Learjet, the control force required to keep the nose from lowering at .86 True Mach number or .88-.89 Mach indicated (in other words, way over redline) is only about ten pounds, or barely perceptible to the pilot." Reynolds continued to note that a "Mach Trim" system was incorporated in later models that would trim the nose up slightly, as the Mach number increased, thus eliminating any effects of this "Tuck." Conversely, Mach Tuck as described by the uneducated, is where the aircraft nose is pitched down (maybe straight down) is uncontrollable and is unrecoverable.

In reviewing each of these conditions, have you noticed that every perceived Learjet flaw has been sensationalized to where fiction is now fact if it is said enough times? Sounds like social media posts these days. The FAA has guaranteed you will never see any of the above dangerous conditions by flying within the limitations of the flight manual. Since I earned my Learjet type rating in April of 1976, I have flown the 23, 24, 25, 31, 35 and 55 Learjet models and not once have I experienced any of these flaws. They were fantastic airplanes that unfortunately are no longer in production. ■

My Flight on September 13th, 2001

David Moll

I'm sure everybody who was in aviation September 11th will question the title of this article. Yes, almost all the airplanes were grounded, except for the one I was flying. So, read on.

At my last recurrent training session in January of 2024, a pilot came up to me and said – are you David Moll, and if so do you remember me? He continued saying, you and I flew the head of the Red Cross Disaster relief from Atlanta's PDK airport to Westchester County Airport (White Plains, N.Y.) on September 13th, 2001, just two days after 9/11. It only took me a second after he told me his name was Tony Egart and all the memories of that trip came back to me.

In 2001, Tony was called by the flight coordinator of the Atlanta "Angel Flight" organization to fly the Red Cross leader to the terroristic disaster in New York. Tony was a part-time pilot I was using in our flight department, so he called me. Of course with all the aircraft in our nation grounded, a flight like this needed special FAA approval, as well as probably so many other agencies at that time. Bernadette, the flight coordinator of Angel Flight, was a master at making flights work and didn't know the meaning of "no you can't do that". Apparently the first approval came back as a one-way flight only. She would not accept that and would only accept a round trip approval. Not only did she get approval for a round trip to get the crew home, she also received approval to bring onboard several reporters and a cameraman from WSB, one of the local TV stations.

After we took off, nobody was on any the frequencies we were assigned, and no doubt we were

High and Low Altitude Turbulence Charts

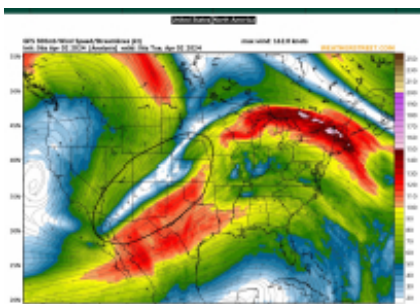
By David Moll

Below are two screen shots that peaked my interest the other day. The first is from a website called weatherstreet.com showing the wind direction and speed at 300 millibars (mb) or approximately 30,000 feet. It's a great flight planning tool regardless of the altitude you will be flying at. Note the section that I circled where there is a dramatic change in wind direction and speed in a very short area.

The second screen shot, from turbulenceforecast.com, showing moderate turbulence between 31,000

feet to 41,000 feet. I think the effective time is somewhat different, but the area I have circled is close enough to matching the area of wind change, could be of concern.

These charts aren't only for jets. The green highlighted area is moderate turbulence from the surface to 18,000 feet. This area is pretty close to being underneath the same area on the wind speed chart where the upper winds are about 120+ knots. It also shows LLWS or Low Level Wind Shear. ■



Weather Forecast Charts

probably followed by one of the many military jets in the air at that time. The remains of the twin towers were still smoking as we were vectored around New York City on our way to Westchester County airport. It was a very sad sight to see after flying into the New York and New Jersey areas for so many years.

One funny situation occurred when the Red Cross lady asked if her rental car had been delivered to the FBO yet. The customer service person made a huge mistake and said – nope, so you'll have to hike up to the terminal and get it yourself. One of the reporters was originally from New York, and she absolutely unloaded on that person and in no uncertain terms told her to get off her backside and get to work.

After our passengers had left, we took off and made a turn westerly as instructed. About overhead

Teterboro, a clearance of direct back home was given to us.

Everybody remembers where they were when the jets crashed into the towers but really didn't know how to help. Angel Flight was the perfect choice because they only use private aircraft to transport patients for medical care. Westair, the owner of the Citation 650, saw the opportunity to help and donated the aircraft and paid for all the fuel, while Tony and I donated our time. We were all Americans doing what was right for America. Sadly, this is something we don't see too much of anymore in today's highly partisan and divided nation.

Now that I'm in the twilight of my career, I thought it was important the youth of today's aviation know the rest of the story. ■

A Final Word

By David Morris

Aircraft are truly remarkable machines. They enable us to shrink distance and time, and to expand our business and personal horizons in ways that, not too many years ago, were virtually inconceivable. For many the general aviation aircraft has become the indispensable tool of efficiency.

