

Ground Operations and ASRS

David Wichner

Program Manager, Booz Allen Hamilton

Abegael Jakey

Quality Assurance Manager, Booz Allen Hamilton

AVIATION SAFETY REPORTING SYSTEM Linda Connell
Program Director, NASA ASRS

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Topics of Discussion

- ASRS Program Overview
 - Purpose
 - Report Processing
 - Products
- ASRS Database Online Demonstration





ASRS Program Overview





ASRS Purposes

- Identify deficiencies and discrepancies in the National Airspace System
 - Objective: Improve the current aviation system
- Provide data for planning and improvements to the future National Airspace System
 - Objective: Enhance the basis for human factors research & recommendations for future aviation procedures, operations, facilities, and equipment





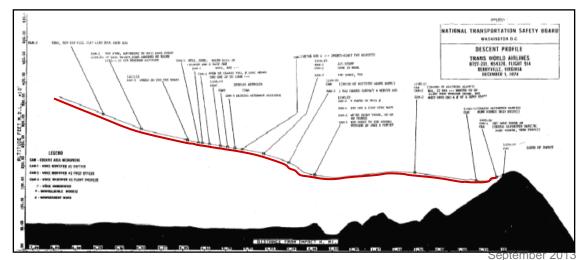
ASRS History

- After a fatal TWA crash in 1974, the investigation revealed that six weeks prior, a United Airlines crew had experienced an identical ATC misunderstanding and narrowly missed the same mountain
- Although the information was shared with FAA at the time, there was no method of sharing the United pilot's experience with TWA and other airline operators

 This solidified the idea of a need for a national aviation reporting program that would enable collection and dissemination of safety

information

 In April 1976, NASA and FAA implemented the Aviation Safety Reporting System (ASRS)

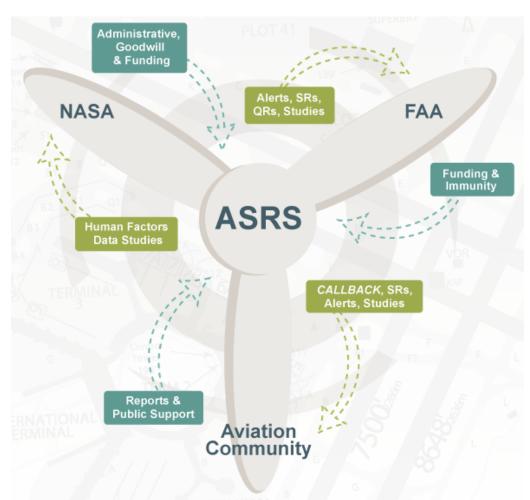




NTSB Identification: DCA75AZ005

ASRS Gov't/Industry Stakeholders

- FAA provides
 reimbursable funding to
 NASA for ASRS Support
 & Management
- NASA provides funding for Director to provide overall management
- The Aviation
 Community provides
 support through
 advocacy for reporting,
 feedback, and
 communications





System-Wide Event Occurrences

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

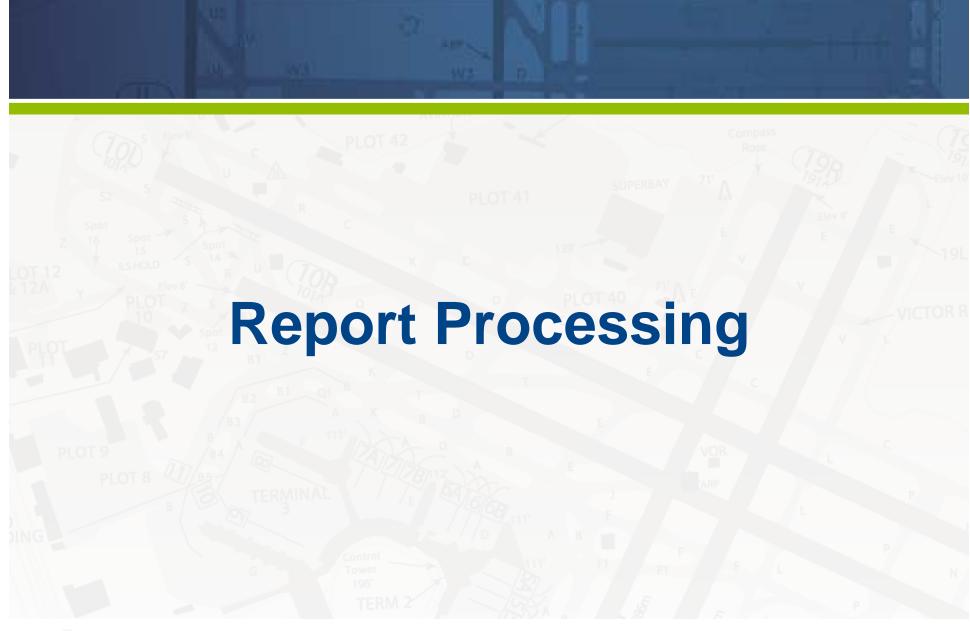






ASRS in the International Aviation Community









Report Intake Overview

- ASRS receives reports from pilots, air traffic controllers, cabin crew, dispatchers, maintenance technicians, ground personnel and others involved in aviation operations
- ASRS's report intake has been robust from the first days of the program, in which it averaged approximately 400 reports per month
- In recent years, report intake has grown at an enormous rate with intake now averaging 7,000 reports per month

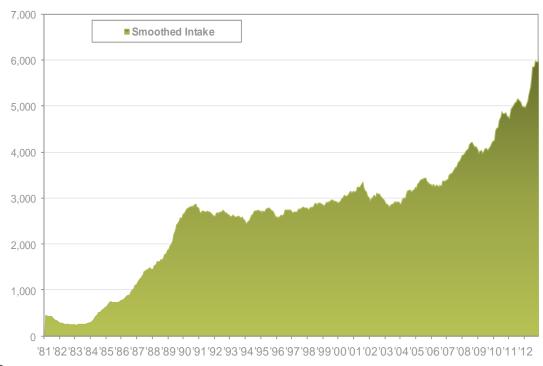




ASRS Report Volume Profile

- 37 years of confidential safety reporting
- Over 1,000,000 reports received
- Over 5,550 alert messages issued
- Over 6,000 reports per month, or 300 per working day
- Total report intake for 2012 was 71,540
- Current rate estimate for 2013 is over 75,000

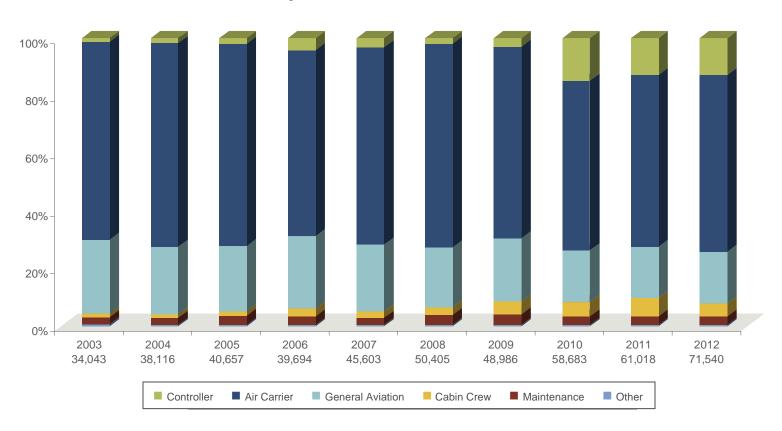
Monthly Intake January 1981 – December 2012





