

On The Captain's Watch

The Captain as the Pilot Monitoring

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Command and Control

The Influence of Flight Crew Role Assignment on Flight Safety in Air Transport Operations

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Abstract: Compared with other team settings, flight crew in air transport present a unique situation where the leader or supervisor regularly engages in active control. When the captain is assigned cognitively demanding pilot flying duties, the subordinate and often less experienced first officer must perform equally crucial monitoring and support duties. Using a systematic review methodology, this study reviews the reported effect of crew role assignment on flight safety outcomes. Our review identified 18 relevant studies and suggests crew performance factors linked to flight safety are affected by crew role assignment. Findings suggest a greater number of inherent obstacles may exist for optimal crew performance with the captain as pilot flying, raising the need for further specific research and policy review in this area.

Keywords: crew resource management, decision making, flight crew, monitoring, pilot in command

“In the [AIR FORCE] it would be perfectly normal if not preferred for the commander to not be flying the aircraft”

“... if the PIC is flying when something goes awry, he/she should exchange controls as soon as practicable and manage the situation.”

“in [AIRLINE A] over 30 years ago and they had a 'Captain Kirk' attitude to management. They even had monitored approaches which was when WX fell below certain criteria the first officer had to fly the approach. I loved it but they also realised that you had to have **well trained first officers, not just seat fillers.**”

“When I did my command training at [AIRLINE B] I was horrified to learn that to hand over control of the aircraft to the FO was considered a bad thing... The Captain was to save the day.”

“In [AIRLINE X] the books mandate for the Captain to be PF in emergencies, in [AIRLINE Y] the Captain had discretion which I thought was much more constructive.”

“Occasional events I’ve had over the years I’ve found it more efficient to let the FO be PF (especially if they are doing it proficiently) which frees me up to monitor the situation and manage the communications with ATC, Company, Engineering, Cabin Crew, and Passengers. It also enables better monitoring of the PF and offering guidance or takeover if required.”

“I hope that airlines might pull themselves out of the deep rut of tradition and take the effective approach you recommend”

PicMA

Pilot-in-charge Monitored Approach

reducing "Crew-caused"
approach and landing
accidents

[HOME](#) [SHORT VERSION](#) [WHAT IS PICMA?](#) [PICMA BASICS](#) [PICMA.INFO](#) [FAQS](#) [CONTACT](#)

A simple change in flight operations could easily prevent many "crew-caused" approach accidents, runway excursions and loss of control events. Misunderstandings and lack of knowledge result in it being ignored.

Why PicMA is
needed

- > [Flight Operations need to change](#)
- > [The major problem areas](#)



