



“Don’t Get Blown Away” - A Review of ASRS Jet Blast Related Reports

InfoShare – Ground Ops

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**AVIATION SAFETY
REPORTING SYSTEM**



Discussion Topics

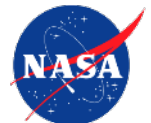
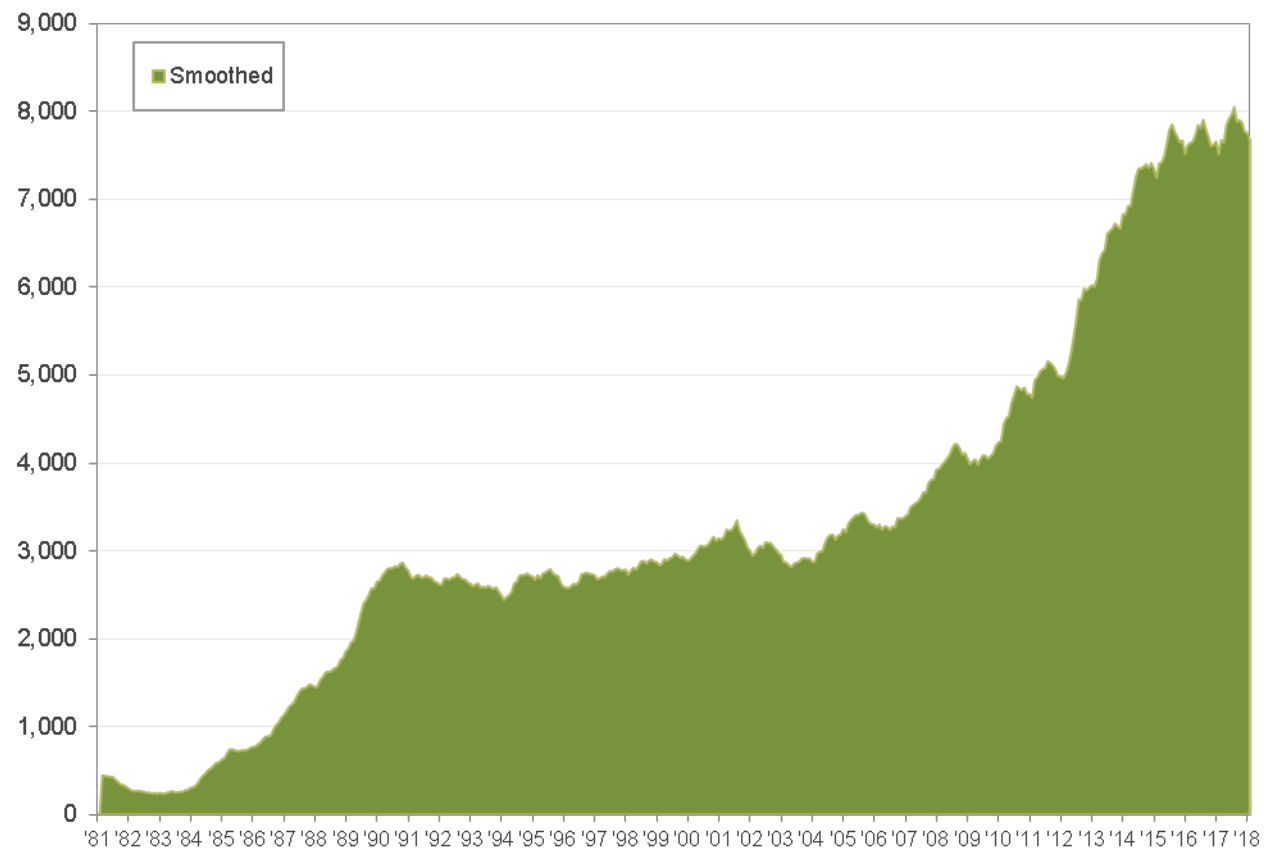
- ASRS Metrics and Alerts
- Ground Personnel Report Data – Intake, Location and Anomalies
- “Don’t Get Blown Away”
 - Review of relevant events



