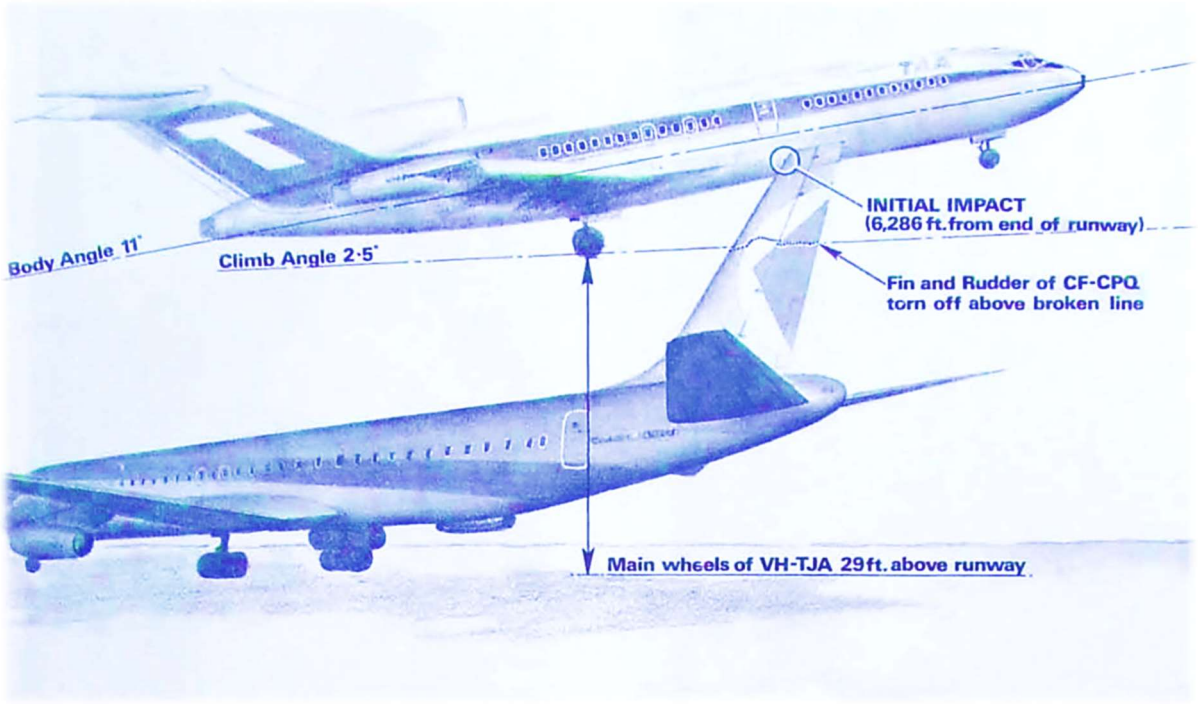
Miracle at Mascot?

Surviving Sydney's 1971 airliner collision



Peter Hobbins

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The world was shocked in March 1977 when two Boeing 747 airliners collided on a runway at Los Rodeos airport in the Canary Islands, killing 583 people. In poor visibility, a KLM 747 commenced its take-off run, unaware that a similar Pan Am aircraft was backtracking down the runway directly toward them. Air safety investigators suggested that if the first aeroplane had risen just another 8 metres, the worst airline accident in history might have been avoided.[1]

In Australia, however, another possibility was soon aired. "Aviation experts say the Canary Islands crash would never have happened if both pilots had studied official reports of a similar near-tragedy in Sydney", reported the *Sydney Observer*.[2] A suite of similar stories soon recalled the evening of 29 January 1971, when two jet airliners collided on the runway at Kingsford-Smith Airport in Mascot, endangering the lives of 240 passengers and crew. Indeed, asserted the Minister for Civil Aviation, "a much more serious accident was avoided only by a very narrow margin".[3] Decades later, the highly respected aviation safety author, Macarthur Job, declared the Mascot collision "one of the nearest approaches to calamity" ever seen in Australian skies.[4]

This analysis asks just how close Kingsford-Smith Airport – and the Bayside area – came to a major catastrophe in the context of the local environmental, technical and political environments of 1971. As the technical and legal reports of the time made clear, the margin between disaster and a minor miracle at Mascot was narrow indeed.

Sydney's airport communities

In 1970, Sir Donald Anderson estimated that 9,000 people worked at Kingsford-Smith Airport, predicting that this figure would grow to 20,000 by 1980. But as the Director-General of the Department of Civil Aviation (DCA), he neglected to mention that Mascot and nearby bayside suburbs were home for thousands or airport workers and supporting industries.[5] Nevertheless, Anderson hoped that by reducing aircraft noise levels, "the airport and its surrounding community

[1] Macarthur Job, *Air Disaster*, Vol. 1 (Weston Creek: Aerospace Publications, 1994), pp. 164–80.
[2] 'We warned of horror jet crash', *Sydney Observer*, 3 March 1977, p. 9.
[3] 'Statement in the Senate by the Minister for Civil Aviation Senator R.C. Cotton', August 1971, National Archives of Australia (hereafter NAA), Series B595 Control 24/1/254 PART 1.
[4] Macarthur Job, *Air Crash: the Story of How Australia's Airways Were Made Safe*, Vol. 2 (Weston Creek: Aerospace Publications, 1992), p. 197.
[5] *Sydney Airport Draft Planning Strategy* (Canberra: Federal Airports Corporation, 1990), pp. 2-2,12-1–12-2.

will be able to live together in greater harmony".[6] This optimism was deeply misplaced, with local residents, schools, churches, nursing homes and businesses all writing to Rockdale Council about the intolerable volume and frequency of aircraft movements.[7] Indeed, recalled the Mayor of Rockdale, Ron Rathbone, "In 1969 the Parish Priest at Rockdale actually witnessed tiles being sucked from the roof of one of the church buildings as an aircraft flew over".[8] By 1971 a local Noise Abatement Committee was arguing for aircraft movements to concentrate on the airport's north-south Runway 16, urging that approximately 80 percent should take off southward over Botany Bay.[9]

The airport itself also continued to grow and transform the local landscape, waterways and airspace. After a major expansion following World War II, the emergence of new international jetliners such as the Boeing 707 and McDonnell Douglas DC8 in the early 1960s led the Australian Government to approve a land reclamation project that extended Runway 16 into Botany Bay. Completed in 1968, this addition necessitated an underpass for the six-lane General Holmes Drive, creating a distinct 'hump' in the runway's 2700 metre surface.[10] Then in 1970, Queen Elizabeth II opened a new international terminal, comprising one of the Commonwealth's largest-ever works projects. By 1971 a further extension of Runway 16 into Botany Bay was already underway, permitting access for the massive new Boeing 747 that was set to revolutionise global travel.[11]

[6] Donald Anderson, *Australia's Aviation Industry: a Review of the 1960's and Some Projections for the Seventies* ([Melbourne]: [Department of Civil Aviation], 1970), p. 17.

[7] Submission by Rockdale Municipal Council to the Standing Committee on Environment and Conservation on Aircraft Noise, 1982, pp. 4–12, Rockdale Library Local Studies Collection, Report 629.13 Rock; Paul Ashton *et al*., *Connecting the Nation: a Short Thematic History of Australian Civil Aviation* (Sydney: UTS ePress, 2017), pp. 39–44.

[8] Rockdale Library Local Studies Collection Report 629.13 Rock, p. 26.

[9] Rockdale Library Local Studies Collection Report 629.13 Rock, pp. 16–17.

[10] Jennifer Gall, *From Bullocks to Boeings: an Illustrated History of Sydney Airport* (Canberra: Australian Government Publishing Service, 1986), pp. 53–7, 62–7.

[11] Jim Eames, *Sydney Airport: 80 Years as the Gateway to Australia* (Edgecliff: Focus Publishing, 2000), p. 68; Elizabeth Conroy, *A Thematic History of the Former City of Botany Bay* (Rockdale: Bayside Council, 2017), pp. 219–22.

