Command and Control

The Influence of Flight Crew Role Assignment on Flight Safety

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PB94-917001
NTSB/SS-94/01

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

SAFETY STUDY

A REVIEW OF FLIGHTCREW-INVOLVED, MAJOR ACCIDENTS OF U.S. AIR CARRIERS, 1978 THROUGH 1990

REPRODUCED BY:
DEPARTMENT OF COMMERCE
National Technical Information Service
Springfield, Virginia 22161

6241

IATA

Guidance Material for Improving Flight Crew Monitoring

1st Edition

NASA/TM—2010-216396

NASA

Checklists and Monitoring in the Cockpit: Why Crucial Defenses Sometimes Fail

R. Key Dismukes
NASA Ames Research Center, Moffett Field, CA

Ben Berman
San Jose State University Foundation, San Jose, CA

July 2010

FLIGHT SAFETY FOUNDATION

A Practical Guide for Improving

Flight Path Monitoring

FINAL REPORT OF THE ACTIVE PILOT MONITORING WORKING GROUP

NOVEMBER, 2014

Loss of Control Action Group

Civil Aviation Authority

Monitoring Matters

Guidance on the Development of Pilot Monitoring Skills
CAA Paper 2013/02

BRITISH AIRWAYS · easyJet · flybe.com · Jet2.com Friendly low fares · Thomas Cook Airlines · TUI · virgin atlantic

Air Line Pilots Association, International
American Airlines
Atlas Air
Boeing
Delta Air Lines
Federal Aviation Administration
FedEx Express
jetBlue
LOSA Collaborative
National Aeronautics and Space Administration
National Transportation Safety Board
Southwest Airlines Pilots Association
US Airways
U.S. Navy

