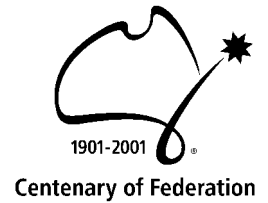


Questacon

Ahead in the Clouds



A clever Australian inventor made a black box to take the mystery out of air disasters.

WHAT'S THE PROBLEM?

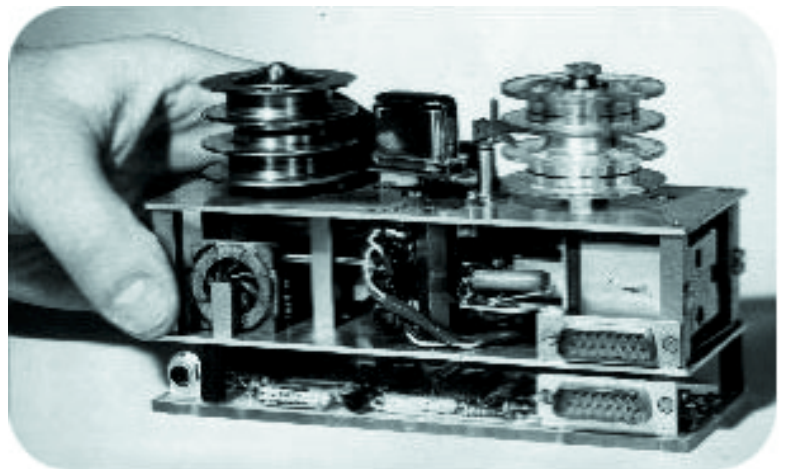
A boom in commercial air travel came after the Second World War but in the early 1950s a number of tragic plane crashes shook the public's confidence. With no witnesses or survivors to tell the tale of what went wrong, crash investigators could only speculate.

A GREAT AUSSIE SOLUTION

Dr David Warren of the Aeronautical Research Laboratories, Melbourne, decided to build a crash- and fire-proof unit that could record the flight crew's conversation along with a few instrument readings.

The first such recorder, called the 'ARL Flight Memory Unit', was made in 1958 but flight recorders were not made compulsory in Australian planes until 1967.

Today there are two black boxes on board; a cockpit voice recorder and a flight data recorder. They are actually painted day-glo orange to make them easier to find!



The original (1958) ARL Flight Memory Unit "The Black Box: An Australian Contribution to Air Safety" (Commonwealth of Australia copyright reproduced by permission)

HOW DOES IT WORK?

The recording medium in the first flight recorder was steel wire which stored the crew voice data and instrument readings such as airspeed, altitude, engine speed and engine temperature. To protect it from physical impact and heat, the device was contained in a titanium box with heat insulation. These days most black boxes use magnetic tape or large capacity computer memory chips rather than wire.

THE FUTURE

Flight recorders proved to be an invaluable source of information for crash investigators. Soon every plane will have a video recorder taking images of the cockpit to supplement the voice information.

FURTHER INFO, FACTS & FUN

- In 1965, Jack Grant of Qantas devised the first slide raft, an inflatable escape slide which doubles as a raft, which is now standard safety equipment in planes.
- The T-VASIS visual landing system was developed by the Australian Department of Civil Aviation and the Aeronautical Research Laboratories in 1956. The system, which guides the pilot during landing, is used in Australia, New Zealand and South-East Asia.
- For further information on the black box, check out:
Defence Science and Technology Organisation – History of the Black Box
<http://www.dsto.defence.gov.au/corporate/history/jubilee/blackbox.html>

For more info on great Australian Science check out:

Questacon's Innovative Australians <http://www.questacon.edu.au/innovaus>

CSIRO's Australia Advances <http://www.csiro.au/promos/ozadvances>

The Australian Academy of Science's Nova <http://www.science.org.au/nova>

The Australian Science Archive Project <http://www.asap.unimelb.edu.au/>