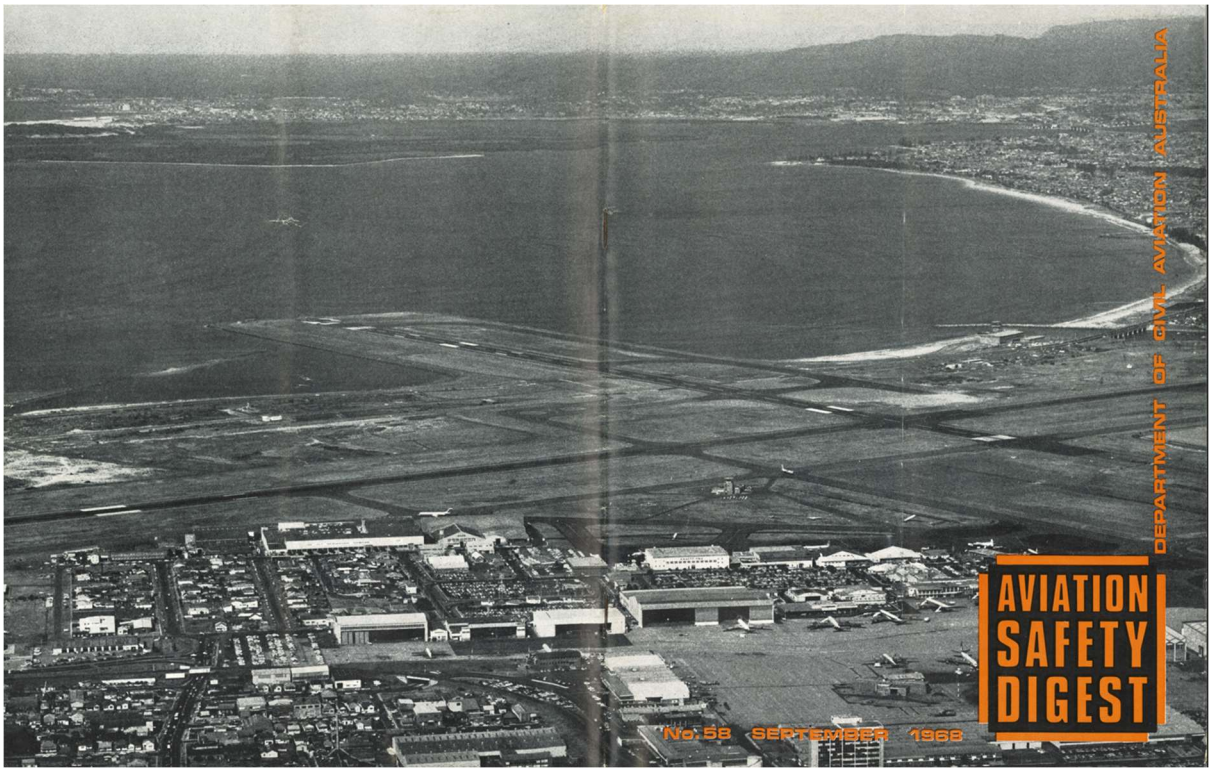

Figure 1. The suburbs surrounding Botany Bay were transformed by the ongoing expansion of Kingsford-Smith Airport in the postwar years, with the first stage of the Runway 16 extension prominent in this 1968 photograph. Source: Aviation Safety Digest. *Out of copyright.*

These works were completed at such a rapid pace that by early 1971, DCA's own plans of Sydney Airport – as issued to domestic and international pilots – left out many of the new taxiways that connected the runways to the new terminal.[12] A concurrent upsurge in air traffic also demanded a major enhancement of airways operations, including a new control tower on additional land reclaimed from Botany Bay. A second fire station was furthermore required to maintain critical crash response times across the airport's 600 hectare site.[13]

These plans were pointed. In 1945 a Consolidated Liberator transport aircraft had crashed at Mascot, killing all 12 people aboard, while in 1961 an Ansett-ANA Vickers Viscount airliner disintegrated over Botany Bay soon after taking off into a massive thunderstorm, with 15 fatalities.[14] Local residents also had a lucky escape in 1957 when a Douglas DC-3 airliner lost power after take-off. Narrowly avoiding the suburbs of Botany and Pagewood, it ditched into the water at Eastlakes Golf Course, with all 27

[12] D.S. Graham to First A.D.G.(O), 16 August 1971, NAA, B595 24/1/254 PART 1.

[13] R.J.M. Edey, 'Air traffic control faces challenge', *Aircraft* 48, no. 10 (1969), p. 102; Frederick A. Larcombe, *The History of Botany, 1788–1970* (Botany: The Council of the Municipality of Botany, 1970), p. 81.

[14] Peter Hobbins, 'Tragedy at Mascot: Sydney's forgotten aviation disaster', *History*, no. 141 (2019), pp. 18–22; Peter Hobbins, 'Severe turbulence: unravelling the Botany Bay airliner crash of 1961', *History*, no. 154 (2022), pp. 16–19.

aboard surviving.[15] Although the southward extension of Runway 16 was intended to reduce both noise levels and accident risk, locals remained understandably alarmed about the possibility of large aircraft coming down into the surrounding suburbs, especially Arncliffe, Bexley, Kyeemagh, Mascot, Rockdale and Sydenham.[16]

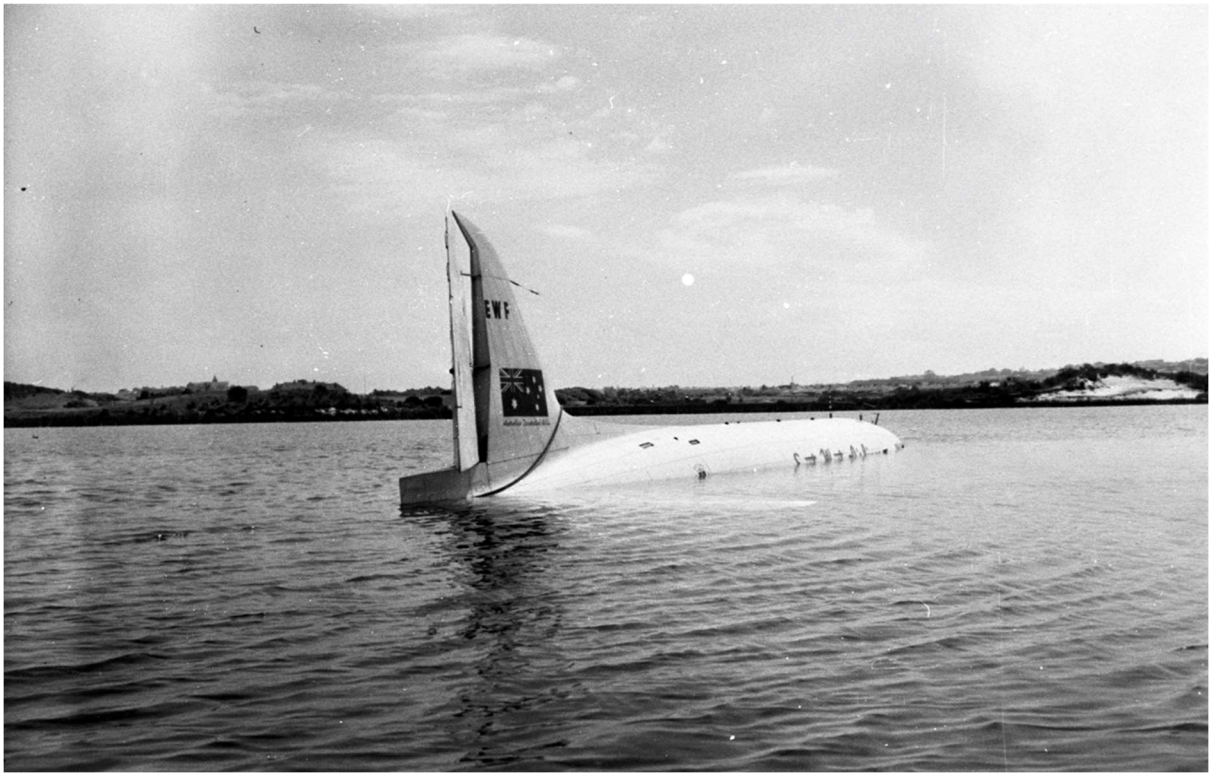

Figure 2. This East-West Airlines DC-3 ditched into Eastlakes after an engine failure in 1957, narrowly avoiding local suburbs. Source: State Library of New South Wales, Australian Photographic Agency - 04254. Permission for research granted.

While the annual risk of such an event was later calculated as 10 million to one, bayside residents' fears were far from groundless.[17] On 1 December 1969, a Pan Am Boeing 707 carrying 125 passengers and 11 crew collided with a flock of seagulls during take-off. It was bound for Honolulu on Runway 34 – the alternative designation for Runway 16 when aircraft movements were directed northward. After the captain abandoned the take-off, the fully fuelled airliner ploughed past the end of the runway and was severely damaged. Happily, there was no fire and all aboard escaped without

[15] Division of Air Safety Investigation, 'A freshwater ditching in a DC.3', *Aviation Safety Digest*, no. 16 (1958), pp. 20–4; Job, *Air Crash Vol. 2*, pp. 159–61.

