SOUTH AUSTRALIAN AVIATION MUSEUM

SIGNIFICANT AIRCRAFT PROFILES

DOUGLAS DC-6 & DC-6B IN AUSTRALIAN SERVICE (PART 1)

Australia's first involvement with the Douglas DC-6 family began in November 1948 with the arrival of VH-BPE, the first of four such aircraft to be operated by British Commonwealth Pacific Airlines (BCPA) from its base in Sydney, New South Wales.

Who was BCPA and where did its aeroplanes fly?



BCPA DC-6 standing next to Southern Cross

In 1944, Commonwealth delegates from Great Britain, Australia, Canada and New Zealand met in Montreal, Canada, to discuss the post WWII establishment of a British Commonwealth Air Service. Ideally, the route structure would interconnect all those nations then coloured pink on maps of the world with Britain. In 1946, at a meeting in Wellington, New Zealand, a further step was taken

with the announcement of the formation of British

Commonwealth Pacific Airlines Ltd (BCPA). This "missing link" across the Pacific would enable a global round-the-world air service in either westerly or easterly directions. Canada chose not to be part of the group, electing to operate across the Pacific in its own right. Thus was born BCPA, with ownership split between Australia, 50 per cent, New Zealand, 30 per cent and 20 per cent Great Britain. BCPA's route structure would initially commence from its home base in Sydney to San Francisco and on to Vancouver, with intermediate fuel stops in Fiji, Canton Island and Honolulu, with the return trip operated in reverse order.



BCPA Advertisement and Schedule

One of the airline "observers" at the conference was Hudson Fysh, representing Qantas Empire Airways (QEA), who viewed BCPA as a serious rival. QEA at that stage was not in a position to operate the Southern Cross route in its own right, as the airline was rebuilding following losses sustained in WWII. South Australian Sir Keith Smith, a member of the 1919 crew who flew the first England/Australia flight in a Vickers Vimy bomber, was BCPA's vice president representing British interests. The Australian government was a keen backer of BCPA, believing Pan American Airlines (PAA) would soon recommence its Pacific services, including the USA/AUS route. They did not want PAA to regain a majority hold. BCPA's planners would have recognised that the Southern Cross Route offered an alternative and more secure passage to the UK, because the established Kangaroo Route in the immediate post-war era was exposed to political and anti-colonial turmoil throughout the Middle East and South East Asia, along with the threat of Russian and Chinese expansionism.

BCPA faced an immediate hurdle in that the airline did not possess either aircraft or crew to commence scheduled services. The problem was overcome by a 1946 agreement with Australian National Airlines (ANA) that would provide four DC-4 aircraft plus technical and cabin crew. The agreement would expire in April 1948, when BCPA expected to operate in its own right. The first scheduled BCPA flight departed on 15 September 1946, with a frequency of once per fortnight.

By mid-1948, BCPA realised it would need to update its DC-4 based operation. Aware that PAA was considering the introduction of either Lockheed Constellations or Boeing Stratocruisers, BCPA began looking at its options. After other considerations, it settled on the Douglas DC-6, a selection that



BCPA DC-6 Cockpit

came about in an unexpected way. In July 1948, John Watkins, who at the time was both Technical Superintendent of the recently established TAA (Trans Australian Airlines) and Technical/Engineering adviser to BCPA, was in California for the handover of TAA's first Convair aircraft from the San Diego plant. Following advice he visited the Douglas aircraft factory at Santa Monica where he found four sleeper-equipped DC-6s that had originally been built for a Swedish airline. Several Nordic countries had united to form one airline, Scandinavian Airlines System (SAS), and the four DC-6 aircraft had been declared as surplus. Watkins

contacted Arthur Coles, BCPA's chairman and also chairman of the Australian National Airlines Commission, advising him of the immediate availability of the aircraft. The end result saw BCPA's first DC-6, VH-BPA, depart the United States for Australia in November 1948.

The four aircraft were registered and named as follows:

- VH-BPE Resolution
- VH-BPF Endeavour
- VH-BPG Adventure
- VH-BPH Discovery

The names bestowed upon the aircraft, were in honour of the ships that had sailed with Captain Cook on his voyages of exploration.

Why choose Douglas?

The Douglas Aircraft Company was founded in July 1921 in Santa Monica, California and had earned a reputation for designing and building aircraft that were both practical and sound. For instance, in 1924 four Douglas Cruisers departed the USA to attempt the first round world flight. Two completed the journey in an elapsed time of 175 days, alternating between the use of either interchangeable



BCPA boarding passengers

floats or wheeled landing gear. In July 1933, Douglas ushered in an aviation milestone with the introduction of the twin engine all metal DC-1. Soon after followed the DC-2, then the legendary DC-3 and in 1938 the four engine DC-4.

