

CALLBACK

From NASA's Aviation Safety Reporting System



Issue 453

October 2017

Re-sourcing Crew Management

The application of team management concepts in the flight deck environment was initially known as cockpit resource management. As techniques and training evolved to include Flight Attendants, maintenance personnel, and others, the new phrase “Crew Resource Management” (CRM) was adopted. CRM, simply put, is “the ability for the crew... to manage all available resources effectively to ensure that the outcome of the flight is successful.”¹ Those resources are numerous. Their management involves employing and honing those processes that consistently produce the best possible decisions. Advisory Circular 120-51E, CREW RESOURCE MANAGEMENT TRAINING, suggests that CRM training focus on “situation awareness, communication skills, teamwork, task allocation, and decision-making within a comprehensive framework of standard operating procedures (SOP).”²

Aircrews frequently experience circumstances that require expert CRM skills to manage situations and ensure their successful outcomes. Effective CRM has proved to be a valuable tool to mitigate risk and should be practiced on every flight. This month *CALLBACK* shares ASRS reported incidents that exemplify both effective CRM and CRM that appears to be absent or ineffective.

Who Has the Aircraft?

A B737 Captain had briefed and instituted his non-standard method to transfer aircraft control when the FO performed takeoffs. When he did not employ his own technique, confusion was evident and aircraft control was questionable.

■ *[As we were] pushing back in Albuquerque, ATC switched the airport around from Runway 26 to Runway 8. The Captain and I ran the appropriate checklist and proceeded to taxi.... I was the Pilot Flying (PF) [for this leg]. The Captain stated previously that he likes to spool the engines up and transfer controls while the aircraft is moving.*

Once cleared for takeoff, the Captain spooled the [engines]. I was expecting him to transfer controls. I monitored him spool them up to takeoff power. While he was accelerating, my comment was, “I’m not flying the aircraft. You have the controls.” He seemed confused briefly, and we took off with the Captain in full control without incident.

The Captain needs to [abandon] the habit of transferring thrust levers to the First Officer while moving. It’s a bad

habit. It can be confusing if one of the crew members is saturated.... Under no circumstance should transfer of thrust levers and aircraft happen while saturated in the takeoff phase while moving.

Freedom of Speech

This Captain received uncommon, simultaneous inputs from two unexpected sources. An accident may have been averted when the Heavy Transport crew exercised simple, effective CRM in a critical situation and high workload environment.

■ *This was a night takeoff, ...and it was the FO’s first flying leg of Initial Operating Experience (IOE). Two Relief Pilots were assigned for the flight. We were cleared onto the runway...after a B737 [had landed]. The FO taxied onto the runway for takeoff. Once aligned for takeoff, I took control of the throttles. At this point I thought we were cleared for takeoff, but apparently we were not. I advanced the power to 70% and pressed TOGA. At about that same time, a Relief Pilot alerted the flying pilots that the other plane that had just landed was cleared to [back-taxi]...on the runway, and the Tower alerted us to hold our position. I disconnected the autothrottles and immediately brought them to idle. [Our speed was] approximately 30 knots, and we had used up approximately 200 to 400 feet of runway. The back-taxiing B737 exited the runway.*

Looking back, somehow the clearance to take off or the non-clearance was lost in the translation. The Controllers in ZZZZ most often use non-standard phraseology with an accent not easily understood.... Higher than normal workloads [existed] due to a new hire first leg, and the flight was late and had been delayed from the previous day. I had assumed situational awareness with the airport and runway environment. Generally in past practice, ZZZZ holds the landing traffic in the holding bay after landing and does not have two airplanes on the runway at the same time. What “saved” the situation was good CRM and situational awareness by the Relief Pilots.

Finishing Strong

This MD80 crew finished the last leg of their trip, but distractions degraded the performance of their duties. Unmanaged threats had contributed to the misperception that the job was done when it was clearly incomplete.

