NASA ASRS
Aviation Safety Reporting System



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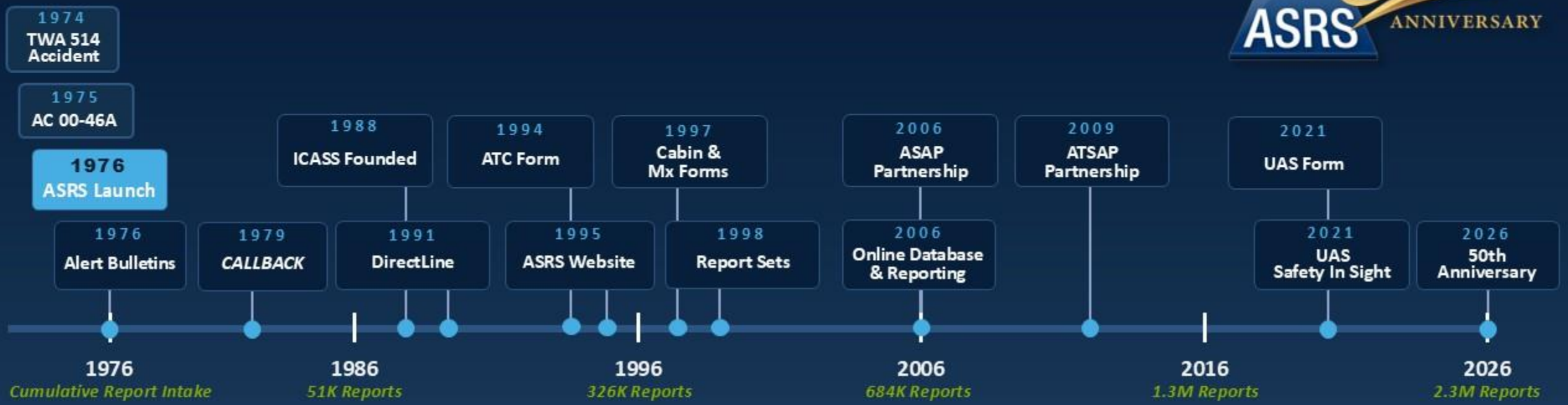
50 YEARS OF SAFETY REPORTING. 1976-2026

PROGRAM MILESTONES



TOPICS OF THE TIMES

1976 – 1985
- Crew Resource Management
- Altitude Deviations
- Go Around Maneuvers
- Decision Making
- Fatigue
- CFIT /CFTT Events
- Sterile Cockpit

1986 – 1995
- Glass Cockpit (1989+)
- TCAS (1993)
- AQP Training (1995)
- Clearance Confusion
- Readback/Hearback Errors
- Hold Short Hazards
- Rejected Takeoffs

1996 – 2005
- Ramp Safety
- Cabin Safety/PAX Misconduct
- Pre-Departure Clearances
- Cockpit Interruptions
- Altitude Deviations, SID/STARS
- PNF/PF – Pilot Monitoring
- Automation Complacency
- Uncontrolled Tower Ops

2006 – 2015
- Wake Encounters
- Datalink Weather Services
- Checklist Design
- High Density Airspace
- Maintenance Dirty Dozen
- Automation Surprise
- Electronic Flight Bags
- Fuel Management

2016 – 2026
- Runway Incursions
- RNAV / Metroplex
- NOTAM Modernization
- Hazmat / Lithium-Ion
- COVID
- UAS Integration into NAS
- 5G / GPS Interference
- ATC Staffing / Equipment

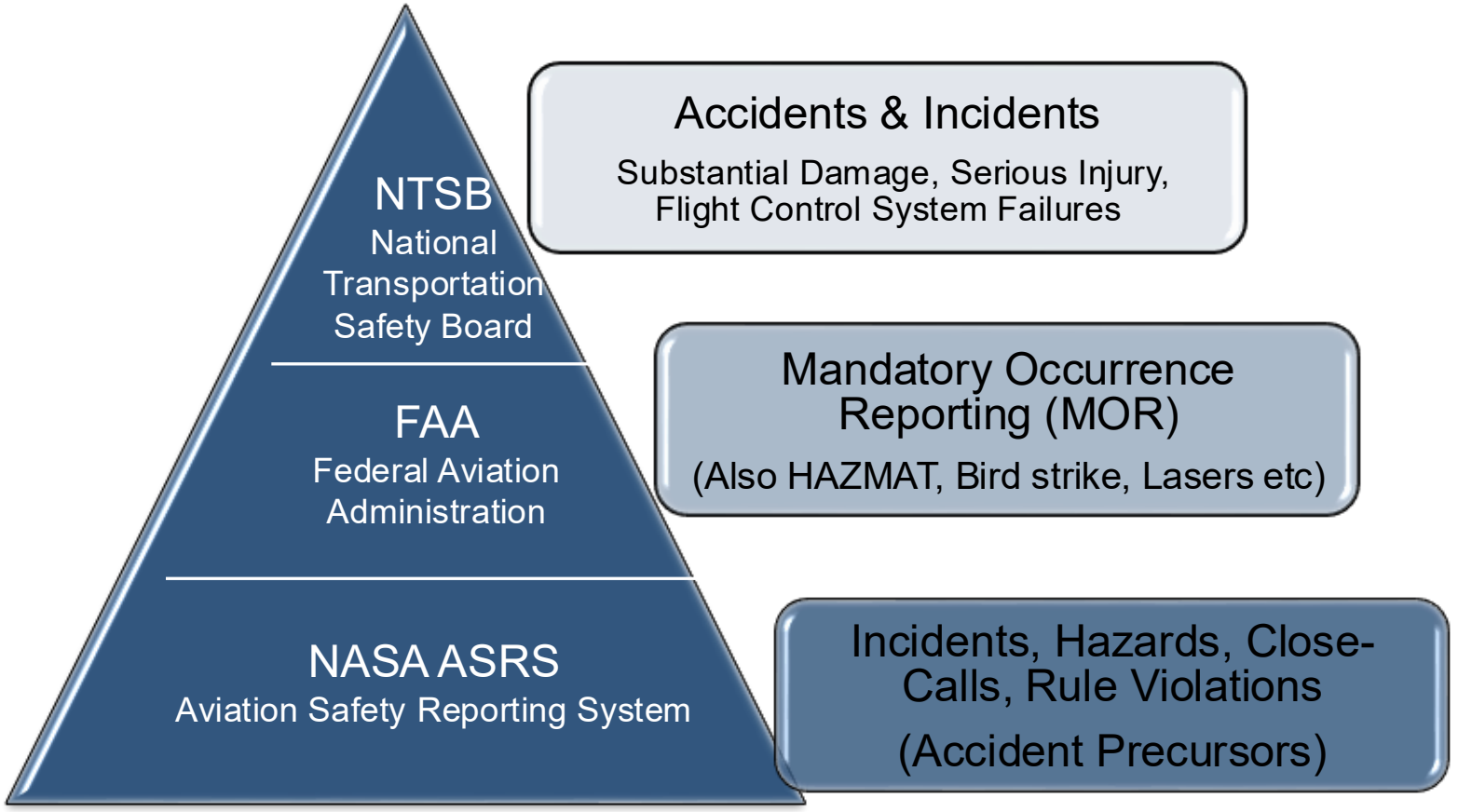
Selected examples only — see https://asrs.arc.nasa.gov for more