[16] Gall, *From Bullocks to Boeings*, pp. 68–9; Rockdale Library Local Studies Collection Report 629.13 Rock, pp. 3, 13; Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement, Sydney (Kingsford-Smith) Airport: Hazard Analysis and Risk Assessment Working Paper* (Ultimo: Kinhill Engineers, 1990), pp. 43–5.

[17] Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement*, p. 54.

injury.[18] After analysing the onboard flight data recorder (FDR) and cockpit voice recorder (CVR), plus audio recordings from the airport's control tower, air safety investigators concluded that the captain's actions were justified.[19] Locals, however, remained nervous. If the 707 had continued its take-off and then lost power, it might have descended into Tempe or Marrickville, potentially causing hundreds of deaths.[20]

Figure 3. The Pan Am Boeing 707 which overran the end of Runway 34 on 1 December 1969. Despite the extensive damage, air safety investigators confirmed the captain's decision to abort the take-off. Source: Airways Museum. Reproduced with permission.

Even 20 years later, Botany Municipal Council expressed incredulity that Kingsford-Smith remained "the only major airport in the world where 3 of the 4 aircraft approach areas are over densely built up areas".[21] A contemporary study suggested that the airport's risk of airliner accidents over 1969–89 was 0.3 per 100,000 landings, with a 60 percent likelihood of occurring during take-off or landing.

[18] Department of Civil Aviation, *Investigation of Accident: Boeing 707-321B, N892PA, Sydney Airport, Australia, 1st December, 1969. Factual Reports*, Department of Civil Aviation (Melbourne, 1970), Airways Museum, Ian Leslie Collection, Box 2, pp. 2–13.

[19] Air Safety Investigation Branch, *Boeing 707-321B Aircraft N892PA at Sydney (Kingsford-Smith) Airport, on 1st December, 1969*, Accident Investigation Report, (Melbourne: Department of Civil Aviation, August, 1970), pp. 20–6.

[20] Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement*, p. 51.

[21] 'Review by Botany Municipal Council of the draft guidelines and proposed additional guidelines for the environmental impact statement for the proposed third runway at Kingsford Smith Airport', p. 10, Rockdale Library Local Studies Collection, LH 387.7 BOTA.

This analysis calculated that the possibility of a major crash at or near the airport, resulting in 120 deaths, was only likely to happen once in 100 years.[22]

Living with these risks reflected the nation's post-war embrace of aviation. By 1970, nearly 6 million passengers flew within Australia annually, including 3.4 million passing through Kingsford-Smith Airport.[23] Accordingly, Mascot's new control tower sat above an Air Traffic Control Centre that would require 90 staff at peak times. Even though operations continued to run out of Mascot's old tower in 1971, these facilities were "places of rapid decision making and a seemingly never-ending babel of requests and instructions", wrote aviation authority Don Charlwood. "Mainly they are places for the younger man [sic] with perfect vision and quick reactions".[24] At Sydney the three personnel usually in the tower comprised an air movement controller who guided take-offs and landings, plus a surface movement controller who managed aircraft on the ground, both overseen by an experienced coordinator. Their instructions were integrated into a massive, national airways system managed by the DCA, contributing to Australia's enviable reputation for aviation safety.

During the 1960s there were 49 civilian accidents deemed 'major air disasters' in Australia.[25] Yet only four involved more than a handful of people, leading Anderson to observe in 1970 that Australian airlines had a "remarkable record indeed", with passengers facing a risk of just 1.7 per million of dying in an accident.[26] The likelihood of crashes involving two aeroplanes was even more remote; in 1970 the President of the Air Transport Association of America claimed that the odds of a fatal airborne collision between airliners was 1 in 6.6 million.[27] Nevertheless, the potential human and financial cost was staggering, including the prospect of up to 1,000 deaths and predicted insurance payouts exceeding US$200 million.[28]

[22] Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement*, pp. 37–8, 46, 128–30, 138–49.
[23] Air Transport Branch, Department of Civil Aviation, *Australian Air Transport Statistics, Year Ended 30 June 1970*, Department of Civil Aviation (Melbourne, 1970), pp. 1, 4, Airways Museum, Filing Cabinet P-S, 'Statistics'.
[24] D.E. Charlwood, *Take-off to Touchdown: the Story of Air Traffic Control* (Sydney: Angus and Robertson, 1967), p. 68.
[25] 'Major air disasters in Australian civil aviation, 1960–72', Airways Museum, Ian Leslie collection – speeches & articles.
[26] Anderson, *Australia's Aviation Industry*, p. 19.
[27] Stuart G. Tipton, *How Safe is Flying?* (Washington DC: Air Transport Association of America, 1970), p. 6.
[28] Alan B. Hunter, 'Insuring the big jets', *Shell Aviation News*, no. 359 (1968), p. 18.

Figure 4. The interior of Sydney Tower in the late 1960s, illustrating the three controllers on duty as a Boeing 707 taxis past. Source: National Archives of Australia. Out of copyright.

Cockpit politics

"It has been said that because of the remarkable technical advances in aviation in recent years", proposed a 1969 review by Trans-Australia Airlines (TAA), "the new generation of passengers take safety for granted".[29] As a major domestic carrier owned by the Australian Government, TAA was a leader in this field, widely praised for its high maintenance standards and sensible choice of aircraft. Among them was the Boeing 727, which "ushered in the jet era on Australian domestic routes in a highly efficient manner".[30] As the first pure-jet aircraft to operate local airline services, the new Boeings represented both a profound leap in technological complexity and a drastically increased level of operational reliability. "A cabin as large as the big inter-continental jets … soft furnishings and soft music … the TAA 727 T-Jets built by Boeing offer a new world of whisper-quiet comfort to Australian air travellers", enthused a 1964 launch advertisement.[31]

[29] Flight Safety Committee, *Quarterly Summary of Accidents and Incidents* (s.n.: Trans-Australia Airlines, Feburary 1969), Foreword.
[30] Eric Allen, *Airliners in Australian Service*, Vol. 2 (Fyshwick: Aerospace Publications, 1996), p. 82.
[31] 'TAA whispering T-Jets are the quietest jets in the world', *Aircraft* 44, no. 2 (1964), p. 54.

But even before its arrival in the country, the 727 proved to be a highly political machine. Both TAA and its main commercial rival, Ansett-ANA, were under enormous pressure to buy the similar-looking Hawker Siddeley Trident. Yet this British aircraft simply did not offer the same performance, economics or delivery schedule as the American airliner.[32] Even the unwelcome addition of a hefty import duty on the 727 did not deter either operator from their decision. In fact, the subsequent refund of this excise to both airlines was deemed a "unique cry of *mea culpa* by an Australian government".[33] Nevertheless, under the nation's 'two-airline policy', any new jet turbine-powered aircraft had to enter service with both carriers on exactly the same day.[34]

Therefore on 2 November 1964, Ansett's first model 727-76, registered VH-RME, took to the air along with TAA's VH-TJA for their first commercial flights from Melbourne to Sydney.[35] In launching the 727-76 for TAA, VH-TJA was named *James Cook*, cementing the airline's links with Botany Bay. This aeroplane was subject to a surprisingly low number of incidents during its seven years of service up to 1971. Perhaps the most serious occurred in June 1969 when its nose radome was battered by the wingtip of fellow TAA 727, VH-TJB, during a taxying incident at Perth airport.[36]

Figure 5. TAA's first Boeing 727-76, VH-TJA, in the markings it wore during the 1971 collision at Mascot. Source: Airways Museum. Reproduced with permission.

[32] Stanley Brogden, *Australia's Two-airline Policy* (Carlton: Melbourne University Press, 1968), pp. 182–5.
[33] Brogden, *Australia's Two-airline Policy*, Postcript.
[34] David Corbet, *Politics and the Airlines* (London: George Allen & Unwin, 1965), pp. 134–5.
[35] Neville Parnell and Trevor Boughton, *Flypast: a Record of Aviation in Australia* (Canberra: AGPS Press, 1988), p. 305.
[36] Flight Safety Committee, *Quarterly Summary of Accidents and Incidents* (s.n.: Trans-Australia Airlines, August 1969), pp. 4–5.

