

Globe-trotting DC-3

Geoff Goodall outlines the eventful earlier career of an Australian Douglas DC-3

This is the story of an Australian airline DC-3, looking no different from so many other DC-3s which flew our airline network from 1937 into the 1970s, and some even later. However this particular DC-3 led a fascinating life, being gainfully employed in far-flung parts of the world for twenty years before, for the first time, settling down to a steady job as a passenger airliner in Australia.

The subject is Mac.Robertson Miller Airlines' VH-MMT *RMA Turner*, which joined the West Australian airline in 1965. It was immediately paint-stripped into the MMA distinctive DC-3 scheme of all over polished metal finish. Not even a white roof to reflect some of northern WA's extreme heat, believed among sweating crews to be based on management concern that the weight of the paint would reduce revenue payload. This latest addition to MMA's DC-3 fleet entered service in June 1965 mainly on inland routes, while Fokker F.27 Friendships flew the MMA coastal services to towns along the trunk route Perth-Darwin.

So where had this DC-3 been, prior to purchase by MMA in 1965?



VH-MMT at Port Hedland July 1968. Photo: Geoff Goodall.

It was built in 1942 at the Douglas Aircraft Company plant at Santa Monica Airport, southern California. It had been laid down as Douglas construction number 6353, a civil DC-3A-447 to the order of Pan American Airways with allocated registration NC34960. However after Pearl Harbor and the entry of the United States into World War II, civil production was taken over by the US Government for re-issue to the military. This aircraft was allocated to the US Navy and completed to navy specification as a R4D-4 transport with Pratt & Whitney R1830-92s engines.

On 20 January 1943 this R4D-4 was accepted by the US Navy as serial number 33818. Later that month it was assigned to VR-2 Fleet Transport Squadron home based at Alameda Naval Air Station. VR-2 came under Naval Air Transport Service Pacific Wing, operating to the Pacific war theatre and the Aleutian Islands in Alaska. In March 1943 it was transferred to VR-4 and the following January to VR-5, both squadrons under the US Navy South Pacific Combat Air Transport Service (SCAT). The R4Ds carried fuel and supplies to combat zones including Guadalcanal

and brought out casualties. With the post-war wind down, this R4D-4 was assigned in February 1946 to Fleet Air Wing FAW-5 at Norfolk NAS Virginia, a month later to FAW-3 in Panama before being approved for disposal. It was handed over to the War Assets Administration and struck-off US Navy charge on 31 October 1946.

The civilian purchaser was Aero Service Corporation, Philadelphia Pennsylvania, a leading aerial mapping and mineral survey operator. It was the first of many DC-3s the company would use post-war. In early 1947 it was registered NC9032H and after civil certification as a DC-3 and installation of specific survey equipment, it was dispatched to its first overseas assignment at Nassau, Bahamas where it was to be based for most of that year. Aero Service Corp's scientists were adapting wartime anti-submarine magnetic detection systems into effective civilian aerial survey technology to detect mineral and oil deposits under ground or water. Our DC-3, which changed to N9032H in 1949 under revised US civil registration procedures, was among the first fitted with experimental magnetometer equipment. As the equipment improved N9032H saw widespread use. This summary of its activities was compiled by Australian magnetometer survey specialist Doug Morrison, as part of his research into the development of aerial mineral survey around the world.



N9032H at Essendon 1961.

Aero Service Corp DC-3 N9032H:

- 11.47. Completed Nassau, Bahamas returned to Philadelphia
- 8.12.47. arrived Cuba from Philadelphia, returned Philadelphia 2.48
- 24.4.48 Philadelphia to Denver, Colorado
- 5.7.48 Philadelphia to Portuguese East Africa (Mozambique). Routed via Goose Bay, BW-1, Keflavik, Prestwick, Marseilles, Casablanca, Dakar, Accra, Leopoldville, Elizabethville, Johannesburg to Lourenco Marques.
(arrived 18.7.48, 76 hrs 25 mins flying time)