SAFETY REPORTING IN USA

Safety Reporting in the USA

Information is shared among airlines, ASRS, FAA, NTSB. Reports submitted to ASRS may describe both unsafe occurrences and hazardous situations.



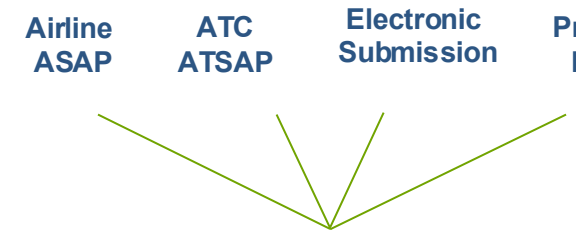
ASRS Stakeholders





REPORT PROCESSING AND DATA METRICS

ASRS Process and Products



Screen and Triage
Expert Analysts read every report within 3-5 days for rapid identification of safety concerns

Match
Multiple reports for same event are combined to provide a richer understanding of the event

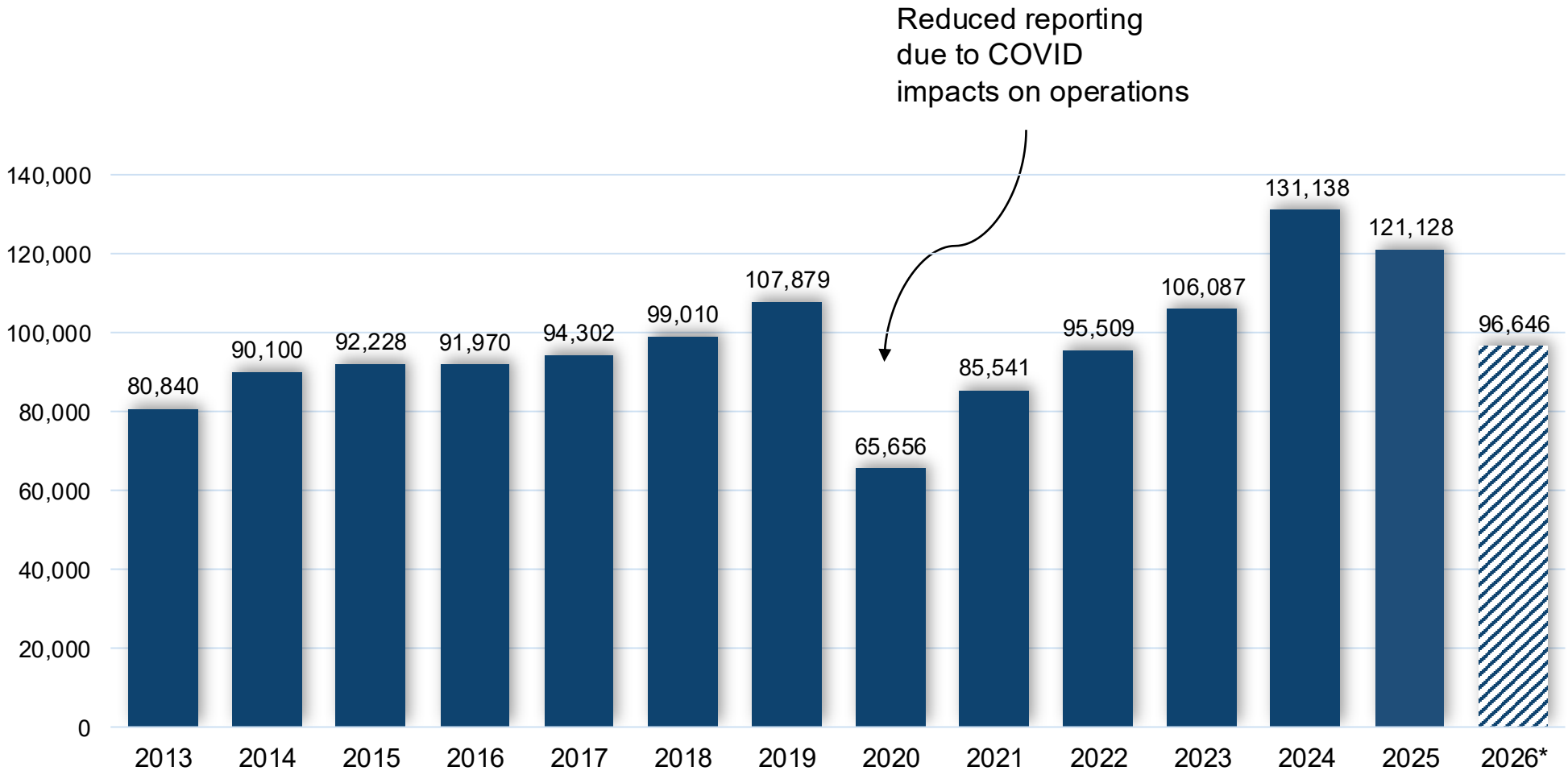
Code
Expert Analysts code reports for ease of data extraction

De-Identify
Personal and carrier information, and revealing flight details are removed. Other specific information may be generalized or removed

- **Safety Alert Bulletins**
- **FAA/NTSB Telecons**
- **Online Database**
- **Newsletters**
- **Industry Meetings**