Incident Reporter Distribution

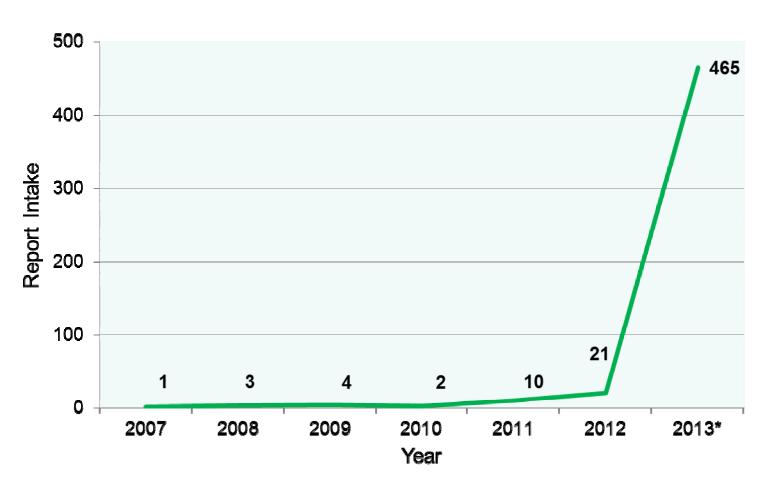
January 2003 – December 2012





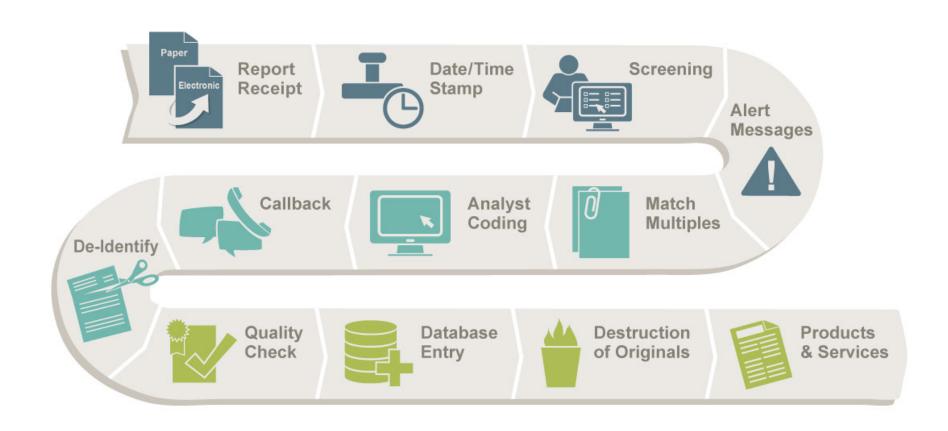


Ground Operations Safety Reporting





*Intake through August 19, 2013









ASRS paper reports are picked-up daily from the Moffett Field Post Office or are received electronically via website Electronic Report Submission (ERS) or ASAP data transmissions



Every report is date and time stamped based on the date of receipt



Two ASRS Analysts "screen" each report within three working days to provide initial categorization and to determining the triage of processing



ASRS Analysts may identify hazardous situations from reports and issue an Alert Message. De-identified information is provided to organizations in positions of authority for further evaluation and potential corrective actions







ASRS retains high-level categorization of 100% of reports received. Based on initial categorization, multiple reports on the same event are brought together to form one database "record"



ASRS Analysts identify reports that require further analysis and entry into the public ASRS database. During the detailed Report Analysis process, reports are codified using the ASRS taxonomy.



An ASRS Analyst may choose to call a reporter on the telephone to clarify any information the reporter provided. This information is added to the analysis and final record.



To ensure confidentiality all identifying data is removed. After analysis, the Identification Strip, the top portion of the report, is returned to the reporter. This ID strip acts as the reporter's proof of submittal. All physical and electronic ID strip data with the reporter's name, address, date and time stamp is removed.





All reports that receive further analysis go through a Final Check to assure coding accuracy. Quality Assurance checks are also performed for coding quality.



Final coded reports enter the ASRS Database. These de-identified records are then available in the ASRS Database Online, which is available through the ASRS website.



Original reports, both physical and electronic data, are destroyed to completely ensure confidentiality



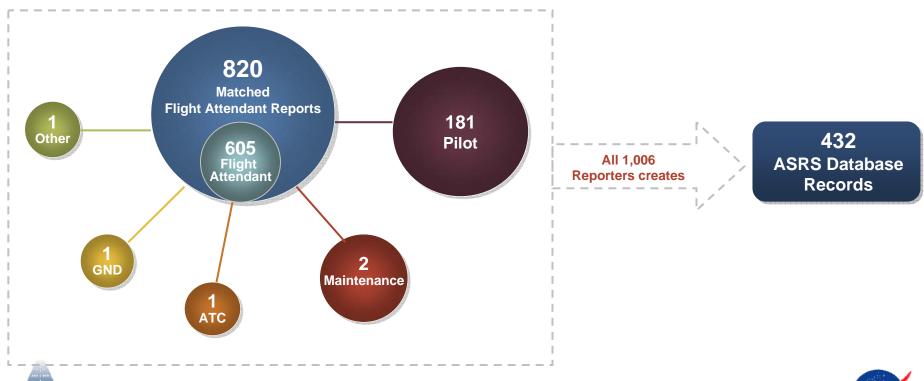
ASRS uses the information it receives to promote aviation safety through a number of products and services, such as Alert Messages, Search Requests, a monthly newsletter, focused studies and more





Example of Multiple Report Matching

- A sample of 3,533 Flight Attendant reports were analyzed
- Of those reports, 820 are matched to at least one other report
- These 820 reports correspond to a total of 432 unique incidents





ASRS Products

 These products and services fulfill the program's mission to disseminate safety data



Alert Messages

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



CALLBACK

Monthly newsletter with a lessons learned format, available via website and email.



Quick Responses

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



ASRS Directline

Safety topic summaries based on ASRS reports published to meet the needs of operators and flight crews.



ASRS Database

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



Focused Studies/Research

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







Alert Messages





ASRS Alert Message Priorities

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 is issued in For Your Information (FYI) Notices.

ASRS Safety Teleconferences & Other Safety Communications

Alert Bulletins and FYI Notices determined appropriate for an in-depth discussion are included in a monthly teleconference with the FAA and others.



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



Alerting Subjects

January 2003 – December 2012

Subject	Total
Aircraft Systems	810
Airports Facility Status and Maintenance	450
Other	285
ATC Procedures	209
ATC Operations	164
Airport Lighting and Approach Aids	161
ATC Equipment	125
Hazards to Flight	86
Aircraft Power Plants	83
Navigation	44
Aircraft Avionics	37





Alerting Responses

January 2003 – December 2012

Response	Percentage	
Action taken as a result of the AB/FYI	25%	
Action initiated before AB/FYI received	13%	
Action initiated in response to AB/FYI but not completed	10%	
Addressee agrees with AB/FYI but sees no problem	6%	
Issue raised by AB/FYI under investigation	5%	
Addressee disputes factual accuracy of AB/FYI	21%	
Information in AB/FYI insufficient for action	12%	
For information only, no response expected	3%	
Action not within addressee's jurisdiction	3%	
Addressee in factual agreement but is unable to resolve	2%	





Total

59%

Examples of Safety Alerting Success

SFO Taxiway Signage (FYI 2012-102)

SFO Airfield Operations office reviewed the pilot's comments and stated they are "...working with Jeppesen to enlarge the inset diagram on page 10-9 depicting Hot Spot #1, which currently shows Taxiways E, J, and F, but excludes Taxiway F1. The more encompassing diagram should assist pilots in quickly identifying the position of each taxiway and thus more effectively follow Tower instructions."

DTW Taxiway "F" Marking Confusion (FYI 2012-97)

The DTW Director of Airfield Operations investigated the safety concern stating "As a result of our investigation, a request was made to the commercial chart provider on July 31, 2012 to revise the chart and add a notation for 'Taxiway Fox located south of E-2' to the map."

HS-125 Violent Wing Oscillations (AB 2012:17)

The Kansas City Aircraft Evaluation Group responded stating "The result of investigating the source of these ASRS reports found 40 some similar incidences have been reported in various forms. The information has facilitated attention to the matter resulting in effort toward continued operational safety."