In late 1944, the USAAF (United States Army Air Force) and Douglas were discussing a requirement for a long range, pressurised transport. Douglas were no doubt keen to engage in the project, as their DC-4's origins dated back to 1935 and, by late 1945, Lockheed had already sold over 100 of their

technologically advanced Constellations to airlines. Douglas began design work on what was known as the XC-112 and in February 1946 the prototype aircraft made its first flight. USAAF interest at this point had waned somewhat with the end of WWII. Even so, Douglas continued development of the aircraft, now along commercial lines and referred to as the DC-6. The reconfigured and renamed aircraft's first flight took place in June 1946.

American Airlines and United Airlines were the first commercial airlines to operate the DC-6. Introduction to service was not without drama as two of the type suffered from inflight fires, the worse being the loss of a United Airlines aircraft and all 52 aboard in November 1947. The cause was identified as venting fuel being drawn into a cabin heater inlet. The problem was resolved and, after a four-month grounding, all DC-6s resumed flying. By mid 1949 the majority of large US carriers and many European airlines were operating DC-6s in their fleets.

BCPA DC-6 Configuration

Quotations on BCPA DC-6 configuration vary, however the following details appear to be a close summation. The aircraft was low wing, of all metal construction, with a fully retractable tricycle undercarriage. Powered by 4 x Pratt & Whitney R 2800 "Double Wasp" 18 cylinder radial engines, developing 2100 hp, giving a cruising speed of 285kt (530km/h, 320mph) at an altitude of approximately 17,000ft/5100m. Originally fitted with Curtiss three bladed propellers, BCPA changed to Hamilton constant speed props, reversible and full feathering. With maximum fuel of 4250 US gal/16,000lt, range was approximately 4480mi/4072nm/7200km. MTOW(maximum take off weight) was 93,200lb/42,300kg. Length was 101ft 5in/30.45m, with the DC-4 wingspan of 117ft 6in/35.25m retained. Major cabin changes included pressurisation and air conditioning. BCPA's cabin accommodation differed from the standard fit out in that passenger uplift could be varied between 48 by day or, by converting seats to sleepers (lie flat beds), 37 for night flights.

The crew complement of a BCPA DC-6 was composed of Captain, Co-Pilot, First Officer, Navigator, Radio Operator, Flight Engineer, Purser, and two Hostesses, one being a trained nurse. TAA carried out all maintenance requirements, mainly in Sydney, and were general sales agents in Australia for BCPA.

BCPA's four DC-6 aircraft justified John Watkins' selection. The aircraft represented an advancement over the DC-4 in the areas of speed (90kt/165km/h), engine power (900hp), range (1500nm/2850km) and importantly a pressurised and air conditioned cabin. Douglas had built an aircraft that was appreciated by the crews that flew it and the passengers it carried. In the short period BCPA operated, the company established a reputation for reliability and high standards of service both in and out of the cabin. Numerous commendations both spoken and written attest to passenger appreciation of the personalised care and attention they received.



To illustrate a point, company procedures required that on departure from Sydney, the dispatching officer and two ground hostesses would stand to attention facing the cockpit, the two hostesses to the left of the dispatcher. All three were to remain in this position until engines were started, the captain's salute received and returned, and the aircraft taxied away. Procedures inside the cabin were also strictly adhered to. When preparing the cabin for an overnight, four seats at floor level were converted into double beds. In what may have seemed an act of moral rectitude at the time, a bundling board was placed between the beds to separate unmarried couples when no upper single bunks were available. To ensure BCPA's aircraft were fully prepared for each Pacific crossing, the allocated DC-6 was required to undertake a test flight. Four days prior to the departure date, the aircraft would make a pm arrival at TAA's Sydney engineering facility. Over the following two days, the aircraft would undergo an extensive maintenance check before a test flight of one to two hours the following

morning. All being well, the aircraft would be ready for departure the following day.

In the post WWII era, air travel was expensive, international fares even more so and, not surprisingly, beyond the reach of many. Passengers tended to be politicians, entertainers, sports stars (ie, the Australian Davis Cup squad) or leading businessmen. The average take home wage in 1951 was A£10-15 (A\$20-\$30 dollars). In comparison, a Sydney to San Francisco return fare was A£477/14/00 (A\$956.80). Bear in mind that BCPA's cabin was only one class, the same fare applying to all those who travelled. It would be akin to travelling in first class today. Mass travel was many years away, when 300-400 plus passengers, with varying fare classes, could be uplifted in a single aircraft.

