



# On Time Performance Pressure

InfoShare – Fall, 2013

Atlanta, GA

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September 2013

**AVIATION SAFETY  
REPORTING SYSTEM**



# Agenda

- ASRS Reporting
- On-time Performance Events



# System-Wide Event Occurrences

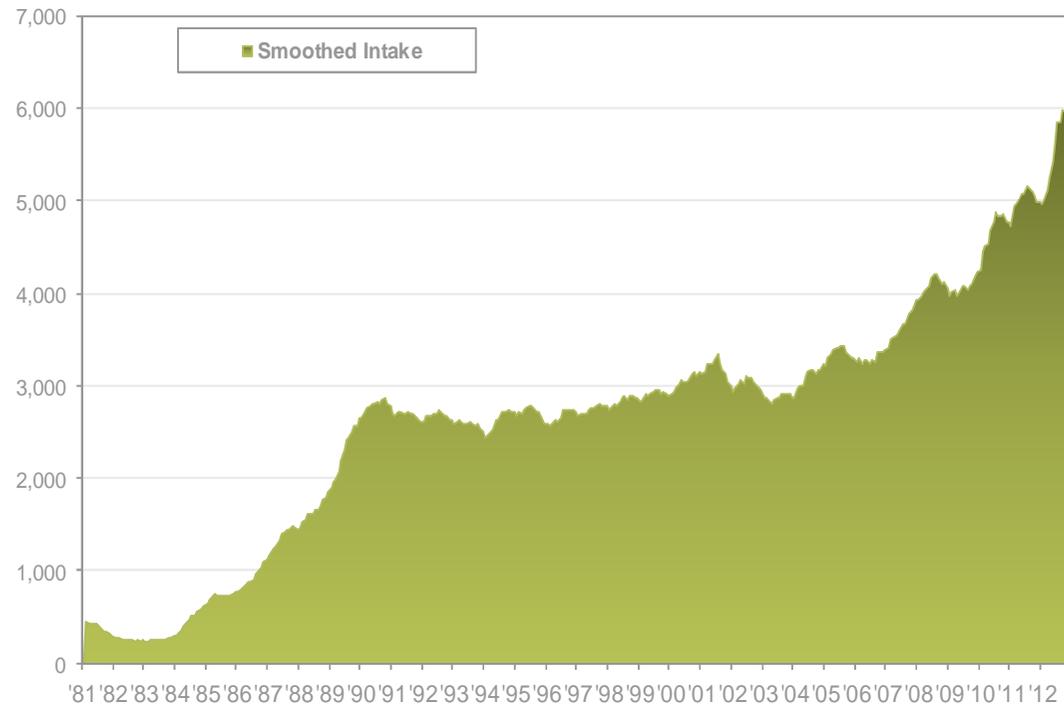
- ASRS is complementary to other systems of reporting and focuses on precursors to the most severe events