Quick Responses





Recent Quick Response Applications

- An Analysis of Part 121 Similar Call Sign Related Incidents (QR339)
- An Analysis of Part 121 Flight Crew Fatigue Related Incidents (QR338)
- An Analysis of Dual Turboprop Engine Aircraft Icing Encounter Incidents (QR337)
- An Analysis of Part 121, 135 and 91 Turbojet Rejected Takeoff Related Incidents (QR336)







ASRS Database





ASRS Database

- Information in the ASRS Database is available publicly. ASRS will provide Search Requests to government agencies, members of Congress, aviation safety organizations, and others. ASRS searches its database, download relevant reports, and sends to requestor.
- Direct access to search de-identified reports in the ASRS database is now available through ASRS Database Online http://asrs.arc.nasa.gov/search/database.html
- For your convenience, selected relevant reports on several safety topics are available on the website called ASRS Database Report Sets http://asrs.arc.nasa.gov/search/reportsets.html
- The ASRS Database is also available and updated monthly through the FAA Aviation Safety Information Analysis and Sharing (ASIAS) website http://www.asias.faa.gov/





ASRS Database Metrics

- Since the inception of ASRS, over 7,335 Search
 Requests (SRs) have been directly provided by ASRS
 Research Staff to various aviation organizations and agencies, as well as individuals through December 2012
- The activity on the ASRS website for ASRS Database
 Online is over 1,638 completed queries a month
- From the ASRS website, ASRS Database Report Sets are downloaded on average over 3,140 times a month, Report Sets were first posted in January 2000





Search Requests Samples

- Ramp Control Related Incidents (SR 7057)
 - Completed in support of the Air Traffic Procedures Committee
- Ramp Operation Incidents Involving Physical Injury, Aircraft Damage or Equipment Damage (SR 7077)
 - Completed for The Boeing Company
- Tow/Tug Related Incidents (SR 6957)
 - Completed for the FAA





CALLBACK

CALLBACK, the award winning ASRS monthly safety newsletter, has been published since 1979 in a popular "lessons learned" format. CALLBACK presents ASRS report excerpts that are significant, educational, and timely. Occasionally features on ASRS program developments and research are also presented. Over 403 issues have been published and distributed throughout the U.S. and to the international aviation community. All issues since December 1994 are available for download at the ASRS website at:

http://asrs.arc.nasa.gov/publications/callback.html

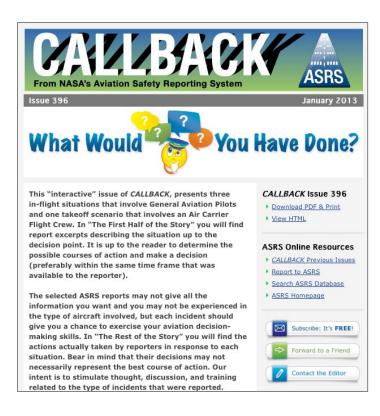






Distribution and Metrics

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



- The total number of email subscribers for 2012 was over 24,500
- CALLBACK views for 2012 (HTML and PDF) were over 300,000





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

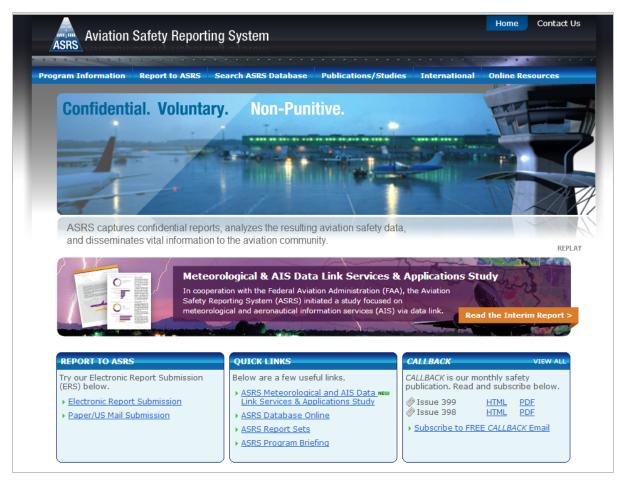


ASRS Database Online Demonstration





ASRS Web Site



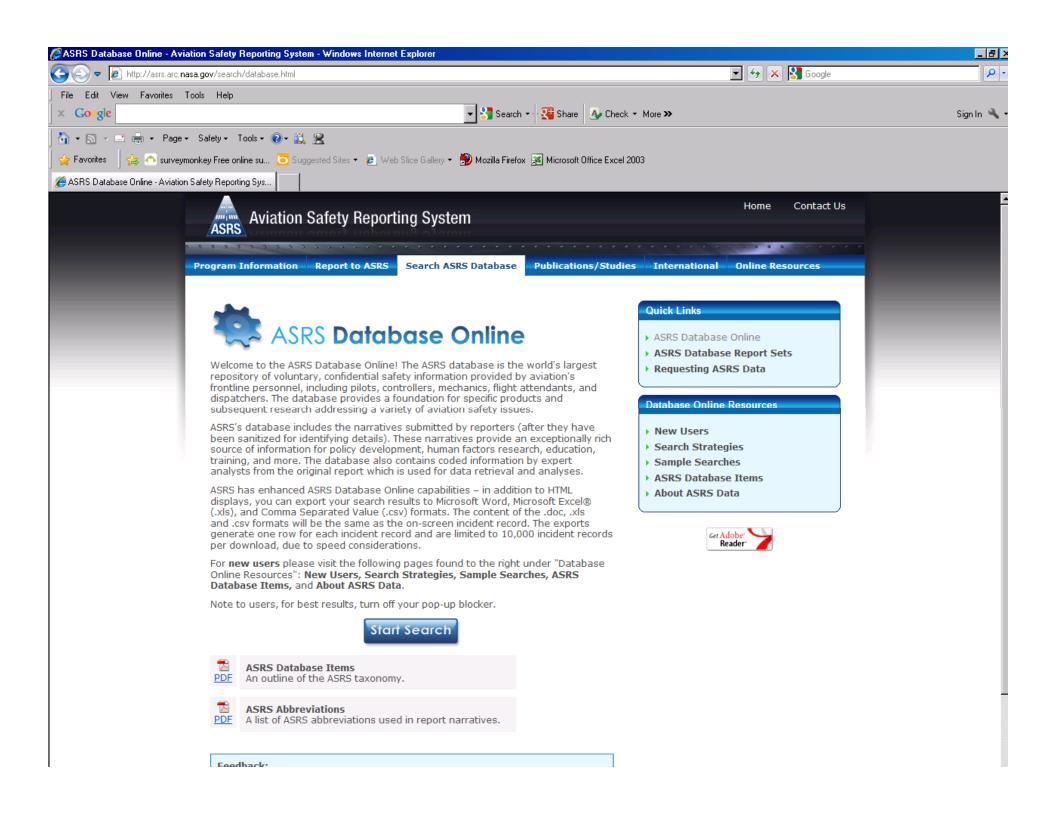
- Launch Oct. 2007
 - Over 9 million sessions in 2012
- File ASRS Report
 - Electronic
 - Print and Mail
- Database Online
- ASRS Publications
- ProgramInformation
- Immunity Policies