BCPA's Annual Report for the 12 month period ending 31 March 1951 revealed the company made a profit of A£26,470/A\$52,940, the first since the airline's inception. Gross revenue was A£1,900,000, a substantial increase over the A£478,200 recorded in 1948, BCPA's first year of operation. In the same period, BCPA carried more passengers than both PAA and Canadian Pacific combined. With BCPA's financial success, thoughts turned to future planning requirements that envisioned a fleet of six de Havilland 106 Comet 2s with a potential delivery date of late 1954. Despite the buoyant feelings, the seeds of uncertainty were beginning to be sown.

The three controlling government bodies met in Canberra in mid 1952, where the prospect of one airline operating both the Kangaroo and Southern Cross Routes was discussed at length. The airline most frequently mentioned as able to fulfill this goal was QEA. Hudson Fysh had always been an ardent proponent of this view, even more so now that QEA had re-established itself following the airline's WWII losses. Having purchased Lockheed Constellations, QEA had resumed scheduled

services to London in December 1947 and commenced service to Johannesburg on the Wallaby Route in September 1952. QEA DC-4s were operating to Hong Kong, Tokyo and Port Moresby/Lae. As the nature of these discussions became known, the morale of BCPA's 260 staff began to ebb away. Despite these distractions, all at BCPA knew they had a job to do and that was to present and maintain the airline with its high standards, while others decided their future.

During the period March 1950 to late 1953, BCPA scheduling could be achieved by using only three aircraft, the fourth DC-6 becoming available for charter. TAA first took up the offer, chartering both aircraft and crew on wet lease basis, over Christmas/Easter holiday periods or when passenger demand peaked. ANA also chartered the fourth DC-6 over these same periods, along with a Melbourne Cup special from Sydney. Tasman Empire Airway Limited (TEAL) frequently chartered the aircraft to operate Sydney/Auckland services. The Korean War also proved to be a lucrative period for BCPA between April 1952 and mid 1953 as both the Australian and New Zealand governments chartered the aircraft to carry military personnel to Japan and return.



BCPA Route Map

Rumours persisted throughout 1953 in regard to BCPA's future, the most prominent being the absorption of the airline into QEA. Rumour became fact in October of that year when representatives of the three controlling nations agreed to cede the Southern Cross Route to QEA. The effective date of implementation was to be no later than 31 March 1954. However, BCPA was struck a cruel blow before then, with the fatal crash on 28 October 1953 of DC-6 VH-BPE *Resolution*. The flight had departed Honolulu for San Francisco where, on making an ILS (Instrument Landing System) approach, the aircraft impacted high terrain with the loss of all 19 aboard (8 crew/11 passengers). Despite this terrible tragedy, BCPA continued operating until QEA commenced their inaugural Pacific service on the 15 May 1954 with a Lockheed L1049C Super Constellation. The 264

BCPA staff members were offered positions with QEA, which the majority accepted, many going on to further their career and eventually retiring from the airline.

So ended BCPA's short life, an airline that had been created for reasons of political expediency, primarily:

- (a) As an alternative and secure route to the U.K;
- (b) To gain route ascendancy before other major airlines, principally Pan American Airways, could re-establish themselves.



Two other elements were always bubbling along in BCPA's wake. First was Hudson Fysh who always felt the Southern Cross Route should be part of the QEA mosaic. Second was BCPA's restriction in being tied to the one route, with little or no scope for expansion save for *ad hoc* charter work. BCPA's life seemed to parallel that of a moth as it was drawn to its inevitable conclusion.

BCPA's VH-BPE lost near San Francisco 28 Oct 1954

And what became of the three surviving aircraft?

When researching the life and times of BCPA, it became apparent how central the four DC-6 aircraft were to the story. Without them, there was no story, as they each took on a life of their own with BCPA.

Following BCPA's closure, the three remaining DC-6 aircraft were placed with TEAL and, in the early 1960s, were absorbed into the RNZAF (Royal New Zealand Air Force). Thereafter the three aircraft passed through the hands of a succession of operators until their final known disposition:

- VH-BPF crashed in service with Royal Air Lao in 1971;
- VH-BPH scrapped and nose section in Finland;
- VH-BPG currently located at Lanseria International Airport, Republic of South Africa. The Queensland Air Museum is currently seeking sponsors to assist in returning this aircraft to Australia.

