Higher Living

Last quarter of the year again. Didn't we just put away the Christmas decorations?

I hope each of you have been out flying. The recent weather has been quite nice for it.

Most recently we have been working to add a Cessna 172 to the two that we already have in the fleet. It looks like this will happen soon and more information will be available as we get closer to making it a reality.

515DH is currently in the shop getting its new engine. Soon it will back even better than before.

So far this year we have had 27 people either solo or get a pilot certificate or advanced rating. There will be more before the last quarter concludes. Congratulations to all those folks! Be sure to visit the Hall of Fame to check out the hard work.

I want to thank each of you for making 2023 a very safe year for flying. It is through your constant attention to detail that all our flying has happy endings.

Be sure to tell all your interested friends about Executive Flight Training…our waiting list is currently short and we can get new pilots started quickly.

Come fly with us.

- David Williams, Editor

The "Higher Living" newsletter editor can be reached at david@execft.com Your feedback and article subject suggestions are welcome.

Contact Us

Phone: 919-897-8882

Schedule your next aviation adventure at www.ExecFT.com

Located in the FBO at 700 Rod Sullivan Road, Sanford, NC.

Airplane & Instructor Rates

Discovery Flight	$119
Wet rate for rentals. Tax is included.	
Cessna 172 N30617	$205/hr
Warrior N41669	$185/hr
Warrior N9626C	$180/hr
Cherokee N720FL	$165/hr
Cherokees N515DH, N711FL	$155/hr
Cessna 172 N3816Q	$170/hr
Instructor time	$50/hr
CFI/CFII training	$60/hr
Redbird TD2	$40/hr

Instrument Approach Testing

You may have wondered if instrument approaches are routinely tested for accuracy. If course the answer is yes and occasionally you can hear the "Flight Check" call sign in use at KTTA while the checks are being made. The Atlanta Flight Inspection Field Office is responsible for ensuring that all instrument approaches in North Carolina are operating properly and that the approach procedures that use the systems are properly notated.

The Federal Aviation Administration (FAA) regularly tests and maintains Instrument Landing Systems (ILS) to ensure their accuracy and reliability. You probably know that ILS is a ground-based navigation system that helps guide aircraft safely to a runway during low-visibility conditions. Here's an overview of how the FAA tests ILS:

The FAA requires airports to perform regular inspections and maintenance of ILS equipment to ensure it meets the required standards for accuracy and reliability. These inspections include checking the localizer and glide slope transmitters, antennas, cabling, and associated systems.

Calibration and alignment are critical to maintaining the accuracy of the ILS. Highly specialized equipment is used to precisely align and calibrate the localizer and glide slope antennas to their correct positions and angles. This ensures that the transmitted signals provide accurate guidance to approaching aircraft.

The FAA operates a Flight Check Program, which involves dedicated aircraft equipped with specialized equipment to perform flight inspections of navigation aids, including ILS systems. These flight checks are typically conducted at regular intervals to verify the accuracy of ILS signals and identify any discrepancies. In early September they were flying the approaches and scanning the signals at KTTA.

ILS signals are normally continuously monitored for any anomalies or interference. If any issues are detected, airport personnel and FAA technicians investigate and rectify the problems promptly.

If an ILS system or any part of it is found to be temporarily out of service or not operating correctly, the FAA issues a Notice to Airmen (NOTAM). Pilots are informed of these NOTAMs so they can plan their flights accordingly. As I write this the ILS at KTTA is out of service due to a problem with the localizer.

When maintenance or repairs are required for ILS equipment, the FAA and airport authorities work together to coordinate the necessary work. This may involve shutting down the ILS temporarily while repairs are conducted, and NOTAMs are issued to inform pilots of the outage.

ILS systems must undergo periodic recertification to ensure they meet the FAA's requirements for accuracy and safety. This process includes an assessment of the ILS's performance and alignment.

The FAA places a strong emphasis on quality assurance and continuous improvement in the maintenance and operation of ILS systems. Regular audits and reviews are conducted to identify areas for enhancement and ensure compliance with safety standards.

If you want more information, you can go to this website. https://www.faa.gov/air_traffic/flight_info/flight_ops/flightinspection/fieldoffices/atlanta

Who Actually Checks Tower Information on Sectional Charts?

The single item that changes most on aviation charts is the information about towers. New ones come into the picture with every chart cycle. In the Federal Aviation Administration (FAA), the responsibility for checking obstruction information on aviation sectional charts primarily falls under the purview of various FAA personnel and offices. Here are the key individuals and entities involved in this process:

FAA cartographers are responsible for creating and updating aviation sectional charts. They work in the FAA's Aeronautical Information Services (AIS) office. These professionals compile data on obstructions and terrain, and they use specialized software and databases to design and produce sectional charts that pilots rely on for navigation.