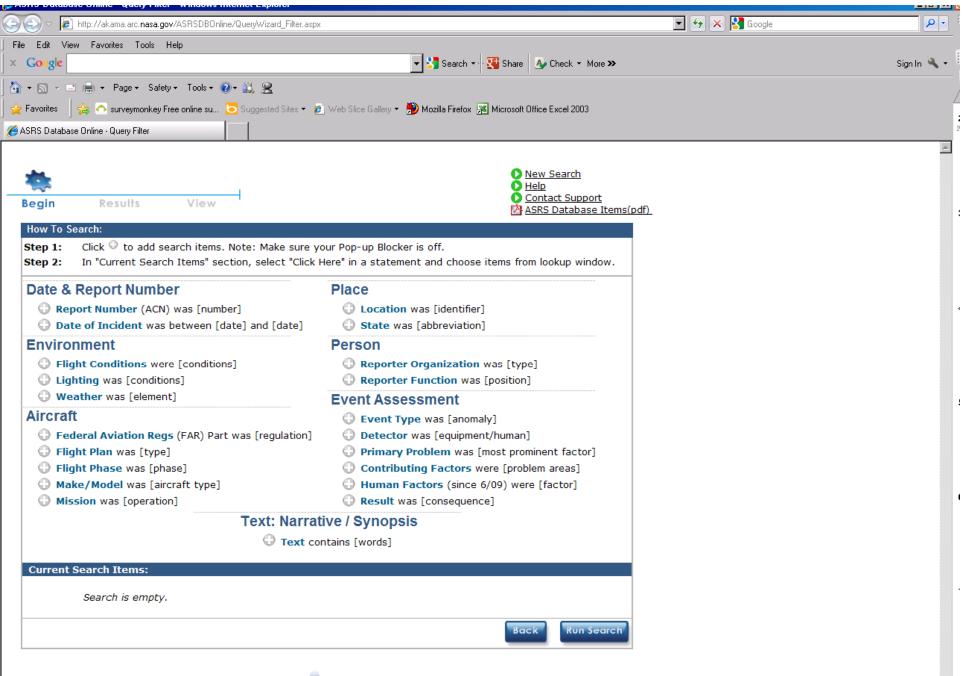


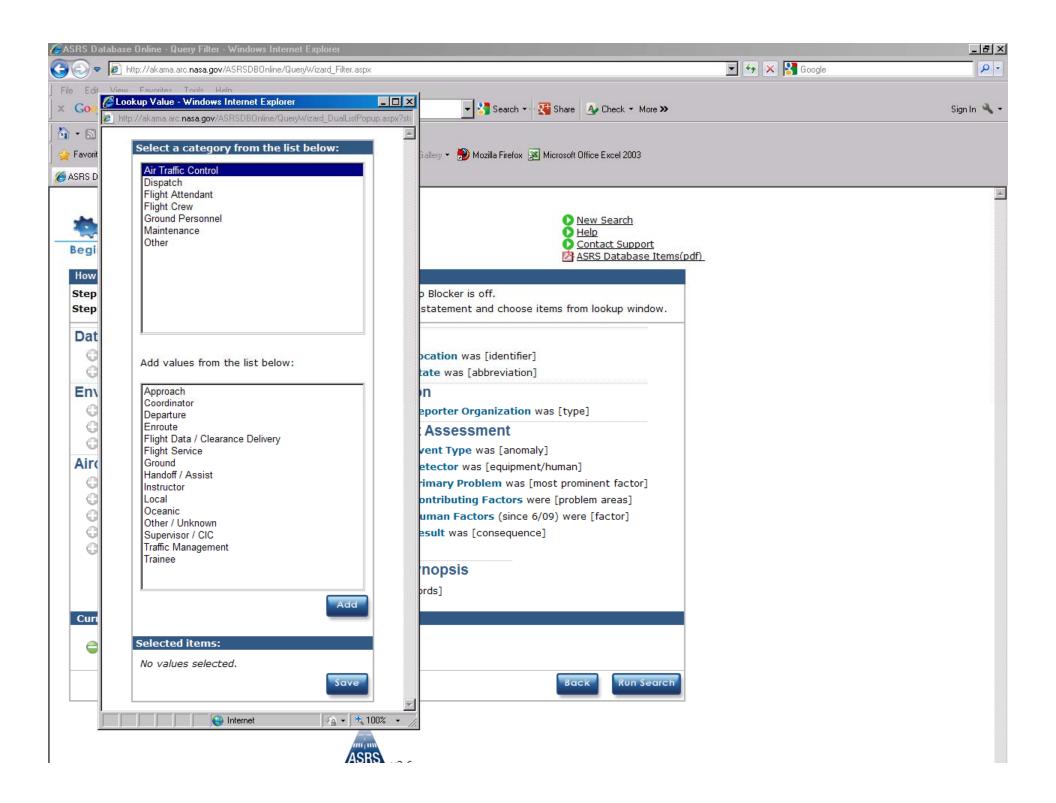
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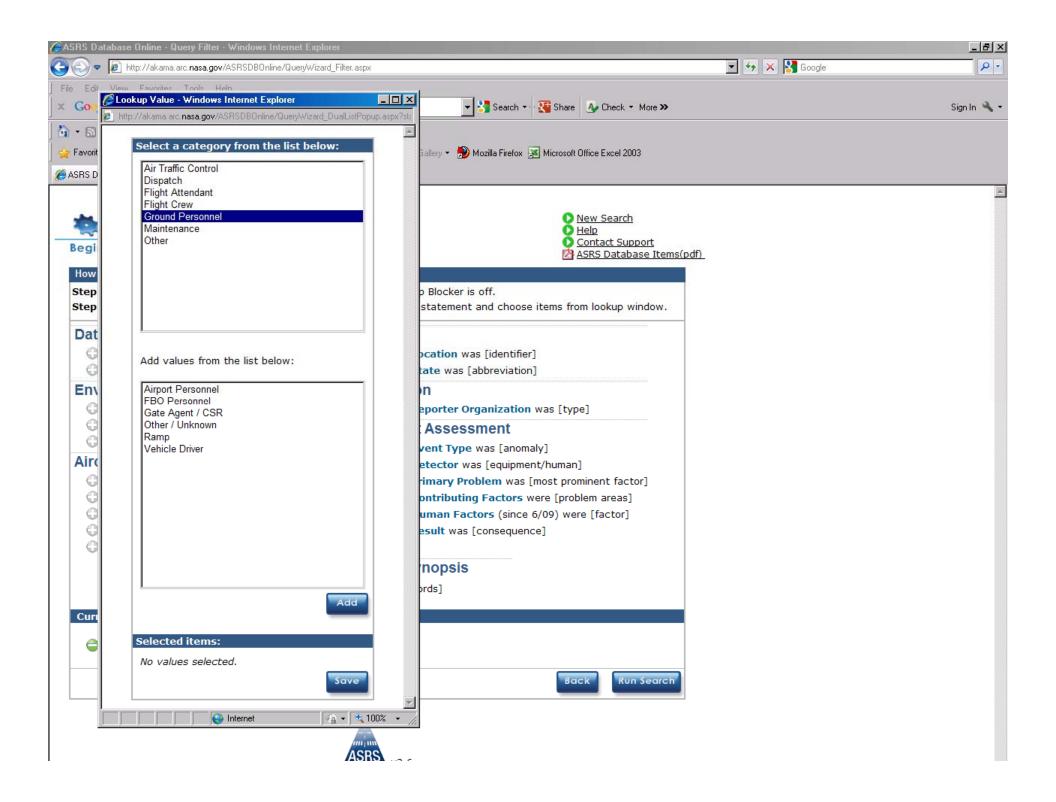
Aviation Safety Reporting System