ASRS Report Intake Profile

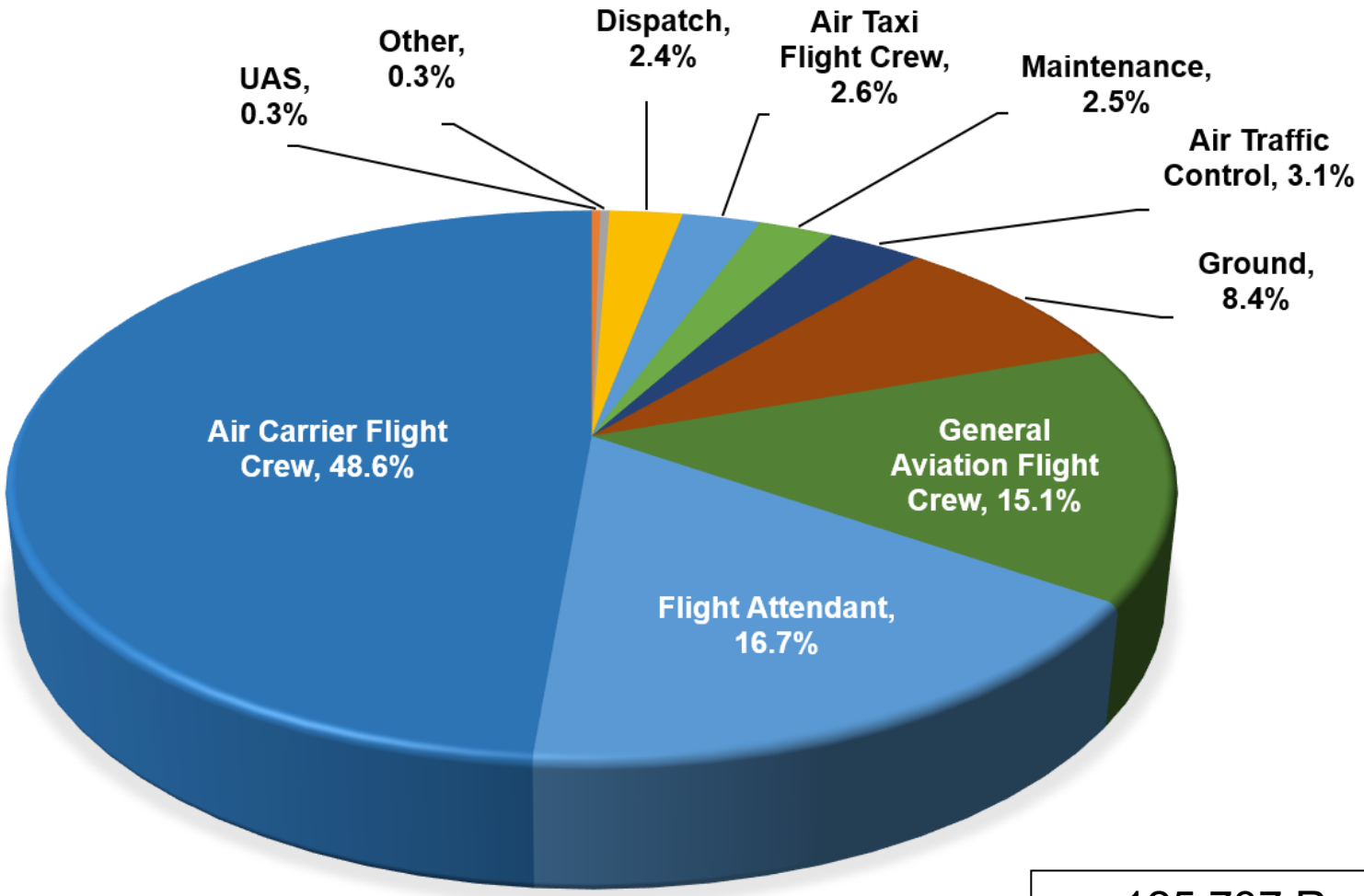
- Total Program Report Intake **2,417,696**
- Averaging **10,094** reports per month, **485** per working day



* Data complete through September 30, 2026.

