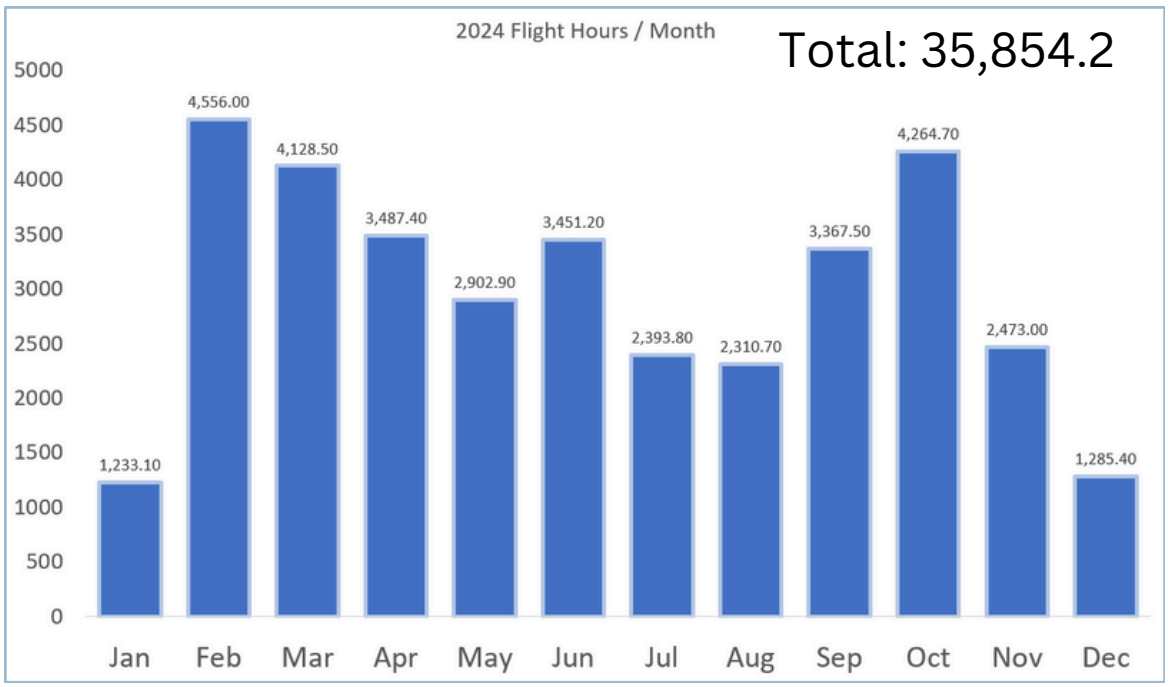
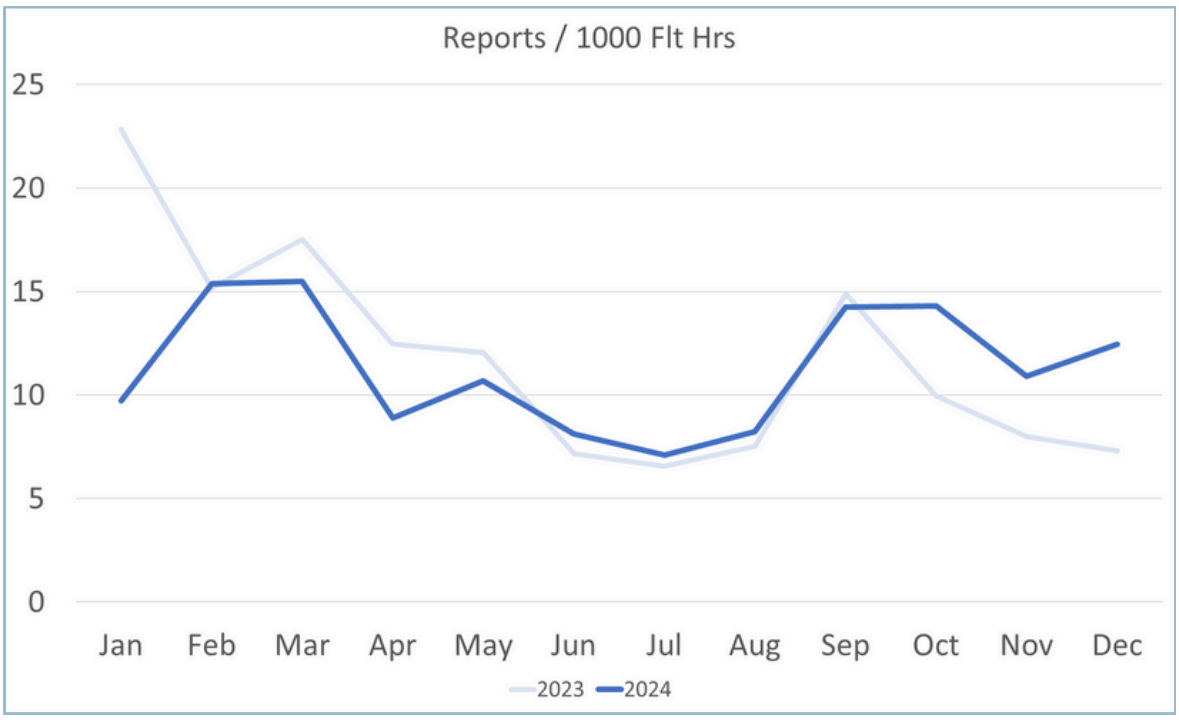
YEAR IN REVIEW