Dean Robinson History Group Member August 2016

ACKNOWLEDGEMENTS

E Allen, Airliners In Australian Service (Vol 2), 1996.

Barry Berkinshaw, South Australian Aviation Museum.

Ron Cuskelly, "British Commonwealth Pacific Airlines & Douglas DC-6 VH-BPG *Adventure*, C/N 43127", Queensland Air Museum.

HM Moore, Silver Wings In Pacific Skies, 1993.

P Yule, The Forgotten Giant Of Australian Aviation, 2001.



BCPA VH-BPE "Resolution" photographed on the tarmac at Vancouver Airport, Canada

APPENDIX – AIRCRAFT SPECIFICATIONS

The Douglas DC-6 (in BCPA configuration) Metal low-wing monoplane with full cantilever wing and tail surfaces and semi-monocoque fuselage with fully retractable tricycle-type landing gear and steerable nose wheel. Span: 117'5" Fuselage Cross-Section Height Fuselage Cross-Section Height: 11'6" Length: 101'5" Fuselage Cross-Section Width: 10'5" Wheel Base: 30'8'/:" Height: 28'5"

Engines:

4 x Pratt & Whitney R-2800 'Double Wasp', CA15, Spec. No. 8112, 18-cylinder air-cooled radials, single stage, 2speed blower.

Propellers:

Curtiss Electric. Hub C632S-A112, three blade, 13'1", reversible, full feathering, automatic synchronisation.

Passenger Accommodation: od Cabin

Forward Cabin:	o rows of 4 seats each
Aft. Cabin:	4 rows of 4 seats each
Total Day Seats:	48
Sleepers:	
Forward Cabin:	9 Upper Berths
	4 day seats make up into a
	lower berth - 8 lower berths
Aft. Cabin:	4 Upper Berths
	4 Lower Berths
Total Berths:	13 Singles (Uppers)
	12 Single/Double (Lowers)
Toilets:	2 Forward
	1 rear in powder room

Radio:

HF and VHF receiver and transmitter, beacon localiser, glide-path receiver and radio altimeter.

Capacities:

Fuel Grade - 100/130

Fuel Tank capacity - 4248 US Gals. (Approx. 48 gals required for Start, Warm and Taxi out) Engine Lubricating Oil: Grade 1120 Summer Grade 1100 Winter Vacuum Greenband Tank Capacity per Engine: 37.5 gls Total 4 Engines: 1125 lbs

Normal oil load: 35 gls per engine Hydraulic Fluid: Total capacity: 22.6 gals. Anti-Icing Alcohol, Tank capacity: 16 gals. Fresh water supply, total tank capacity: 48.5 gals. Engine water-alcohol Injection Fluid, Four nacelle tanks of 5.4 US gals. each, Total: 21.6 gals.

Air Frame limitations:

Approx. BCPA Basic Weight: 59,000 lbs Max. Gross Weight, less useable Fuel and Oil: 70,000 lbs. Max. Takeoff Gross weight: 93,200 lbs. Max. Landing weight: 75,000 lbs.

DC-6 Airspeed Limitations (MPH)

ALT.	DIVE	CRUISE	GEAR EXTEN.
S.L.	349	292	194
7000	349	292	194
11000	325	292	194
15000	301	268	194
20000	271	238	194



Pressurisation:

Cabin Altitude:	Flight Altitude
0 ft.	8920 ft.
815 ft.	10,000 ft.
4515 ft.	15,000 ft.
8000 ft.	20,000 ft.
11.280 ft.	25.000 ft.

Level Flight Speed

Ra

Maximum Cr	uise Power, H	ligh Blower	
Gross Weight	75,000 lbs.	84,000 lbs.	93,200 lbs.
Altitude	20,600 ft.	20,400 ft.	20,200 ft.
Speed	325 MPH	315 MPH	301 MPH

nge:	Absolute range at 10,000 ft.
	with 4248 Gals. Fuel = 4480 Miles

Ceiling: Four-engine 23,800 ft. Three-engine @ 81,500 lbs. gross weight 22,200 ft. Two-engine @ 81,500 lbs. gross weight 8,800 ft.

Anti-Icing Equipment:

Anti-icing equipment is installed to control ice formation on leading edges of main planes, tail fin and tail plane; propellers, carburettor intakes, windshield, pitot tubes and air scoops.

Identification:

Manufacturer's Serial Nos. 43125, 43126, 43127, 43128. Australian registration: VH-BPE, VH-BPF, VH-BPF, VH-BPH.