ASRS Report Volume Profile

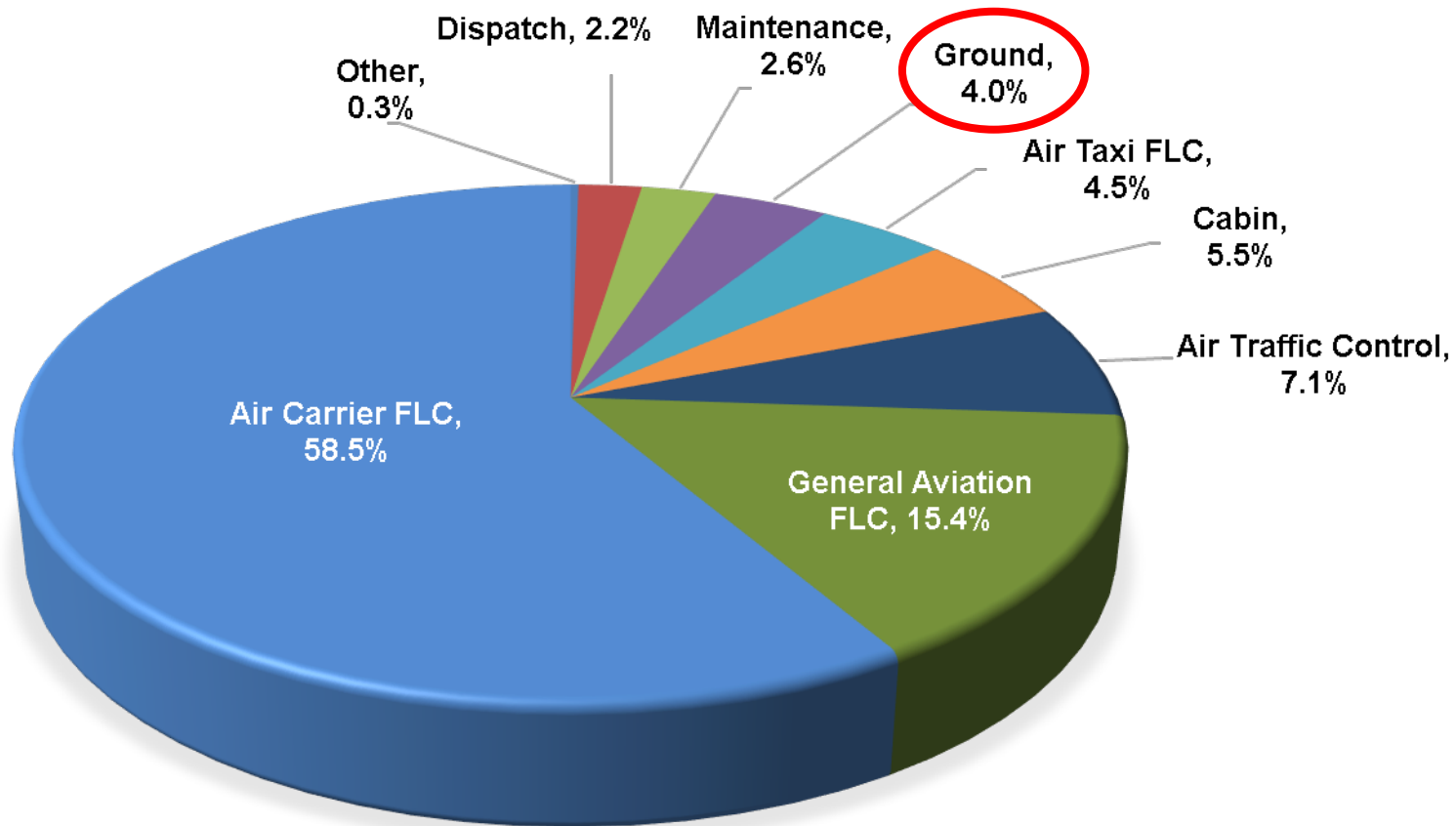
- Approaching 42 years of confidential safety reporting
- Over 1,522,000 reports received
- Over 6,400 alert messages issued
- Over 7,858 reports per month, or 377 per working day
- Total report intake for 2017 was 94,302
- Current rate estimate for 2018 is over 95,000

Monthly Intake
January 1981 – February 2018



Incident Reporter Distribution

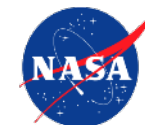
January 2017 – February 2018



n = 106,961



Source: 100% ASRS Report Data



ASAP Reporting to ASRS

■ ASAP Reporting

- 243 Total Programs
- 123 Air Carriers/Operators

More programs being added continuously

■ Reporting Groups

- 117 Pilot
- 57 Maintenance
- 43 Dispatch
- 23 Flight Attendant

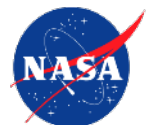
ASRS Electronic Transmission Methodology compatible with numerous software platforms

- 3 Other (Including Ground Crew, etc.)