Incident Reporter Distribution

October 1 2025 – September 30, 2026

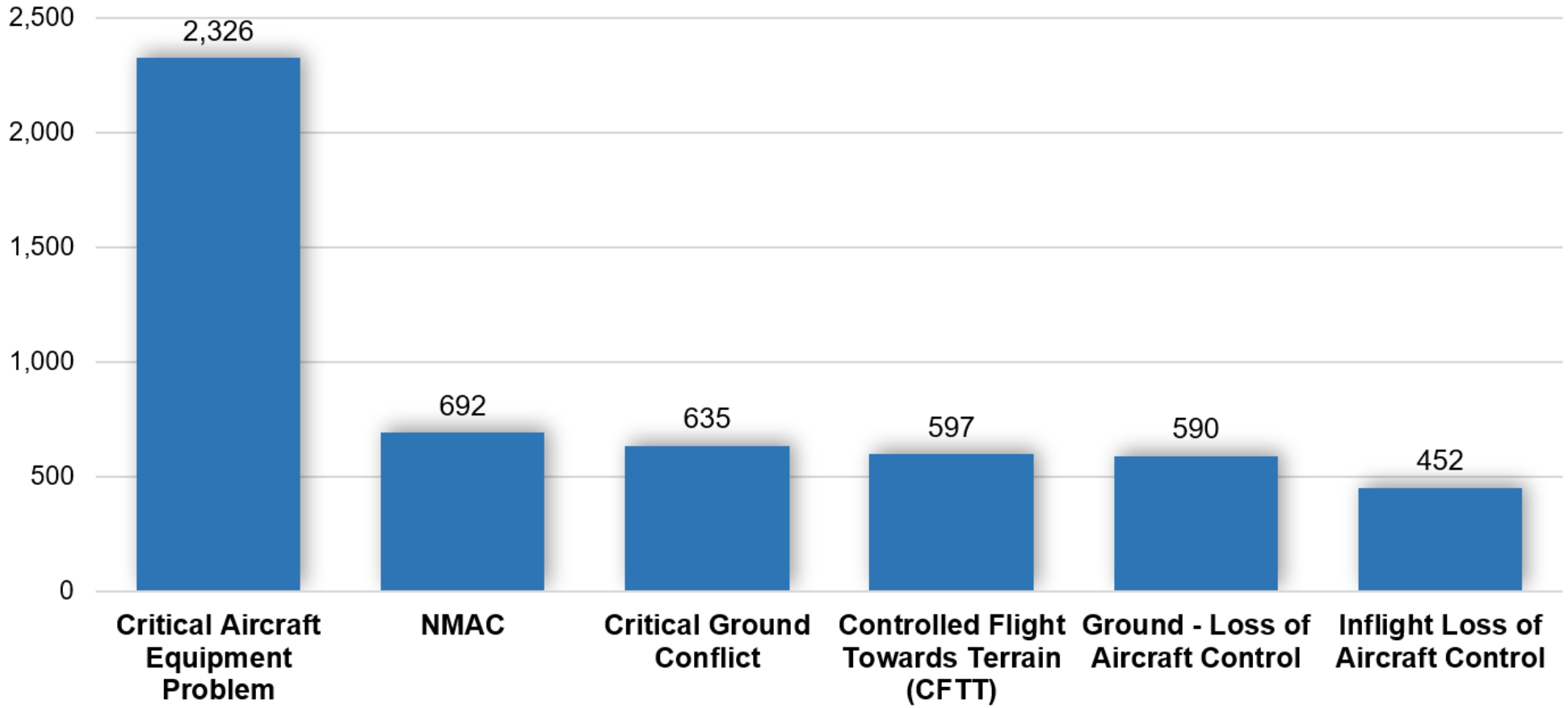


n = 125,737 Reports

Source: NASA ASRS Screening Data

ASRS High-Priority Safety Topics

July 2025 - June 2026 *(Date of Occurrence)*



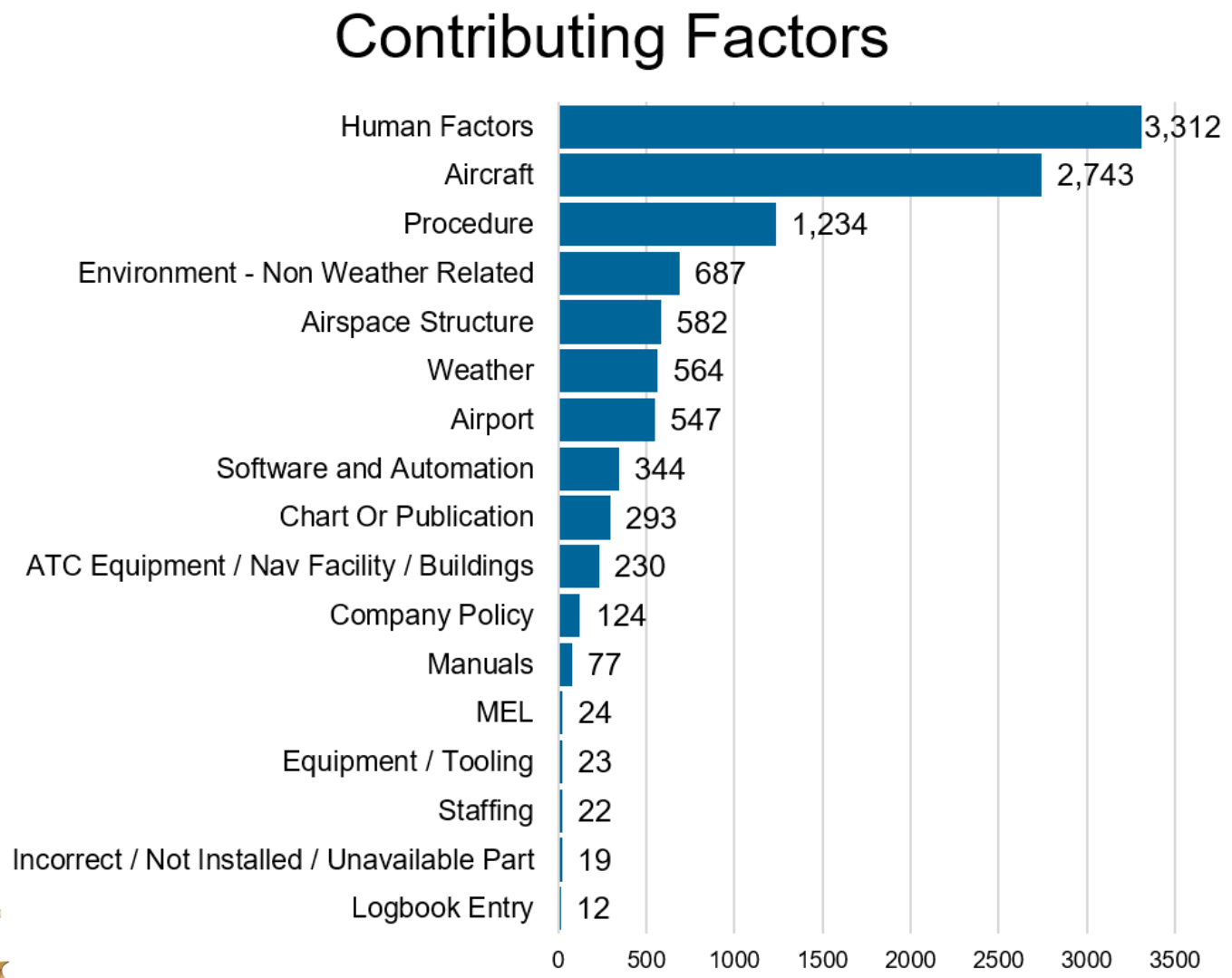
High-Priority "Bold List" Safety Topics

Total of 4,942 Records

*Categories are not mutually exclusive

Contributing Factors

July 2025 - June 2026 *(Date of Occurrence)*



Specific Human Factors

- Situational Awareness
- Communication Breakdown
- Workload
- Time Pressure
- Troubleshooting
- Confusion
- Distraction
- Training / Qualification
- Human-Machine Interface
- Fatigue
- Physiological – Other
- Other / Unknown

n = 6,031 Records

*More than one contributing factor can be selected per record



DISSEMINATING SAFETY INFORMATION

ASRS Products & Services



ALERT MESSAGES

Safety information issued to organizations in positions of authority for evaluation and possible corrective actions.