# ASRS Report Volume Profile

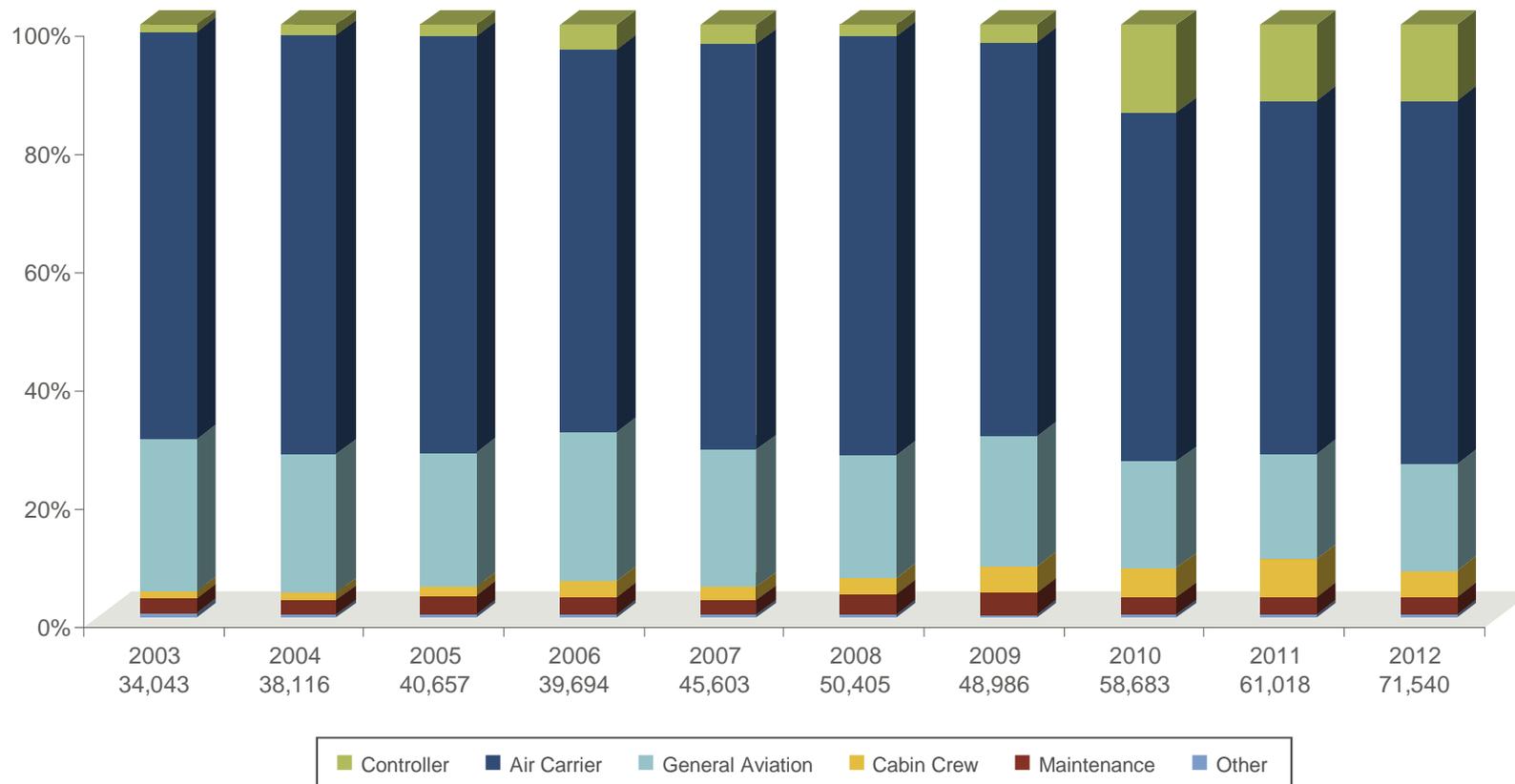
- 37 years of confidential safety reporting
- Over 1,100,000 reports received
- Over 5,550 alert messages issued
- Over 6,700 reports per month, or 322 per working day
- Total report intake for 2012 was 71,540
- Current rate estimate for 2013 is over 80,000