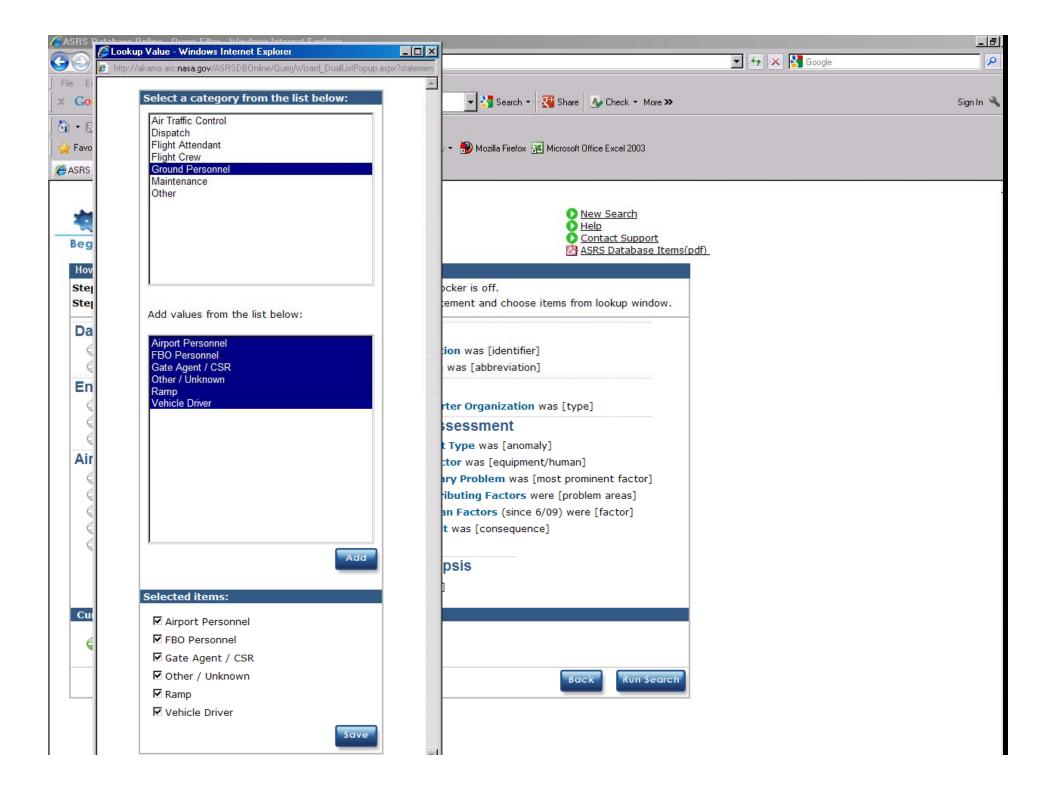


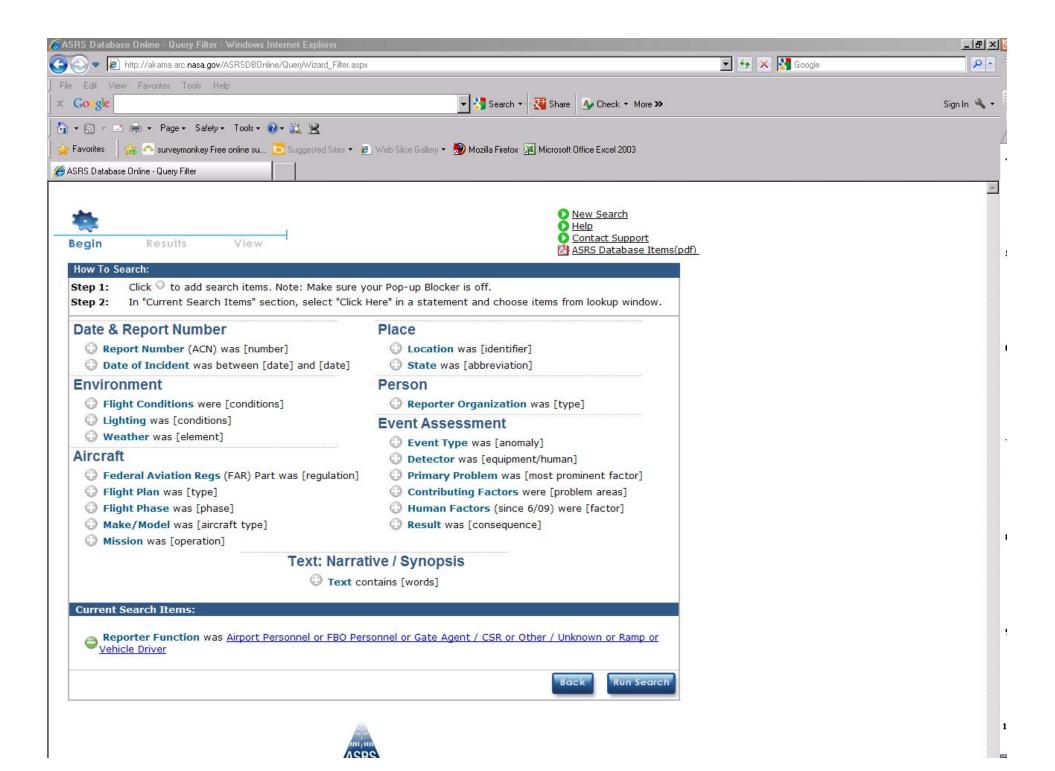


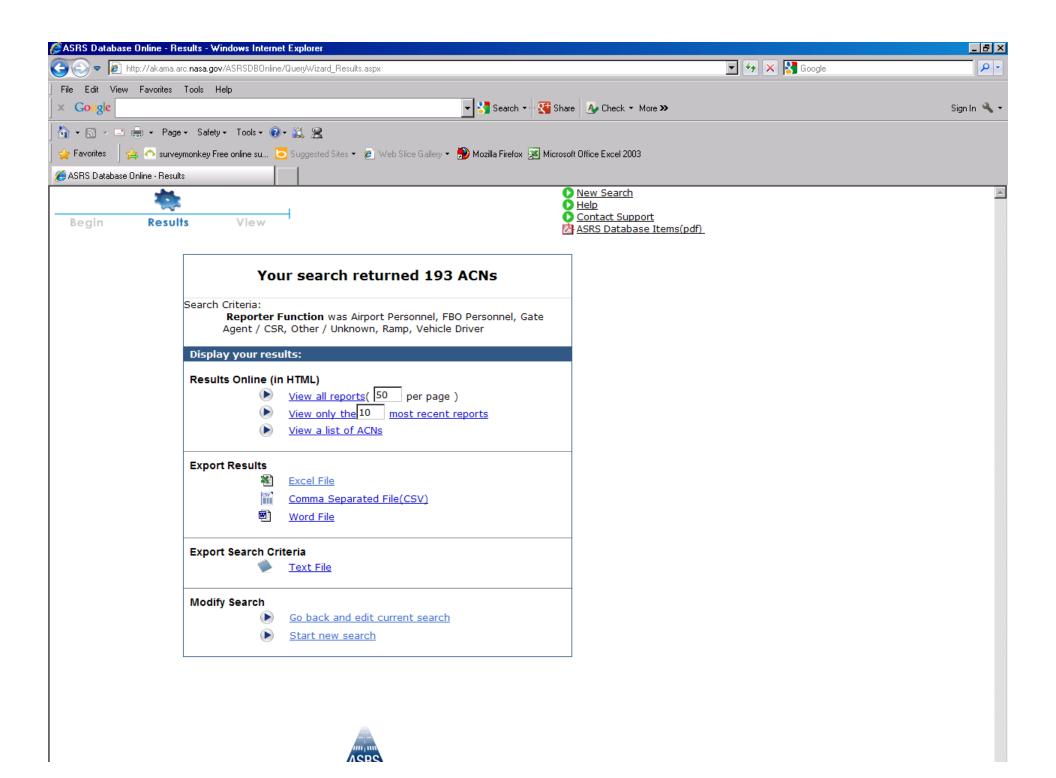


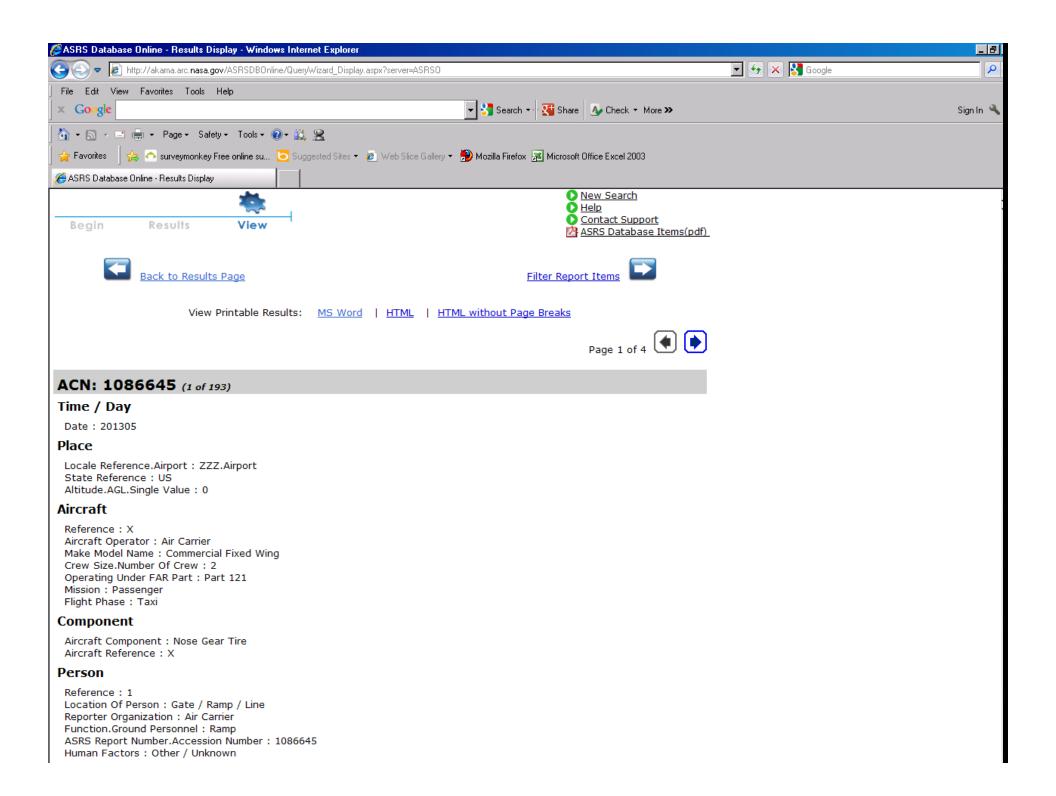


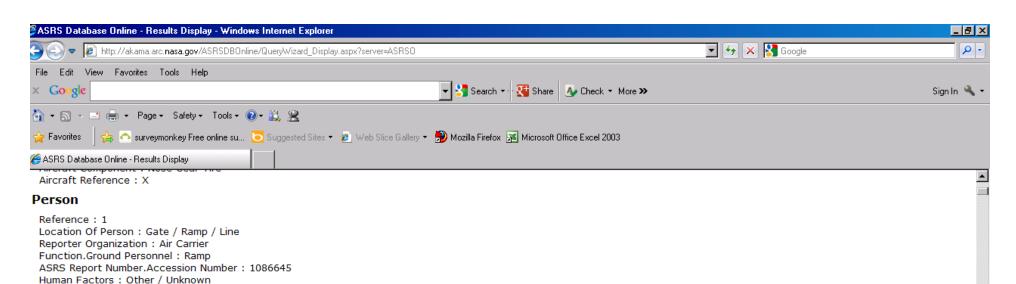












Events

Anomaly.Ground Event / Encounter : Object Anomaly.Inflight Event / Encounter : Object

Anomaly.Inflight Event / Encounter: Loss Of Aircraft Control

Detector.Person: Ground Personnel

When Detected: Taxi

Result.Aircraft: Aircraft Damaged

Assessments

Contributing Factors / Situations : Company Policy Contributing Factors / Situations : Equipment / Tooling Contributing Factors / Situations : Human Factors

Primary Problem : Ambiguous

Narrative: 1

Equipment failure: Towbar hitch broken causing the towbar to separate away from the aircraft. Aircraft was being towed using a Steward and Stevenson pushback tractor; one of our better pushback tractors but by no means a towing tractor. We have a Goldhofer tow tractor but it is out of service more than in service. We towed across 2 taxiways making a couple left and right turns. As I was guiding the aircraft into the gate, I was positioned to the driver's right side due to a pre-positioned GPU. Making sure tractor cleared unit. As the tow was almost complete and tow tractor was slowing down I was guiding tractor to stop mark. I happened then to notice the nose of aircraft veering to the left of the tow tractor. I quickly crossed over to the left hand side of tractor to see what was going on only to hear a loud pop and then a second pop. The tractors driver also noticed at the same time and quickly pulled forward going to the right side away from nose of the aircraft. Simultaneously I radio to flight deck to set breaks. This happened so quick we didn't have time to stop aircraft before it ran over the towbar popping both nose gear tires. My angle of vision was blocked by the position of the GPU and the tow tractor.