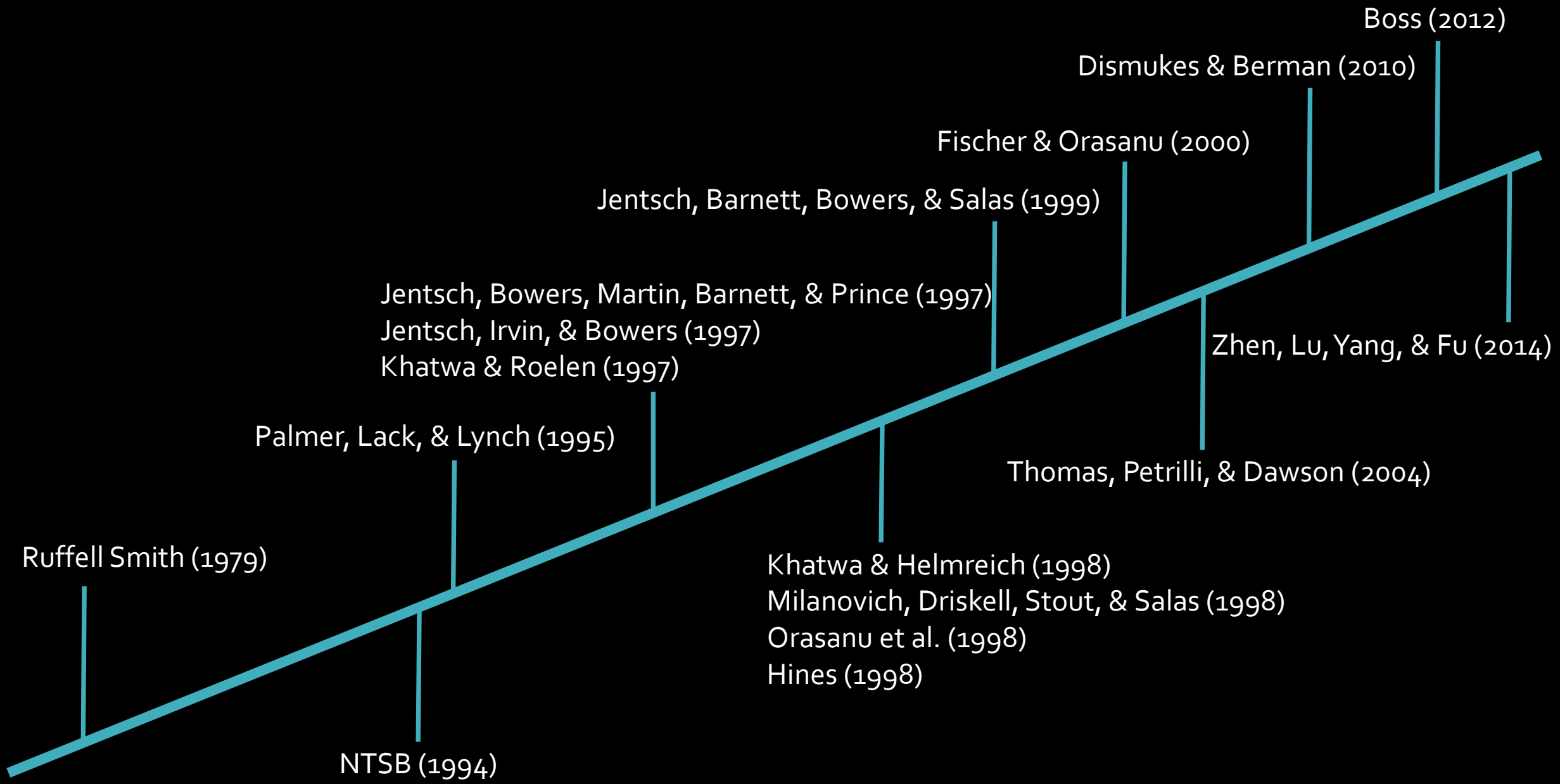
ACTIVE PILOT MONITORING WORKSHOP

HOSTED BY
Delta Air Lines
February 5 – 7, 2013

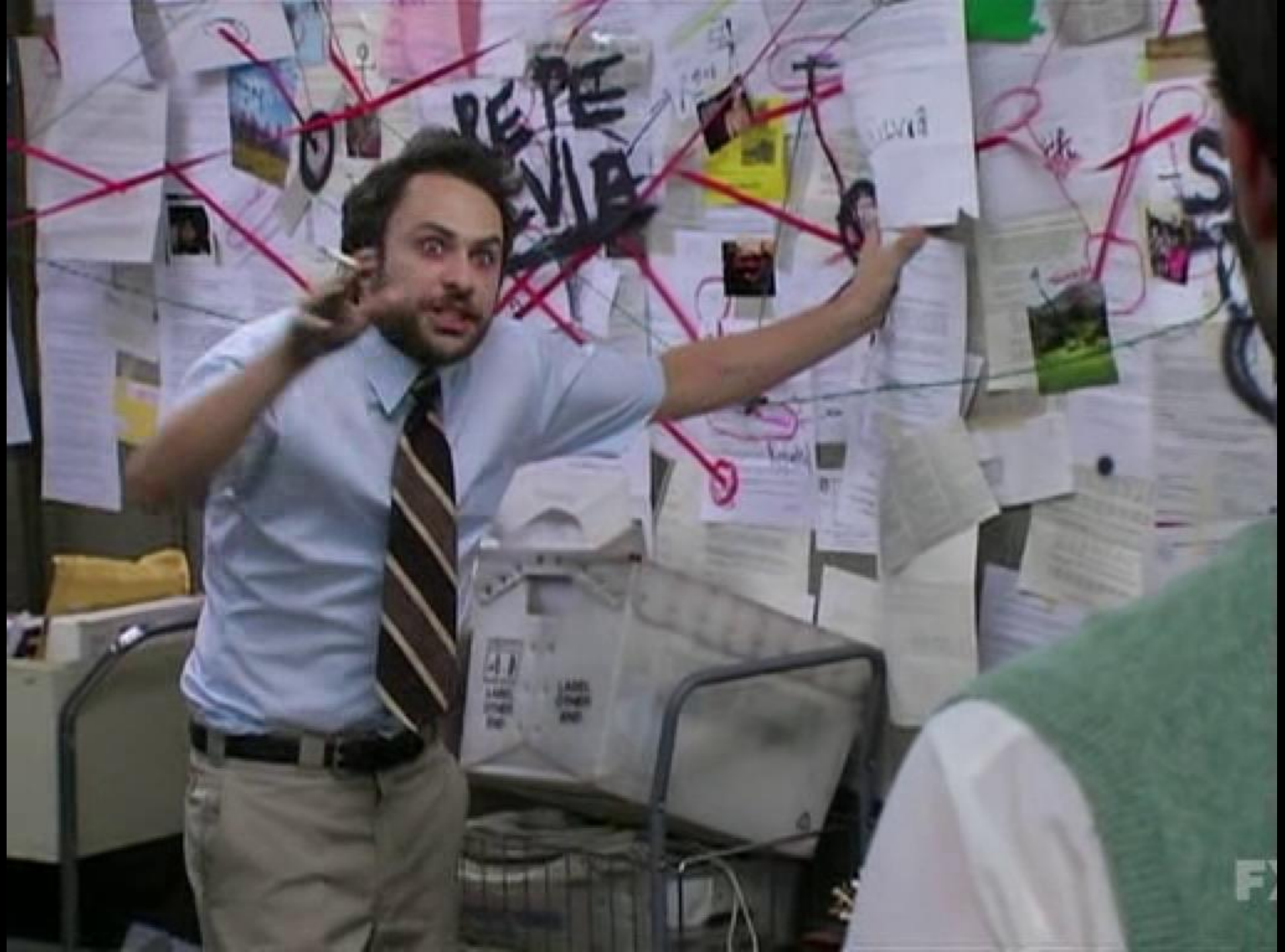
Operational Use of Flight Path Management Systems