Monthly Intake  
January 1981 – December 2012



# Incident Reporter Distribution

## ■ Percentage of Total Intake



January 2003 – December 2012



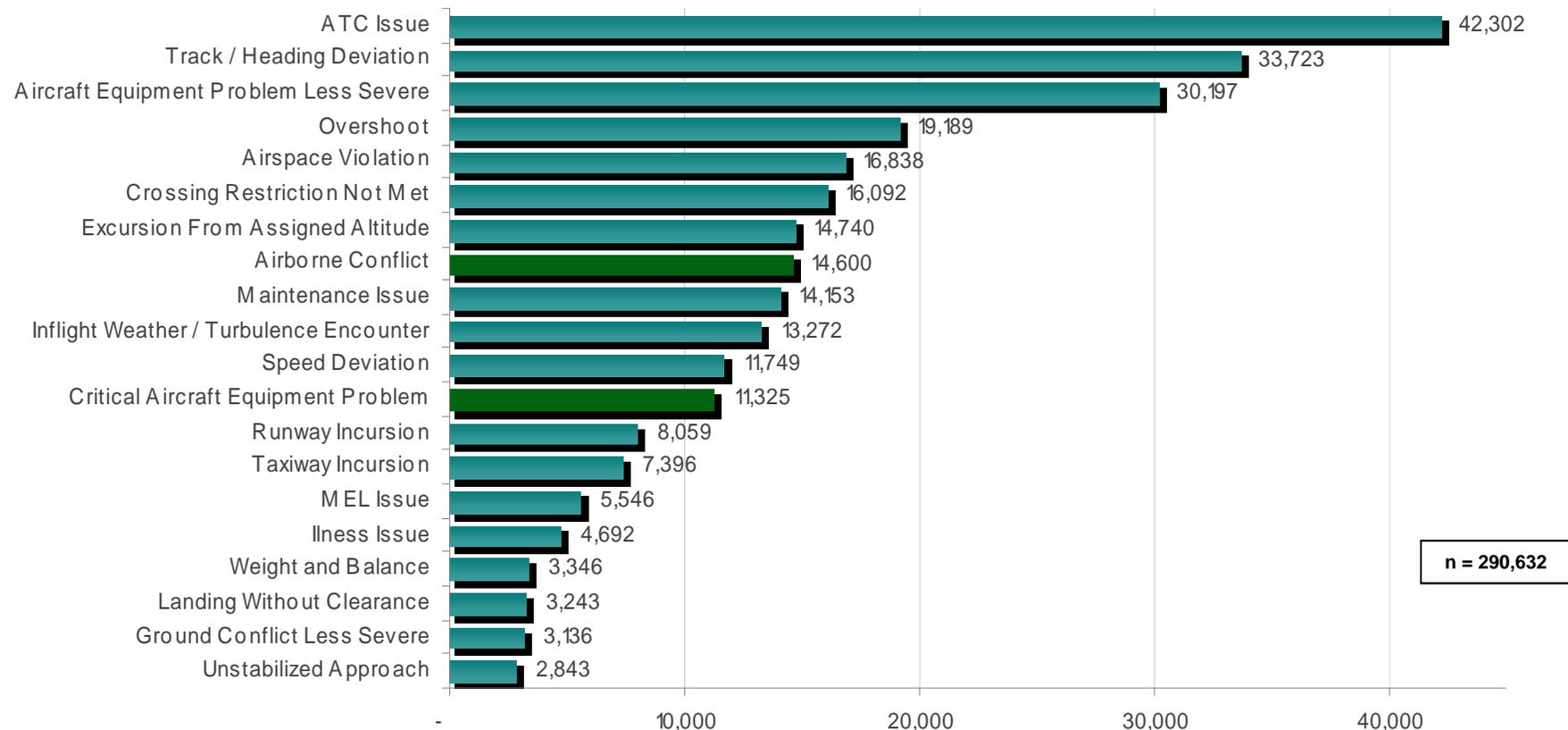
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# ASRS Internal Screening Data Set (100%)

