

Vale Alex Copeland (1950–2015)

It is with great sadness that we report the death of Alex Copeland. He died from lung cancer in hospital in Adelaide on Thursday 16 April. The diagnosis of lung cancer, made last year, came as a shock to all of us, particularly Alex, as he had not been a smoker.

Alex's geophysical career spans over more than 40 years, starting in 1968 when, straight from school, he joined Fairey Aerial Surveys based in Maidenhead UK. He initially trained as a cartographic draughtsman but later transferred to their newly formed airborne geophysics department, working as a data compiler. One of Alex's tasks was flight path recovery, plotting the path of the aircraft from tracking film onto map. As much of this work was undertaken on site (along with other data QC) Alex was soon working away from home on a variety of projects. Derek Minter remembers him as a popular crew member, hard working, competent and sociable. In 1974 Alex worked in Nigeria on a large airborne survey based out of Enugu for nearly a year (Figures 1

and 2). Derek says the project struggled with aircraft and electronics problems but to his great credit Alex saw it through to its conclusion.

Alex had a reputation of being something of a boy racer and Doug Morrison recalls being terrified when driving with him in Africa. Doug claims he was not alone in that regard, although they all found that a few beers helped ease the fear. Having beer in the car also came in handy one night when their favourite orange VW hunting car caught fire on route to the movies, with Alex driving. During his time in Nigeria Alex bought an E-Type Jaguar which he eventually brought out to Australia and would terrify his passengers as he worked off the Hilux blues.

Alex left Fairey to join Geometrics in 1975 as a data compiler, initially in Zambia but then transferring to the US before coming to Australia in the late '70s. It appears he did have time between data compilations to model for Geometrics' new seismograph as shown in Figure 3. Doug Morrison recalls a time



Figure 2. Alex reviewing bush medicine in Nigeria about 1975 (photo Derek Minter).

in the late '70s when Alex helped him unload and stack tons of paperbark fencing and spent a few hours helping to start construction of the fence at his old home at Lane Cove, Sydney. He also recalls that Alex was dating Mark Baigent's sister at the time – a small geophysical world!

Already an excellent navigator, Alex qualified as a commercial pilot in 1979 and undertook some survey flying for Geometrics in their Piper Navajo aircraft.



Figure 1. Alex, second from left, with the Fairey Aerial Surveys team and DC3 in Nigeria, 1974 (photo from Fairey Aerial Survey History site <http://www.faireysurveys.co.uk>).

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Figure 3. Alex posing for the camera with the 'new' Geometrics seismograph (thanks to Doug Morrison for the scan).

His work with Fairey and Geometrics, took him all over the world. This formed a template for later life as Alex loved to travel, so much so that although he had lived in Australia for over 30 years and wanted to become an Australian citizen, he claimed that he could not qualify because he could never reach the minimum continuous period required to be physically in Australia. Wherever he travelled he left a trail of people with Alex stories. He had friends all over the world.

Alex moved to Adelaide for a new start in 1982 and joined Shell Australia as a field assistant in their Adelaide office. While not providing many stamps in his

passport this job did give him a close up look at outback Australia and, importantly, provided him with bush driving skills, a critical tool to have for a Pom in the Australian outback. This required a tempering of the racing car driving style of his time in Africa. When Shell closed their South Australian exploration office in 1986 Alex set up an exploration service company, initially providing field assistants, camping and vehicle support. His first job in this role was assisting me in acquiring seismic refraction data for the new Olympic Dam borefield just south of Lake Eyre. It was June and we slept in swags at what was then the end of the borefield road. A road train was trucking water to Olympic Dam

and operated 24 hours a day on about a one hour return cycle. Although we were camped on the open gibber plain only 100 m away from the turning circle and stand pipe we all slept soundly, thanks to hard work and the Coopers Real Ale Alex had brought. Showers were taken in the open, between road train visits, under the standpipe. The showers might not have been very long and certainly were not warm but we did use a lot of water and got wet very quickly! The highlight for Alex and his crew was on the last day when I 'disposed' of the 250 kg of unused explosives with a relatively short blasting cable.