8.48-9.48 based Lourenco Marques and Inhambane, Mozambique
 10.48 Mozambique to South Africa due wet weather Mozambique
 12.48-3.49 based in South Africa, returned to Mozambique 4.49 where completed 6.49
 49 Aircraft parked Johannesburg
 3.50 Johannesburg-Cairo-Tunisia for survey commencing 25.3.50
 mid 1950 Tunisia survey completed, ferry to Sicily for survey
 6.50 Sicily to Philadelphia via Lisbon, Shannon, Iceland, Labrador
 9.11.50 Philadelphia for Venezuela where based on survey
 Late 11.50 Venezuela to Cuba, based Camaguey then Santiago, Cuba
 7.12.50 Santiago, Cuba to Philadelphia via Miami, arrived 8.12.50
 20.9.51 commenced survey in North Dakota and adjacent states
 12.52 Miami Florida for major overhaul
 3.53-4.53 California survey
 5.53-6.53 Texas survey
 12.53 Louisiana and Gulf Coast survey
 7.54 Louisiana and Texas survey
 12.54 Trenton, New Jersey for overhaul
 8.55 Galveston, Texas, survey there until 12.55
 1.56 Venezuela survey
 7.56 Santa Cruz, Bolivia survey, returned to US 10.56
 12.56 Texas survey, Corpus Christi, Texas 3.57-4.57
 7.57 Southwest USA survey until 12.57
 7.58 Trenton New Jersey being prepared for magnetometer survey in Libya.

Doppler navigation system installed, new magnetometer, double engine change, rebuilt undercarriage, two 200 gallon ferry fuel tanks in fuselage.

7.58 Ferry Trenton NJ to Tripoli, Libya by British ferry pilots Peter Nock and Janet Ferguson
 8.58-10.58 Based Sebha, Libya and then remote oasis Kufra, 600 miles south of Tobruk
 12.58 aircraft in Tripoli, Libya on completion of Libya survey 11.58
 1.59-2.59 Morocco survey, completed 6.59
 6.59-7.59 Las Palmas, Canary Islands as base for magnetometer survey Spanish Sahara
 mid 7.59 Canary Islands/Spanish Sahara magnetics completed, photo work continuing
 12.59 Turkey survey, completed 12.60
 12.60 Libya survey
 early 1961 Cairo Egypt survey. Moved base Cairo to Luxor 4.61
 17.4.61 Idris, Libya
 18.8.61 arrived Sydney Airport after ferry flight from North Africa

The DC-3 N9032H had been deployed to Sydney to join Aero Service Corp's Australian associate company Aero Service (Pty) Ltd, based at Camden Airport, south west of Sydney. The Australian business had been formed by Morrie Lawrence, an experienced aerial survey operator. His previous survey company, Sepal Pty Ltd at Camden, had conducted mapping and magnetometer surveys on behalf of World Wide Aerial Surveys in USA. Sepal had used two ex RAAF Mosquitos, an Avro Anson and Lockheed Hudson for extensive surveys as far afield as Broome WA and Labuan, Borneo. When World Wide Aerial Surveys completed their Australian contracts, Sepal Pty Ltd was sold to Adastra Aerial Surveys, Sydney.

The newly formed Aero Service Ltd would carry out aerial survey contracts under its Australian operating licenses for Aero Service Corporation, Philadelphia. The Australian company was formed by M. J. Lawrence Holdings as a subsidiary of Aero Service (Bahamas) Ltd, itself a subsidiary of Aero Service Corp, Philadelphia. Australian staff recall that their early pay cheques came from Aero Service (Bahamas) Ltd.

The first aircraft was PA-23 Apache 160 N3128P which arrived at Camden on 20 July 1960 from Thailand. Over the previous year it had conducted magnetometer surveys in Korea, Laos and Thailand, flown by Aero Service Corp pilots Al Holtzlaw (ex US Navy, who later lived in Tasmania) and Halm "Pop" King, who ferried the Apache to Australia. It was equipped with magnetometer operator and recording equipment in the cabin and a long "stinger" extending behind the tailplane housing the magnetometer sensor at the tip. The aircraft had "Aero Service Corporation, Philadelphia PA" on the fuselage sides and a large US flag across the tail.