## ■ Top 20 Events Reported 2008 – 2012

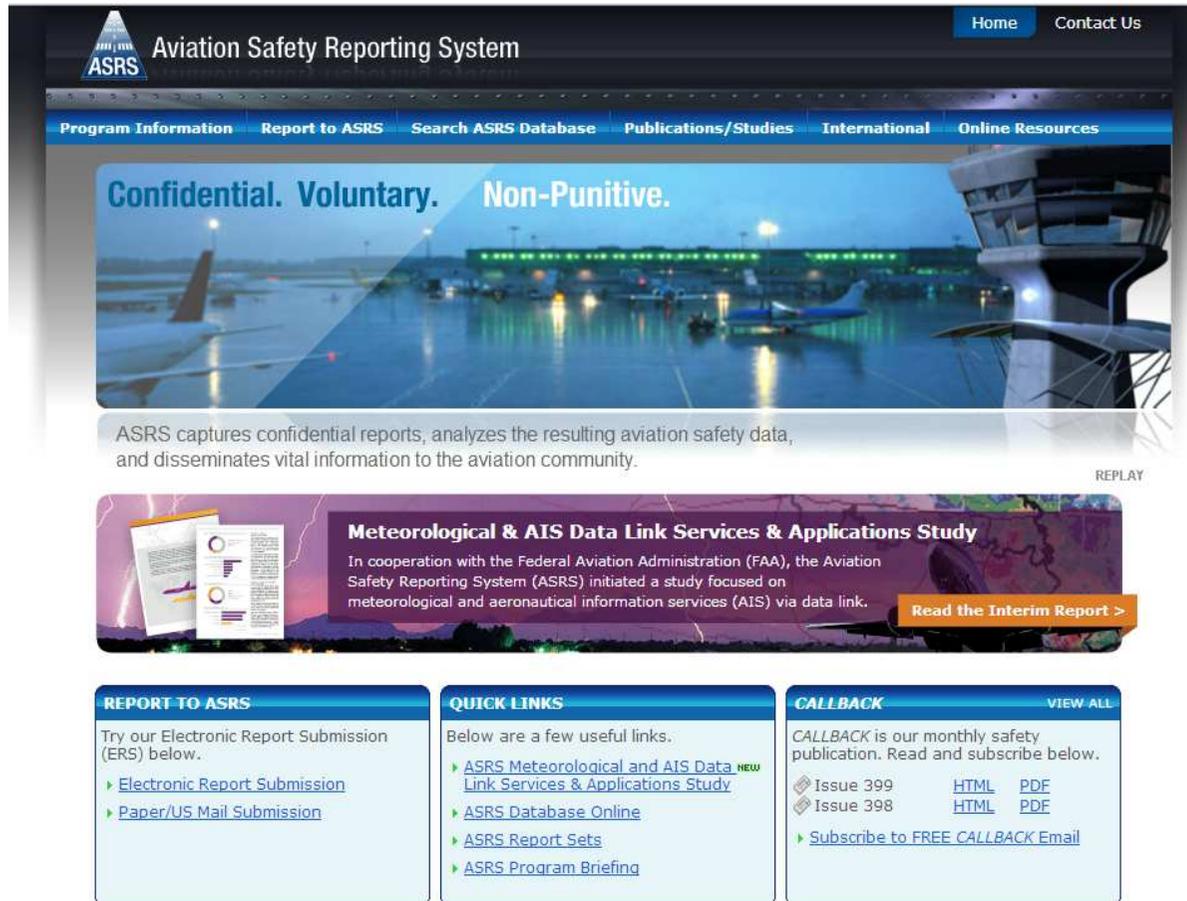


\*Categories are not mutually exclusive. Therefore, a single incident may be coded by ASRS analysts as involving more than one anomaly.

Note: 100% of Dark Green Bars are given detailed analysis



# ASRS Web Site



The screenshot shows the ASRS website homepage. At the top left is the ASRS logo. The main header reads "Aviation Safety Reporting System" with "Home" and "Contact Us" links. A navigation bar includes "Program Information", "Report to ASRS", "Search ASRS Database", "Publications/Studies", "International", and "Online Resources". A large banner features the text "Confidential. Voluntary. Non-Punitive." over an image of an airport at night. Below the banner, a paragraph states: "ASRS captures confidential reports, analyzes the resulting aviation safety data, and disseminates vital information to the aviation community." A "REPLAY" button is visible. A secondary banner promotes the "Meteorological & AIS Data Link Services & Applications Study" with a "Read the Interim Report >" button. At the bottom, three boxes provide quick links: "REPORT TO ASRS" (Electronic Report Submission, Paper/US Mail Submission), "QUICK LINKS" (ASRS Meteorological and AIS Data Link Services & Applications Study, ASRS Database Online, ASRS Report Sets, ASRS Program Briefing), and "CALLBACK" (Issue 399, Issue 398, and a link to subscribe to FREE CALLBACK Email).

- Launch Oct. 2007
  - Over 9 million sessions in 2012
- File ASRS Report
  - Electronic
  - Print and Mail
- Database Online
- ASRS Publications
- Program Information
- Immunity Policies



<http://asrs.arc.nasa.gov>

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# ASRS Database Online (DBOL)

**How to Search:** ASRS Database Items (Taxonomy)

**Step 1:** Click to add search items.

**Step 2:** In "Current Search Items" section, select "Click Here" in a statement and choose items from Lookup Window.

**Date & Report Number**

- Report Number (ACN) was [number]
- Date of Incident was between [date] and [date]

**Environment**

- Flight Conditions were [conditions]
- Lighting was [condition]
- Weather was [element]

**Aircraft**

- Federal Aviation Regs (FAR) Part was [regulation]
- Flight Plan was [type]
- Flight Phase was [phase]
- Make / Model was [type]
- Mission was [operation]

**Place**

- Location was [identifier]
- State was [abbreviation]

**Person**

- Reporter Organization was [type]
- Reporter Function was [position]

**Event Assessment**

- Event Type was [anomaly]
- Detector was [equipment / human]
- Primary Problem was [most prominent factor]
- Contributing Factors were [problem areas]
- Human Factors (since 6/09) were [factor]
- Result was [consequence]

**Text: Narrative / Synopsis**

- Text contains [word(s)]

Current Search Items:

- DBOL launched 2006
  - Over 125,000 total online queries completed to date
  - Over 19,600 queries completed in 2012
- Fixed field and text search capability
- Data formats (export)
  - MS Word, Excel, CSV HTML
- Experts version is being proposed for the future

