

**From:** Terry Hill <terry.hill2@bigpond.com>  
**Sent:** Thursday, 25 March 2021 5:42 PM  
**To:** Alan Hume; John Hart; Ken Fraser  
**Subject:** Fwd: Fwd: THE AEROPLANE BLACK BOX  
**Attachments:** REVEREND HUBERT WARREN AND FAMILY.jfif

This came to me today and it tells a tale which might interest youall.

Kind regards, Terry Hill.

----- Forwarded Message -----

**Subject:**Fwd: THE AEROPLANE BLACK BOX  
**Date:**Thu, 25 Mar 2021 15:08:19 +1100 (AEDT)

----- Original Message ----- From: "Jill" <[jillbeaumont@netspace.net.au](mailto:jillbeaumont@netspace.net.au)> To: Sent: Monday, 22 Mar, 2021 At 3:51 PM Subject: THE AEROPLANE BLACK BOX

Begin forwarded message:

**From:** "Peter McKiernan" <[petermckiernan@tpg.com.au](mailto:petermckiernan@tpg.com.au)>

**Subject: FW: THE AEROPLANE BLACK BOX**

**Date:** 22 March 2021 at 2:48:15 pm AEDT

**To:** "Liz McGlade" <[lizmcglade@outlook.com](mailto:lizmcglade@outlook.com)>, <[mckiernan@tpg.com.au](mailto:mckiernan@tpg.com.au)>, <[sydneycatwoman@yahoo.com.au](mailto:sydneycatwoman@yahoo.com.au)>, "trevor Beaumont" <[tbeaumont@netspace.net.au](mailto:tbeaumont@netspace.net.au)>, "Patrick Mc Glade \ ( Kiwi \ ) (\(mcgladepatrick@gmail.com\))" <[avro13@bigpond.com](mailto:avro13@bigpond.com)>, "Tim Banks" <[timabanks@bigpond.com](mailto:timabanks@bigpond.com)>, "Kevin Dungey" <[kevin.dungey@bigpond.com](mailto:kevin.dungey@bigpond.com)>, "Keith Kimpton" <[keith@canadianbaydental.com.au](mailto:keith@canadianbaydental.com.au)>, "Charlie Helquist" <[chasdiesel@gmail.com](mailto:chasdiesel@gmail.com)>, "Sally-Ann Nugent" <[sanugent16@gmail.com](mailto:sanugent16@gmail.com)>, "Rex & Deanna Hall" <[rha41579@bigpond.net.au](mailto:rha41579@bigpond.net.au)>

On Friday 19 October, 1934, the passenger plane Miss Hobart fell from the sky to the sea.

Eight men, three women and a baby boy fell with her, swallowed - it's believed - by the waters of the Bass Strait that lies between Tasmania and mainland Australia.

The plane's wreckage was never found.

One of those on board was a 33-year-old Anglican missionary, Rev Hubert Warren (pictured at end), who had been travelling to his new parish in Enfield, Sydney. His wife Ellie and four children had stayed behind, intending to follow by boat.

The reverend's last present to his eight-year-old son, David, had been a crystal radio set that the boy treasured deeply.



As a boarder at Launceston Boys' Grammar School in Tasmania, David Warren tinkered with the machine after lessons, learning what made it work. He charged friends a penny to listen to cricket matches, and within a few years was selling home-made copies at five shillings each.

By his mid-twenties, David Warren had studied his way to a science degree from the University of Sydney, a diploma in education from Melbourne University and a PhD in chemistry from Imperial College, London.

His specialty was rocket science, and he went to work as a researcher for the Aeronautical Research Laboratories (ARL), a part of Australia's Defence Department that focused on planes.



In 1953, the department loaned him to an expert panel trying to solve a costly and distressing mystery: why did the British de Havilland Comet, the world's first commercial jet airliner and the great hope of the new Jet Age, keep crashing?

### Why Did The de Havilland Comet Keep Crashing? - Plane & Pilot Magazine

He thought it might be the fuel tanks; but there were dozens of possible causes and nothing but death and debris as evidence. The panel sat down to discuss what they knew.

"People were rattling on about staff training and pilots' errors, and did a fin break off the tail, and all sorts of things that I knew nothing about," Dr Warren recalled more than 50 years later.

"I found myself dreaming of something I'd seen the week before at Sydney's first post-war trade fair. And that is - what claimed to be the first pocket recorder, the Miniphon. A German device. There'd been nothing before like it..."

The Miniphon was marketed as a dictation machine for businessmen, who could sit at their desks (or on trains and planes) recording letters that would later be typed up by their secretaries. David, who loved swing music and played the clarinet, only wanted one so he could make bootleg recordings of the jazz musician Woody Herman.

However, when one of his fellow scientists suggested the latest doomed Comet might have been hijacked, something clicked for him.