As we reflect on 2024, we're proud to share the highlights of our commitment to safety, operational excellence, and continuous improvement.



We flew almost **36,000** hours!



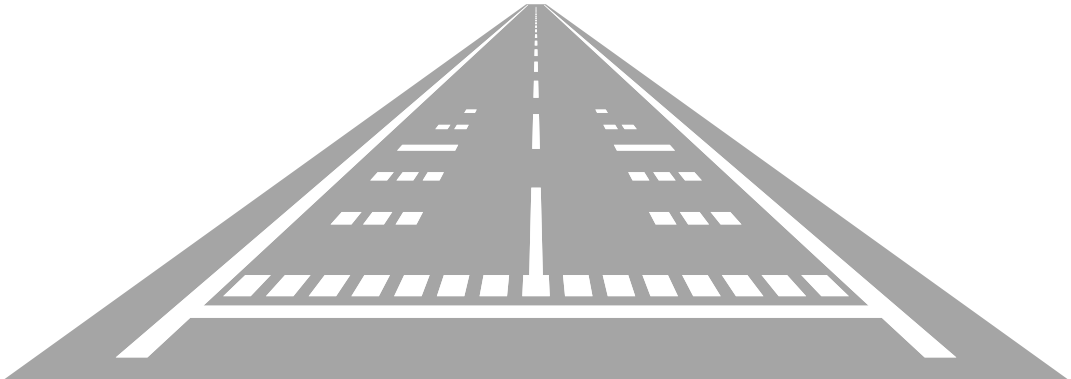
424 total reports submitted
An average of **35** reports / month