<http://asrs.arc.nasa.gov>

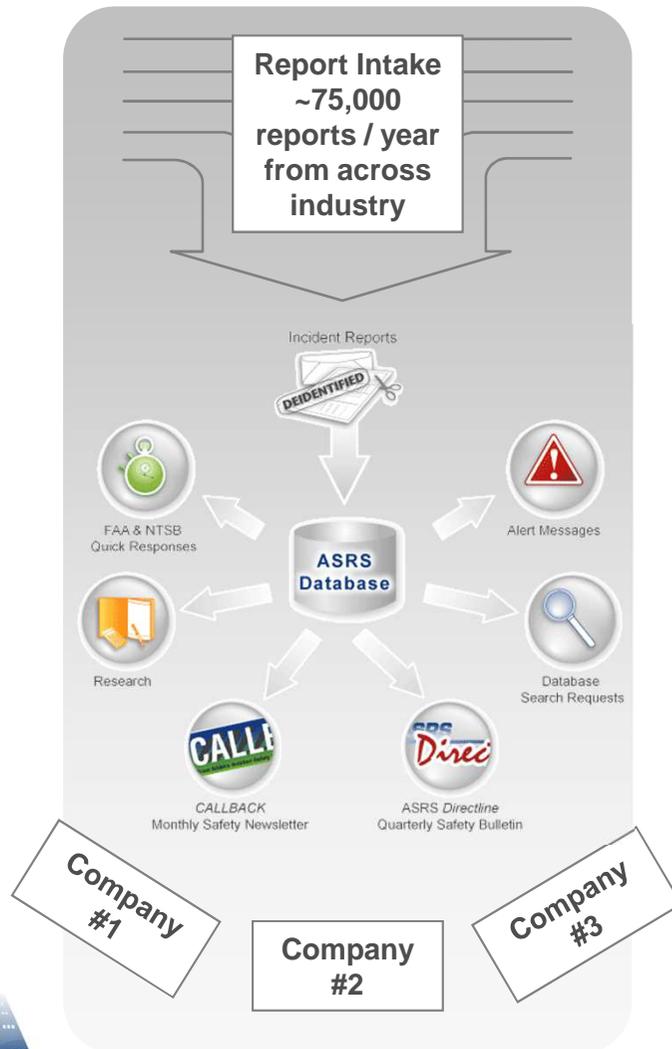


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# Industry Integration with ASRS



- ASRS is a national repository of aviation safety data
- Company's safety processes can use ASRS to obtain a systemic view of emerging issues
- Companies can review reports for similarities to their operations to help identify issues not yet encountered
- ASRS can help companies recognize important issues within their own processes



