

Vale: John Kingsley Newman, Australian geophysical pioneer (1925–2018)



John Newman

One of the pioneers of airborne geophysics in Australia, John Newman, passed away in Rosebud Hospital, Victoria, on 19 May 2018.

John was born in 1925 and educated in Perth. He came from a musical family, including several opera singers, and retained a great love of all kinds of music throughout his life. He was also a keen swimmer and spearfisherman, making his own hand spears, and an enthusiastic follower of science and new developments in technology. He graduated from the University of WA as a BSc Eng in 1947, including three years of physics and pure and applied maths to support a prime interest in thermodynamics of heat engines, particularly steam and gas turbines.

John was an adventurer who was always exploring new ideas. During his younger years he worked as a pearl shell diver around Broome and spent time contract mining blue asbestos in the Hamersley Ranges during 1944 University vacation. He took a break for a year to work in the field in 1946, starting with a mine managed by Lang Hancock in Wittenoom Gorge. This was followed by work with CSIRO Division of Aeronautics in Melbourne, working on a test bench for Australia's first gas turbine.

After graduating as a BSc Eng in 1947, John took on temporary employment as a geophysicist with the Bureau of Mineral Resources (BMR), now known as Geoscience Australia, based in Melbourne. He conducted BMR's first 'survey' for uranium with a Geiger counter in Melbourne, Sydney and Brisbane mining museums. After some time working on various ground geophysical surveys, including an Australia wide absolute gravity survey with pendulums, he joined the BMR's

new airborne geophysical survey team about 1950, and became its airborne systems developer.

Initially this involved converting wartime AN/ASQ-1 Magnetic Airborne Submarine Detectors to airborne magnetometer survey tools in the BMR's first DC3 aircraft. These were fluxgate instruments, initially developed by Gulf Oil for airborne magnetic surveys, but then used by the US Navy for submarine detection. After conversion John used these instruments in Australia's first airborne magnetic surveys, and later added gamma ray scintillometers for radiometric measurements.



John left the BMR in 1952 and joined the North Australian Uranium Corporation, exploring for uranium from the air using a Chalk River scintillometer installed in a light wood and fabric Auster aircraft. He did discover uranium at Coronation Hill, near the Alligator River in the Northern Territory using a total field scintillometer. In order to try to discriminate between

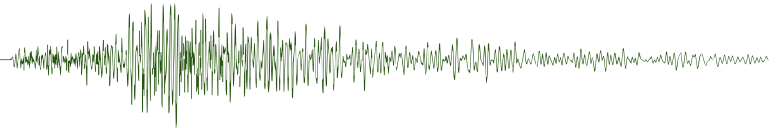
uranium and potassium (K40) that was always present in the local granites, they flew at very low altitudes (typically 50 ft) and this eventually led to a crash that wrote off the aircraft and left John with crushed vertebrae and four months in a plaster cast.



John returned to BMR in 1954, where he converted an AN/ASQ-8 MAD magnetometer and began development of fluxgate detectors. He also took over management of BMR airborne magnetic and radiometric surveys with the BMR's second DC3. In these days the radiometric measurements were total count only, preceding gamma ray spectrometers. During these years he also developed the BMR's first proton precession magnetometers.

John left BMR again in 1963 to join Barringer Research in Canada, and was involved in Barringer participating in Australian Mining Exploration Geophysics (AMEG) together with Lindsay Ingall. John later became the majority and then sole owner of AMEG, the first Australian owned airborne geophysical exploration company. It operated from 1965 to 1974 with light aircraft and proton precession magnetometers providing commercial surveys to exploration companies. Typically, these surveys provided more detailed data (terrain clearance 150 feet and line separation 500 feet) than the BMR, and navigation was usually achieved by manual picking on photographs. Pilots were usually recruited from the crop spraying industry.

About 1968 AMEG's business was boosted by the development the first successful computer automated data acquisition and processing system for airborne geophysical data. This was developed by Engineering Computer Services (ECS) of NSW. Data was initially captured by photographing side



lit numerical indicators of total magnetic field at one second intervals, and converting these to punch cards and paper tape. The ECS software then converted magnetic profile data to contour maps – a huge step forward at that time. AMEG, working with ECS, was a world leader at that time but eventually was displaced by others. In 1974 AMEG won a large contract to fly a sedimentary basin for BMR but these were recession years and they were unable to finance it. John went to Canada to seek finance but failed and stayed in Toronto working with Barringer Research.

John was always an innovator, he was always eager to grasp new technology and adapt it to geophysical applications. In 1976 he left Barringer to raise capital and support for automated geophysical systems and consulted to several geophysical companies in the Toronto area. He established Interex Geophysics, later to become Interex Computing Systems, in collaboration with several colleagues from the University of Toronto.

Eventually, John returned to Sydney and finally Melbourne, where he settled in

Frankston in 1992. He continued his interest in technology and several other business ventures through connections in Australia and North America. He gradually moved out of geophysics, although he remained interested and kept in touch. He retained contact with colleagues in Orbitec who he visited regularly in El Paso.

John remained active and swam regularly at Frankston Beach, in winter, into his 90s. Eventually his health declined, and his physical activity became limited. His mind was sharp, and he put together some notes on his life story and assisted other colleagues in compiling a history of airborne magnetic surveys in Australia. His physical limitations frustrated him, but he kept in touch with many friends and colleagues through email. It was a serious inconvenience to him that death would eventually prevent him from keeping up with developments in technology.

John was an adventurer, innovator and pioneer in Australian geophysics. He is survived by his wife, Ruth, and his daughter, Sheila, who assisted

with the compilation of this obituary.

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