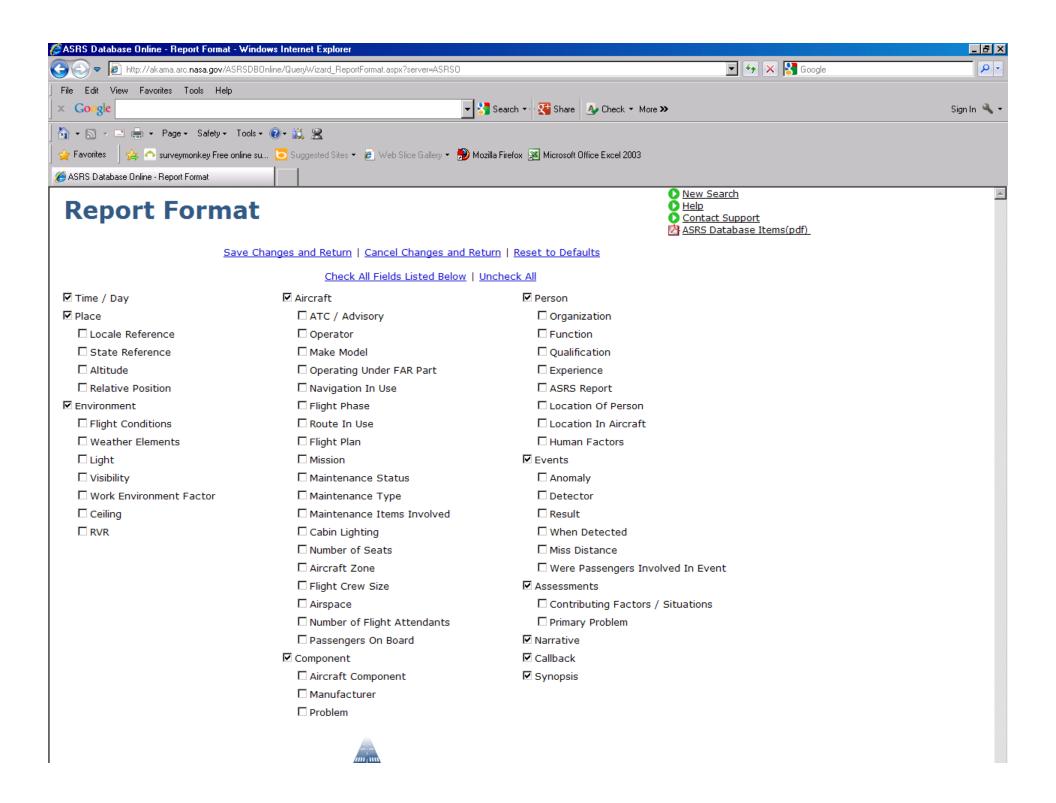
Synopsis

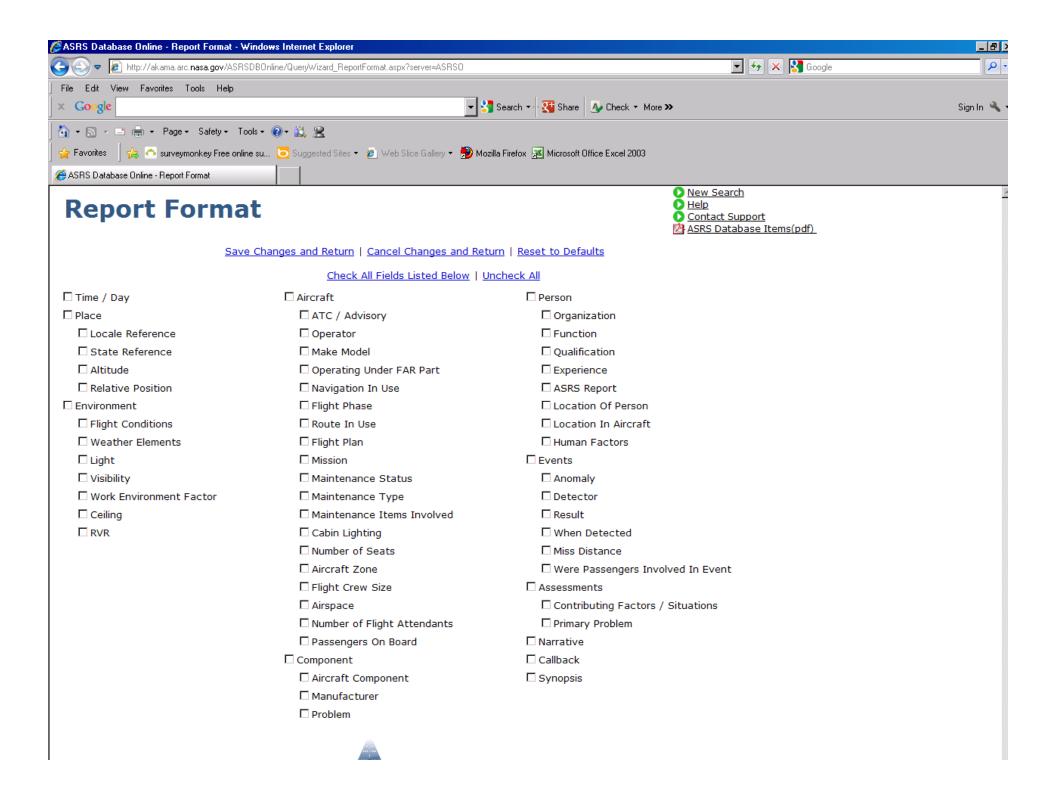
Ground crewman supervising an aircraft tow reports a broken tow bar hitch approaching the gate. Before the aircraft can be signaled to set brakes the nose tires run over the towbar popping both tires.

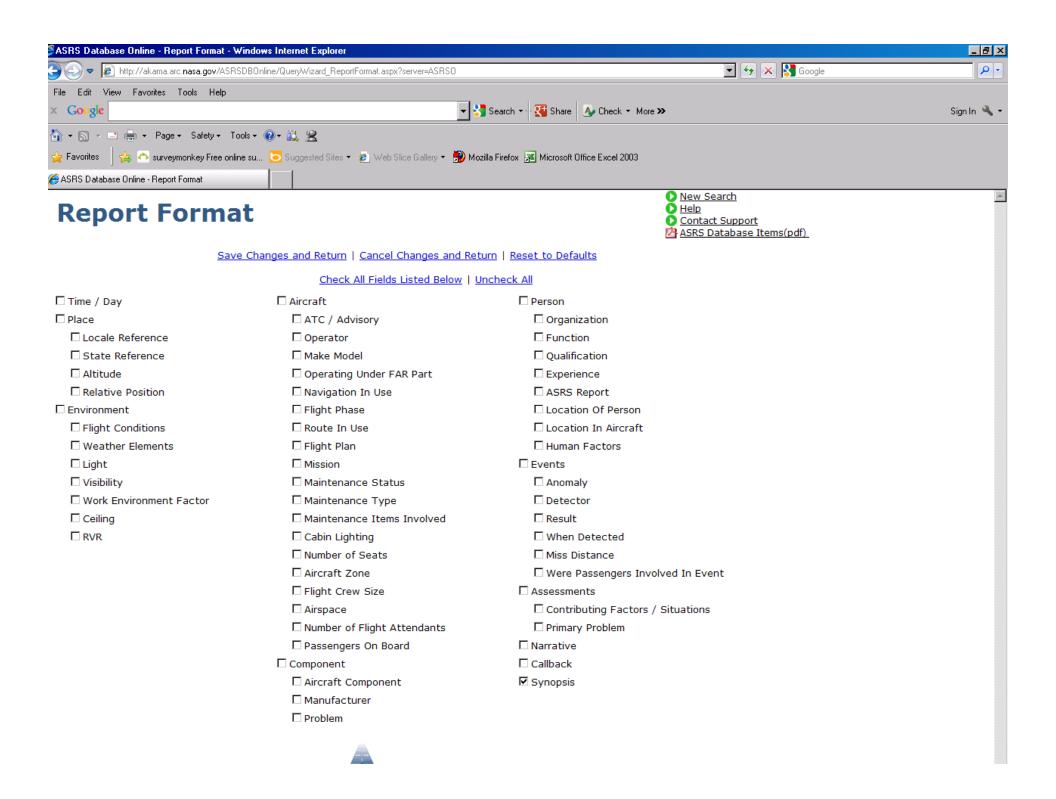
ACN: 1086636 (2 of 193)

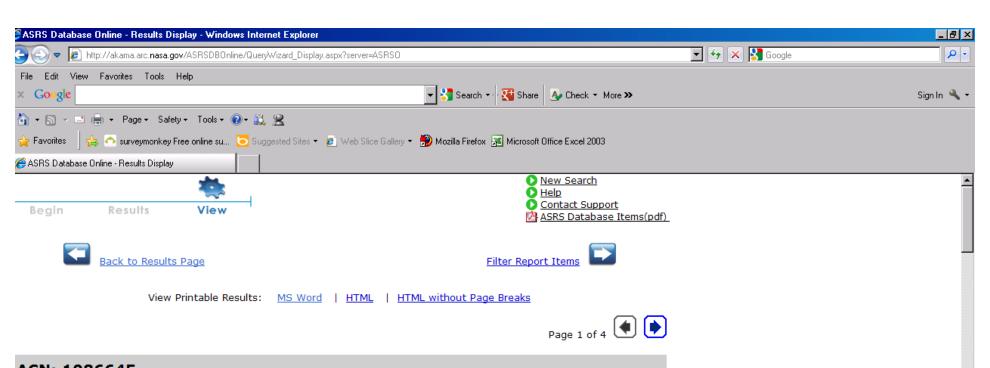
Time / Day

Date: 201303









ACN: 1086645 (1 of 193)

Synopsis

Ground crewman supervising an aircraft tow reports a broken tow bar hitch approaching the gate. Before the aircraft can be signaled to set brakes the nose tires run over the towbar popping both tires.

ACN: 1086636 (2 of 193)

Synopsis

Baggage handler suggest that the aircraft lavatories should not be serviced while the rear compartment is being loaded and unloaded due to the high winds present at PHOG and the likelihood that the ground crew will get sprayed.