MOST WANTED LIST

MTSU Aerospace's Safety Objectives

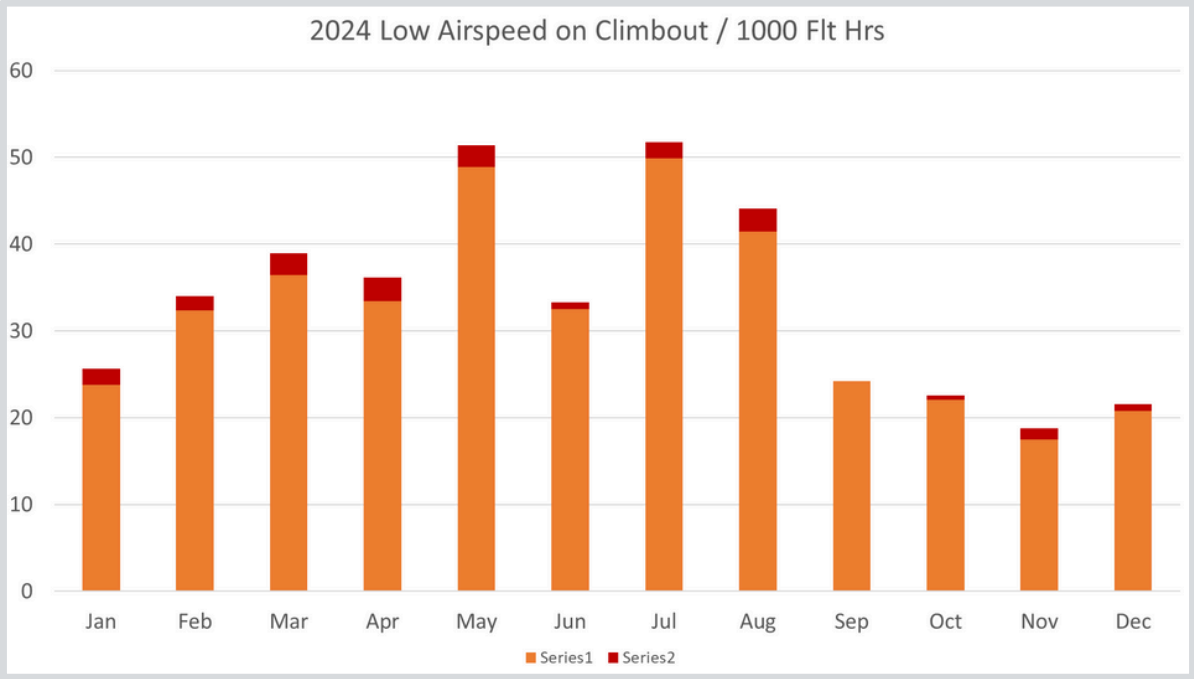
The NTSB's Most Wanted List was created in 1990 and retired in 2023. For over 30 years it highlighted transportation safety improvements needed to prevent accidents, reduce injuries, and save lives. This is MTSU Aerospace's MWL.

1. **Reduce Low Airspeed on Climbout/Approach**
2. **Reduce Proximity Events**
3. **Reduce Low Altitude Events**
4. **Increase Safety Council Participation**
5. **Increase Concentration-Wide Participation**



1 LOC-I Low Airspeed on Climbout/Approach

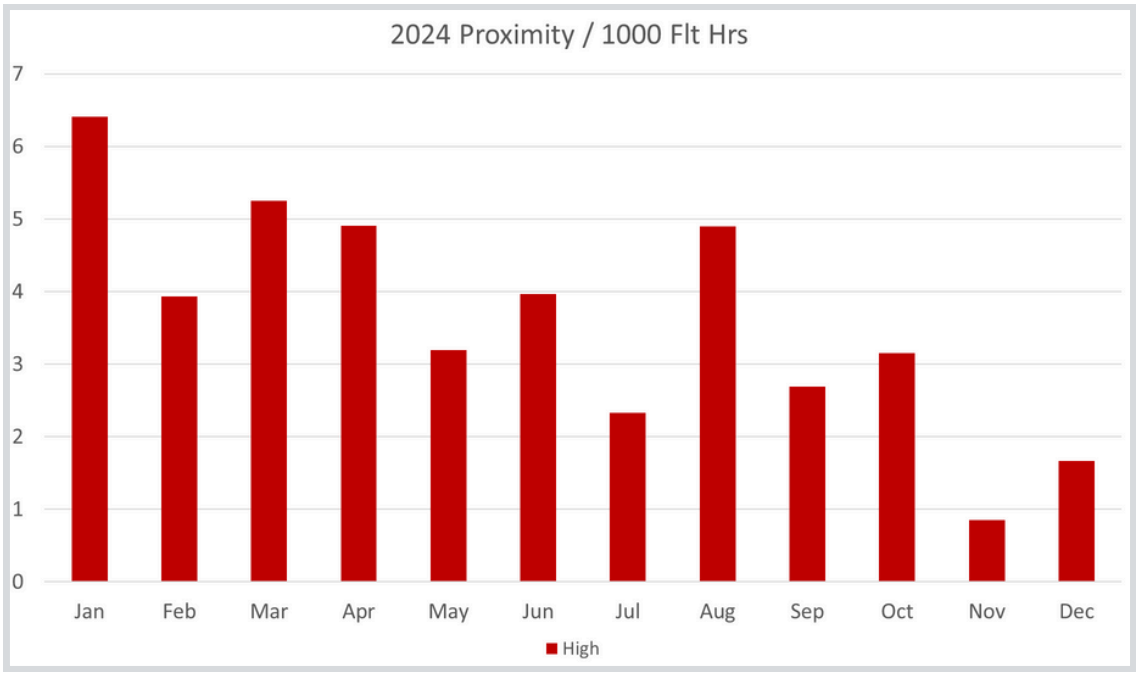
“Unintentional stalls are deadly, resulting in fatalities almost 50% more often than non-stall accidents. Pilots are taught to recognize, avoid, and recover from stalls early in flight training, yet they still account for almost 25% of fatal accidents. The overwhelming majority of unintended stalls occur on personal flights in day visual meteorological conditions (VMC) under light winds. Perhaps surprisingly, more stalls occur during the departure phases of flight (takeoff, climb, and go-around) than in the arrival phases (approach, pattern, and landing).” - AOPA Air Safety Institute