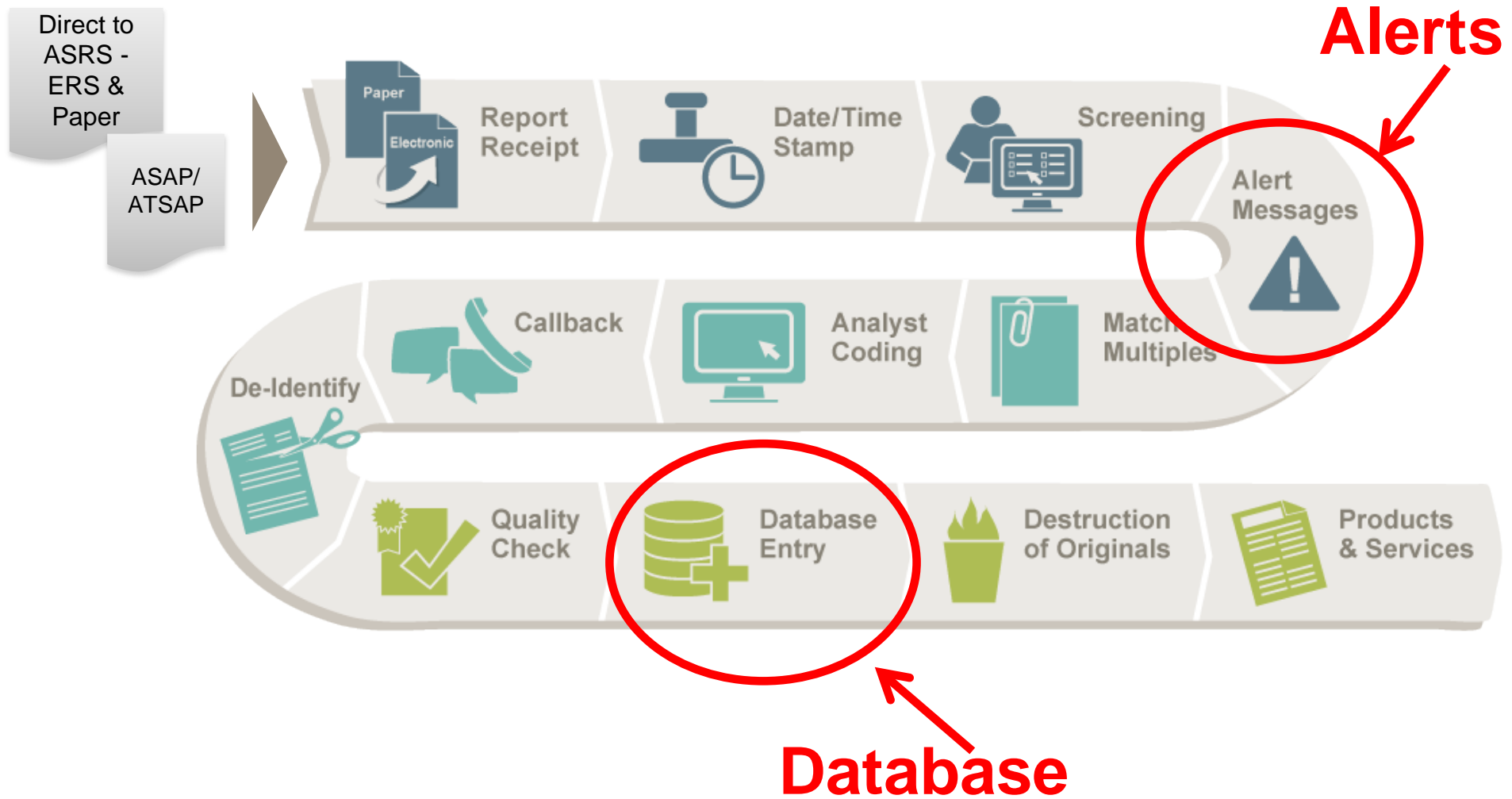
■ Majority are received through Secure Electronic Data Transmission protocols