Boeing 727s also arrived in Australia with cockpit voice recorders fitted as standard. Aircrew were outraged, with the Australian Federation of Air Pilots (AFAP) declaring that they would accept these devices "only when guarantees were given that the tapes would not be admissible in any civil liability hearing and would not be used at all when the pilot was unavailable to give evidence".[37] As the main union representing airline pilots, the Federation had considerable clout. It had just forced a significant improvement in working conditions after a three-day strike in 1964 and would soon drive a 35 percent pay rise in 1966.[38]

Just in time to enable 727 operations, in December 1964 an accord was reached between the AFAP and the Director-General of the DCA, assuring pilots that if they survived an accident, voice recordings would not be admissible as evidence. It was implied – although not formally stated – that accidents involving overseas-based aircraft would be exempt from this 'gentlemen's agreement'.[39] In 1969, Anderson sought to change the Commonwealth *Air Navigation Act* or its regulations, specifically to preclude the use of CVR recordings for any purpose other than accident investigation. The process stalled, however, on account of the fundamental legal principle against self-incrimination and the uncertain jurisdictional reach of the proposed legislative revisions.[40] Not all air safety experts were happy with the Department's semi-formal arrangement, with one investigator bravely informing AFAP members in 1972 that "Despite what you might think, the average pilot's memory of events is notoriously unreliable and requires every possible aid".[41]

By the early 1970s, cockpit politics had also expanded to include the industrial action that characterised much of Australia's labour relations throughout the seventies. TAA's chairman, Sir Fred Scherger, took a dim view of unionised aircrew, particularly as represented by the AFAP.[42] He resented insistent wage claims, especially when 1970–71 saw the world's airlines suffering "an economic slump unprecedented in the history of international civil aviation".[43] To add to TAA's financial woes, the opening of Melbourne's Tullamarine Airport in July 1970 saw more international flights bypass Sydney, reducing the need for connecting flights between the capitals. Nevertheless, in

[37] 'Guarantees wanted on voice recorders', *Age* (Melbourne), 16 September 1964, n.p.
[38] Brad Norington, *Sky Pirates: the Pilots' Strike that Grounded Australia* (Crows Nest: Australian Broadcasting Corporation, 1990), p. 22.
[39] D.G. Anderson to the Minister, 6 October 1975, p. 1, Airways Museum, Collision Sydney CF-CPQ and VH-TJA.
[40] J.K. Ewans to the Director-General of Civil Aviation, 30 July 1969, NAA, B595 24/1/254 PART 1.
[41] David S. Graham, 'The role of pilots in accident investigations', 23 August 1972, p.5, Airways Museum, Accident investigation, general.
[42] Harry Rayner, *Scherger: a Biography of Air Chief Marshall Sir Frederick Scherger KBE CB DSO AFC* (Canberra: Australian War Memorial, 1984), pp. 180–2.
[43] John Gunn, *Contested Skies: Trans-Australia Airlines, Australian Airlines, 1946–1992* (St Lucia: University of Queensland Press, 1999), p. 244.

1971 the airport handled 79,097 domestic airline flights and another 16,058 international movements.[44]

One overseas airline that offered a weekly service from Vancouver to Kingsford-Smith Airport was Canadian Pacific Airlines. Flying to Australia since 1949, the company had rebranded as CP Air in 1968. They operated this service with their distinctive orange-topped DC8s, including CF-CPQ, christened *Empress of Hong Kong*. This aircraft was one of the new 'stretched' DC8-63 series aircraft that was approved for operation into Australia in March 1970, making it the largest commercial aircraft flying in Australian airspace at that time.[45] Staging through Honolulu and Nadi as Flight 301, CF-CPQ touched down at Mascot at 9.34 pm on 29 January 1971 with 136 passengers and 11 crew aboard. Within minutes it touched off a major safety incident that reshaped the legal, industrial and procedural basis of airline travel in Australia over the coming decades.

Figure 6. CP Air's stretched 'Super DC8' airliners wore a distinctive colour scheme, with CF-CPQ illustrated in this photograph by John Hopton. Source: Airways Museum. Reproduced with permission.

Three metres from calamity

In Sydney Tower that night were four DCA staff, including senior tower controller Robert Gunn, surface movement controller Robert Davidson and aerodrome controller Lindsay Hill. While the Canadian airliner was landing, Hill advised the DC8 to "take taxiway right – call on 121.7". He

[44] Gall, *From Bullocks to Boeings*, p. 72.
[45] Roland Wilson to John C. Gilmer, 6 March 1970, NAA, B595 47/8/1 PART 1.

intended the aircraft to vacate the runway and taxi west to the newly opened international terminal, as well as switching radio frequencies to come under Davidson's guidance. In the cockpit of CF-CPQ, however, all four crew claimed to hear Hill's direction as "backtrack if you like – change to 121.7".[46] They later attested that this confusion was due to mishearing Hill's Australian accent; the controller himself had been regularly critiqued for speaking "much too fast with no attempt to enunciate clearly".[47] To be fair, Australian air traffic controllers in general were internationally renowned for speaking too quickly.[48] Yet on the DC8's flight deck, neither Captain Charles Magrath nor First Officer Walter Mude questioned the unexpected direction, even though Mude had never received such an instruction in hundreds of landings.[49] The CP Air crew proceeded to slowly turn their long aeroplane through 180 degrees just past the General Holmes Drive overpass, then began backtracking north along the runway they had just alighted on.

In the dark and drizzly conditions, all four men in the tower peered past the hump in Runway 16, approximately 1200 metres away, and saw the DC8 turning right as instructed. Not observing that the Canadians then went on to execute a full U-turn, at 9.35 pm Hill cleared VH-TJA for take-off. The TAA jet sat at the northern end of Runway 16, fully fuelled to operate Flight 592 to Perth, with 84 passengers and eight crew aboard. Under the command of Captain Warren 'Jimmy' James, assisted by first officer Doug Spiers and flight engineer James Ryan, the 727 accelerated and lifted its nose ('rotated') to depart the runway. James claimed that it was only at this instant that he realised that there was an obstacle on Runway 16, but chose to maintain a normal take-off angle, in line with company procedures.[50] The two aircraft were now approximately 1400 metres apart, with CF-CPQ barely moving but VH-TJA accelerating through 180 kilometres per hour directly toward the Canadian airliner.

These were the critical seconds. Having switched radio frequencies, the Canadians had not heard that VH-TJA was taking off. Suddenly they saw the lights of the 727 accelerating toward them and Magrath veered the lumbering DC8 to the right of the runway's centreline. Approximately six seconds later, as the TAA airliner screeched overhead at 9.36 pm, the DC8 shuddered.[51] However, as everything seemed normal, Magrath resumed taxying. Then through their windscreen, the CP Air

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[46] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney (Kingsford-Smith) Airport New South Wales on 29 January, 1971* (Melbourne: Department of Civil Aviation, August, 1971), p. 2.

[47] 'Aerodrome Controller Lyndsay [sic] Stuart Hill', c.1971, p. 2, NAA, B595 24/1/254 PART 1.

[48] L.J. Fowler to the Crown Solicitor, 14 May 1975, p. 3, NAA, A432 1971/391 PART 1.

[49] Fedsol Sydney to Fedsol Canberra, 18 June 1975, NAA, A432 1971/391 PART 2.

[50] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, pp. 2–3.

[51] Robert Jospeh Maxwell Edey, 'Answers of the firstnamed defendant to the interrogatories of the plaintiff', 4 June 1974, p. 9, NAA, A10273 50/1975.

crew saw the lights of another aircraft coming in to land directly toward them – a TAA DC9 airliner, VH-TJN. When Mude mentioned this to Davidson in Sydney Tower, the startled controller asked if the DC8 was on the taxiway. "Negative sir, we're on the runway, we were cleared to backtrack on the runway", came the reply.[52] The landing DC9 was urgently instructed to go around – thus avoiding a potential second collision – while CF-CPQ now took a taxiway to the left and arrived at the international terminal. Just 10 minutes later, an East-West Airlines Fokker F27, VH-EWJ, was permitted to take off along Runway 16. The captain of this much smaller airliner saw hundreds of items of debris in his lights, later claiming that "it was only sheer luck which enabled him to avoid 'wreckage which covered the runway'".[53]

But if accidents involving the DC9 and F27 had been averted, this was not true for the TAA 727. James and Spiers immediately realised that their aircraft had collided with the DC8. Only after they reported the impact did the CP Air crew learn that the VH-TJA had struck them – in fact the top half of the DC8's tailfin had been completely sheared off. More seriously, the collision had gouged an 18-metre path through the underside of the 727, severely damaging air conditioning, hydraulic and electrical systems, with some progressively failing. After initially exclaiming that they were "not in very good shape", the TAA crew were ultimately able to circle the aircraft for 40 minutes off Botany Bay to dump its heavy fuel load.[54] Several pieces of the aeroplane fell into a suburban building in Tempe, just before VH-TJA landed without incident at 10.16 pm. They returned to Runway 16, which had since been cleared of major wreckage, then taxied to the domestic terminal and disembarked the passengers.[55]

While there was no fire and nobody aboard either aircraft was injured, air safety investigators later estimated that just 3 metres separated the two airliners from a significant bodily impact.[56] Such an event could result in a major fire characterised by intense heat within a 300 metre radius, or even a massive fireball reaching 1 kilometre from the collision.[57] What investigators did not mention was that if the 727 had been merely 2 metres lower, its main fuel tanks may have been ruptured by the DC8's fin. Even a sideways divergence of less than 1 metre could have damaged the 727's main

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[52] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 30.

