Dr Robert Bruce Lee AO

Intelligence
Knowledge
Enthusiasm
Energy
Passion
Optimism
Istanbul 1975: IATA 20th Technical Conference

• Dedicated to understanding ‘pilot error’ in accidents
• A first for an aviation industry conference:
  – These accidents are *not* the result of ‘negligence’ or ‘carelessness’ of the crew
  – Rather the byproduct of organisations:
    • ‘creating a situation where the probability of failure was high’.
• There are therefore better options than to simply blame the ‘offending crewmembers’.
Istanbul 1975: IATA 20th Technical Conference

- Some of the topics discussed in working papers:
  - The changing role of the pilot
  - Handling pilot incapacitation
  - How to train crews to deal with ‘seldom or unforeseen’ events
  - Motivation for adherence to SOPs
  - Personality assessment and selection of flight crew
  - Psychological characteristics related to human error
  - Stress in aircrew
  - Aircrew fatigue / circadian rhythms
  - Flight crew coordination
  - Visual perception and approach and landing accidents
  - The man in the system
The path towards systemic investigation

• 1989 (Lee meets Reason):
  Prof James Reason presents to the XVIII Conference of WEAAP (Western European Association for Aviation Psychology), University of Sussex, Brighton, UK

• 1990:
  Human Error (Reason) published by Cambridge University Press

• 1991:
  Reason presents to the International Society of Air Safety Investigators (ISASI) 22nd Annual Seminar, Canberra, Australia
The path towards systemic investigation

- **1994:** ICAO adopts the ‘Reason Model’ as a standard for systemic safety investigation (Rob Lee was a leading advocate of this approach)
- **July 1994:** BASI publishes the “Monarch report”, the first systemic aircraft accident investigation, into the fatal June 1993 crash of a Piper Chieftain at Young, NSW
From systemic to systematic

• **2002:**
  Dr Rob Lee and Professor Patrick Hudson develop and conduct the first
  *Integrated* Safety Management Systems (ISMS) training course at Singapore’s SAA
  – By November 2017 they had conducted 30 ISMS courses (for more than 1,000 pax)

• **2006:**
  – (SMM Third Edition published in 2013)

• **2013:**
  ICAO Annex 19 on Safety Management adopted (the first new ICAO Annex in 20+ years:}
Aviation psychology and Human Factors contributions to Flight Safety

- Flight Crew / ATCO / Cabin crew selection & training
- Human Performance Limitations
  - Perception / Information processing / SA / Decision Making
- Mental health and well-being
- Flight deck design
- Flight path management
- Cabin safety
- Crew Resource Management
  - Threat and Error Management
  - Non-Technical Skills assessment
- Maintenance Human Factors
- RPAS / UAS Human Factors
- Systemic safety investigation / Integrated SMS
- Fatigue Risk Management
- Startle / Surprise / Upset Prevention & Recovery Training
- Flight Crew Resilience
Rob Lee’s Legacy

• ATSB (via BASI)
  – Systematic and Systemic, globally respected

• Psychologists as HF Investigators
  – BASI / NTSB / TSB Canada / BEA (since the 1980s)
    • UK AAIB’s first HF specialist appointed in 2018.

• Integrated SMS
  – Widely accepted and globally adopted

• Influenced the thinking of a generation of aviation safety professionals, globally, over 40 years…
  – pilots, cabin crew, ATCOs, Engineering & Maintenance, safety managers, FLTOPS managers, safety investigators, researchers…")
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