■ Paper form submissions continue to be received at ASRS

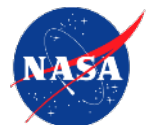
27.4% of all reports are matched to unique events in 2017



Report Processing Flow



Aviation Safety Reporting System



Ground/Ramp Operations Alert Messages

- **Ground/Ramp Alert Message Examples**
 - **Jet Blast Incidents Involving Ramp Operations Personnel**
 - Ground Vehicle Conflict Issues
 - Potential Effects of Insecticide Spray on Crewmembers
 - Ramp Personnel in the Vicinity of Operating Engines
 - ERJ-170 Baggage Loading Procedure Deviations
 - B737-800 Baggage Loading Procedure Deviations at JFK
 - Ramp Personnel Safety Issues
 - Ramp Personnel Performing Undocumented Activities in Cockpit
 - Towing of Regional Aircraft at ORD



Ground Personnel Report Data

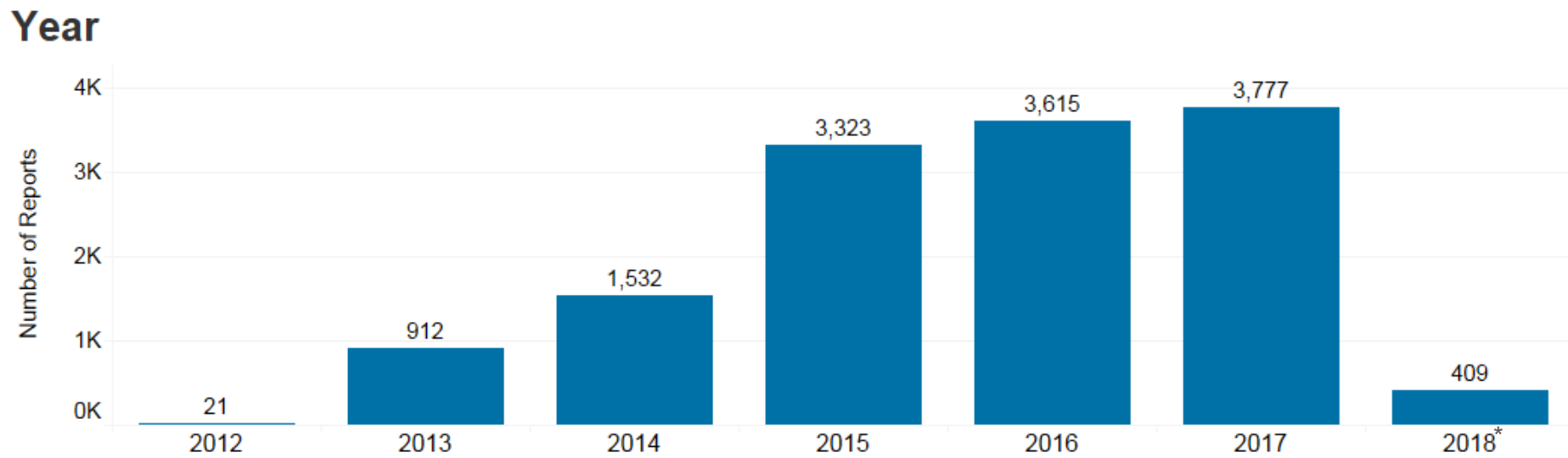
100% of Reports Received

- ASRS report data includes Ground Personnel incident reports received between Jan 1, 2012 – Feb 13, 2018
- Charts tabulated:
 - Year/Month
 - Location
 - Event Anomalies



Ground Personnel Report Data

100% of Reports Received (Jan 1, 2012 – Feb 13, 2018)