Final Report of the Performance-based operations Aviation Rulemaking Committee/ Commercial Aviation Safety Team Flight Deck Automation Working Group

September 5, 2013


Boss (2012)
Dismukes & Berman (2010)
Fischer & Orasanu (2000)
Jentsch, Barnett, Bowers, & Salas (1999)
Jentsch, Bowers, Martin, Barnett, & Prince (1997)
Jentsch, Irvin, & Bowers (1997)
Khatwa & Roelen (1997)
Palmer, Lack, & Lynch (1995)
Ruffell Smith (1979)
NTSB (1994)
Khatwa & Helmreich (1998)
Milanovich, Driskell, Stout, & Salas (1998)
Orasanu et al. (1998)
Hines (1998)
Thomas, Petrilli, & Dawson (2004)
Zhen, Lu, Yang, & Fu (2014)

Monitoring
High workload of PF and PM
Expertise: Risk, time and pertinence appreciation
Self-doubt, deference to authority
Face-threat, conflict avoidance
Situational Awareness
Cognitive tunneling, distraction
Lack of Level 2/3 SA: Lose 'big picture'
Failure to inform captain
Decision Making
Decision errors
Safety Outcomes
Unsafe acts
Undesired aircraft states
Accidents and Incidents



BOSS

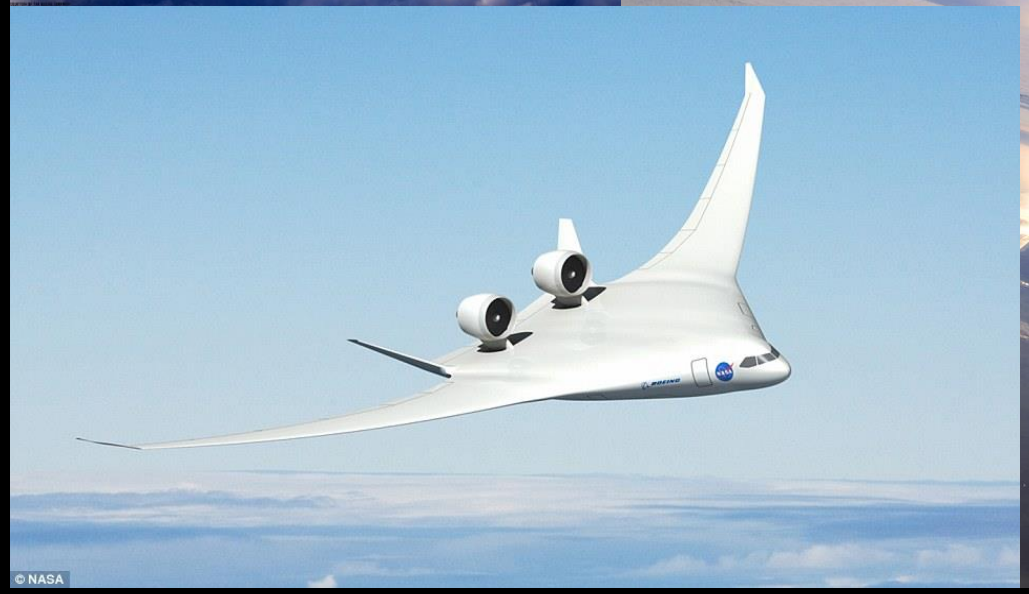
POLICE
POLICE

What can we do?

- Address research gaps
- Reassess focus on monitoring
- Review regulations & policy
- Reconsider aircraft equipage

and…

Redesign flight decks?



Thank you!

Beveridge, S.D.H., Henderson, S.T., Martin, W.L., & Lamb, J.B.

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