In 1987 Alex was joined by Peter Elliot and they formed Search Exploration Services focussing on contract ground geophysical surveys. He and Peter later parted ways with Pete taking the Zonge equipment and Alex the Scintrex gear. He used the Scintrex IP equipment for several years building Search's reputation as a hard working, reliable geophysical contractor. However, like many Australian geophysicists, he started to realise that equipment designed and built on the other side of the world wasn't giving him the best answers in Australia where, electrically speaking, the overburden often looked like sea water. At this stage he could have done as most other contractors do and look for an off the shelf solution. Undaunted, or perhaps not realising the cost both in time and money in building his own system, he decided to do just that and, with help from Phil Palmer on the hardware side and John Paine on the software side, he built what is arguably the best IP system in the world – certainly the best system for Australian conditions.

Alex took his systems all over the world. I recall a job in Tunisia where Alex proudly told me that the crew I was using would have a newly rebuilt Volkswagen racing engine powering their 30 kV generator. It lasted 15 minutes before seizing (Figure 4). Off it went to the local mechanics coming back a week later, working. Again it lasted 15 minutes in the field before seizing. By this time Tony Walsh, the crew leader, was getting a roasting remotely from Alex, whilst scouring the wreckers of Tunis for a replacement engine. This time the mechanic took a closer look and discovered that the racing engine had been modified so that the oil intake had been shortened and did not reach the bottom of the sump. Depending on the angle that the truck was parked, the



Figure 4. *The Search crew in Tunisia with their shiny new, but seized, motor generator.*



Figure 5. *Alex set up for comfort on survey in PNG (photo Regis Neroni).*

engine either had oil or no oil and the crew had unfortunately chosen to park it with the intake in the air. Alex quickly acknowledged his mistake and accepted that just because an engine has ‘racing’ in front of its name and works on flat tracks it need not work in survey situations. He subsequently equipped his crews with turbo charged diesels, which they still use today.

Alex always managed to add a touch of class to what would otherwise have been a pretty ordinary field job (Figure 5). Lisa Vella recalls that while working at Carrapateena in 2007 (Figure 6), and despite the relative isolation, Alex managed to produce a few good bottles of red wine for dinner each night. She went on to say, ‘Alex was a fine and decent man. Always kind and ready to help a younger geophysicist in need. He was a very good mentor and endlessly enthusiastic about his work and the world around him. All the while innovating with a smile on his face. There was no fanfare with Alex, just a quiet belief in himself and his company, enabling Search to develop one of the best IP systems in the world.’

Alex was a keen rugby player, playing at all levels for the Old Collegians Rugby club in Adelaide from 1982 through to the 1990s. Both Chris Yaeger, who shared houses in Adelaide with Alex for several years and gave one of the two eulogies at his funeral, and I played breakaway with Alex at five eight. We both recall breaking from a scrum or maul to chase the ball down the opposition back line only to have their winger kick the ball direct to Alex who,



Figure 6. *Alex explaining the survey at Carrapateena with Lisa Vella and Jim Hanneson looking on (photo Lisa Vella).*

with a couple of the old props, had not moved since the breakdown. He’d then somehow manage to run to the end of the paddock without being tackled. We’d come off the paddock covered in blood and bruises and he would come off looking like he’d just played a round of golf – typical back. He was a prolific try scorer and played in seven Golden Oldies Rugby World Cups as well as helping to organise the 1999 event in Adelaide. Old Collegians provided a fertile recruitment ground as many of Alex’s field crew had rugby backgrounds.

Alex leaves behind Gerry Bown, his partner and business manager for over 30 years, and a great sadness in all those who knew him. He will be missed.

Kim Frankcombe
kim@exploregeo.com.au
With help from, Derek Minter, Doug Morrison and Lisa Vella

P.S. With some help from Dave McInnes, and no doubt from Phil Palmer and John Payne, Gerry has announced that she will keep Search Exploration Services running so the technology that Alex developed will continue to be available.