Advances in the mechanical reliability of the aircraft we fly have been equally impressive. The explosion in capability of avionics systems is even more remarkable. Just a few years ago, many of these systems were too large and prohibitively expensive for general aviation size aircraft and are now becoming increasingly commonplace in even the smallest aircraft.

As pilots we need to embrace all the safety information we can in the area of skill and proficiency to ensure the greatest gains in safe flying are to be made over the years to come. Intimate knowledge of our aircraft, its capabilities and its limitations, and disciplined adherence to the procedures for our airplane's operation, will enable us to transform potential tragedy into an interesting hangar story when – as it inevitably will – the abnormal situation is presented. Know your aircraft's limitations, and your own and never exceed either.

Aviation Trivia

Take a look at some aviation trivia and see if there are any facts you do not know....

- **What airplane can fly the longest amount of time without refueling?**
Boeing 777 – 200LR. The Boeing 777-200LR holds the world record for the longest non-stop flight without refueling with a flight distance of 11,664 nautical miles.
- **What is the current longest scheduled flight without stopping?**
The longest nonstop commercial flight in the world is scheduled at 18 hours and 50 minutes from Singapore (SIN) to New York City (JFK) serviced by Singapore Airlines.
- **Who was referred to as the "Father of old Aviation"?**
Sir George Cayley was first called the "father of the aeroplane" in 1846. During the last years of the previous century he had begun the first rigorous study of the physics of flight and would later design the first modern heavier-than-air craft.
- **What is the current most expensive scheduled flight in the world?**
The most expensive flight ticket currently available is not Emirates but Etihad Airways. The ticket for the Etihad Airbus A380 suite "The Residence" on the route New York City/JFK – Abu Dhabi/AUH costs a hefty \$65,652.78 US dollars.
- **Who is considered the Mother of all aviation?**
With 500 jets, Air India seals mother of all aviation deals.
- **Who owns the most expensive airplane in the world?**
The world's most expensive private jet belongs to Prince Alwaleed bin Talal of Saudi Arabia who owns an Airbus A380 with a price tag of over 500 million USD.

A Review on Weight and Balance Terms

David Morris

1. The weight of an empty airplane including unusable fuel, full operating fluids (hydraulic fluids) and full engine oil is referred to as _____.
2. Standard empty weight plus optional equipment is referred to as the _____.
3. Maximum Ramp Weight - Basic Empty Weight = _____.
4. How much weight you can carry besides basic empty weight and fuel is referred to as _____.
5. The maximum allowable weight mass for surface operations is referred to as _____.
6. _____ is usually a structural limit but may include calculations based on missed approach climb performance.

Weight and Balance Review Answers

1. Standard Empty Weight
2. Basic Empty Weight
3. Useful Load
4. Payload
5. Maximum Ramp Weight
6. Maximum Landing Weight

Instrument Flight Rules Quiz

1. To meet the minimum instrument experience requirements, within the last six calendar months you need to have flown _____?
2. An instrument rated pilot, who has not logged any instrument time in one year or more, cannot serve as pilot in command under IFR, unless the pilot _____?
3. The enroute weather is IMC. However, during the descent on an ILS approach, you encounter VMC prior to reaching the initial approach fix. To log the approach toward instrument currency _____?
4. When is an IFR clearance required during VFR weather conditions?
5. What minimum conditions must exist at the destination airport to avoid listing an alternate airport on an IFR flight plan when a standard IAP is available?
6. An airport without an authorized instrument approach procedure may be included as the alternate on an IFR flight plan if the forecast indicates that the ceiling and visibility at the ETA will _____?
7. The fuel requirements for flight in IFR conditions states that you must have enough fuel to fly to destination, your alternate, and have a reserve of _____?
8. If a pilot chooses to fly to the selected alternate, the landing minimums used at that airport should be the _____?
9. Which items are included in the basic empty weight of an aircraft?
10. If you have filed an Instrument Flight Rules (IFR) flight plan to an airport that has no published instrument approach procedure for that airport, and the weather is forecasted to be Visual Meteorological Conditions (VMC), are you required to file an alternate airport in your IFR flight plan?
11. Which procedure should you follow if, during an IFR flight in VFR conditions, you have two-way radio communications failure?