ACN: 1080252 (3 of 193)

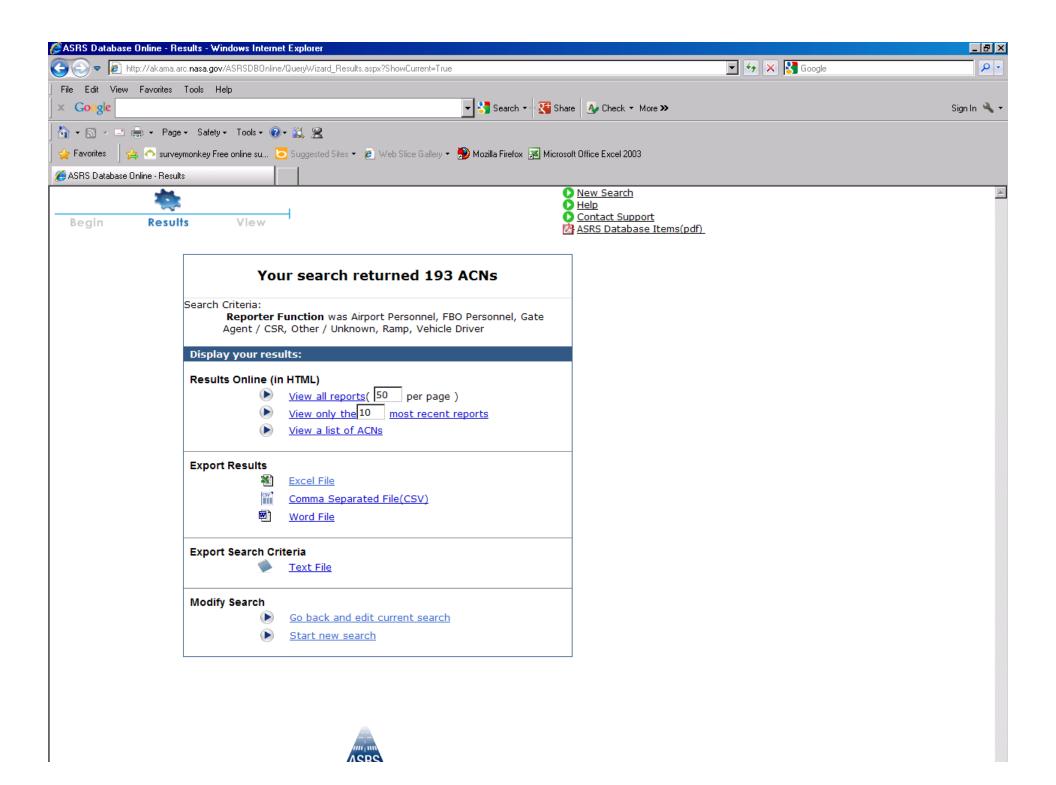
Synopsis

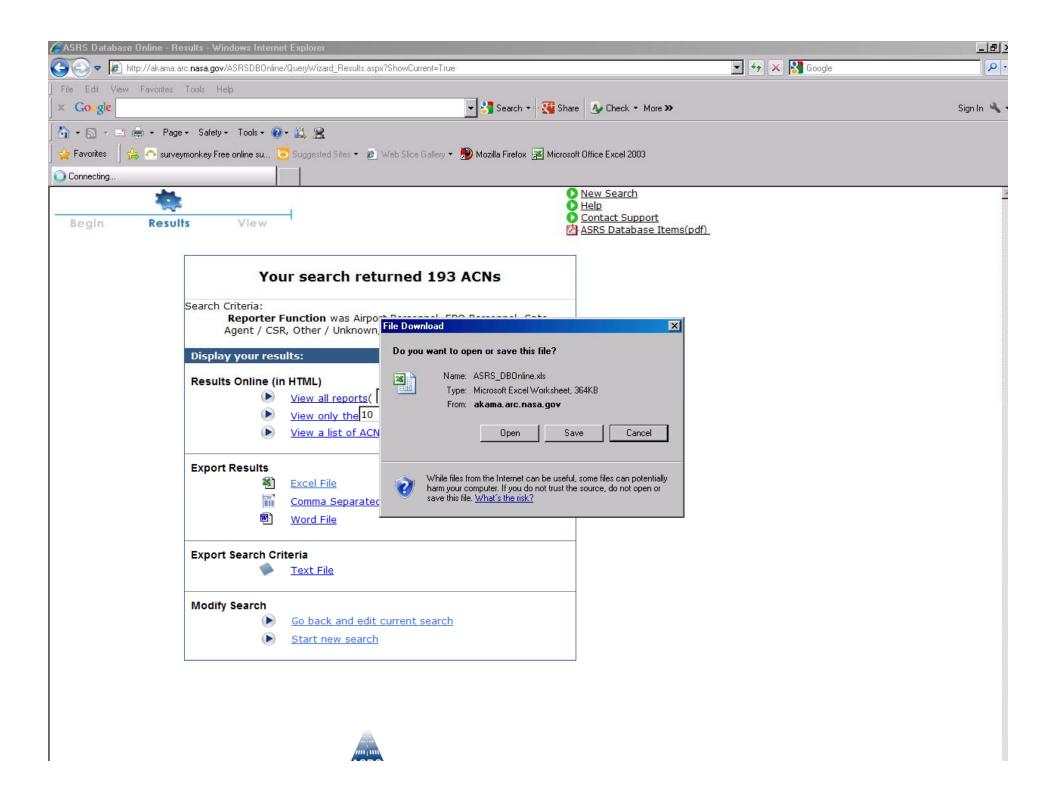
A baggage tractor driver, hurrying because he had no accurate way to determine the time relative to the scheduled departure time of flights to which he was delivering bags, attempted to take a turn at too high a speed and was ejected from the vehicle. The unmanned baggage vehicle continued uncontrolled and struck two lavatory trucks and several baggage carts.

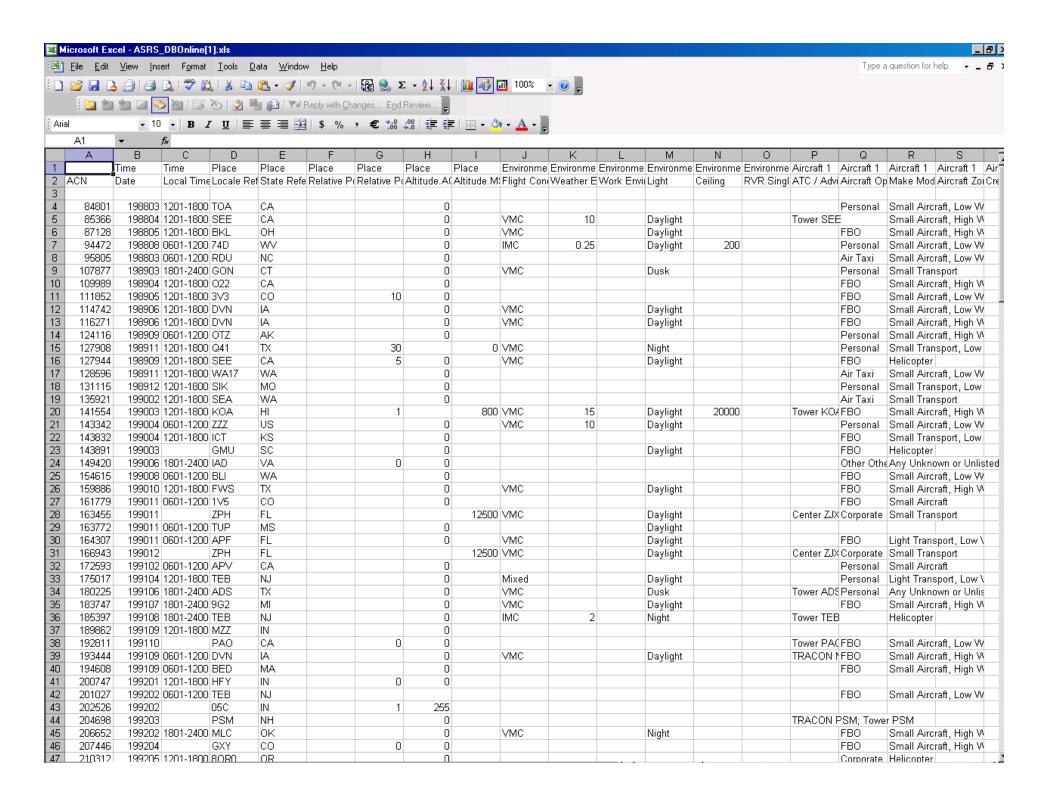
ACN: 983727 (4 of 193)

Synopsis

A Ramp Operations Tug Driver reports hooking up a tow bar to a CRJ-200 aircraft and positioning the pushback tug in front of







Contact Information

Linda Connell
NASA ASRS Director

Linda.J.Connell@nasa.gov

(408) 541-2827 ASRS Office

(650) 604-0795 NASA Office

http://asrs.arc.nasa.gov