Vale Dave Hutchins (1948–2015)



Figure 1. Dave Hutchins.

David Hutchins (Figure 1) was born in Torquay, Devon, England on 21 July 1948. He completed his schooling at Newton Abbot Grammar School in 1967 before entering the University of Southampton, England where he completed a BSc (Honours, Geology) in 1970. He then joined the Ministry of Overseas Development as a Natural Resources student and attended the University of Birmingham, where he was awarded an MSc (Applied Geophysics) in 1971.

Dave's professional affiliations were: Society of Exploration Geophysicists (Africa and Middle East representative, 1984-87); Australian Society of Exploration Geophysicists; Botswana Geoscientists Association (Life Member, 1985); South African Geophysical Association; Geological Society of Namibia (Life Member).

Posted to the Botswana Geological Survey, David became aware of the need for regional geophysical data sets to aid the mapping of sub surface geology predominately hidden by more recent cover. This resulted in:

- The first national gravity survey of Botswana (1971–74).
- The first regional airborne magnetic survey of the Kalahari (150 000 line km).
- A seismic refraction survey and micro seismic studies of the Okavango Delta, Botswana.
- Geophysical field investigations for underground water and rural development including the Jwaneng Diamond Mine and the Morupule Coal Fields.

In 1985 David left the Botswana Geological Survey, where he was Principal Geophysicist heading an embryonic Geophysics Division. In 1986 he joined the Geological Survey of South West Africa (SWA)/Namibia as their sole geophysicist, initially as Principal and, since 1988, as Chief Geophysicist. David retired from the Geological Survey of SWA in 2013 but was invited to consult until his recent demise.

Included in David's achievements whilst at the Geological Survey of SWA were:

- Pre Namibian independence regional airborne magnetic surveys (78 000 line km).
- Acquisition of the first computer hardware/software by the Geological Survey.

- Consultant in the drafting of Namibian petroleum legislation.
- Compilation of the Namibian regional airborne magnetic/radiometric surveys in co-operation with the German funded Mineral Promotion Project (1992–2002) (Figure 2).
- Planning and supervision of the high resolution airborne magnetic/radiometric survey of Namibia (1994–2011), which was funded by the European Union's SYSMIN Fund, and the Namibian Government's Mineral Development Fund. 4.4 million line km of data were acquired.
- Planning and supervision of several airborne electromagnetic, gravity and hyperspectral image surveys to support the national magnetic and radiometric survey programme of Namibia.

