Lessons from history

Some Safety theory – prominent accidents

Some events from history that have influenced the way that we think about safety

Its a principal of the traditional way of thinking about safety that lessons are learnt

Learning the lessons, makes future safety, safe - but does it?

What events have influenced safety that Think Safety are interested in?

THINK SAFETY

Nairobi 1974 - DLH540

PROBABLE CAUSE: "The accident was caused by the crew initiating a take-off with the leading edge flaps retracted because the pneumatic system which operates them had not been switched on.

This resulted in the aircraft becoming airborne in a partially stalled condition which the pilots did not identify in the short time available to them for recovery.
Major contributory factors were the lack of warning of a critical condition of leading edge flap position and the failure of the crew to complete satisfactorily their checklist items."

- Flight engineer found to be 'negligent'…

Charged for manslaughter

The Criminalisation of Error

THINK SAFETY

1977 - Tenerife

Two B747s collide on the runway at Tenerife

Consequence:

Flight deck/ATCO communications

Importance of - RT Phraseology?

Started the discussion about CRM

THINK SAFETY

1978 - Portland, Oregon, USA

United Airlines DC8 crashed because of fuel starvation

Breakdown of crew coordination identified

Just like KLM/PAA in GCTS

The tipping point that led to CRM

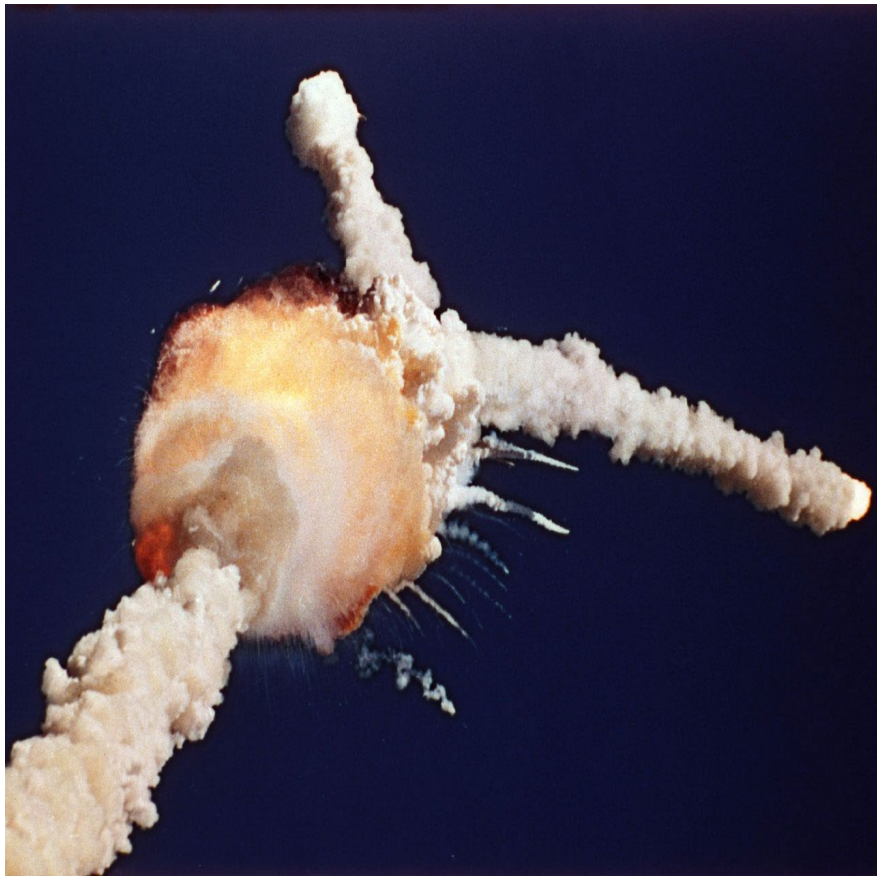
THINK SAFETY

Three Mile Island, 1979

- Nuclear power plant
- Misleading indications to the human
- Formal safety methods limitations
- System failure, but…
- interest in Human reliability
- The trigger to human factors shift
- The point where HF and Safety converged

THINK SAFETY

Challenger, January, 1986



‘O’Rings

A technical failure or an organisational failure?

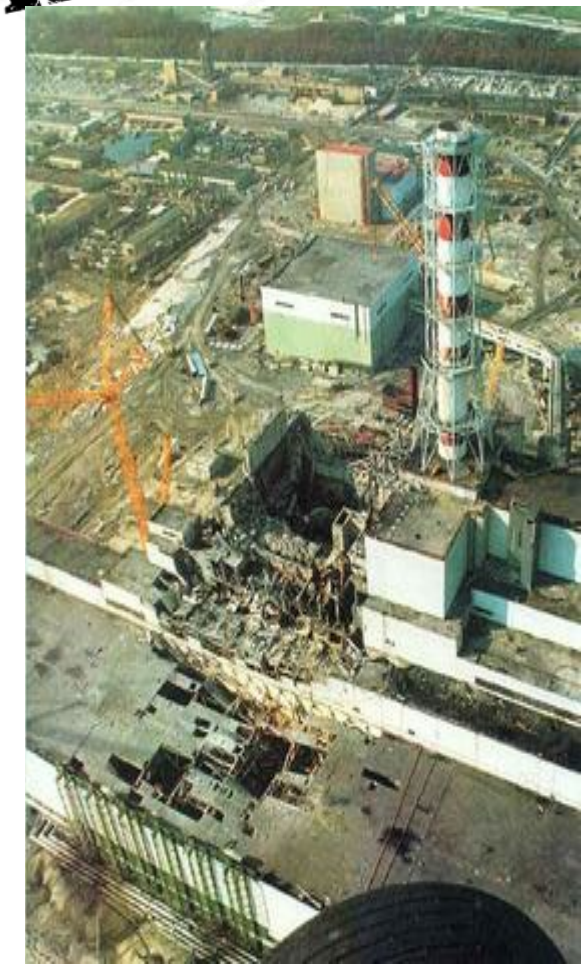
Culture of production?

‘Drift to failure’?

Normalisation of deviance

THINK SAFETY

Chernobyl, April 1986



Initially operator error found to be the cause: procedural violations and rule breaking

The explanation was changed in 1991

Design limitations, lack of training and procedure underspecification

Safety Culture was introduced

The culture of a nation

THINK SAFETY

Dryden FK28, March 1989

FK28 crashed

Investigation Board ‘busy’

Transport Canada started investigation:

The primary cause was pilot error

Judicial inquiry changed the explanation and concluded (Judge Moshansky):

“The failure of the Canadian air transport system in placing the crew in a situation where they did not have the resources to make a proper decision”

THINK SAFETY

Uberlingen, 2002

Mid-air collision in German airspace, controlled by Skyguide

Profound lessons for ATM

Have they been learnt?

Criminalisation of error. Management was charged with manslaughter

The value of organisational learning?

Remember Zagreb – 1976!!

THINK SAFETY

LAM470 Namibia 29th November 2013

3.2 Probable Cause/s

3.2.1 The inputs to the auto flight systems by the person believed to be the Captain, who remained alone on the flight deck when the person believed to be the co – pilot requested to go to the lavatory caused the aircraft to departure from cruise flight to a sustained controlled descent and subsequent collision with the terrain.

3.2 Contributing Factors

3.2.1 The non-compliance to company procedures that resulted in a sole crew member occupying the flight compartment.

Exercise

In your groups, answer the question:

What accidents that have occurred in your region have influenced aviation safety in the region generally and ATM in particular