ASRS DATABASE

The public ASRS Database Online and data available in Database Report Sets or Search Requests full filled by ASRS staff.



NEWSLETTERS

CALLBACK monthly newsletter with a lessons learned format, available via website and email. UAS safety publication via email.



FOCUSED STUDIES

Studies/Research conducted on safety topics of interest in cooperation with aviation organizations.



QUICK RESPONSES

Rapid data analysis by ASRS staff on safety issues with immediate operational importance generally limited to government agencies.



ALERT MESSAGES

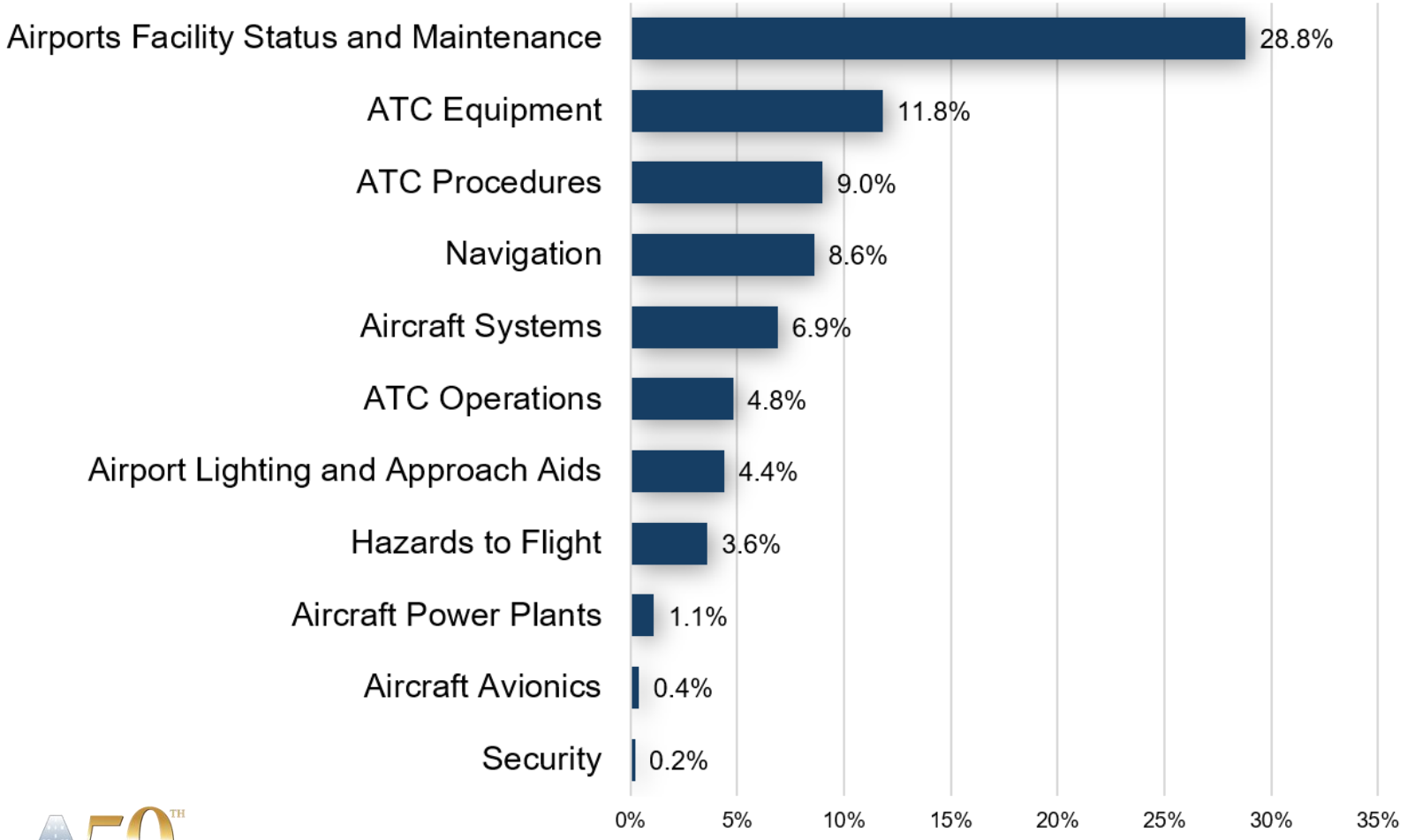
ASRS Safety Alerting Methods

Alert Bulletins	Time critical safety information issued to organizations in positions of authority for evaluation and possible corrective actions.
For Your Information Notices	Less urgent safety information issued to the aviation community for awareness.
Safety Teleconferences	Topics determined appropriate for in-depth discussion are included in a monthly teleconference with the FAA and NTSB.

ASRS has no direct authority to directly correct safety issues.
It acts through and with the cooperation of others.

Alert Bulletin and FYI Messages

October 1, 2025 to September 30, 2026

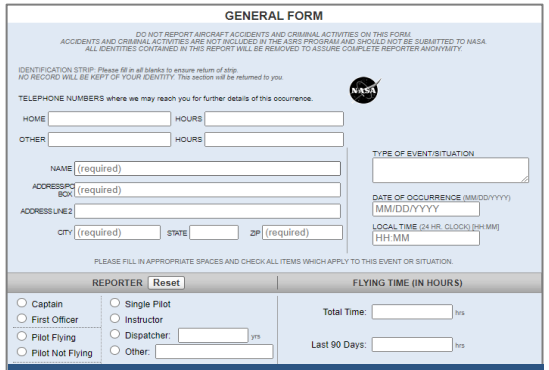


- **ASRS issued a total of 476 Alert/FYI messages**

Note: About twenty percent of alerts were categorized as "Other" (not charted)

ASRS Safety Alerting Program

Report Submitted to ASRS → **ASRS Issued Safety Alert** → **Corrective Action**



GENERAL FORM

DO NOT REPORT AIRCRAFT ACCIDENTS AND CRIMINAL ACTIVITIES ON THIS FORM.
ACCIDENTS AND CRIMINAL ACTIVITIES ARE NOT INCLUDED IN THE ASRS PROGRAM AND SHOULD NOT BE SUBMITTED TO NASA.
ALL IDENTITIES CONTAINED IN THIS REPORT WILL BE REMOVED TO ASSURE COMPLETE REPORTER ANONYMITY.