[53] 'Collision Sydney: record of interview, Australian Federation of Air Pilots, Minister's office', 26 October 1971, p. 3, Airways Museum, CAHS 5565 – Collision Sydney.

[54] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, Appendix B, p. 6.

[55] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, pp. 13–15; Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', pp. 1–9, NAA, A432 1971/391 PART 1.

[56] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 16.

[57] Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement*, p. 48.

undercarriage leg, making a safe landing highly improbable. These were the slight margins by which, in Don Anderson's words, "a tragedy of immense proportions was only very narrowly avoided".[58]

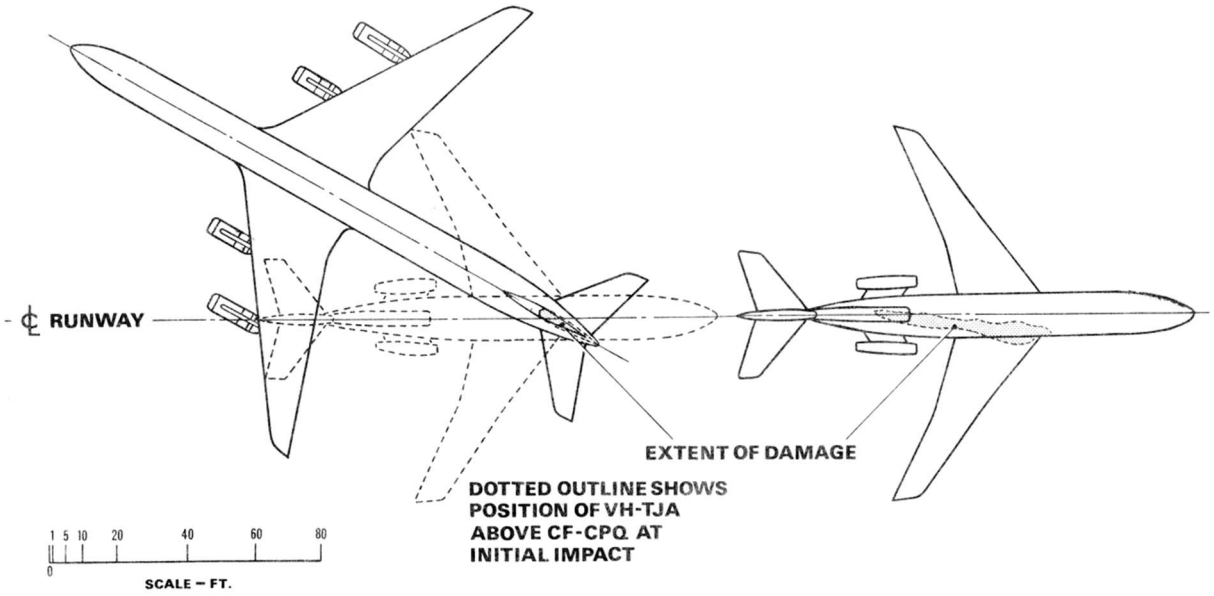

Figure 7. This illustration from the official report into the collision graphically indicates how close the airliners came to disaster, including the extent of the gash in the 727's underside. Source: Airways Museum. Reproduced with permission.

Black boxes and black bans

Following an aviation accident that involves serious damage and/or fatalities, three types of inquiry may be launched. Air safety investigations are typically conducted under a 'no fault' approach, encouraging participants and witnesses to speak honestly in the hope of determining and hence addressing the root cause of the accident. Coronial inquests may be convened in the case of accidental or unexplained deaths, often assisted by local police. The third pathway can see criminal legal proceedings launched to apportion blame and determine punishment, or alternatively a civil action will aim to identify culpable or negligent participants, who then must pay damages to the affected parties. While both technical and legal investigations examine the same sequence of events, their aims are distinctly different, creating tensions that affect the nature of evidence and the behaviour of informants.[59] The Mascot collision of 1971 soon became an important precedent in

[58] D.G. Anderson to John C. Gilmer, 19 February 1971, p. 1, NAA, B595 24/1/254 PART 1.
[59] Sofia Michaelides-Mateou and Andreas Mateou, *Flying in the Face of Criminalization: the Safety Implications of Prosecuting Aviation Professionals for Accidents* (Abingdon: Routledge, 2016), pp. 2–5.

both aviation and legal spheres: its potential consequences emphasised how the standard of care expected in air travel had increased in line with the number of lives at risk.[60]

As soon as the collision was reported, the DCA despatched its Director of Accident Investigation, Frank Yeend, while TAA sent its Manager of Flight Safety Investigation, Captain John Benton. Although CP Air also conducted their own inquiry, the Canadian government did not request formal representation in the official Australian investigation. Conducted by the DCA's Air Safety Investigation Branch (ASIB), it gathered reports from 20 informants, including aircrew from all of the affected aircraft at Mascot that evening. Expert teams also analysed flight operations, airways management, engineering and flight recorder data, as well as liaising with overseas authorities including Boeing, CP Air, the National Research Council of Canada, the Canadian Ministry of Transport and Director of Civil Aviation, and the US National Transportation Safety Board (NTSB).

Issued in August 1971, ASIB's public report attributed the accident entirely to human error occurring at three separate locations: in Sydney Tower, in the 727's cockpit and on the DC8's flight deck. The Canadians were criticised for not ensuring that the pilot in command was familiar with Kingsford-Smith's current layout and procedures, especially as the airport itself was undergoing such drastic transformations.[61] Furthermore, the CP Air crew were faulted for not seeking clarification of the highly unusual 'backtrack' instruction. Indeed, the investigators found it "difficult to understand how four persons listening independently and using ear-phones could all have made precisely the same erroneous interpretation of the words".[62]

Analysing the 'black boxes' soon became a major issue. It was found that the DC8's FDR was not operational during the flight, hindering analysis of the aeroplane's movement on the ground. Of greater concern, the Canadian crew claimed that they disconnected the CVR after being informed of the collision. This action would have prevented the looped tape from being overwritten after 30 minutes, thus preserving a record of what was said on the flight deck. However, the wrong switches had been pulled, leaving the tape running and thus permanently erasing critical evidence. While the ASIB critiqued this surprising lapse, the official report stopped short of labelling the crew's behaviour suspicious or even deliberate.

VH-TJA's 'black boxes' included an FDR which indicated the aircraft's speed, direction and climb, while its CVR captured cockpit noises for the final 60 minutes of the flight, most of which involved circling to dump fuel. ASIB investigators were eager to hear this recording but the Pilot's Federation

[60] Michaelides-Mateou and Mateou, *Flying in the Face of Criminalization*, pp. 13, 17–18.
[61] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 5.
[62] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 23.

had only once before agreed to the use of the CVR in an accident investigation – a 1968 Vickers Viscount crash which left all 26 passengers and crew dead. Indeed, the Federation threatened industrial action when the Department tentatively requested use of VH-TJA's voice recording. On 4 February 1971 an AFAP Presidential Directive stated that "due to breach of agreement by DCA … all pilots are to ensure that the voice recorder is either off of deactivated" when flying scheduled airline services.[63] While the Department rapidly backed down, the ASIB team had discreetly copied the tape. Although investigators may have heard its contents during the duplication process, these facts were only admitted during legal proceedings four years later.[64]

Turning their attention to the Sydney Tower, safety investigators blamed Lindsay Hill for not following full air traffic control requirements. In particular, he was criticised for omitting to ask the CP Air crew to inform him when they had cleared Runway 16, and for not clarifying that they should switch radio frequencies only when clear of the active runway.[65] The fact that all four men in the tower did not realise that the DC8 had U-turned and begun backtracking along the runway was attributed primarily to DCA training deficiencies. What really intrigued the ASIB team, however, was the audio recordings of the tower's exchanges with aircraft crews which – unlike CVR tapes – were admissible as evidence. During VH-TJA's take-off run, the question "How far ahead is he?" inexplicably appeared on one of the tower tapes. Later analysis by the NTSB attributed this query to Captain James, suggesting that he had inadvertently transmitted a comment from the 727's cockpit.[66]