Answers

1. To act as pilot in command in instrument meteorological conditions (IMC), the pilot needs at least six instrument approaches, actual or simulated, within the preceding six months in the appropriate category of aircraft or an aircraft category representative flight simulator or flight training device.
2. If a pilot does not meet instrument experience requirements within the prescribed time, he/she may not fly under IFR or in IMC conditions until they pass an IPC in the category of aircraft involved, given by an approved DE, CFI, or FAA inspector. Completing six hours and six approaches prior to the IPC is not required.
3. Instrument currency requirements must be accomplished under actual or simulated instrument conditions. You can do this by wearing a view-limiting device, flying an approved flight-training device, or flying in actual IMC. The FAA does not require the ceiling to be at MDA or DA/DH during a flight in IMC. The approach may still be logged if an aircraft maneuvering in IMC transitions from IMC to visual meteorological conditions (VMC) on the final approach segment of the IAP prior to or upon reaching MDA or DA/DH.
4. Each person operating an aircraft in Class A airspace must conduct that operation under instrument flight rules (IFR). No person may act as pilot in command under IFR unless that person holds the appropriate pilot certificate with an instrument rating.
5. For aircraft other than helicopters, at least one hour before and one hour after ETA, the ceiling must be at least 2,000 feet above the airport elevation and the visibility must be at least three statute miles.
6. If no instrument approach procedure is available for the alternate airport, the ceiling and visibility must allow descent from the MEA, approach, and landing under basic VFR.
7. No person may operate a civil aircraft in IFR conditions unless it carries enough fuel to complete the flight to the first airport of intended landing, and from that airport to the alternate airport, and fly after that for 45 minutes at normal cruising speed.
8. If an instrument approach procedure has been published for the alternate airport, the pilot must use the approach minimums specified in that procedure. Alternate minimums are not shown on an approach chart. IFR alternate minimums only apply for flight planning purposes. They do not apply when proceeding to the alternate.
9. The basic empty weight of the aircraft includes unusable (residual) fuel and full engine oil. Some older aircraft have different specifications listed under Licensed Empty Weight.
10. Yes. Refer to FAR 91.169(a)(2).
11. If two-way radio communications failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, continue the flight under VFR and land as soon as practicable. The new destination may or may not be the nearest airport that has VFR conditions and depends on the specific requirements or conditions of the flight.

Watch the National Celebration of General Aviation DC Flyover Live!

By AOPA Magazine

A diverse array of aircraft, representing every era of general aviation, will grace the skies above Washington, D.C.'s National Mall on May 11, watch this exciting event live with thousands of others across the US! This event honors the General Aviation industry's contributions to the nation, coinciding with AOPA's 85th anniversary in May 2024. Scheduled for May 11 (rain date May 12), the flyover will begin its journey over DC at 11:30 a.m. and will be seen flying over D.C. from noon to 1 p.m. The event will be live-streamed on AOPA's YouTube channel, you are encouraged to throw a watch party at your local airport.

The flyover, consisting of 15 chapters, will depict the history

of general aviation in America. Twenty-four groups of aircraft will fly the 88-mile round trip from FDK down the Potomac River, led by AOPA President Mark Baker in his historic Beechcraft Staggerwing.

This unprecedented event will take place within Washington, D.C.'s restricted flight zone, P-56, a first

for general aviation aircraft. Onlookers online will witness the impressive

display above iconic landmarks such as the Lincoln Memorial and the Washington Monument. Commentary will be provided by AOPA's Thomas B. Haines and former CNN correspondent Miles O'Brien from the rooftop of the National Museum of American History ■

SATURDAY, MAY 11, 2024
(rain date Sunday, May 12)
11:30 a.m. – 1:00 p.m. (EDT)

Events Calendar

Please check the Aeronautics web page for a list of upcoming aviation events.

Crete Airport (KCEK)
EAA Chapter 569 Fly-in Breakfast
3rd Saturday of every month,
8:00 a.m. - 10:00 a.m.
Suggested donation:
\$10 for adults; \$5 for kids

3rd Thursday Pilot Lunch
Jams – Midtown
7814 West Dodge Road,
Omaha, NE 68114
3rd Thursday of every month at
11:00 a.m.

Sioux City airport KSUX
Pancake Breakfast
Sat. May 4, 2024

8:00 a.m. to 12:00 p.m.
The breakfast is to benefit
the Mid America Museum of
Aviation and Transportation
In addition to the Pancakes we
will have EAA Young Eagles
flights weather permitting.
The event will be held on the
south ramp at Revv Aviation.

Pender Ne .0c4
flyin breakfast
Sunday June 30, 2024
8:00 a.m. to 11:00 a.m.
PIC eat free.
contact John Miller 816-210-2081
jamiller1976@hotmail.com

Registration Now Open

The Air Race Classic women's cross-country air race is set to launch June 18 from Southern Illinois Airport in Carbondale, Illinois. The race will conclude June 21 at Northern Colorado Regional Airport in Loveland, Colorado. The total course is 2,628 statute miles.

New Entry Procedures In Effect In Mexico

According to an internal memo, the Mexican Federal Civil Aviation Agency implemented new entry procedures for all foreign aircraft entering the country starting January 1. The new "Single Entry Authorization" (Autorización de Internación Única) is required for all foreign registered aircraft and is valid for 180 days; during that time aircraft may enter and depart Mexico freely.

The Nebraska Division of Aeronautics is Hiring!

Visit <https://statejobs.nebraska.gov/> and search for "Aviation Operations Chief" to learn more about how you can join NDOT as a pilot and manage the Flight Operations Division.