IDENTIFICATION STRIP: Please fill in all blanks to ensure return of strip.
NO RECORD WILL BE KEPT OF YOUR IDENTITY. This section will be returned to you.

TELEPHONE NUMBERS where we may reach you for further details of this occurrence.

HOME HOURS
OTHER HOURS

NAME (required)
ADDRESS/P.O. BOX (required)
ADDRESS LINE 2
CITY (required) STATE ZIP (required)

TYPE OF EVENT/SITUATION
DATE OF OCCURRENCE (MM/DD/YYYY) MM/DD/YYYY
LOCAL TIME (24 HR. CLOCK) [HH:MM] HH:MM

PLEASE FILL IN APPROPRIATE SPACES AND CHECK ALL ITEMS WHICH APPLY TO THIS EVENT OR SITUATION.

REPORTER Reset

Captain
First Officer
Pilot Flying
Pilot Not Flying

Single Pilot
Instructor
Dispatcher: yrs
Other:

FLYING TIME (IN HOURS)
Total Time: hrs
Last 90 Days: hrs

Air carrier Captain reported ORD signage and markings did not clearly identify where Taxiway SE or SP transitioned into Taxiway A.
Report # 2364083

7/1/2026 **FOR YOUR INFORMATION** 2026-225/5-67
2364083

To: Airport Manager, Chicago O'Hare Int'l, (ORD), IL., FAA (AGL-600)
Info: FAA (Director of Air Traffic Operations CSA, AAS-1, AAS-300, AJV-A, AVP-1, AVP -200, AFS-260, AFS-200, ATM ORD Tower, Runway Safety Team), A4A, AAAE, ALPA, AOPA, APA, ASAP, ATSAP, ATSG, CAPA, IATA, ICASS, IFALPA, IPA, NATCA, NBAA, NTSB, RAA, SWAPA, Jeppesen Sanderson Inc.
From: Becky L. Hooey, Director
NASA Aviation Safety Reporting System
Re: ORD Airport Taxiway Signage and Markings



<u>FAA (AGL-620) Response</u>: The ASRS report was shared with the Chicago Department of Aviation (CDA) for review and resolution.

"Upon coordination with the CDA, they acknowledged that installing a new sign array would benefit pilots and enhance situational awareness for flight crews operating in this area — specifically by clearly delineating where Taxilane SP intersects Taxiway A. Consequently, <u>a new sign array was installed on July 2, 2026."</u>

ASRS 50TH ANNIVERSARY



NEWSLETTERS

CALLBACK Newsletter

In addition to being published online, ***CALLBACK*** is distributed by email. Subscription is free and available via the ASRS website.

33,765

Total number of email subscribers for 2025

1,799,748

CALLBACK views for 2025 (HTML and PDF)



CALLBACK

From NASA's Aviation Safety Reporting System

ASRS

Issue 521 June 2023

Walkaround Wisdom and Preflight Gems

A thorough walkaround inspection and associated activities could mitigate a host of problems that might develop during flight or ground operations. The charge to conduct a good walkaround flows from 14 CFR 91.3(a), which assigns direct responsibility and grants final authority as to the operation of an aircraft to the Pilot in Command (PIC) of that aircraft.

The walkaround inspection and associated activities necessarily cover a large number of items typically described in an Airplane Flight Manual (AFM) or Aircraft Operating Manual (AOM). In the spirit of the CFR and from a practical point of view, most everything that is possible to observe is also covered. Accordingly, the walkaround inspection and preflight activities are important to the safety of any flight.

This issue of *CALLBACK* showcases reported incidents that occurred during walkaround inspections and associated activities. Note the variety of incident types, the reporters' actions, and the pearls of wisdom in each narrative.

Lost and Found

An observant DA42 Twin Star student pilot made some interesting discoveries while performing these walkarounds.

■ *I began preflighting the aircraft…and noticed the right main gear had cord showing, and the left main was missing slip marks. I switched aircraft and began preflighting [again]. Inspecting the left main fuel tank, I discovered a fuel nozzle cover in the tank. [It was] the small rubber cover that goes over the nozzle when fueling. I removed the cover, and [my] instructor delivered it to the [FBO] employee fueling another aircraft. The flight…continued without further incident. Ensure the visual checking of fuel tanks before every flight.*

A Woeful Tail

Following related maintenance work, this Airbus ambulance helicopter pilot pondered how a critical item was missed during the preflight walkaround inspection.

■ *Maintenance did a tail rotor inspection that morning and needed me to do the run-up to check the balance afterward. They had done a Required Inspection Item (RII) inspection on the work. I did my preflight walkaround and looked at the cowlings, latches, tape, wires, and track and balance equipment. I climbed in and started it up, running Engine Number 1 up to idle. Since it was a track and balance, I expected it to not be a normal feeling tail rotor, but this was more vibrations than I would have expected. The maintainer said to shut it down and not even start the other engine. We shut the helicopter down and used the brake to stop the blades. Upon inspection, one of the tail rotor blades had been installed facing the wrong direction. In the future, I will do more than a normal preflight walkaround following maintenance even if it had an RII. I knew the blades had come off. I held the blade while [the maintainer] was on the ladder. Why I didn't look at the direction of the rotors when I looked at them, I don't know, aside from complacency and reliance on the RII. To ensure this won't happen again, I will be sure to verify all aspects of the work that was done with verbal confirmation and the maintainer present.*

Unverified Assumptions

Although all ended well, this Flight Instructor overlooked a detail that quickly placed the aircraft and crew in jeopardy.