After Australian certification inspection at Camden, the Piper Apache was registered VH-MJL in August 1960 and immediately departed for Mount Isa, Queensland to commence a geophysical and photogrammetric survey for the large US company Phillips Petroleum, the first of many Australian surveys. Its logbook recorded 522 hours in the 12 months up to September 1962, 783 hours over the next year, and 426 hours over the next. The early model Apache was an extremely reliable survey platform.

Aero Service Ltd purchased a Cessna 180 VH-MZR in January 1961, which was fitted out for survey work. That same month the Apache had a vertical survey camera installation fitted by De Havilland Aircraft Pty Ltd at Bankstown. A series of large-scale magnetometer surveys in different parts of Australia were being negotiated and Aero Service Corporation decided to send one of their DC-3s, fitted for magnetometer geophysical survey and equipped for long periods away from home base. Our old friend N9032H has completed its work in Libya and Egypt and was sent to Australia.



VH-MMT landing at Mt. Tom Price, W.A. January 1969. Photo: Barry Tate.



PK-OSA (ex VH-MMT) at Kemajoran Airport, Jakarta, Indonesia. 4 May 1979. Photo: Barney Deatrick.



PK-RDG at Jakarta, Indonesia. November 1973. Photo: Christian Volpati.



DC-3 N9032H cabin. Photo: Doug Morrison collection.

DC-3 N9032H arrived at Sydney Airport on 18 August 1961. It was urgently needed to commence a major survey for oil deposits in the seabed of Bass Strait between Victoria and Tasmania. Morrie Lawrence obtained short-term DCA approval for the DC-3 to begin the survey under its US registration and Certificate of Airworthiness, prior to Australian registration. From September to December 1961 N9032H flew the over-water survey. It was mostly based at Essendon Airport, Melbourne or Flinders Island. On New Year's Day 1962 it was ferried from Essendon to Sydney for inspection for Australian certification. Certificate of Registration as VH-MJR was issued on 19 April 1962 in the name of M. J. Lawrence Holdings Ltd trading as Aero Service Pty Ltd, Sydney and Australian Certificate of Airworthiness issued the same day. The DC-3 was now painted as "Aero Service Ltd" with the Australian flag replacing the American flag on the tail. East West Airlines, Tamworth was contracted to provide routine maintenance inspections and VH-MJR resumed Australian survey flying, including the following:

7-10.62 Combined surveys based Alice Springs, Karumba, Weipa, Horn Island



VH-MJR Adelaide Airport Dec.1964. Photo: Geoff Goodall.

30.11.62-4.1.63	Broome, Derby, Fitzroy Crossing
1963	Coral Sea: large survey
6.63	Alice Springs
7.63	Charlotte Waters
8.63-10.63	Wyndham, offshore survey North West Shelf
1.12.63	Townsville
4.64-9.64	Great Barrier Reef survey based out of Rockhampton
9.64-10.64	western NSW and Tanami Desert NT
26.11.64	departed Mascot for Adelaide.
27.11.64	Adelaide, commenced survey St Vincents Gulf, completed 9.12.64

10.12.64	departed Adelaide
22.12.64	noted Mascot
28.2.65	Hobart, Southern Tasmania survey
31.3.65	departed Hobart, replaced by Aero Commander VH-MJJ
4.65	parked Sydney Airport

Aero Service Corporation sent two Aero Commanders to Australia in early 1965 to replace the DC-3. Both were equipped for geophysical survey with magnetometer sensor booms extending from their tails: Aero Commander 680E N830Q arrived in April from Bangkok following a year's survey in Borneo, and Aero Commander 680F N6108Y which became VH-MJJ in March 1965.