Aeronautical Information Specialists (AIS) play a crucial role in gathering and verifying aeronautical data, including obstruction information. They work closely with FAA cartographers to ensure that the sectional charts are accurate and up to date. AIS personnel often collaborate with other agencies and organizations to obtain relevant data on obstructions.

FAA Regional Offices across the United States oversee aeronautical information for their respective regions. They may have personnel dedicated to reviewing and updating obstruction data specifically for their region. These offices collaborate with local authorities and aviation stakeholders to ensure that obstruction information is current and accurate.

Air traffic controllers are also essential in monitoring and reporting obstructions, especially in the vicinity of airports and within controlled airspace. They may identify new obstructions or changes to existing ones during routine operations and report them to the appropriate FAA offices for chart updates.

Local governments and aviation authorities often collaborate with the FAA to provide data on obstructions within their jurisdictions. They may conduct surveys, inspections, or studies to identify and report obstructions, which the FAA then incorporates into sectional charts.

Pilots and members of the aviation community are encouraged to report any discrepancies or new obstructions they encounter while flying. They can provide valuable real-time information to the FAA, helping to keep sectional charts accurate.

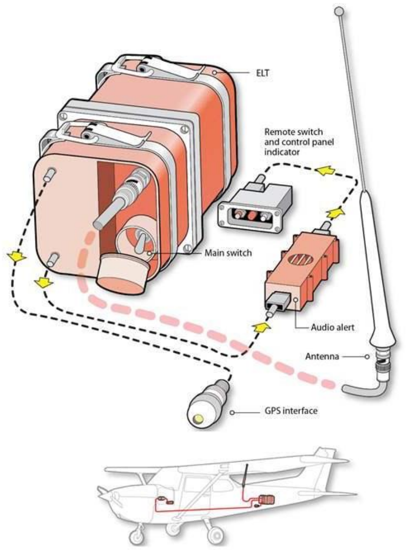
FAA Safety Inspectors, particularly those involved in air traffic control and airport operations, play a role in identifying obstructions that could pose safety hazards. They work in coordination with other FAA personnel to ensure that obstruction information is reflected on sectional charts.

Overall, ensuring the accuracy of obstruction information on aviation sectional charts is a collaborative effort involving various FAA offices, personnel, local authorities, and the aviation community. This cooperative approach helps maintain the safety and reliability of aeronautical charts used by pilots for navigation.

https://www.faa.gov/air_traffic/obstruction_evaluation

How Does an ELT Work?

A small airplane's Emergency Locator Transmitter (ELT) is a critical piece of equipment designed to aid in search and rescue operations in the event of an emergency or crash. Here's how a small airplane ELT typically works:



ELTs are designed to automatically activate in the event of a significant impact or crash. Modern ELTs are equipped with accelerometers or G-switches that detect sudden deceleration, such as that experienced during a crash.

In addition to automatic activation, ELTs can be manually activated by the pilot or passengers. This can be important if you are forced to make an emergency landing, and the impact is not strong enough to trigger automatic activation.

ELTs transmit distress signals on a specific frequency of 406 MHz. This frequency is used for satellite-based search and rescue operations. In addition, many ELTs also transmit an analog signal on 121.5 MHz, which can be received by nearby aircraft or ground-based search and rescue teams.

The 406 MHz distress signal is transmitted to a network of satellites. These satellites continuously monitor the distress frequency and can quickly locate and identify the source of the distress signal.

Many modern ELTs are equipped with built-in GPS receivers. This allows the ELT to transmit not only a distress signal but also precise location information. This can significantly expedite the search and rescue process, as rescuers can pinpoint the exact location of the emergency.

ELTs often include information about the aircraft, such as its registration number and owner/operator details. This information is transmitted along with the distress signal, helping search and rescue teams identify the aircraft in distress.

ELTs are powered by a self-contained battery designed to operate for a specified duration, typically at least 48 hours. This ensures that the ELT can continue to transmit signals even if the aircraft's electrical systems are damaged in the crash.
When a distress signal is received by the satellite system, search and rescue authorities are alerted. They can quickly determine the location of the distress signal and dispatch rescue teams to the scene.

It's important for pilots to regularly inspect and test their ELTs to ensure they are functioning correctly. ELTs have a limited battery life, and batteries should be replaced as per the manufacturer's recommendations to ensure that the device remains operational in an emergency.

Forward vs. aft Center of Gravity

We all know that keeping the airplane within its center of gravity limits is part of preparing for a flight. We know that going too far forward or too far back will cause instability or dangerous control situations. But what is going on between those two points. What is changing as we shift the center of gravity? Turns out there are at least four factors to consider as the CG moves, even when within the allowable limits.