# Agenda

- ASRS Reporting
- On-time Performance Events

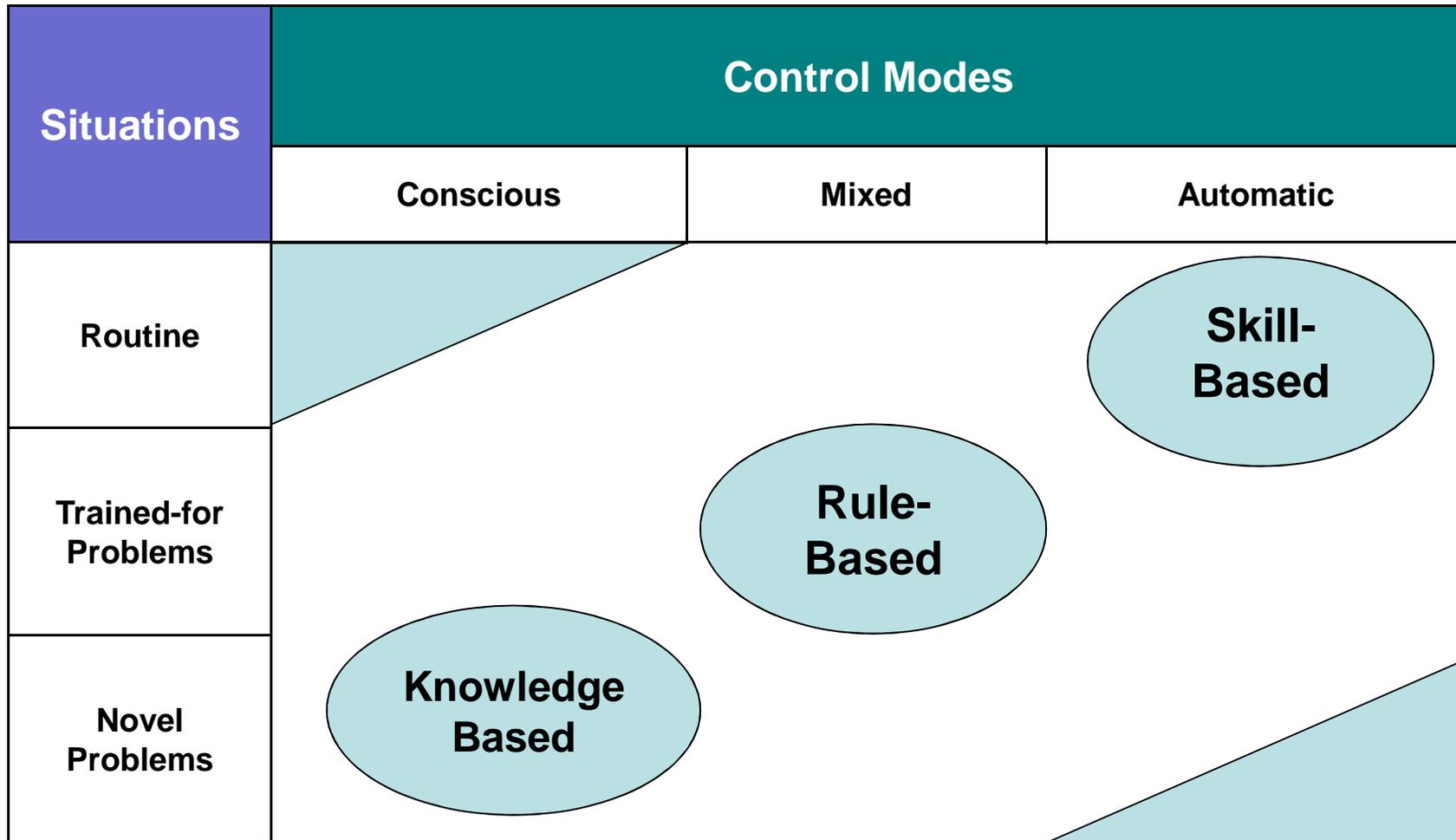


# System Context for On-time Performance

- ASRS reports provide detailed explanation and insight into on-time performance challenges
- System contextual factors for on-time performance include human oversight tasks
- But how does “Safety” fit into on-time performance expectations?



# James Reason - Performance Levels



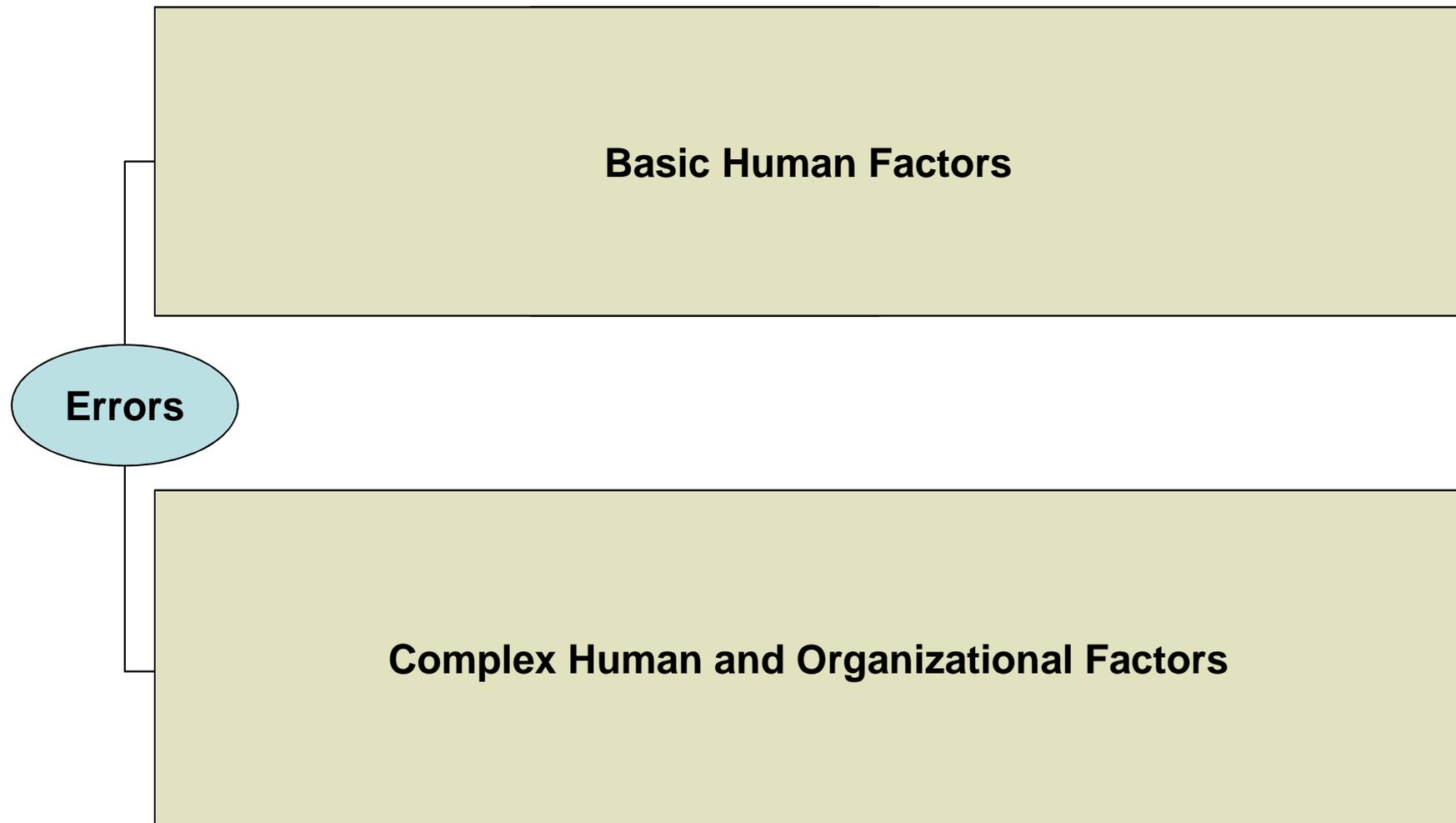
Source: Reason, J. (1997). *Managing the risks of organizational accidents*. Ashgate Press. Hants, England