Year and Month

Month of Receive Date	2012	2013	2014	2015	2016	2017	2018*	Grand Total
January	2	1	111	151	291	331	294	1,181
February			106	158	348	276	115	1,003
March	4	1	107	272	268	319		971
April	1	28	73	173	388	319		982
May	4	73	107	263	332	373		1,152
June	1	128	120	278	317	411		1,255
July	4	131	126	299	283	326		1,169
August	2	130	99	490	292	290		1,303
September		174	123	324	249	283		1,153
October	1	100	139	309	318	292		1,159
November		82	221	232	236	269		1,040
December	2	64	200	374	293	288		1,221
Grand Total	21	912	1,532	3,323	3,615	3,777	409	13,589

Distinct count of ACN broken down by Receive Date Year vs. Receive Date Month. Color shows distinct count of ACN. The marks are labeled by distinct count of ACN.



*2018 data complete through February 13, 2018.

Data references 100% of reports received.

n = 13,589



Ground Personnel Report Data

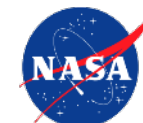
100% of Reports Received (Jan 1, 2012 – Feb 13, 2018)

Event Anomalies (Top 20)	Number of Incidents
Published Material / Policy	6,816
Ground Event Encounter - Other	5,611
Weight and Balance	1,062
Deviation - Procedural - Other	779
Aircraft Equipment Problem - Less Severe	409
Ground Event Encounter with Vehicle	335
Ground Event Encounter with Object	327
Hazardous Material Violation	215
Flight Deck / Cabin / Aircraft Event - Other	198
Ground Conflict, Less Severe	193
FAR	172
Illness	170
Security	141
Clearance	115
Maintenance	111
Ground Event Encounter with Aircraft	77
Taxiway Incursion	63
Ground Event Encounter with Person / Animal / Bird	50
MEL	33
Passenger Misconduct	28

n = 13,589



Categories are not mutually exclusive. Therefore, a single incident may be coded by ASRS analysts as involving more than one anomaly. Data references 100% of reports received.



“Don’t Get Blown Away” - A Review of ASRS Jet Blast Related Reports

- ASRS has received several Ramp Personnel reports describing numerous jet blast events during regular ground operations
- This topic was presented as a Telecon Item in January 2018 (Three events were discussed)
 - FAA, NTSB, NASA (Monthly)



Jet Blast Incidents Involving Ramp Operations Personnel

“Loose Hose”

- **Ground employee reported** an air hose came loose from an aircraft due to jet exhaust and wrapped around his ankle and pulled him down
- Reporter indicated a Boeing 777 aircraft had turned towards the taxiway and jet blasted the gate area (ACN 1484038)

Jet Blast Incidents Involving Ramp Operations Personnel

“Adjacent Gate Pushback”

- **Ramp employee reported** encountering jet blast from an A320 aircraft that began to taxi from adjacent gate; described the incident as a *“horrible jet blast event”*
- Reporter stated *“The real problem was, it was knocking the headset box over almost spilling wands/cords/bypass pins onto the tarmac right under the aircraft we just assisted and had engines running.”*

(ACN 1508472)



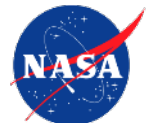
Jet Blast Incidents Involving Ramp Operations Personnel

“Close Proximity Pushback”

- **Ramp employee reported** the pushback crew for a B737-800 was subjected to jet blast from another B737-800 when the two aircraft were directed to adjacent ramp spots
- Reporter suggested Ramp Control should give consideration to ramp safety when assigning ramp spots for pushback and tow bar disconnect operations
- Reporter also stated this was not the first time this type of event has occurred (ACN 1498746)

“Don’t Get Blown Away” - A Review of ASRS Jet Blast Related Reports

- Additional recent reports in process:
 - 1519626
 - 1515266
 - 1512191
 - 1508472
 - 1506746
- Several reporters describe jet blast events from nearby aircraft movement



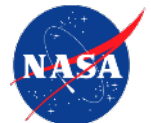
“Don’t Get Blown Away”

Normal Practice

Wing Walker Report

“...Prior to our pushout [from gate, adjacent gate] was pushing to spot X. The ramp tower instructed our pushback driver to proceed to spot Y which put us directly behind the widebody aircraft. I was the aircraft right, number 2 side, wing walker when this event occurred. I was holding up the stop signal before, after and during our push from [gate]. **If I was to stay on the wing where I am suppose to be, I would have been directly in the jet blast of aircraft.** After getting back to the gate, failing to have my stop signal effect the pushout, I questioned the crew. I was advised that this was a **normal practice** out of that gate. My problem is that this normal practice put myself and my teammates in a dangerous position. Also, without me on the wing, the aircraft could have been damaged.”