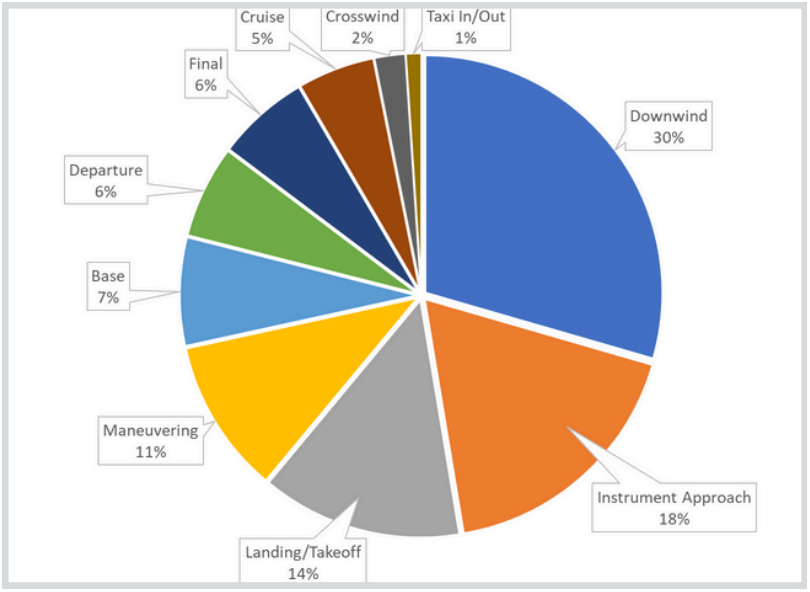
DA40	PA44
IAS <60	IAS <79
IAS <55	IAS <73

2 Proximity (MAC)

“MAC was the second leading cause of fatal instructional accidents from 2000 to 2019, with 27 training flights involved in 23 midair collisions. Seventy percent (19 flights) occurred outside the airport environment, compared to traditional GA where 51 percent occur outside the airport environment. Of the fatal accidents that occurred in the airport environment, five occurred in Class D airspace and three were at nontowered airports. Maneuvering and en route phases of flight led midair collision locations with 11 and nine, respectively, approach (4) was third, followed by climb (2) and takeoff (1).” - AOPA Air Institute and Liberty University



