

Small Country/Big Accident

by

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About PNG ASC

- Independent statutory agency governed by a commission which is separate from the judiciary
- 462,840 km² / 8.2M people
(small country!)



Air Niugini Flight 73 (September 28, 2018)

Crashed into the Chuuk Lagoon, Federated States of Micronesia



Flight Recorders

- Honeywell SSCVR; 2 hour duration
- Honeywell SSFDR; 26 hours duration, 256 word/sec (rich parameter list)
- Decision made by Micronesia to replay the recorders at the PNG AIC
 - PNG facilities were closest
 - PNG and Micronesia have pre-existing regional collaboration
 - PNG was the State of Operation



Flight Recorder Download

PNG AIC specialists removed the memory boards and downloaded using the Memory Access Retrieval System, MARS.

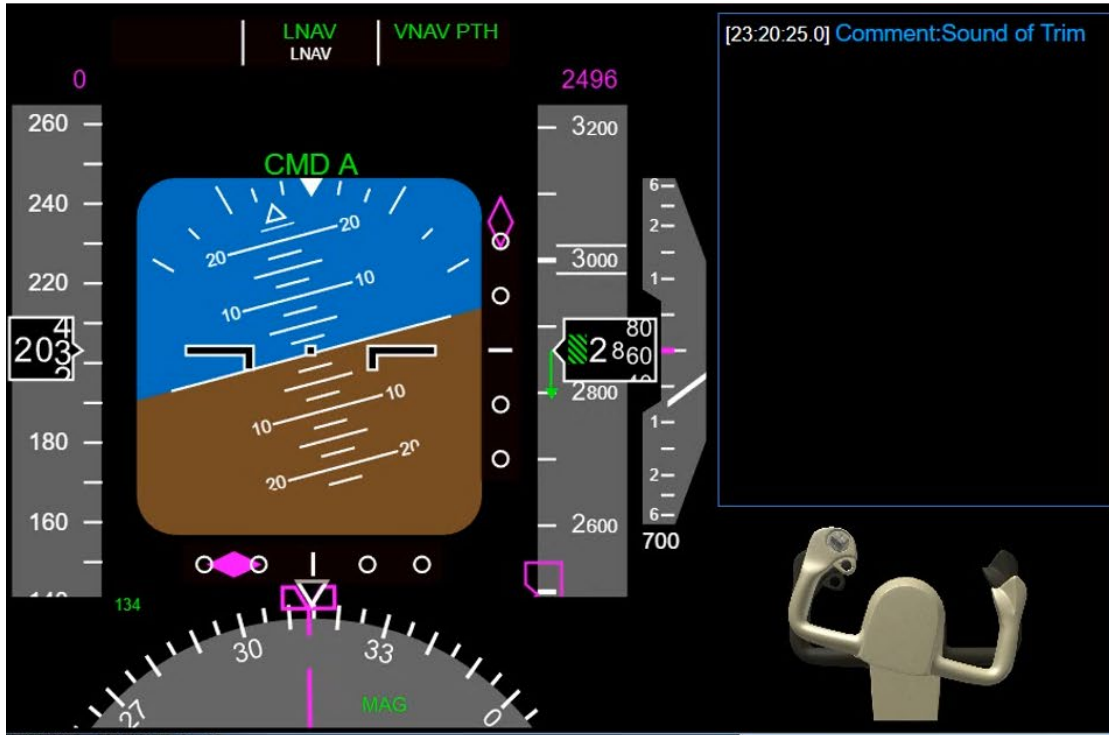


AIC specialist examining the memory board

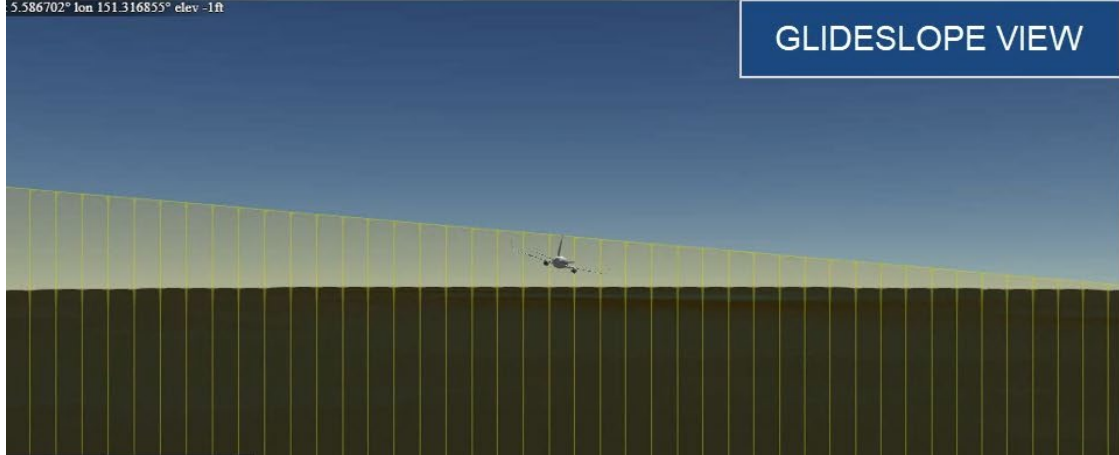


MARS connected directly to the memory board

Flight Animation



GLIDESLOPE VIEW

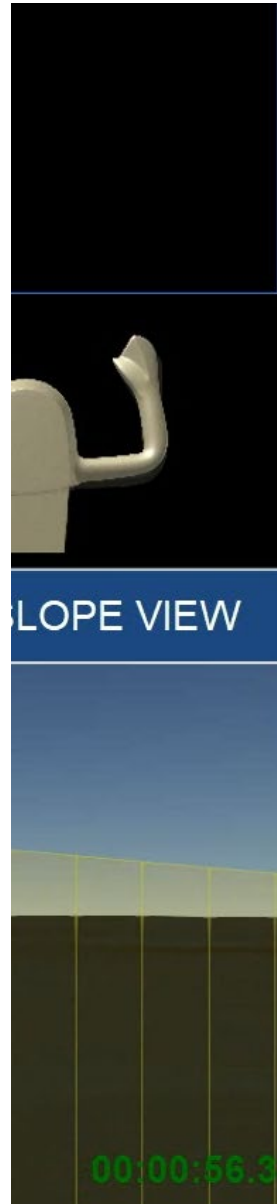


23:20:32.4

00:00:10.5

Surprise 'Image Recording'

- To our (pleasant) surprise, the jump seat occupant recorded the accident on his cell phone!
- Enabled an incredibly accurate and thorough sequence of events
- Eliminated any potential controversy
- Did it all in RECORD TIME



- 1998 Swiss Air 111, TSB/C and NTSB called for '**Image** Recording'
- 2000: International flight recorder community developed a MOPS (Minimum Operational Performance Specification – EUROCAE ED112) for Image Recording

Reasons:

- Capture the human-machine dynamics
- Crew internal interaction
- Non-verbal communications
- Cockpit environment (smoke, checklist in use, etc.)
- Data not currently recorded (weather radar!)



- Few new accidents
- Driven by technology not need
- Money should be spent on safety improvements
- Reactive instead of proactive
- Everything is recorded on the FDR/CVR already

- IFALPA: *'a dollar spent preventing an accident is infinitely better than a dollar spent investigating one'*

'The head and shoulders of the crew shall not be visible whilst seated in the normal operating position.' (the pilots shall not be identifiable in the image recording)

Solution to IFALPA requirement?



1. Internal Operational conversation
2. Air/Ground communications (also captured by ATC/ATS)
3. Noises/sounds
4. Datalink messages
5. Personal/sensitive information

Non-disclosure of records...

The State conducting... shall NOT make the following records available for purposes other than the accident investigation, unless... justice...outweighs...

- a) *Statements*
- b) *Communications between operational personnel*
- c) *medical/private*
- d) ***CVRs, transcripts (image recordings)***
- e) *Opinions expressed during analysis*

5.12.2 These records... **shall be included** in the **report...only when pertinent** to the analysis of the accident or incident...