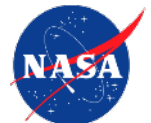
(Report 1519626)



“Don’t Get Blown Away” Duck!

Ramp Agent Report

“... Captain set brakes, Number 1 engine (aircraft left) running, disconnected tow bar, removed bypass pin, received permission to disconnect headset. My wing walker aircraft right, who disconnected tow bar, started the long walk back to [the departure gate], I positioned push back next to wing walker who was now at front of aircraft giving hold position to [the] Captain. [Another] aircraft had exited the runway and taxied toward his parking at [an adjacent gate]. There was [another] aircraft ready to depart. We thought the aircraft would hold until we were clear. Aircraft continued and aimed for entrance of ramp [near our position]. The wing of [the inbound aircraft] passed over the back of our push back and he continued to the gate. We also received jet blast as 2 engines were running. **We had to duck within the pushback to take cover.**” (Report 1515266)



“Don’t Get Blown Away” Tight Space

Captain Report

“... We pushed off the gate and started normally both engines. As we were still connected to the tow vehicle and pushed back from gate XX, a **Regional Jet taxied in front of our aircraft**, behind the tow vehicle and between us and the gates in a very tight space. As the **RJ approached the ground crew tried to wave them to stop but they did not follow the ground crew**. They continued past and stopped short of gate XX turning their jet blast directly on the ground crew who were attempting to unhook us. **The jet blast blew ice and thrust on the ground crew**. There was no ground crew to lead the RJ into the gate so our crew struggled and eventually unhooked and saluted us off. The spacing in this area was tight and we used all our attention to avoid any mishap as we departed. ...My suggestion is a review of this airport, and return of a ramp control for safety.” (Report 1512191)

“Don’t Get Blown Away” Unmarshalled Aircraft

Pushback Tug Driver Report

*“We were just finishing our pushback and the brakes were set. The tug was still connected to the aircraft via tow bar. We were pushed basically straight back. At this time, a CRJ-700 being taxied by maintenance crews cut in front of us to park at the gate we just pushed back from. The aircraft came in unmarshalled and the area was so tight he actually came into the gate line half way up. When he turned to line up with the line his engines were running pointed directly at the pushback crew. I estimate his tail about 20 feet from the pushback crew with his engines running. **This put the ramp personnel directly in their jet blast creating an extremely unsafe condition. The ramp personnel were having difficulty standing up.** They were eventually able to disconnect and then marshal the offending aircraft the last 5 feet into the gate. I do not know if any ramp personnel were injured....” (Report 1506746)*



“Don’t Get Blown Away”

FOD in Motion

Captain Report

“...an aluminum fueling ladder was blown into the number 2 engine cowl of an Airbus parked... A B747 was parked at gate...resulting in our nose being positioned very close to the left wing tip of the B747.... This then requires an immediate right hand 90 degree turn to exit and clear our left wing tip with the left wing tip of the 747 ... There was a wing walker in place to facilitate this clearance, which was logistically tight. To facilitate, the power was set to just under 30% N1...prior to brake release to assure accuracy of thrust setting. We were at maximum gross weight and 30% is very much needed to make the 90 degree turn and then taxi up slope to the center line, (approximately 300 feet) where the slope of the ramp crests. ...it appears that the fueling ladder, which is apparently on wheels, began to move when we were at the 45 degree point of our initial turn out after brake release. ... Adjust the pushback spot so as not to require a 90 turn so close in to the gate area. If it is not possible, ramp personnel must prepare the area for sustained breakaway thrust blast during the turn and up slope taxi.” (Report 1413664)

“Don’t Get Blown Away” FOD in Motion 2

Ground Personnel Report

“Empty LD3 unit was jet blasted with 75 MPH jet blast causing container to become airborne and strike a maintenance pick-up truck.” (Report 1515523)





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