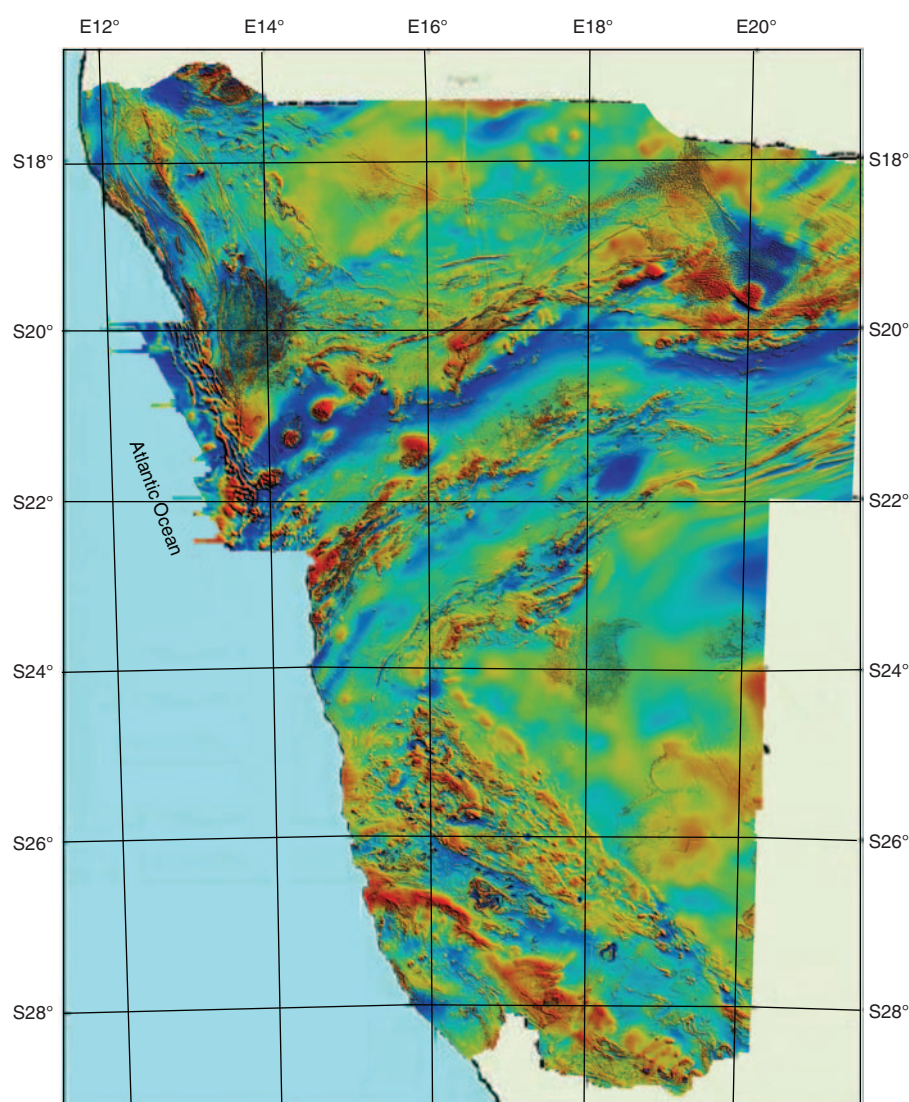


Figure 2. Total magnetic intensity map of Namibia 4.4 million line km of data (1994–2011): a major contribution to the prosperity of Namibia.

- Establishment of seismological and infrasound International Monitoring Station at Tsumeb on behalf of the Comprehensive Nuclear Test Ban Treaty organization (CTBTO) and the establishment of Namibian Seismological Network comprising 10 stations.
- Initiation and planning of a region by region integrated interpretation of airborne geophysical data commencing with the Karas Region, Namibia.

David travelled widely throughout the world to conferences and exhibitions promoting Namibia as a destination for exploration and mining investment. Numerous articles and papers attest to Dave's thoroughness. He also made excursions to the various contractors to check on data QC. His travels usually coincided with the latest Bowls Tournament or Cricket Test Match. His reply when this was brought to his attention was 'Now that's rather odd!!'.

Dave had the unique ability to combine business with pleasure, which could have

been disconcerting to those who only saw one side of these attributes. His peers will relate (and exaggerate) many tales that seemed to have a common social theme. Nonetheless, Dave's easy going manner and apparent nonchalance belied his ability to navigate the politics of bureaucracy, contractors, and the nuances of a disparate audience. In no short measure is the exponential growth in exploration in Namibia due to the world class data sets available to the exploration community, orchestrated and driven by Dave.

In both Botswana and Namibia, Dave put in the structures to develop the qualifications of a healthy team of young geophysicists to continue the work initiated by him.

Dave's commitment to Namibia was illustrated by his becoming a Namibian citizen in February 1994.

Dave was also an avid Lawn Bowler who joined the Windhoek Bowling Club in 1987. From 1990 to 2005, Dave served

on the Management Committee as President, Vice President (Competitions), Vice President (Club Affairs). Dave also served as President of the Namibian Bowling Association for 12 years. Unashamedly, Dave used his contacts with the mining community to sponsor tournaments, equipment purchase, and even club renovations. His laconic style made his requests difficult to refuse. Among many fund raising efforts, Dave initiated and raised funding for the Namibian Junior Bowls development, and travel funding for the Namibian team to World Championships.

Recently, Dave represented Namibia in the Men's Veterans competition against South Africa.

This understated man leaves behind a rich legacy in geophysical excellence. Dave will be missed by his extended family, the geophysical community, Namibian bowlers, and all those whose lives he touched.