■ *That morning, I met [my student], a private pilot to whom I am providing instrument instruction, at ZZZ1 airport. When I arrived, [the student] had already conducted a preflight inspection of the aircraft…. Unfortunately, I did not verify the fuel quantity in the aircraft and relied on the student to do so. The plan for this flight was to do the RNAV…approach into ZZZ2, go missed [approach], and then fly VFR back to ZZZ1. After the missed approach at ZZZ2 and upon reaching 3,500 feet, the engine quit without warning. I took control of the airplane, requested priority with ZZZ2 Approach, and turned toward ZZZ. I was cleared for the runway and landed…without further incident. We could not restart the plane in the air or on the ground.*

There is some background needed at this point. Prior to this flight, I was the last person to fly this plane. As part of our standard practice, after the last flight, I requested fuel service from the FBO and asked that the plane be put away for the night. Assuming the FBO would honor my request, I left for the evening. When I arrived at the airport, my student had completed the preflight and confirmed there was fuel in the aircraft. I've flown with this student many times and found him to be a very competent pilot…. Accordingly, I did not have reason to think there was not enough fuel in the aircraft. When we started the plane, we reset the fuel totalizer for full

SUBSCRIBE

2026 Topics

- New Year's Resolutions
- Risk Management & Mitigation
- What Would You Have Done
- ASRS 50 Year Anniversary
- Aviation Maintenance Heroes
- Expect the Unexpected
- Routine Summer Operations
- General Aviation in Complex Airspace
- Troubleshooting in Flight

UAS Safety In Sight Newsletter

In addition to *CALLBACK*, a UAS specific publication with ASRS UAS report excerpts is also distributed by email. Subscription to ***UAS Safety In Sight*** is free and available via the ASRS website.

NASA ASRS UAS Safety In Sight

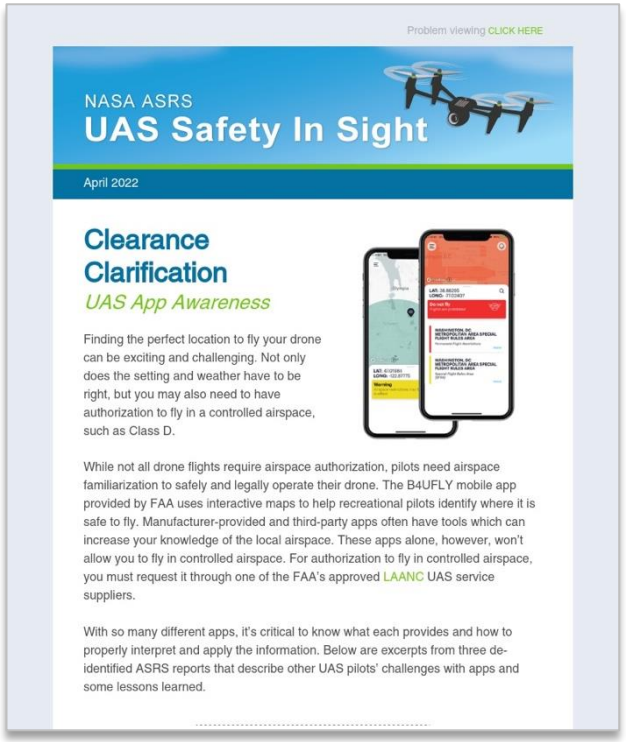
SUBSCRIBE

2097+

Total number of email subscribers for 2025

19 Issues

Published to date



Problem viewing CLICK HERE

NASA ASRS
UAS Safety In Sight

April 2022

Clearance Clarification

UAS App Awareness

Finding the perfect location to fly your drone can be exciting and challenging. Not only does the setting and weather have to be right, but you may also need to have authorization to fly in a controlled airspace, such as Class D.

While not all drone flights require airspace authorization, pilots need airspace familiarization to safely and legally operate their drone. The B4UFLY mobile app provided by FAA uses interactive maps to help recreational pilots identify where it is safe to fly. Manufacturer-provided and third-party apps often have tools which can increase your knowledge of the local airspace. These apps alone, however, won't allow you to fly in controlled airspace. For authorization to fly in controlled airspace, you must request it through one of the FAA's approved LAANC UAS service suppliers.

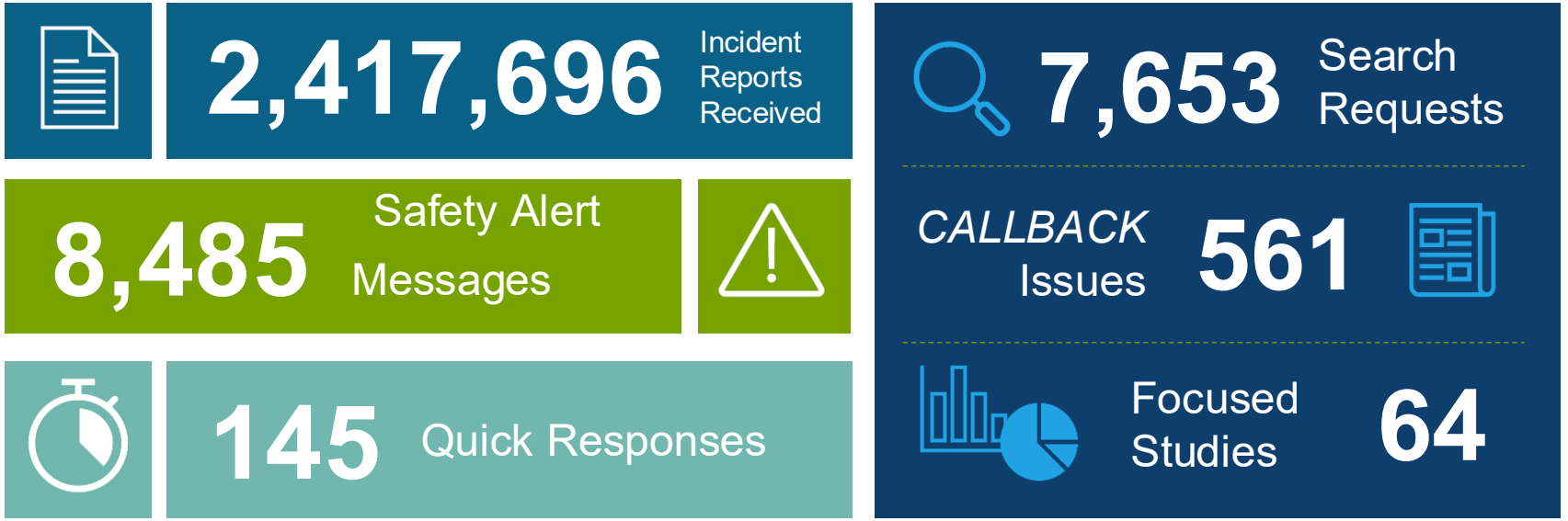
With so many different apps, it's critical to know what each provides and how to properly interpret and apply the information. Below are excerpts from three de-identified ASRS reports that describe other UAS pilots' challenges with apps and some lessons learned.