The chances that a recorder had been on board - and survived the fiery wreck - were basically nil. But what if every plane in the sky had a mini recorder in the cockpit? If it was tough enough, accident investigators would never be this confused again, because they'd have audio right up to the moment of the crash. At the very least, they'd know what the pilots had said and heard.

The idea fascinated him. Back at ARL, he rushed to tell his boss about it.

Alas, his superior didn't share his enthusiasm. Dr Warren said he was told: "It's nothing to do with chemistry or fuels. You're a chemist. Give that to the instruments group and get on with blowing up fuel tanks."

David knew his idea for a cockpit recorder was a good one. Without official support, there was little he could do about it - but he couldn't get it out of his mind.

When his boss was promoted, David pitched his invention again. His new superior was intrigued, and so was Dr Laurie Coombes, ARL's chief superintendent. They urged him to keep working on it - but

discreetly. Since it wasn't a government-approved venture or a war-winning weapon, it couldn't be seen to take up lab time or money.

Dr Warren said the chief superintendent had cautioned him: "If I find you talking to anyone, including me, about this matter, I will have to sack you."

It was a sobering thought for a young man with a wife and two children.

But his boss's backing extended to sneakily buying one of the precious new dictation recorders, and chalking it up as "an instrument required for the laboratory..."

Encouraged, Dr Warren wrote up his idea in a report, titled "A Device for Assisting Investigation into Aircraft Accidents", and sent it out across the industry.

The pilots' union responded with fury, branding the recorder a snooping device, and insisted "no plane would take off in Australia with Big Brother listening".

That was one of his better reviews.

Australia's civilian aviation authorities declared it had "no immediate significance", and the air force feared it would "yield more expletives than explanations".

Dr Warren was tempted to pack it all in.

However, Dr Warren took to his garage and assembled his 20-year-old radio parts. He'd decided the only way to overcome his critics' mockery and suspicion was to build a solid prototype.

It would be the first ever "black box" flight recorder.

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"Dave!" he said, "Tell him what you're doing!"

Dr Warren explained: his world-first prototype used steel wire to store four hours of pilot voices plus instrument readings and automatically erased older records so it was reusable.

There was a pause, then the visitor said: "I say Coombes old chap, that's a damn good idea. Put that lad on the next courier, and we'll show it in London."



The courier was a Hastings transport aircraft, making a run to England. You had to know somebody pretty powerful to get a seat on it. Dr Warren wondered who this man was who was giving away tickets round the world to somebody he'd never met.

The answer was Robert Hardingham (later Sir Robert), the secretary of the British Air Registration Board and a former Air Vice-Marshal in the RAF.

In David's words: "He was a hero. And he was a friend of Coombes, and if he gave away a seat, you took it."

A few weeks later, Dr Warren was on a plane bound for England - with strict instructions not to tell Australia's Department of Defence what he was really doing there, because "somebody would frown on it".

In a near-unbelievable irony, the plane lost an engine over the Mediterranean.

Dr Warren recalled: "I said, 'Chaps, we seem to have lost a donk - does anyone want to go back?' But we'd come from Tunisia and it was about 45 degrees overnight. We didn't want to go back to that hellhole."

They decided they could make it if they ploughed on.

He recorded the rest of the flight, thinking that even if he died in that limping transport plane, "at least I'd have proved the bastards wrong!"

"But unfortunately we didn't prang - we just landed safely..."

In England, Dr Warren presented "the ARL Flight Memory Unit" to the Royal Aeronautical Establishment and some commercial instrument-makers.

The Brits loved it. The BBC ran TV and radio programmes examining it, and the British civil aviation authority started work to make the device mandatory in civil aircraft. A Middlesex firm, S Davall and Sons, approached ARL about the production rights, and kicked off manufacturing.

Though the device started to be called "the black box", the first ones off the line were orange so they'd be easier to find after a crash - and they remain so today.

Peter Warren believes the name dates from a 1958 interview his father gave the BBC.

"Right at the end there was a journalist who referred to this as a 'black box'. It's a generic word from electronics engineering, and the name stuck."

In 1960, Australia became the first country to make cockpit voice recorders mandatory, after an unexplained plane crash in Queensland killed 29 people. The ruling came from a judicial inquiry, and took a further three years to become law.



Today, black boxes are fire-proof, ocean-proof and encased in steel. And they are compulsory on every commercial flight.

It's impossible to say how many people owe their lives to data captured in the death throes of a failing plane - to the flaws exposed, and the safety innovations that followed.





David Warren worked at ARL until his retirement in 1983, becoming its principal research scientist. He died on 19 July, 2010, at the age of 85.

For more detail and TV footage from 1958 of David Warren explaining his invention to the BBC, please follow the link below.

[This little-known inventor has probably saved your life](#)

[What is in a black box?](#)



David Warren between his father Rev Hubert Warren and mother Ellie