The DC-3 was advertised for sale and promptly sold to MacRobertson Miller Airlines, Perth, which needed extra capacity to handle passenger and freight demands of the mining boom in Western Australia's north. In addition that year they had many additional flights between Perth and Learmonth carrying personnel and equipment for the construction of the US Navy North West Cape communications station at nearby Exmouth. The sale paperwork was dated 19 April 1965 but MMA agreed to Aero Service Ltd retaining the aircraft for several weeks to allow it carry equipment from Sydney to Carnegie Station WA in the Little Sandy Desert inland from Wiluna where N830Q was based on a survey. When the DC-3 returned to Sydney in early May the survey equipment was removed and it was handed over to MMA. It was re-registered VH-MMT on 8 June 1965, the following day departed on the long delivery flight to Perth by a MMA crew comprising Chief Pilot Captain Alex Whitham, First Officer Nichol and Senior Engineer Frank Colquhoun.

VH-MMT joined the MMA's other seven DC-3s, in the airline's standard DC-3 scheme of allover polished metal. It was named "RMA Turner", following MMA tradition of naming its aircraft after WA rivers. Appropriately, the Turner River runs through the Pilbara region, where massive iron ore open cut mines, new towns and mining company railways to coastal ports were being constructed. For the very first time in its civilian life, the DC-3 was fitted with airline seating, in MMA's standard 28 passenger configuration.

Mean while back in Sydney later in 1965 the Aero Service Ltd association with Aero Service Corporation, Philadelphia ended, replaced by a new operator Gale Air Pty Ltd, Sydney, formed by American Gale Moulton, who was living in Australia at the time. Aero Service Ltd's processing facility at Rocky Point Road, Ramsgate, with full geophysical data processing, photography labs and photogrammetric facilities with a staff of 30 was shut down.

Morrie Lawrence left aviation to pursue other business ventures including travel agencies.

During 1968 significant changes took place on Australian airline services. After years of lobbying, DCA implemented "Third Level Airlines" and granted licences to established charter operators to take over routes that were uneconomic with larger airline

aircraft. These included a number of MMA DC-3 "milk run" services to small towns, mission stations and pastoral properties across inland WA. MMA had more Friendships joining the fleet and the days of their DC-3s were numbered

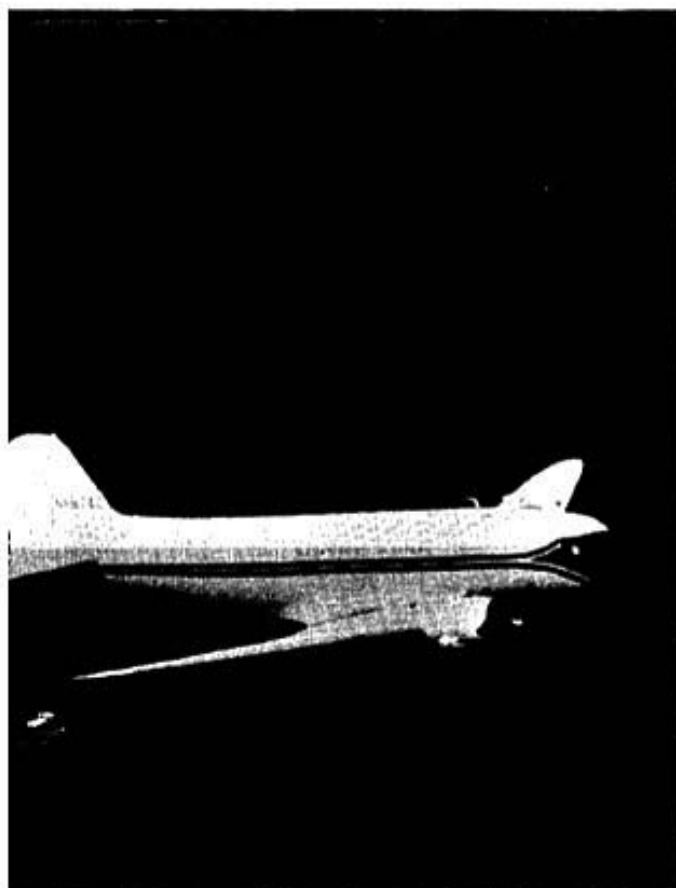
MMA took out full page advertisements WA newspapers during January 1969 to announce that all DC-3s had been retired and that passengers could now look forward to every service being operated by F.27 Friendships with the new F.28 Fellowship jets on order. It wasn't quite true, as one DC-3, VH-MMF was quietly kept in service for another year on charter and freight work, also on occasions substituted for the scheduled F.27 when loadings were low. Ansett Transport Industries, parent company of MMA sent four DC-3s to Ansett Airlines of Papua New Guinea and in May 1969 the other four were sold to Australian Aircraft Sales Pty Ltd, Sydney.

