



NTSB National Transportation Safety Board

Office of Aviation Safety



Flight Crew Performance

Katherine Wilson, Ph.D.
Human Performance

Approach to Landing

- Approach to landing is high workload phase
- Icing and flap anomaly increased workload
- Increased workload can result in performance deficiencies
- Training, experience, and standard operating procedures (SOPs) can mitigate deficiencies



Flight Crew Experience

- Captain
 - Flew for Empire Airlines for over 20 years
 - Total time 13,828 hours; ATR 42: 2,052 hours
 - “Very experienced” flying in icing conditions
- First officer
 - Flew for Empire Airlines for 6 months
 - Total time 2,109 hours; ATR 42: 130 hours
 - Limited experience in icing conditions

Flight Crew Fatigue

- Took steps to mitigate effects of fatigue
- Captain
 - Napped before accident flight
 - Possible sleep debt of 4.5 hours
- First officer
 - Acclimated to be awake at night
 - Sleep opportunities of 8 hours or more

Crew Resource Management (CRM)

- Flight crew had CRM training
- Some good CRM exhibited during initial descent
 - Captain completed checklists in anticipation of first officer's needs
- After flap anomaly, CRM deteriorated
 - Inadequate leadership
 - Poor communication
 - Failure to perform pilot monitoring duties

Flight Crew Performance

- Captain should have been familiar with airplane and company SOPs
- Made errors and did not follow SOPs or training
- Consistent with actions on previous flights
- Might also reflect degradation from fatigue due to time accident occurred and sleep debt

Flight Crew Performance

- First officer lacked experience in ATR
- Distracted from pilot flying duties
- First officer asked “Should I go around?”
captain responded “No”
- Although concerned, she did not challenge the captain
 - Steep authority gradient in cockpit
 - Captain’s dismissal of her inquiry
 - Lack of training on assertiveness





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