Bob Timmins



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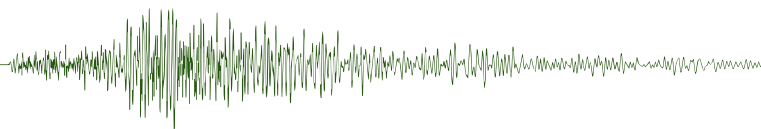
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ATSE Clunies Ross Award for Cathy Foley and Keith Leslie



Dr Cathy Foley

Leading Australian CSIRO physicist Dr Cathy Foley PSM FTSE and accomplished CSIRO engineer Keith Leslie are two of only five innovators honoured as Australia's foremost visionaries at this year's Australian Academy of Technological Sciences and Engineering (ATSE) Clunies Ross Awards. They have received a joint award honouring their contribution to Australia's scientific and economic prosperity through work that developed 'a highly sensitive magnetic device to detect ore bodies'. This technology has been responsible for discovering ore deposits with an estimated value of more than \$10b globally and \$4b nationally.

The select winners of the prestigious ATSE Clunies Ross Awards, Australia's premier innovation commercialisation awards, were honoured at a Gala Dinner at the Brisbane City Hall on 28 May. The dinner was attended by more than 500 eminent entrepreneurs, decision makers, government officials, researchers, academics and business leaders. Nobel



Keith Leslie

Laureate Professor Brian Schmidt AC FRS FAA gave the keynote address, which was focused on industry policy.

According to the Chair of the Awards' Organising Committee, Professor Mike Hood FTSE, 'ATSE Clunies Ross Awards are given to Australia's pre-eminent innovators who persist with their ideas to provide broad economic, social or environmental benefits. Dr Foley and Keith Leslie's collaboration and commitment to their individual roles in LANDTEM's development are part of a 25-year journey that has made LANDTEM the success it is today. Their story demonstrates the importance of unwavering dedication in bringing a scientific discovery to market. Over the coming years LANDTEM will continue to play a major role in the worldwide discovery of new mineral deposits.'

Cathy and Keith are continuing their award winning work, with a new focus that will significantly enhance the sensitivity and functionality of LANDTEM. They have also developed

an improved version of the sensor electronics that will increase the depth of detection of ore bodies.

The select group of other 2015 ATSE Clunies Ross Award winners are:

- Associate Professor Jim Patrick AO FTSE, who received a Lifetime Achievement Award as one of the original engineers who pioneered the development of the multichannel cochlear implant.
- Associate Professor Leigh Ward, from the University of Queensland, who developed a standardised, specific, accurate yet inexpensive tool for early detection of lymphoedema – progressive swelling of a limb, a particular concern after cancer treatment. His device, which now has national and international acceptance, has led to improving quality of life, minimising long-term consequences for patients and significantly reducing treatment costs.
- Professor Zhiguo Yuan, from the University of Queensland, who developed a suite of innovative technologies to revolutionise the science and practice of integrated urban water management for Australian water utilities. 'Putting science in sewers' has fundamentally changed industry's understanding and practice for sewer corrosion and odour management, generating economic benefits in excess of \$400 million.

The ASEG congratulates Cathy and Keith on their award.

Australian Academy of Science elects Malcolm Sambridge



Professor Malcolm Sambridge

The ASEG also congratulates Professor Malcolm Sambridge, Head of Seismology and Mathematical Geophysics at the Australian National University's Research School of Earth Sciences, on his election to the Australian Academy of Science in Canberra.

Malcolm Sambridge has made lasting fundamental contributions to the understanding of the Earth and its internal processes through new mathematical approaches to analysing complex geophysical datasets. His robust approaches to modelling diverse

observational data – including statistically meaningful estimates of uncertainty – has had wide-ranging impact in geoscientific research. Malcolm's work has changed the way in which we analyse seismic waves for the structure of the Earth's interior, model landscape evolution, understand populations of mineral ages from isotopic microanalysis, and interpret infrared absorption spectra associated with hydrous crystal defects in silicate minerals.