

The importance of CRM in inflight emergencies

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Southwest Airlines - Who We Are

- 48th year of service
- Approximately 58,000 Employees
 - 16,500 Flight Attendants
 - 9,700 Pilots
- Operate more than 4,000 flights per day during peak travel seasons
- Operate fleet of 750 aircraft
 - All 737 fleet
 - Largest fleet of Boeing aircraft in the world
- Serve 102 destinations across the United States and 10 additional countries

Southwest Airlines- Where We Fly



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The Importance of Crew Resource Management



Flight 2123
February 12, 2018



Flight 3562
March 11, 2018

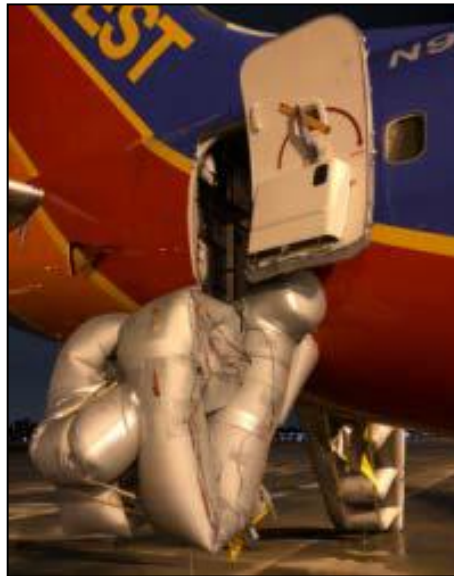
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Flight 2123, SNA-SJC, Unplanned Evacuation

- 2 Pilots, 3 FAs, 139 passengers, 1 lap child, 2 wheelchair passengers
- Flight Attendants starting safety demonstration
- Pushback Crew advised Pilots of flames emitting from APU
- APU shut down
- Pilots unable to contact Ground Control due to lack of power
- Fire department responded, confirmed flames emitting from tail cone
- Pilots unable to use interphone due to lack of power
- Opened flight deck door and advised Flight Attendants to evacuate

Flight 2123, SNA-SJC, Unplanned Evacuation

- L1 and R1 doors and window exits opened by Flight Attendants
- L2 and R2 opened by passengers
- R2 slide did not inflate



In the Cabin

- “A” in front making PA
 - First Officer opened flight deck door and advised to evacuate
 - FA began shouting evacuation commands
 - Could not initially open L1 due to jetway
- “B” in mid cabin near overwing exit
 - Heard First Officer advise to evacuate
 - Assessed conditions and opened overwing exits
 - Saw flaps had not been lowered, reassessed conditions
 - Directed passengers back into aircraft to door exits
- “C” near front of cabin
 - Heard First Officer advise to evacuate
 - Assessed conditions and opened R1 door
 - Directed evacuation at R1
 - Walked to back and saw doors open

Wins

- Crew had introductions and preflight briefing
- Good communication between Pilots/Ramp and Pilots/Flight Attendants
- Event occurred at pushback
- Ramp Agents able to assist
- No injuries

Challenges

- No working interphone
- Rain and darkness
- No Flight Attendant in aft portion of plane
- Flaps not lowered
- Passengers unable to evacuate off wings
- R2 slide did not inflate

Flight 3562, PHX-DAL, Possible Evacuation

- 2 Pilots, 4 Flight Attendants, 140 passengers
- Flight Attendant reported unusual smell in aft galley/lights flickering
- Pilots declared emergency and diverted to ABQ
- During descent, Flight Attendant reported visible smoke
- Aircraft landed, and Flight Attendants initiated evacuation



In the Cabin

- Cabin got very hot after takeoff
- Crew and passengers smelled smoke
- Lights flickered
- Pilots advised of diversion to ABQ with possible evacuation
- Flight Attendants prepared the passengers and cabin
- Upon landing, Pilots announced “remain seated”
- Due to visible smoke, Flight Attendants initiated evacuation via emergency slides

Wins

- All slides inflated
- No serious injuries

Challenges

- Communication between Pilots/Flight Attendants before flight and throughout event
- Varying levels of experience among Flight Attendants
- Initiation of evacuation by Flight Attendants instead of Captain
- Varying levels of understanding of other work group's evacuation tasks

4.3.0 Evacuation Procedures

Revised: 06/12/2018

[14 CFR Part 121.311]

- 1. When danger is apparent and the aircraft is still moving, Flight Attendants remain belted in the brace position and begin shouting the brace command HEADS DOWN STAY DOWN.
- 2. When the aircraft stops, the Captain communicates an evacuation decision:

Table 4.2 EVACUATION DECISION

Remain Seated:	Evacuate:
Passengers should remain seated when the Captain communicates that an evacuation is not necessary. Flight Attendants assess observable conditions and communicate with the Captain.	Pilots may indicate which exits should be used. Pilots will give the command: “Evacuate, Evacuate, Evacuate.” If any portion of the evacuation command is heard over the PA, begin evacuation procedures. In the absence of communication from the Pilots, Flight Attendants assess cabin conditions and, if conditions warrant, initiate an evacuation. “B” Flight Attendant activates emergency lights.

Note: If one Flight Attendant or a Passenger has initiated an evacuation, other Flight Attendants should assess conditions and evacuate.

Note: If conditions allow, make multiple attempts to contact the Pilots. Pilots may be occupied with emergency checklist duties and unable to respond immediately.

Evacuation

Condition: Evacuation is needed.

- 1 PARKING BRAKE. Set C
- 2 Speedbrake lever DOWN C
- 3 FLAP lever 40 F/O
- 4 Pressurization mode selector MAN F/O
- 5 Outflow VALVE
switch Hold in OPEN
until the outflow VALVE
indication shows fully open
to depressurize the aircraft F/O
- 6 If time allows, verify that the flaps are 40
before the engine start levers are moved
to CUTOFF. C
- 7 Engine start levers (both) CUTOFF C
- 8 Advise the cabin to evacuate. C
- 9 Advise the tower. F/O
- 10 Engine and APU
fire switches (all) Override and pull C
- 11 If an engine or APU fire warning occurs:
Illuminated fire
switch Rotate to the stop
and hold for 1 second C



SMS Process

- Completed root cause analysis
- Performed System Assessment to determine how to enhance safety performance
- Deemed Safety Continuous Improvement
- Identified opportunities to enhance training for Pilots and Flight Attendants



Lessons Learned

- Introductions and preflight briefing
 - Highlighted in Pilot and Flight Attendant Training/Captain Upgrade
- Awareness of evacuation tasks for Pilots and Flight Attendants
 - Emphasized in Pilot and Flight Attendant Training
- Joint training opportunities
 - Videos with real-life scenarios featuring Pilots and Flight Attendants
 - Chief Pilots in Flight Attendant Recurrent Classes
 - Inflight Base Managers in Pilot Recurrent Classes



QUESTIONS?



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