Resolute Bay, 2011



Recently published landing accident reports

Every year
"Pilot error"
deaths,
damage

In such
landing
pilots were
prepared
informal
cross-check
effective

"Monitor
crew pro
simplest
effective

ELIMINATING "COCKPIT-CAUSED" ACCIDENTS

Error-tolerant Crew Procedures for the Year 2000

Captain Steve Last

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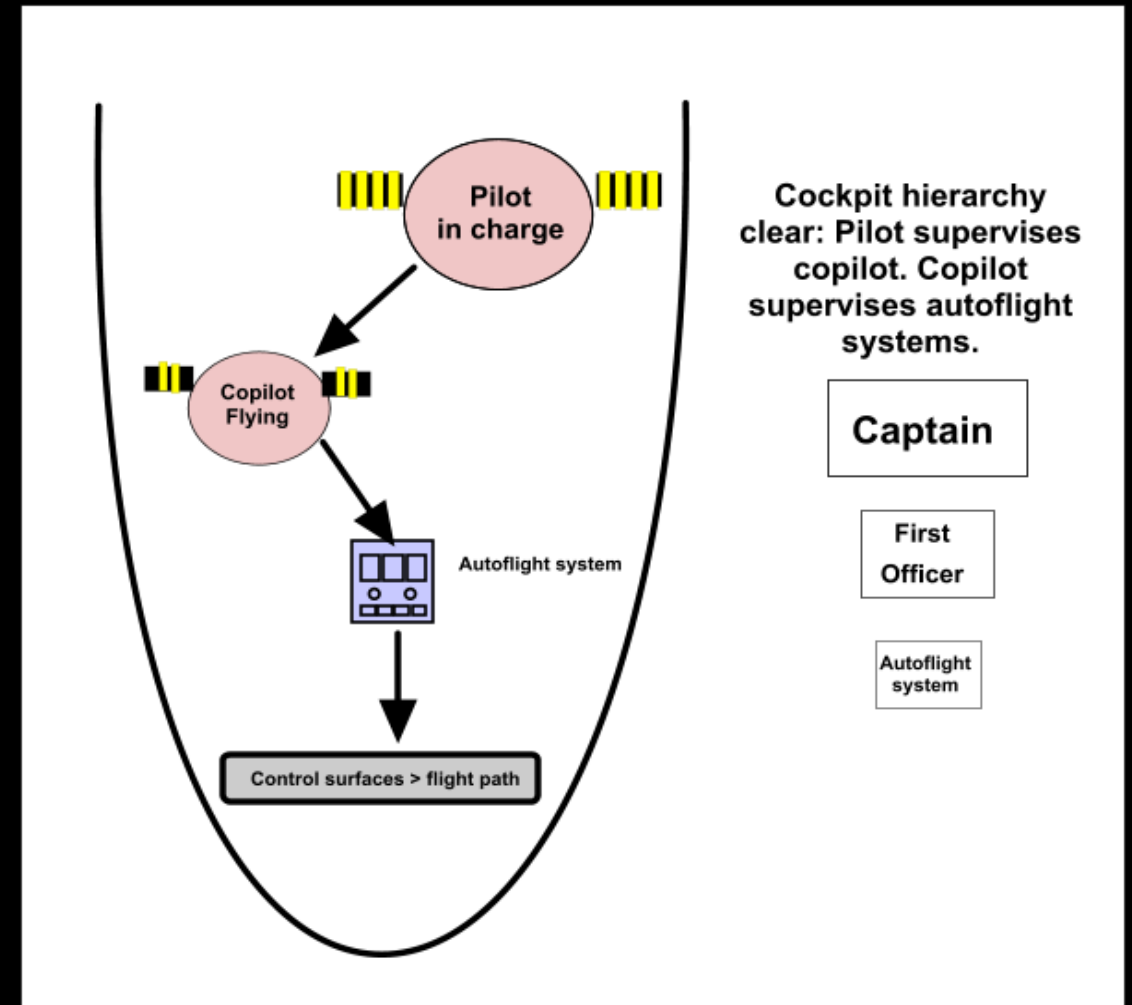
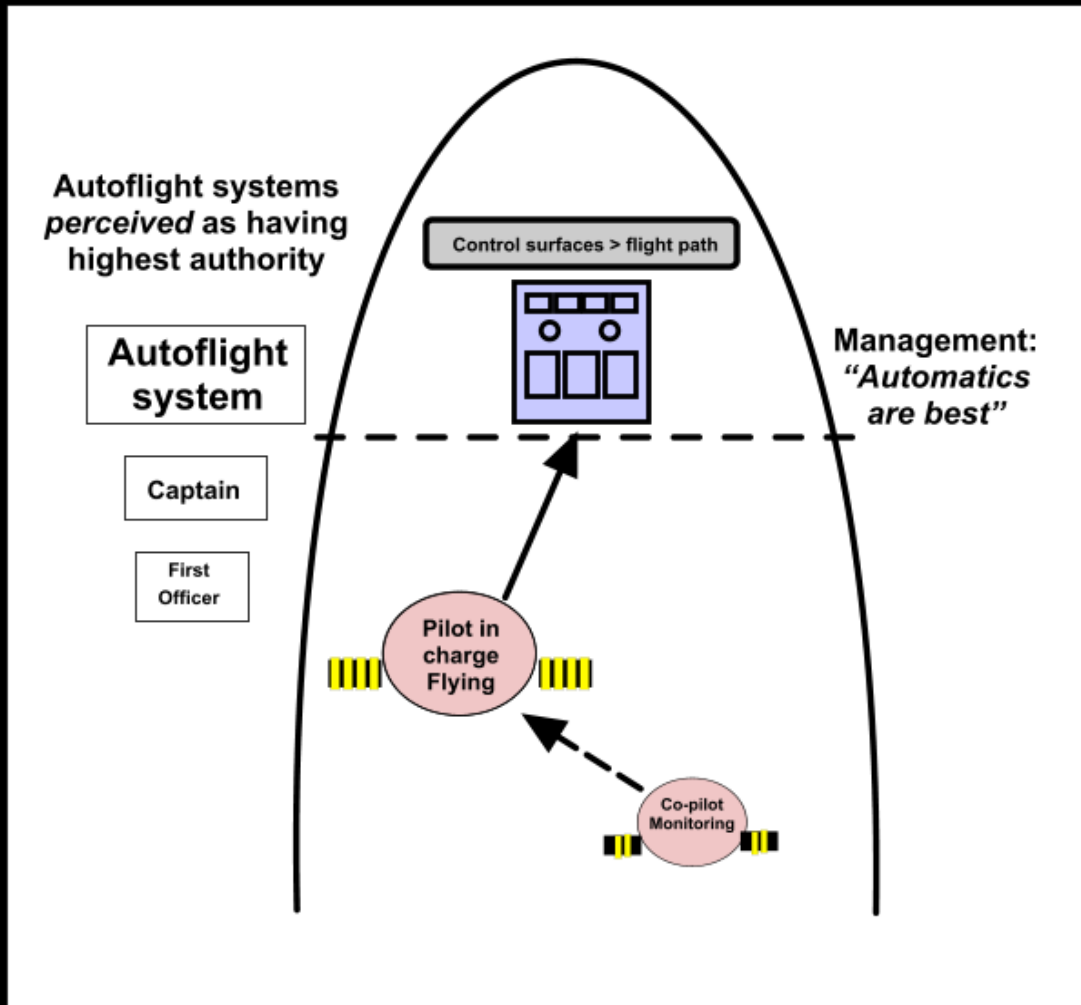
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PIC Monitored Approach (Capt. Steve Last)