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# James Reason - Types of Error



Source: Reason, J. (1997). *Managing the risks of organizational accidents*. Ashgate Press. Hants, England

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# On Time Performance Pressures

- ASRS reports reflect how on-time performance pressures may result in
  - Incomplete work
  - Skipping process steps to get back on time
  - Incomplete problem solving / Troubleshooting
  - Impaired attention to detail
- These can lead to increases in downstream mistakes and associated costs



# On Time Performance Pressures (con't)

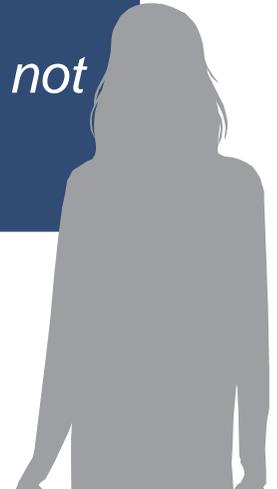
- Work environment is characterized by
  - Pressure to perform, survival mode
  - Lack of priority for compliance norms
  - “We have always done it this way”
  - Tendency to underestimate complex issues
  - Employment termination threats



# Maintenance

*“...we have had two instances where the Thrust Reverser Hydraulic Control Unit (HCU) lockout pin was left in the aircraft causing the thrust reverser not to deploy on landing. Mr. X came in during the first instance, (I was there), and rushed Aircraft Maintenance Technician X, (AMT) to hurry and finish the work he was performing on a Job Card; and in hurrying AMT X forgot the lockout pin.*

*All...are fearful for their jobs, making a less than desirable place to work as well as asking for an accident or mistake to be made. We are constantly being rushed to HURRY and work on aircraft; problem is sometimes we are given unrealistic time frames. I understand the need for aircraft to fly as quickly as possible, but not to the point of rushing people beyond their means....” (ACN 993708 Excerpt)*



# Gate / Ramp Operations

*“... I was working with the Narita agents. We were at crunch time already for an on-time departure and we were ready to pull the jetbridge and so I rang the bell several times and no ramp guide. I had 2 agents telling me I was cleared to back the jetbridge not knowing that the air-conditioning was attached to the aircraft. I only saw that the GPU was detached and when I was told...okay to go, I went ahead and pulled the bridge. I don't ever pull the jetbridge without a guide but today we were so close to departure time....”*  
(ACN 1096099 Excerpt)



# Maintenance

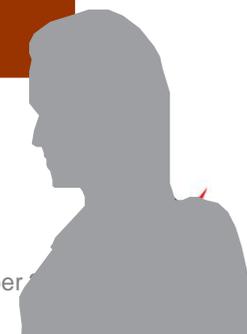
*“...6) Maintenance removed the aircraft from service and replaced the left main landing gear tilt actuator line, which has nothing to do with the #2 brake line leaking 3 drops per minutes. 7) The plane was cleared at the departure airport of the hydraulic leak, however it was clearly “pencil whipped” to achieve an on time departure, thus completely sacrificing safety. There is a huge push at this carrier from the top down for on time departures. This pressure on our pilots, mechanics, gate agents and ramp personnel is clearly creating a chain of events that is severely compromising safety at any cost.”*