The ASIB report concluded that if the TAA crew had abandoned take-off when they first saw the DC8 ahead of them, the 727 would have stopped a comfortable 680 metres short of a collision. Investigators were surprised that James chose to continue, but accepted that he considered this would result in a safe avoidance of the Canadian airliner.[67] One alternative would have been to climb more steeply to avoid the looming DC8. However, James argued, TAA's procedures manual stated that 'over-rotation' of a 727 – increasing the angle at which it takes off – would actually slow down the ascent and risk the tail section contacting the runway. Nevertheless, the official censure was clear: in his assumption that it was safe, James "persisted with the take-off, in the face of clear signs that the take-off operation was not a safe one".[68]

In the meantime, the absence of a 727 from service had significant scheduling and financial consequences for TAA. The airline rapidly accepted Boeing's quote for a team to travel from Seattle

[63] Frank E. Yeend, 'Affadavit', 25 February 1975, pp. 6–7, NAA, B595 24/1/254 PART 1.
[64] *Australian National Airlines Commission v Commonwealth* (Canberra: High Court of Australia, 1975), p. 536.
[65] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 28.
[66] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 17.
[67] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 32.
[68] Air Safety Investigation Branch, *DC8-63 Aircraft CF-CPQ and Boeing 727 Aircraft VH-TJA at Sydney*, p. 35.

and fix the aeroplane at Mascot. After replacing and mending major components, the costs amounted to over $711,000 for repairs plus $80,000 in lost revenue.[69] The 727 was returned to service on 28 February 1971, just two days after a McDonnell Douglas team completed work on CP Air's DC8, totalling $351,000 plus nearly $77,000 in losses and other costs.[70] In the background, Don Anderson wrote to CP Air, seeking assurances that they would deal with the safety issues raised by the accident.[71]

Figure 8. A 1969 photograph of the cockpit of a TAA Boeing 727 flight simulator, illustrating the relative positions of the captain (left), first officer (middle) and flight engineer (right). Source: Airways Museum. Reproduced with permission.

"People's reputations have taken a hell of a hammering"

Under considerable political pressure to deliver their findings, in August 1971 the ASIB provided a report on the Mascot collision to the Minister for Civil Aviation, Robert Cotton. Upon tabling it in the

[69] Phillips Fox & Masel to Deputy Crown Solicitor, 10 March 1972, NAA, B595 24/1/254 PART 1.
[70] 'Super service ... the story of TAA Boeing VH-TJA', *Aircraft* 50, no. 11 (1971), pp. 36–8; Creagh & Creagh to The Crown Solicitor, 19 June 1972, p. 1, NAA, B595 24/1/254 PART 1.
[71] D.G. Anderson to J.C. Gilmer, 17 March 1971, NAA, B595 47/8/1 PART 1.

Senate, he remarked that "People's reputations have taken a hell of a hammering", referring particularly to the TAA crew.[72] Indeed, wrote a local aviation correspondent, "This might have been Australia's worst aircraft accident but by a miracle and the ability and courage of the Captain" – meaning 'Jimmy' James.[73]

The investigation process itself came under scrutiny in Parliament on 9 December 1971. Pressured by the Pilots' Federation, opposition Senator Reg Bishop proposed that the report represented an "injustice to Captain James" and called for a new inquiry.[74] He furthermore urged that investigations should be conducted by a body separate from the DCA, given that its own staff and procedures were implicated in managing the airport and its air traffic control services. Senator John Sim, related by marriage to Captain James, went so far as to allege that "there is no longer credibility in the Air Investigation Branch [sic]".[75] The Department itself was meanwhile campaigning Cotton to instigate legislative revisions, leading the AFAP to threaten that "no aircraft would fly in Australia if pilots did not get adequate protection under proposed federal legislation on the use of cockpit audio recorders".[76]

But a far bigger issue was now looming: a tripartite legal case in the High Court of Australia. On 4 March 1971, three writs were issued by the Australian National Airlines Commission – the Commonwealth agency that operated TAA – under instruction from their insurer, Lloyds of London. The writs were served against Canadian Pacific Airlines, the Commonwealth of Australia as operators of Kingsford-Smith Airport, and the Director-General of the DCA as responsible for the airport's air traffic control services.[77] Indeed, there was some question as to whether the ASIB report would be considered in contempt of the writs served by the High Court, although the Crown Solicitor's Office counselled otherwise.[78] Then on 14 December, CP Air launched a counterclaim against TAA and the Commonwealth, denying that the crew of CF-CPQ were negligent and accusing VH-TJA's pilots of taking off without keeping due lookout.[79]

Very rapidly the prospect of civil litigation shaped the actions of all parties. Even during the ASIB investigation, aircrew became cautious about answering questions, while the DCA delayed revising

[72] Hansard (Australian Senate), 10 December 1971, p. 2668.
[73] 'Super service', p. 36.
[74] Hansard (Australian Senate), 9 December 1971, p. 2657.
[75] Hansard (Australian Senate), 10 December 1971, p. 2662.
[76] 'Govt inquiry into flight recorders. Pilots want to be protected', *Sydney Morning Herald*, 15 December 1971, n.p.
[77] High Court of Australia, 'Australian National Airlines Commission v the Commonwealth of Australia and Canadian Pacific Airlines Limited, Statement of Claim', 12 August 1971, NAA, B595 24/1/254 PART 1.
[78] B.J. O'Donovan to the Attorney General, 4 August 1971, p. 3, NAA, B595 24/1/254 PART 1.
[79] High Court of Australia, 'Canadian Pacific Airlines Limited v Australian National Airlines Commission and the Commonwealth of Australia, Counterclaim', 14 December 1971, NAA, B595 24/1/254 PART 1.

its air traffic control procedures lest they appear deficient in retrospect. “A public airing of the whole matter in the High Court could produce no benefit for the Department”, noted an ASIB summary, “and would be likely to damage considerably its public image” – particularly air traffic control services.[80]

In the meantime, a new federal Labor government came to power in late 1972. Both its industrial relations and fiscal policies differed markedly from the previous 23 years of Liberal rule. In late 1973 the new regime dissolved the Department of Civil Aviation and rolled its functions into a new Department of Transport.[81] Although an out-of-court settlement was occasionally mooted to circumvent a High Court hearing, it was suspected that TAA’s legal team were dragging their heels because the CVR recording implicated their aircrew.[82] The global regulatory environment also shifted in 1974, with the International Civil Aviation Organization agreeing that “the information on cockpit voice recorders should be privileged in respect of any process other than the investigation of accidents for accident prevention purposes”.[83]

The star witness

On 13 February 1975, CP Air’s lawyers finally sought to commence proceedings and submitted a summons for VH-TJA’s CVR tape. The application was heard in Melbourne on 5 March before Sir Garfield Barwick, Chief Justice of the High Court of Australia and a seasoned aviation law jurist. The Crown Solicitor opposed the request on behalf of the Commonwealth, submitting an affidavit from Yeend which argued that the Department of Transport was “honour and duty bound, whenever we have the opportunity, to oppose the use of cockpit voice records in any liability action”.[84] TAA’s legal counsel also urged excluding the tape from discovery, under the threat that AFAP members would not crew any aircraft fitted with a CVR.[85] Doubtless aware that TAA pilots had pressured the Whitlam government to award a 24 percent salary rise a year earlier, Barwick intoned that “I am certainly not going to act under any feeling of industrial blackmail”.[86] He may also have also learned that the

[80] Air Safety Investigation Branch, ‘Position paper on legal liability claims arising’, 1 March 1974, p. 1, NAA, B595 24/1/254 PART 1.
[81] Leigh Edmonds, *Stability in Flight: 1939–1973* (Ballarat: BHS Publishing, 2017), pp. 261–6.
[82] L.R. Edwards, ‘High Court action arising out of collision between aircraft at Sydney on 29.1.71’, 28 March 1973, NAA, B595 24/1/254 PART 1.
[83] Frank E. Yeend to The Minister, 3 March 1975, p. 2, NAA, B595 24/1/254 PART 1.
[84] Frank E Yeend, ‘Minute paper’, 19 November 1974, p. 4, NAA, B595 24/1/254 PART 1.
[85] Geoffrey Robin Masel, ‘Affadavit’, n.d., p. 3, NAA, A432 1971/391 PART 1.
[86] High Court of Australia, ‘Transcript of proceedings at Melbourne on Wednesday, 5 March 1975, at 9.45 a.m.’, 5 March 75, p. 2, NAA, B595 24/1/254 PART 1; Norington, *Sky Pirates*, p. 22.