- Evenly matches the workload with their capabilities
- Preserves SA of the captain to avoid/manage hazardous situations
- Greater degree of vigilance: *"On the Captain's watch"*
- Captain able to actively consider/execute strategy



- Moves automation to where it belongs in the cockpit hierarchy



PIC Monitored Approach (Capt. Steve Last)

- PM can make assessment of landing solution
- National cultures/personality strengths







FINAL REPORT

AIC 18-1004

AIR NIUGINI LIMITED

P2-PXE

Boeing 737-8BK

Chuuk Lagoon, 1,500 ft (460 m) before the runway 04 threshold

Chuuk State

FEDERATED STATES OF MICRONESIA

28 September, 2018

Air Niugini *FLIGHT STANDING ORDER*

On 14th June 2019, Air Niugini notified the AIC that on 14th February 2019 Air Niugini Limited issued *Flight Standing Order, B737 Operational Notice No: 006/2019*.

SUBJECT: SAFETY RECOMMENDATIONS – B737 CHUUK OPERATIONS.

The following recommendations have been inserted into Section 6 of the Boeing Route Guide:

1. Operations into Chuuk are restricted to PIC ONLY landing.
2. Chuuk can only be nominated as a destination airport for arrival during daylight hours.
3. Chuuk may be planned as an EDTO en-route alternate for day/night when no other options exist.
4. Aircraft shall not be dispatched from POM to Chuuk with any open MEL items for braking systems (Brakes and anti-skid systems, Thrust Reversers and Flight and Ground Spoilers).
5. Consideration should be given for using Flaps 40 landing.
6. Landing with a known tailwind component is NOT permitted.
7. Due to the risk of higher than expected ZFW ex TTK plus the TTK and PNI runway lengths the plan supplied for these airports will be a min fuel plan. The PIC has the final authority on the total fuel uplift.