(ACN 927510 Excerpt)



# Flight Crew / Cabin

*“... We were late arriving into (city) by 10 minutes. Because of operations pressure to push the aircraft on time and despite my insistence that the door not be closed until cabin was secured, the operations agent shut the forward entry door before the Flight Attendant confirmed her passenger count and before briefing the emergency exit row passengers. The aircraft pushed back from jetway 3 minutes late. Our turn time was 21 minutes. Pressure on operations to push the aircraft on-time creates these FAR violations. Stop the pressure so that Flight Attendants can perform their duties as required.....” (ACN 1096099 Excerpt)22*



# On Time Performance - Workarounds

- Work environment is characterized by
  - Procedures that are
    - Overly complex
    - Incomplete
    - Not readily available
    - Inconsistent
  - Inadequate resources (staff, tooling, parts)
  - Facilities concerns (dirty, disorganized, inop)



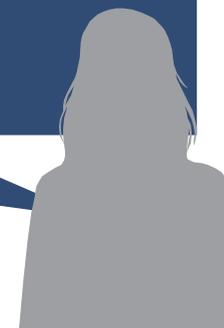
# On Time Performance - Workarounds

- May result in
  - Repeated omissions from wrong procedures
  - Employee injuries
  - High delay costs
  - Unnecessary costs
  - High employee turnover



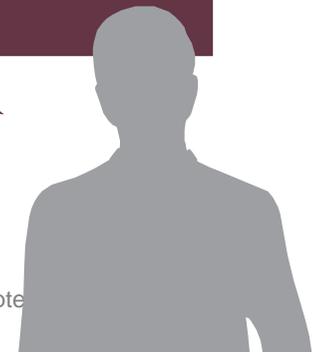
# Flight Crew / Cabin / Gate Operations

*“The flight crew, flight attendants and I were faced with bulk packages of newspapers in front of our equipment credenza filled with amenity kits, head sets and document bag. Old document bag and blue service kits from the inbound flight were never removed from plane. Four overhead bins in first class were filled with return amenity kits and headsets - leaving no room for passengers' luggage... This situation was a standards procedure failure.... The purser, Captain, agent and zone are responsible for the flight - not a supervisor. The company manual gives me the authority to decide if the regulations have been met. It says preflight is a FAR and must be accomplished before closing the door. None of these requirements were accomplished because the Manager decided we could board. (ACN 1037821 Excerpt)*



# Maintenance

*“I was instructed how to install a Carbon Seal and given information on the Service Bulletin, but not [for] removal and installation of the seal, and as instructed, I removed the old seal and O-Ring. I was given a new seal but not a new O-Ring. I installed a new seal and installed the housing back in the engine, but I never installed the O-ring. The aircraft sat in Maintenance for a few more days and upon Run Checks, no leaks were noted. The aircraft made its flight and developed a large oil leak. It made its first few legs and had to divert on a later leg.” (ACN 1053059 Excerpt)*



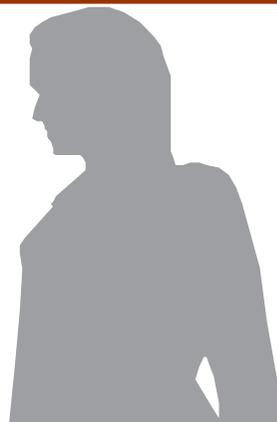
# Flight Operations / ATC

*“This SID is flawed in that aircraft departing the east runway on the RNAV SID, if the SID is flown, turn right, across the other 2 departure runways, to get to the programmed fixes on the departure. CVG has instituted a series of workarounds and memory joggers to keep the pilots from flying the SID, instead of NOTAMing out this and 2 other SIDs with similar problems” (ACN 903390 Excerpt)*



# Flight Operations / ATC

*“The transition is way at the bottom of the chart, and easy to miss. The route in the box and clearance was confirmed by both Captain and First Officer and we thought we understood it, but were wrong. ATC corrected us on the SID and we continued uneventfully. ATC commented that several company crews have done the same thing and asked we bring it to company's attention. Each station ACARS clearance has a slightly different format. A “no kidding” standard from the FAA would be a great thing to prevent confusion.” (ACN 825838 Excerpt)*



# Summary of On Time Performance Issues

- The pressure of on-time departures may impair safety in several ways
- Operational pressures or a perceived need to implement workarounds may contribute to poor judgment leading to safety issues
- Companies can help employees avoid lapses in safety judgments that may occur in order to meet company expectations



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