From the Captain's report:

■ *The landing was uneventful, and we were given an expedited crossing of the departure runway. We accomplished the after landing checklist, but due to the expedited crossing, I wasn't sure if the First Officer started the APU (which had been consistent/standard practice so far in the trip). We were cleared to enter the ramp, and I consciously elected to leave both engines running (which was contrary to my standard practice during the trip). As we turned to pull into the gate,...an unmarked van cut across our path. We saw him coming, so no immediate stop was necessary.... At the gate,...we pulled to a stop normally, parked the brakes, and I believe I commanded, "Shut down engines." The FO believes he heard, "Shut down the left engine" (which had been the standard command throughout the trip). He shut down the left engine. The right engine continued to run and we finished the Parking Checklist and departed the cockpit.*

Minutes later...I received a page...requesting that I return to the gate. I returned to find the right engine running. I immediately shut off the fuel lever. No damage or injuries occurred. The aircraft was chocked and the brakes parked. In my estimation, there are three distinct contributing factors in this event.

1. *Complacency when reading the checklist. I assumed items had been accomplished and felt no need to follow up the response with a tactile and visual check.*
2. *Complacency when relying on past actions as a predictor of future actions. We had done things the same way each leg, therefore we would continue to do them the same way on every leg.*
3. *Distractions. The expedited crossing to the ramp side of the runway, compressed time frame for completing the after landing checklists, and vehicular traffic all led to this event.... These issues....still keep happening. Strict, unyielding adherence to policy and procedures is a must. No one is perfect, and that is why policies and procedures exist. An event like this WILL happen if you allow yourself to become too comfortable.*

From the First Officer's report:

■ *We arrived at the gate, and the parking brake was parked. The Captain remarked, "Shut down the Number 1 Engine, Parking Checklist." I read the checklist as the Captain responded. At the end of the checklist, I exited the aircraft.... I had walked about 10 gates down from the aircraft...when I heard an announcement asking the flight crew inbound from our flight to please return to the gate.... No one was there when I returned.... About 5 minutes later the agent*

walked up...and told me that one of the engines had been left running. She let me on the jet bridge and the Captain was walking off the aircraft....

I believe this problem came about because of a pattern we developed during all our flights.... I started the APU...after landing, and...about two to three minutes [later], would shut down the Number 2 Engine at the Captain's request. We did this every flight. After landing on this flight, it got very busy.... When...at the gate, the Captain called for me to shut down the Number 1 Engine, I didn't think about the Number 2 Engine still running.... I read the checklist and listened to the Captain's responses. I should have been double checking him, but I didn't.... This has never happened to me....I'm just grateful that no one was hurt....

Here, Here! and Hear, Hear!

This Dash 8 crew experienced a flight control problem that required extensive coordination. Thorough, effective CRM contributed to the orderly sequencing of their decisions and to the successful completion of their flight.

■ *We had to deice prior to takeoff, and we checked all flight control movements twice before we took off. At the beginning of the cruise portion of the flight, the...Master Caution Annunciators...and two amber Caution [lights] illuminated: ROLL SPLR INBD HYD (Spoiler Inboard Hydraulics) and ROLL SPLR OUTBD HYD (Spoiler Outboard Hydraulics). We completed the associated Spoiler Failure Checklist, including confirming that all spoilers [indicated] retracted at the PFCS (Primary Flight Control System) indicator. The Pilot Flying, the Captain, continued to hand fly the aircraft (as our autopilot was [inoperative] for all legs). We evaluated all facts, discussed all of our options, and [advised Center of our flight control situation]. We informed them that we were not requiring any assistance (upon landing or elsewhere).*

The Captain talked to Dispatch and Maintenance, while I hand flew the aircraft. The Captain, Dispatch, and I all agreed that ZZZ, with its long runways, was the best place to land. I informed our Flight Attendant that we were planning on a normal, uneventful landing with no delays. ATC issued [our runway], and we executed a visual approach. [We accomplished] a normal landing and taxi. We thanked ATC for all of their help. At the gate, the maintenance write up was completed. The smooth outcome can be attributed to very good CRM exhibited today.

1. https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/airplane_flying_handbook.pdf

2. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC120-51e.pdf

ASRS Alerts Issued in August 2017	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	2
ATC Equipment or Procedure	1
TOTAL	3

453

A Monthly Safety
Newsletter from

The NASA
Aviation Safety
Reporting System

P.O. Box 189
Moffett Field, CA
94035-0189

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

August 2017 Report Intake	
Air Carrier/Air Taxi Pilots	5,349
General Aviation Pilots	1,391
Controllers	598
Flight Attendants	516
Military/Other	321
Mechanics	203
Dispatchers	196
TOTAL	8,574