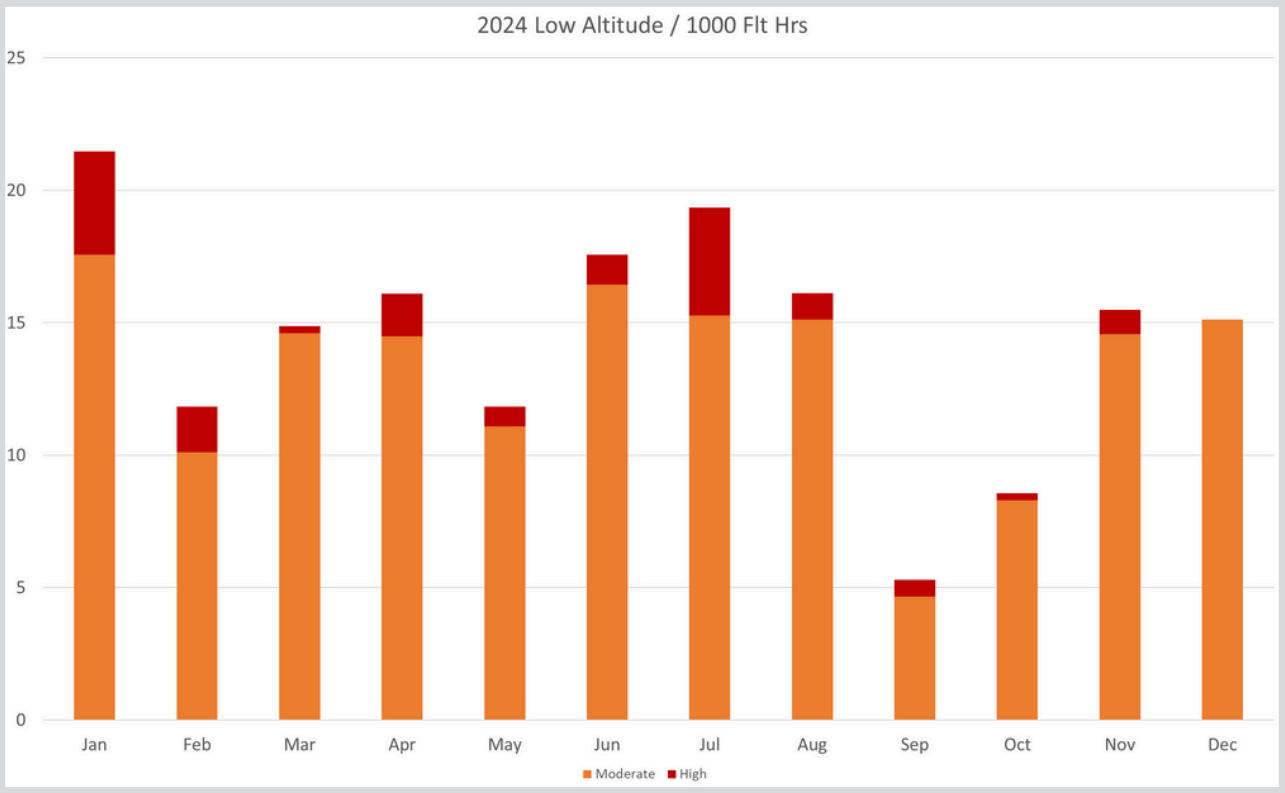
2024 Proximity by Location



FlySto

3 Reduce Low Altitude Events

When flying **below 500 feet AGL**, and especially below 200 feet AGL, numerous unmarked and unlit obstacles—such as power lines and antenna towers—pose a serious collision risk. While **14 CFR Part 91.119** permits flight below 500 feet AGL over **sparsely populated areas or open water,** these operations come with increased safety hazards. Extreme caution is advised below **2,000 feet AGL**, as radio and television **towers can exceed 1,000 feet AGL**, with **some surpassing 2,000 feet AGL**. These structures are often supported by nearly invisible guy wires, which can extend 1,500 feet horizontally. To mitigate risk, pilots should maintain **at least a 2,000-foot horizontal clearance** from all skeletal structures. - Aeronautical Information Manual, Chapter 7