Department of Transport was willing to allow airliners to operate without CVRs.[87] Refusing the Federation any representation in court, Barwick also rejected CP Air's motion for the tape to be shared with all three parties prior to the trial. He did, however, order TAA to preserve the recording, lest it be called as evidence by the trial judge.

As late as mid-May 1975, the Department of Transport proposed an out-of-court settlement to minimise reputational, financial and industrial relations harm. Legal advisers suggested following a last-minute, 'door of the court' strategy, with the Crown Solicitor authorising an offer to settle for 25 percent of TAA's and CP Air's damages claims, respectively. However, both airlines summarily rejected this gambit and the trial ran from 26 May to 24 June 1975.[88] It was conducted in Sydney before Justice Sir Anthony Mason, a former Royal Australian Air Force officer later "regarded by many as one of Australia's greatest judges".[89] All three parties were represented by Queen's Counsel, including John Barnard for TAA, Alec Shand for CP Air and Norman O'Bryan for the Commonwealth.

While many witnesses were called, including controller Lindsay Hill who had long since relocated to Canada, the proceedings pivoted on the audio recording from the 727's flight deck.[90] "Without doubt, the introduction of the TJA CVR information had a significant bearing on the inquiry", remarked a Department observer. "The tape certainly influenced Mr Justice Mason, after he had heard it privately, to introduce the material into evidence in the court and I am quite certain TAA's earlier and perhaps stronger position slipped a good deal as a result".[91]

Mason initially heard the CVR tape alone in the Department of Transport's offices, then a copy was made for him to listen at home. Despite TAA's claim that it was privileged information, he chose to listen to the recording on the grounds that doing so would not imperil the national interest.[92] Furthermore, he asserted, to exclude this evidence without due reason would contradict the principle that justice must be seen to be done.[93] Any objection on the grounds of potential industrial

[87] 'Harper Deputy Secretary to Secretary DoT Canberra', c.29 May 1975, Airways Museum, Flight data recorder.
[88] Norman M. O'Bryan and Peter Liddell, 'Opinion', 29 April 1975, p. 12, NAA, B595 24/1/254 PART 1; Crown Solicitor's Office, 'Memorandum for Acting Deputy Secretary, Department of Transport', 8 July 1975, p. 1, NAA, B595 24/1/254 PART 1.
[89] 'Mason, Anthony Frank', in *The Oxford Companion to the High Court of Australia*, ed. Tony Blackshield, Michael Coper and George Williams (South Melbourne: Oxford University Press, 2001), pp. 459.
[90] Lindsay Hill to the Director-General of Civil Aviation, 19 April 1971, Airways Museum, CAHS 5565.
[91] K.J. Leonard, Minute, 1 July 1975, NAA, B595 24/1/254 PART 3.
[92] Mason J, 'Reasons for judgment [sic] on application by second defendant for inspection of cockpit voice recorder tape', p. 10, NAA, A432 1971/391 PART 1; Dennis Pearce, 'The courts and government information', *Australian Law Journal* 50, no. 10 (1976): pp. 515–16.
[93] *Australian National Airlines Commission v Commonwealth* (Canberra: High Court of Australia, 1975), pp. 38–9; 'Current topics', *Australian Law Journal* 49, no. 11 (1975), p. 605; L.R. Edwards, 'Collision between aircraft – liability of operators and air traffic control – evidence – cockpit voice recorders. Australian National Airlines Commission v the Commonwealth of Australia and Canadian Pacific Airlines Ltd.', *Air and Space Law* 1, no. 2 (1975), p. 104.

action, Mason insisted, "was not supported by any judicial decision in Australia or for that matter in the common law world".[94] The threat remained, nevertheless.[95] "I believe that, if information recorded on a cockpit voice recorder were to be used", declared the Minister for Transport, Charles Jones, "members of the Australian Federation of Air Pilots would cease to agree to the installation or carriage of cockpit voice recorders on any aircraft".[96]

Mason was not swayed and two key extracts from the CVR were quoted to witnesses during the trial, before a new version of the recording was played to the open court on 3 June.[97] The key evidence comprised a comment by Captain James at 53 seconds past 9.35 pm: "Gee I would have thought he (is/was) still on the runway but at any event – (hope) to be airborne before then".[98] These words came 15 seconds after the tower had given clearance for take-off and fully 39 seconds prior to the impact. James had difficulty connecting the CVR evidence with his memories, claiming that his query "How far ahead is he?" was only muttered to himself just 22 seconds prior to impact.[99]

The cockpit recording also indicated that while circling over the sea 10 minutes after the collision, VH-TJA's crew attempted to rationalise their decision on the runway. "In fact if we'd a tried to stop … it would have been a bloody worse mess", remarked First Officer Spiers.[100] Given this new evidence, Hill was interrogated by the judge and insisted that "if he had had the slightest doubt that the runway was not clear he would not have cleared TJA to take off".[101]

It was suggested that James might offer a defence of 'the agony of the moment'.[102] This doctrine had been developed from naval law and subsequently applied to motor vehicle accidents. It acknowledged that the person controlling a vehicle is sometimes required to make a split-second decision between options which may each prove catastrophic and, in retrospect, 'wrong'. But under

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[94] *Australian National Airlines Commission and the Commonwealth of Australia and Another* (Canberra: High Court of Australia, 1975), p. 590.
[95] Philip Griffiths, 'Air crash record "not for courts"', *The Australian*, 28 May 1975, n.p.
[96] Charles Keith Jones, 'Affadavit in the High Court of Australia', 26 May 1975, p. 2, NAA, B595 24/1/254 PART 3.
[97] K.J. Leonard, 'Report on the proceedings in the High Court of Australia between Canadian Pacific Airlines, Trans Australia Airlines and the Department of Transport in respect of the accident at Sydney Airport on 29.1.71', 1 July 1975, p. 12, NAA, B595 24/1/254 PART 3.
[98] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', pp. 14–15, NAA, A432 1971/391 PART 1.
[99] High Court of Australia, 'Australian National Airlines Commission v The Commonwealth of Australia and Canadian Pacific Airlines Ltd. – interrogatories on behalf of the firstnamed defendant for the examination of the plaintiff', 16 August 1974 (hand-annotated copy), p. 9, NAA, B595 24/1/254 PART 1.
[100] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', p. 15, NAA, A432 1971/391 PART 1.
[101] K.J. Leonard, 'Report on the proceedings in the High Court of Australia between Canadian Pacific Airlines, Trans Australia Airlines and the Department of Transport in respect of the accident at Sydney Airport on 29.1.71', 1 July 1975, p. 5, NAA, B595 24/1/254 PART 3.
[102] W.G. Tucker to L.J. Fowler, 12 May 1975, p. 1, NAA, A432 1971/391 PART 1.

cross-examination, "James wilted noticeably and his answers became rambling and self-contradictory".[103] While Spiers had a clearer recollection of the events, all three TAA crew claimed that they could not remember the conversations captured on the tape. Summing up TAA's case, Barnard argued that the CVR evidence did not demonstrate that the crew of VH-TJA were aware of the runway being obstructed until the moment of rotation.[104]

The Canadian crew were also vigorously grilled. Summing up for the Commonwealth, O'Bryan stated that "the erasing of the CVR tape in CPQ was a 'fortunate accident' for CPA if indeed it was an accident!"[105] Likewise, on behalf of TAA, Barnard asserted that Lewis Ellert, the highly qualified check captain who had also been in the DC8's cockpit, "was the villain in the piece and … probably had subsequent doubts about the backtrack instructions and had probably taken steps to ensure that the CVR tape was erased".[106] While Captain Magrath was also somewhat confused in his testimony, First Officer Mude provided the most consistent account from the Canadian perspective.[107]

Justice Mason handed down his 45-page judgement on 29 August 1975, affirming that "the CVR provided valuable evidence upon which I have placed considerable reliance".[108] Indeed, he deemed the TAA crew's version of events "unsatisfactory and unreliable", while the Canadians "did not impress me as accurate witnesses".[109] In outlining the events as he interpreted them, Mason believed that the CP Air DC8 was actually on the hump above General Holmes Drive, rather than beyond it, when the TAA 727 commenced its take-off. He was convinced that Captain James observed the orange-topped airliner in more than sufficient time to abort. In electing to persevere, "the risk was considerable and it should not have been taken". [110] Mason was equally sceptical that Captain Magrath did not observe the 727's lights heading toward him as the DC8 U-turned to backtrack.