A quick review. The center of gravity (CG) in an aircraft affects its stability and handling characteristics. It represents the point at which the total weight of the aircraft is concentrated. The location of the CG can have significant implications for the aircraft's flight performance, and it can be categorized into two main positions: forward center of gravity and rearward center of gravity. Here are the key differences between them:

Forward Center of Gravity (Forward CG):

- Stability: When the CG is located forward of the aircraft's designed or recommended CG range, the aircraft tends to be more stable. It means it is less prone to abrupt pitch (nose-up or

nose-down) changes and is generally easier to control.
- Control Response: An aircraft with a forward CG may have somewhat sluggish control responses, which can make it less agile but more stable, particularly in turbulent conditions.
- Stall Behavior: A forward CG can result in a more gentle and predictable stall behavior. The aircraft is less likely to enter a deep stall and is more likely to recover from a stall with minimal pilot intervention.

Rearward Center of Gravity (Rearward CG):

- Stability: When the CG is located aft of the recommended range, the aircraft becomes less stable. It is more sensitive to control inputs and can be challenging to handle, especially in turbulence.
- Control Response: Aircraft with a rearward CG tend to be more responsive and agile, which can be desirable for certain types of flying, such as aerobatics. However, this responsiveness can become a liability if not properly managed.
- Stall Behavior: A rearward CG can result in more abrupt and less predictable stall behavior. The aircraft may be more prone to entering a deep stall, which can be dangerous.
- Takeoff Performance: Aircraft with a rearward CG may have poorer takeoff performance, requiring longer runways to achieve lift-off.

It's important to note that aircraft are designed with a specific CG range, and pilots are required to ensure that the CG falls within this range during flight. This is typically achieved by loading the aircraft with passengers, cargo, and fuel in a way that keeps the CG within the prescribed limits. Deviating from these limits can have significant consequences for flight safety.

The precise CG range for a particular aircraft is outlined in its flight manual or operating handbook, and you must adhere to these guidelines to ensure safe and stable flight.

Crew Resource Management

In the dynamic and complex world of aviation, safety is paramount. The aviation industry has evolved significantly over the years, and one of the critical developments in ensuring safety and efficiency is Crew Resource Management (CRM). CRM is a systematic approach that focuses on enhancing communication, teamwork, and decision-making within flight crews. Remember that just because you fly alone doesn't mean you don't have access to a crew. The sophisticated avionics in most airplanes can help you in ways that would not have been possible before. You always have access to Air Traffic Controllers who are there to help you if they can.

The Evolution of Crew Resource Management

CRM has its roots in the aviation industry, and its emergence can be traced back to a series of accidents in the 1970s that highlighted the need for improved communication and teamwork in the cockpit. Before CRM, the aviation industry primarily focused on technical skills and knowledge. However, it became evident that human factors, such as miscommunication and inadequate teamwork, played a significant role in accidents and incidents.

As a response to this realization, CRM was developed to address these human factors. Initially, it involved training programs and courses aimed at improving interpersonal skills, communication, and decision-making among flight crews. Over time, CRM evolved to include a broader set of principles and found applications in various high-risk industries beyond aviation, including healthcare, maritime, and the military.

Core Principles of Crew Resource Management

Effective communication is the cornerstone of CRM. Crew members must clearly and concisely convey information, share concerns, and ask questions. Open and honest communication ensures that all team members are aware of the situation and can contribute to decision-making.

CRM emphasizes the importance of collaboration and teamwork among crew members. It encourages the utilization of each team member's strengths and expertise to collectively solve problems and make informed decisions.

In high-pressure situations, quick and informed decision-making is crucial. CRM promotes the use of structured decision-making processes and encourages crew members to evaluate all available options before choosing a course of action.

CRM training emphasizes the need for all crew members to have a clear understanding of the current situation. This includes awareness of aircraft systems, weather conditions, and potential hazards. Situational awareness enables informed decision-making and risk mitigation.

CRM recognizes that leadership is not limited to the captain. All crew members should be prepared to take on leadership roles when necessary, and the concept of "followership" is equally important, ensuring that all team members support and contribute to the overall mission.

Applications Beyond Aviation

While CRM originated in aviation, its principles have been applied successfully in various industries:

CRM has been adapted for healthcare settings to enhance patient safety. In the medical field, it helps improve communication among healthcare providers, reduce errors, and enhance patient outcomes.

Maritime organizations use CRM to improve safety aboard ships and enhance teamwork among crew members. It is particularly important during emergency situations at sea.

The military employs CRM principles to enhance decision-making, communication, and teamwork among soldiers in combat situations. It helps ensure mission success and reduces the risk of friendly fire incidents.

Crew Resource Management has proven to be a vital tool in enhancing safety and efficiency in high-risk industries. Its core principles of communication, teamwork, decision-making, situational awareness, and leadership/followership can be adapted and applied across a wide range of professions.

Question of the Quarter

Which airline currently refers to itself as “Brickyard” when communicating with air traffic control and why?

Answer:

Republic Airline, headquartered in Indianapolis, uses the nickname Brickyard on the radio. It is a reference to the Indianapolis Motor Speedway which was formerly paved with brick and is now sometimes called the brickyard.

You just learned something new.