2026 Topics

- Out of Sight and Supervision - An RPIC Eye-Opener
- New Drone, Old Mistake: A Reminder to Slow Down and LAANC Up
- Detecting Drones – Hear, See and Avoid
- Every Step You Take – The Importance of Preflight Checks

ASRS 50TH ANNIVERSARY

ASRS Safety Products



As of September 30, 2026

How are ASRS Reports Used?

Stakeholder	Examples of How the Reports are Used
FAA	**Wake Encounters**: Long-term study to assess wake vortex encounters and assess the impact of changes to dynamic separation criteria **Fuel Events**: Understand types of incidents and factors that contribute to Fuel Exhaustion, Fuel Starvation, Fuel Contamination, and Wrong Fuel, **Near Mid Air Collisions**: Examination of risk areas and operational context
NTSB	Inform accident investigations, examining precursor events to shed light on possible human factors involvement; Ground Conflicts, Near Mid Air Collisions
Airlines and GA Pilots	Educate pilots about new routes (Share local folklore about airport operations) Database and CALLBACK newsletter used for pilot education and training
Equipment Manufacturers	Analyze and cross-reference to similar events to identify recurring and emerging issues
Airports	Address confusing signage, faded paint/markings, inadequate markings for construction
Chart Manufacturers	Identify and correct discrepancies between chart and actual airspace/airport; Rectifying missing or confusing charting
Researchers	Unidentified Aerial Phenomenon (UAP), Air Traffic Management System Design, Integrating Drones into the Airspace



CURRENT SAFETY CONCERNS

Current Safety Concerns

Aircraft Conflicts with Drones / RPAS

Rotorcraft Near Mid Air Collisions

Ground Operations and Ramp Safety

Aircraft Conflicts with Drones / UAS / RPAS

- 272 records of Near Mid-Air Collisions or Airborne Conflicts between crewed aircraft and UAS from Jan 2023 to Dec 2025
- 56 required evasive action to avoid conflict; 111 took no action at all

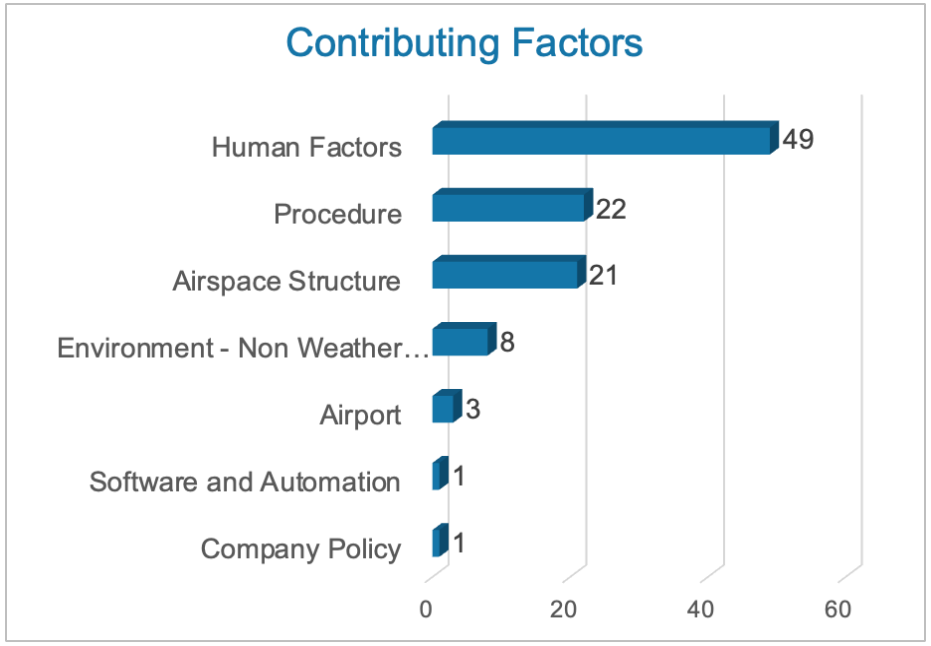
Aircraft Operator Type	Count
Air Carrier	151
Air Taxi / Fractional/ FBO/ Corporate	61
Personal Recreational General Aviation	20
Commercial Operator (UAS/ RPAS)	14
Government (e.g. Law Enforcement)	10
Military	8
Recreational / Hobbyist (UAS/RPAS)	5

Key Points

- Small drones can be difficult to detect and determine proximity to aircraft and rates of closure.
- Small drones are not currently required to have ADS-B capability and thus are not detectable by aircraft TCAS equipment.
- Often, they are only detected when very close, with little or no time for evasive action.
- Conflict locations
  - Near or at airports and heliports/helipads
  - Low altitudes during critical phases of flights such as final approach, landing, sometimes necessitating missed approaches

Rotorcraft Near Mid Air Collisions

- 192 records of Near Mid-Air Collisions involving a Rotorcraft from Jan 2023 to Nov 2025
- Over 73 different Airports Locations



Human Factors: Communication Breakdown

Lack of required/expected radio calls

- Fixed-wing and/or helicopters not announcing position or intentions
- Aircraft in controlled airspace not communicating with ATC and causing NMACs

Aircraft not communicating on the same frequencies

- One aircraft on CTAF and conflicting aircraft on Tower frequency
- Two helicopters operating in proximity on two different frequencies as instructed by ATC

ATC advisories/coordination late or missing

- Cleared for takeoff without receiving ATC advisory of nearby traffic
- Cleared to transit airspace by ATC but in conflict with a departure

Non-equipped/participating traffic (no ADS-B/ transponder)

- Non-equipped aircraft such as crop dusters, powered parachutes; non-functioning transponders/equipment
- Non-standard pattern entries/maneuvers

Ground Operations and Ramp Safety

543 Reports submitted by Ground Ops Personnel between Jan 2025 and June 2026

Key Concerns

- Contact or near contact between Ground Vehicles and Aircraft
  - Fuel trucks, baggage carts, buses, catering vehicles, etc entering active pushback, towing, arrival, or taxi paths.
- Ground Crews moving near aircraft with running engines,
- Uncommanded aircraft movement
  - Aircraft rolling unexpectedly during pushback or towing because brakes were not set, chocks were removed prematurely, or tow equipment disconnected unexpectedly.

Contributing Factors

- Communication Breakdown
- Training

More Information at ASRS Website