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[103] K.J. Leonard, 'Report on the proceedings in the High Court of Australia between Canadian Pacific Airlines, Trans Australia Airlines and the Department of Transport in respect of the accident at Sydney Airport on 29.1.71', 1 July 1975, p. 4, NAA, B595 24/1/254 PART 3.

[104] Fedsol Melbourne to Fedsol Canberra, 25 June 1975, NAA, A432 1971/391 PART 1.

[105] K.J. Leonard, 'Report on the proceedings in the High Court of Australia between Canadian Pacific Airlines, Trans Australia Airlines and the Department of Transport in respect of the accident at Sydney Airport on 29.1.71', 1 July 1975, p. 11, NAA, B595 24/1/254 PART 3.

[106] K.J. Leonard, 'Report on the proceedings in the High Court of Australia between Canadian Pacific Airlines, Trans Australia Airlines and the Department of Transport in respect of the accident at Sydney Airport on 29.1.71', 1 July 1975, p. 13, NAA, B595 24/1/254 PART 3.

[107] K.J. Leonard, 'Report on the proceedings in the High Court of Australia between Canadian Pacific Airlines, Trans Australia Airlines and the Department of Transport in respect of the accident at Sydney Airport on 29.1.71', 1 July 1975, p. 6, NAA, B595 24/1/254 PART 3.

[108] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', p. 5, NAA, A432 1971/391 PART 1.

[109] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', pp. 9, 12, NAA, A432 1971/391 PART 1.

[110] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', p. 38, NAA, A432 1971/391 PART 1.

Mude had a further duty "as a matter of good airmanship to ask that the message be repeated or to state his understanding and ask that it be confirmed". [111] Nor did the controllers in the tower escape a verdict of negligence in permitting the TAA 727 to take-off; the judge found their observation of the DC8 cursory at best and their radio contact inadequate.[112]

In apportioning responsibility, Justice Mason reiterated that culpability in civil law indicates not moral blameworthiness, but the "degree of departure from the standard of care of the reasonable man".[113] He slated the major liability to the Commonwealth, citing the duty of air traffic controllers to maintain safe airways and to prevent accidents. He found the CP Air crew to have exercised less than reasonable attention, proposing that their responsibility for the collision was equal to that of the TAA aircrew. Respecting the original claim, the Commonwealth was held 4/7 responsible and CP Air 3/7 culpable. For the counterclaim, TAA was ordered to pay 3/7 of CP Air's expenses with the Commonwealth to pay the remaining 4/7. Costs for both decisions followed the proportional damages, except that the fee for inspecting the CVR tape was split equally between CP Air and the Commonwealth.[114]

As the Commonwealth entity responsible for TAA, the Australian National Airlines Commission was awarded $552,378.67 plus costs of $51,026.71, minus $160,719.60 plus $1,544.87 costs for the counterclaim. Ending up $441,140.91 in credit, this amounted to 55.9 percent of TAA's original claim for $788,952. Canadian Pacific Airlines received $281,259.30 plus $3,604.71 costs for the counterclaim, but had to pay $236,733.72 on the original claim and $921.45 for the CVR inspection, resulting in a nett gain of $47,208.84, or just 11.7 percent of the $402,489 sought. The Commonwealth meanwhile paid $436,184.66 plus $29,158.12 costs for TAA's claim, as well as $2,059.83 for CP Air's counterclaim costs and $921.45 for the CVR inspection, adding up to a debt of $468,324.06. The Commonwealth also had to foot its own expenses such as O'Bryan's $10,880.00 legal fees, bringing the total disbursement to well over $480,000. Neither airline actually received their award, since the funds were owed to their respective insurers. Although its expenses were substantial, the Department of Transport's debit equalled just 0.05 percent of its 1975–76 annual expenditure of nearly $917 million.[115]

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[111] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', p. 31, NAA, A432 1971/391 PART 1.

[112] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', pp. 22–30, NAA, A432 1971/391 PART 1.

[113] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', p. 39, NAA, A432 1971/391 PART 1.

[114] Mason J, 'Australian National Airlines Commission v. the Commonwealth of Australia and Canadian Pacific Airlines Limited – Judgement', pp. 40–1, NAA, A432 1971/391 PART 1.

[115] P.J. Nixon, *Australian Transport 1975–76* (Canberra: Department of Transport, 1976), p. 191.

There was surprisingly little media interest in the case and none of the parties launched an appeal, perhaps because the Commonwealth came off better than predicted. Just prior to the trial, the Acting Deputy Crown Solicitor had proposed offering a settlement of $511,833 to TAA and $277,982 to CP Air. Although very close to the amounts formally allocated by Justice Mason, the total suggested outlay of $789,815 was around 65 percent higher than what the Commonwealth eventually paid.[116] It was, of course, not possible to put a price on the reputational damage to the Department, nor on the massive drain on its resources that the collision had caused since 1971.

Moreover, the Commonwealth's bill was just a fraction of the compensation claims that would have ensued if the TAA airliner had been just a few metres lower and collided fatally with the CP Air jet. Given that over 90 percent of those aboard died after the double 747 collision in Los Rodeos, the death toll at Mascot may have exceeded 215 of the 240 people on the 727 and DC8. With Australian legislation limiting compensation for airline accidents in 1971 to $30,000 per victim, the estimated payout may still have topped $6.5 million. In comparison, the final compensation payouts for the Canary Islands collision totalled a sobering $68 million in 1980 dollars.[117]

A near-miracle?

In Australia, the near-miracle at Mascot led to a tightening of airways procedures, including a requirement for pilots to notify the tower when their aircraft was clear of the runway.[118] Already amongst the most stringent in the world, these standards required high levels of proficiency from air traffic controllers. In the wake of the High Court's verdict, tower personnel argued that since they were expected to operate at the same level of responsibility as a 747 first officer, they should be paid accordingly. Their December 1975 claim for a 75 percent pay rise was later reduced to 36 percent, but failed in the new political environment that followed the dismissal of the Whitlam Labor government. In fact, controllers were still mounting an industrial campaign to press their case when the Los Rodeos collision horrified the world.[119] Pilots, meanwhile, continued to insist that CVR recordings should not be presented as evidence in civil legal proceedings. Despite the precedent set by Justice Mason in 1975, the principle agreed in 1964 has generally been upheld.

[116] L.J. Fowler to the Crown Solicitor, 14 May 1975, p. 4, NAA, A432 1971/391 PART 1.
[117] '$68m damages in worst airline disaster', *Mercury* (Hobart), 26 March 1980, p. 22.
[118] 'Unit Aeronautical Information Circular – Sydney Airport', 2 February 1971, NAA, B595 24/1/254 PART 1.
[119] 'Traffic control workers strike far from over', *The Bulletin*, 19 February, 1977, n.p.

"As the present airport becomes more and more congested", proposed Rockdale's Mayor, Ron Rathbone, in 1982, "so the possibility of a major air disaster also grows".[120] Certainly, the 1971 accident proved to be just one of 40 collisions recorded at Kingsford-Smith Airport between 1969 and 1989, including 16 involving two aircraft.[121] While several impacts resulted in substantial damage, none were as serious as the Boeing 707 runway overrun in 1969 or the TAA-CP Air collision two years later.

But safety is never simply a case of luck. When an Advance Airlines of Australia Beech Super King Air 200 crashed on landing at Kingsford-Smith Airport in 1980, killing all 13 people on board, the technical inquiry confirmed that air traffic control had acted correctly despite extenuating circumstances.[122] In 1989, analysts planning for the proposed third runway at Mascot observed that despite still using equipment installed during the tower upgrade of 1972, the "Air Traffic Control system has a good record … [but] is very reliant upon human actions".[123] It was precisely by holding such actions accountable – both in technical and legal terms – that the Sydney airliner collision of 1971 helped contribute to the airport's ongoing safety record more than half a century later.

Acknowledgements

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[120] Rathbone, p. 26, Rockdale Library Local Studies Collection, Report 629.13 Rock.
[121] Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement*, pp. 146–7.
[122] Air Safety Investigation Branch, *Advance Airlines of Australia Beech Super King Air 200 VH-AAV Sydney (Kingsford Smith) Airport, New South Wales 21 February 1980* (Canberra: Australian Government Publishing Service, 1981), pp. 27–9.
[123] Australian Centre of Advanced Risk and Reliability Engineering, *Third Runway Proposal Draft Environmental Impact Statement*, p. 35.