...could be utilized inappropriately for subsequent disciplinary, civil, administrative and criminal proceedings... **If such information is distributed, it may, in the future, no longer be openly disclosed to investigators...**

5.12.5 States shall take measures to ensure that audio content of cockpit voice recordings as well as image and audio content of airborne image recordings **are not disclosed to the public.**

CVR Rationale Roots (circa 1970-1980)



- *'Few workers are subjected to recording...to offset this intrusion...'*
- *'...protection facilitates open and frank dialogue in the cockpit of an aircraft during situations...'*
- *'...authority should not release anything considered personal...'*
- *'...the availability of vital information would be jeopardized...'*
- *'if the pilots live, we have no business listening to the CVR'*

The 'surprise' image recording enabled investigators to understand what happened in exquisite clarity in record time... Image recording revealed:

- Weather radar showed a (red) storm cell directly on the final approach path
- Weather became IMC right at MINIMUMS and remained IMC until water impact
- 'Pull Up' message was displayed on the PFD
- Crew was engaged in landing (no distraction/incapacitation)

Better Wording? PARA 5.12



*Investigators should only transcribe CVR content which is determined to be **pertinent** to the investigation. Personal/sensitive information shall not be transcribed.*

*The State conducting... **shall make the CVR transcript available as part of the investigation record if it was pertinent to conduct the analysis.** The actual CVR **recording** shall not be released for purposes other than the accident investigation, unless... justice...outweighs...*



AIB FDR POLICY V1.0 March 2019

ACCIDENT INVESTIGATION BUREAU
FLIGHT DATA RECORDER POLICY

FLIGHT DATA RECORDER POLICY

*Only portions of the recording shall be transcribed that the assigned specialist or CVR Group **determines to be pertinent** to the investigation.*

Non-pertinent sensitive information of a personal nature shall not be transcribed...

*This transcription scope is done with the expectation that **whatever is transcribed will be released** by the Bureau with the final report.*



AIB CVR POLICY V1.0 March 2019

ACCIDENT INVESTIGATION BUREAU
COCKPIT VOICE RECORDER POLICY

COCKPIT VOICE RECORDER POLICY

Time to ACT and put Safety First

- Anyone who has done a CVR knows how cryptic they can be; an image even once per second is invaluable

- We already have voice which is far more sensitive than images

- We are video recorded virtually everywhere today, police body/dash cams are invaluable; **for aviation images of the cockpit environment are long overdue!**



Time to ACT and put Safety First

- Image recordings provide **clarity** and **reduce or eliminate controversy**, both of which are invaluable for accident investigation



CLA **RITY**