VH-MMT was left parked at Perth, the MMA markings were removed and initials "AAS" painted in red behind the cockpit. On 12 October 1969 an AAS crew ferried it to Essendon, to join other retired Australian airline DC-3s the company had acquired at the time. Late that year a sale was negotiated for VH-MMT, to Seulawah Air Services P.T. in Indonesia. Repainted as PK-RDG, the DC-3 departed Essendon on 17 December 1969 on delivery to Jakarta. Seulawah was one of a number of Indonesian start-up airline companies formed when the Indonesian Government in 1968 allowed airline deregulation on domestic routes, which had previously been operated exclusively by Garuda.

Seulawah Air Services was taken over by a competitor Mandala Airlines in 1971 but continued operating under the Seulawah name. Our DC-3 changed registration to PK-OSA in January 1978 and continued in service for another three years in Seulawah Air Services paint scheme. By late 1981 it was reported as retired at Kemajoran Airport, Jakarta and by 1985 was a stripped airframe hulk, ready to be carted away as scrap metal.

Author's note: My thanks to Doug Morrison, Sydney. After a career in Australian aerial mineral survey, which included working on this DC-3, Doug has researched the post-WWII world-wide development of geophysical survey using magnetometers to identify mineral and oil deposits under ground or water. Doug willingly shared his files for the preparation





THE DC-3 DAKOTA, long known for its dependable, workhorse performance, is the survey aircraft for Aero Service Ltd.



MAJOR airborne magnetometer surveys in Australia, during past year include work in these shaded areas.

Aerial exploration investigates huge Australian tideland areas

EXPLORATION is flying ahead in Australia. For example, July saw the beginning of a 140,000-sq-mile airborne-magnetometer survey in the Gulf of Carpentaria. It's the largest aerial reconnaissance ever done Down Under.

Other major aeromagnetic surveys—in the Great Barrier Reef and the Bass Strait areas, as well as inland—bring the total nearly to 500,000 sq miles during the past 12 months.

These surveys are being performed by Aero Service Ltd., Sydney, a division of Litton Industries. The company is managed and staffed by Australians, with a small nucleus of technical personnel from the parent company. It has been engaged in petroleum exploration

on this continent for nearly 10 years.

The Carpentaria survey is being performed for the Delhi Australian Petroleum Ltd.-Santos Ltd. group. The aeromagnetic reconnaissance of the Great Barrier Reef area was undertaken for Australian Oil & Gas Corp. Haematite Exploration Pty. Ltd., the B.H.P. subsidiary, was the client for the Bass Strait survey. The inland surveys were performed for Delhi.

Airborne geophysical surveys, and indeed all types of petroleum exploration, are aided by a subsidy from the Australian Government. The Department of National Development of the Commonwealth of Australia has virtually doubled its allocation for subsidizing geophysi-

cal and drilling operations, to accelerate these activities on the continent.

Aero Service Ltd. uses specially modified DC-3 Dakotas as its survey aircraft. They carry a Gulf high-sensitivity magnetometer in a tail or "stinger" installation. The DC-3s are also equipped with precise radio altimeters and a Kearfott N-1 electronic compass system. The Kearfott compass helps to guide the Dakotas, especially in the Gulf of Carpentaria where flight lines are over water, with up to 400 miles between landfalls.

Flying of the Carpentaria area is moving ahead rapidly. The aircraft will be based at Weipa, Galbraith station, and Home Island as the survey progresses.