“Operations into Chuuk are restricted to PIC ONLY landing”



Who Is Flying This Plane Anyway? What Mishaps Tell Us about Crew Member Role Assignment and Air Crew Situation Awareness

Florian Jentsch, John Barnett, and Clint A. Bowers, University of Central Florida, Orlando, Florida, and **Eduardo Salas**, Naval Air Warfare Center Training Systems Division, Orlando, Florida

This paper reports a detailed analysis of over 300 civilian incident reports that identified whether loss of situation awareness (SA) was related to air crew role assignment. The results indicate (a) that loss of SA is responsible for an incident more often when the captain is at the controls than when the first officer (FO) is at the controls, and (b) that the pilot flying (PF) is more likely to lose situation awareness than the pilot not flying (PNF). As a result, captains lose SA more often across aircraft types, flight segments, and weather conditions when they are the PF than when they are the PNF. The results also suggest that the person who is flying commits more of the critical errors that lead to an incident. Together, the results indicate that captains lose SA more often and make more tactical errors when they are at the controls than when they are not.



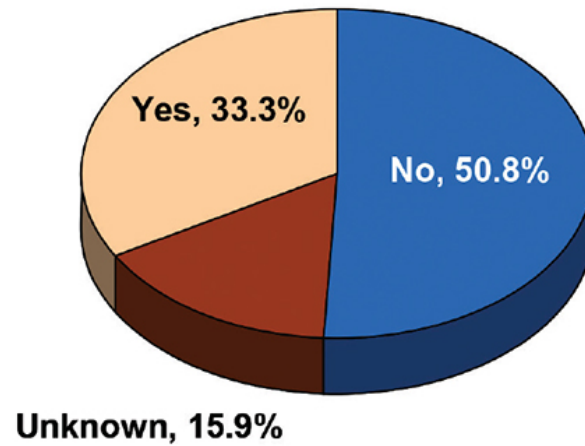
Rejected Takeoff Authority: Is Dividing Captain's Command A Good Idea?

James Albright | Business & Commercial Aviation

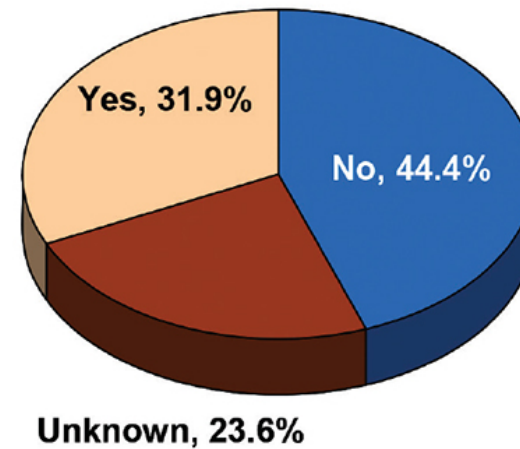
May 22, 2019

Correct Decision to Abort or Not

1980-1993



1994-2008



Source: NLR (2010)







What is being proposed?

- PM as the “owner” of the flight
- Consider reject authority for the FO when PF
- Consider monitored approaches
- Give BOTH pilots same access to controls & info
- Give guidance to captains on delegation
- Review procedures that require PIC as PF. Why is it so?

When you call for "Flaps One" and the non flying pilot says "Are you sure?"



What is being proposed?

- Train first officers to the highest possible standard for PF

Better FO's as PF = Better Captain performance

"...We often don't want to (hand over control), because having to diagnose a problem you've never seen before is hard to do and you might not succeed.

We know how to fly the airplane so that's what we want to do in that situation. Sometimes you need to do what you don't want to do in order to survive."

Thank you!

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