DA40	PA44
AGL < 500’	AGL < 1200’
AGL < 300'	AGL < 1000'

FlySto

4 Increase Safety Council Participation

> **SAFETY IN COMPLEX SYSTEMS IS NOT A RESULT OF GETTING RID OF PEOPLE, OF REDUCING THEIR DEGREES OF FREEDOM. SAFETY IN COMPLEX SYSTEMS IS CREATED BY PEOPLE THROUGH PRACTICE—AT ALL LEVELS OF AN ORGANIZATION."**
>
> *- Sidney Dekker*

MTSU Aerospace Safety Councils offer a unique opportunity to be involved with department wide conversation about safety! Each council provides feedback regarding all of the Aerospace concentrations.

As a council member, you'll:

- ✅ Review recent safety reports
- ✅ Debrief safety events
- ✅ Analyze trends to improve operations
- ✅ Share your feedback & recommendations

To get involved, watch for an email with details about the next council meeting, or reach out to **aerosafety@mtsu.edu.**

5 Increase Concentration-Wide Participation

Updates from the Physiology Lab ✈️💡

Big news from the **Aerospace Physiology Lab**! This year, the **Hypoxia Lab** upgraded to a safer, **more effective space in BAS S212**. No more working in the shadows—literally! 🌟

The new location provides **better lighting, improved accessibility, and an overall enhanced learning environment,** making hypoxia training not only more immersive but also safer. This move highlights MTSU Aerospace's **commitment to continuous safety improvements,** ensuring students get the best experience possible.

Get with **Professor Babb** with any questions or interest in the Hypoxia Lab!

Aerospace Technology Lab Evolves! 🛠️⚙️

The **Aerospace Technology Lab (ATL)** has been busy innovating **safely**! With cutting-edge research tools like the **wind generator,** an open-air wind tunnel used to test propeller thrust, MTSU aerospace is committed to continuous improvement in a safe environment.

To keep up with these advancements, the **ATL Safety & Operations Manual** was updated to include safe placement guidance for personnel, ensuring researchers stay out of harm's way. Plus, an **ATL Lab Assistant** now oversees lab operations, making sure every AERO 4410 student follows best safety practices while pushing the boundaries of aerospace technology.

From new tech to enhanced safety protocols, ATL is leading the way in smart, safe innovation! 🚀🔬

Get with **Dr. Callender** with any questions or interest in the ATL!

Part 147: A Year of Safety & Innovation! 🔧✈️

The Part 147 Maintenance Concentration made major safety strides this year! From enhanced PPE usage to stronger safety discussions in lower-level classes, this year highlighted our commitment to increasing safety awareness.

Key improvements include:
✅ New safety equipment – Lock Out Tag Out kit & modern magneto tester
✅ Annual inspections – Overhead crane & hangar door for safe operation
✅ Physical safety upgrades – New signage & chains to protect from jet/prop blast
✅ Fleet maintenance – 22 aircraft discrepancies addressed for safe operations
✅ Increased safety reporting & participation in department-wide initiatives

Plus, we welcomed a new Cessna T210, providing more hands-on learning opportunities! Here's to another year of progress and safety! 🚀

Keeping MTSU Flying: 141 Maintenance Team's Impact!

Behind every safe and successful flight at MTSU is the **dedicated 141 Maintenance team**, working tirelessly to keep the fleet in top shape! Over the past year, they've completed an impressive **286 100-hour inspections,** ensuring each aircraft meets the highest safety standards. With 528 oil changes, they've kept engines running smoothly and efficiently. And when it comes to aircraft discrepancies, the team tackled **1,122 squawks**, either verifying and fixing issues or ensuring reported concerns couldn't be reproduced, preventing unnecessary downtime.

Their hard work and attention to detail are what keep MTSU's flight operations running safely and seamlessly—**a true testament to their expertise and commitment to excellence and safety!** 🚀⚙️

THANK YOU FOR YOUR COMMITMENT TO EXCELLENCE AND SAFETY THIS YEAR.

LET'S MAKE 2025 THE BEST ONE YET.