

New arrival of

Two Harwell staff who have played music together for nearly 30 years reached the climax of their musical careers in August last year when they reached number four in the charts. The European play charts that is, where their single 'She Loves Me', has started a genuine following for their band, Union Revival. Kevin Wharley, who works for AEA/T products and systems, and Tony Cook of UKAEA property management founded the band in their spare time.



Pictured here in Nashville, home of country music, with Tim Barber (centre).

"Breaking into the UK charts is virtually impossible," says Tony.

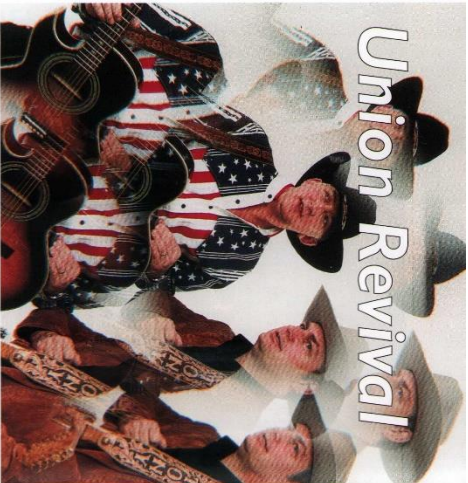
"The radio stations will not include independent record labels on their play lists so you don't get any airtime. However, our single appears on the newly released 'Best of British Country' from Silver Heart Records so we could get some valuable exposure by being

on a good compilation CD."

Kevin is lead singer and rhythm guitarist, Tony is lead guitarist and backing vocalist and the band also includes a bass guitarist and drummer. The pair have seen an evolution of their musical styles through rock 'n' roll, blues, folk, heavy metal, even playing in a jazz quartet. Five years ago they discovered the attraction of country music and are now hooked.

Last autumn they met songwriter Tim Barber from Blackbird Star Music in Nashville, USA, to discuss further songs written for them. While in Nashville they mingled with other songwriters and bands and are now inspired to push for

Union Revival



Kevin and Tony's band, Union Revival, recorded their latest CD locally at Warehouse Studios in Kemington.

greater success. There are regular gigs, many for charity, including a slot at the Life Music Festival where they enjoyed a half-hour ovation! They are considering a tour in Denmark.

However for they travel the band always finds time to play in

Living in three centuries

£100 years old former Harwell employee, Reg Randall, has **lived** during the nineteenth, twentieth and twenty-first centuries! Born in August 1899 he has enjoyed a 35-year retirement since leaving Harwell and still manages an afternoon's fishing on the River Tamara!

Active service took Reg to Mesopotamia under Colonel Lawrence of Arabia. As an army sergeant during the Second War he was granted a commission.



Reg inspecting the Royal Marine Commando guard on his 100th birthday

Reg retired from the army to start a fresh career as a technical writer at Harwell in 1948. Colleague Arthur Winter, himself retired and living in Wallingford, recalls,

"Reg and I worked in the specifications & manuals section. We were responsible for compiling and publishing the manuals for servicing electronic equipment designed at Harwell. I remember that at one time we worked in temporary buildings behind H10 and 220 but eventually we ended up in B424."

As a veteran of both world wars, Reg was recently honoured by an invitation to inspect a passing out parade of the guard of Royal Marine Commandos. He said afterwards, "I am most proud to have been asked to perform this inspection as I know from my own service in the army that this is a rare privilege." The British Legion also gave him a special tribute on his 100th birthday.

Reg doubts whether any of his friends are still at Harwell but

Oxfordshire at the many clubs devoted to country music. You can sample their music on Saturday 18 March at the Kingston Lytle Country & Western Club. For more details about this event and the band call 01235 223362.



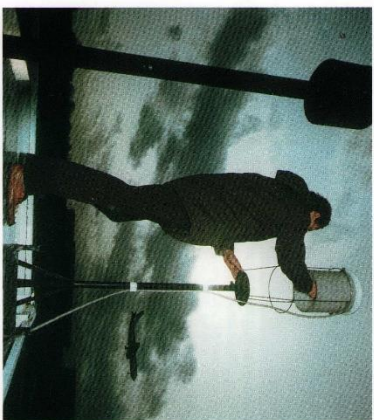
During active service

would like to hear from anyone who remembers him. To contact him please either email arthur.winter@btopenworld.com or ring 01235 436009 for further details.

AEAT maps out pollution picture

In two separate contracts worth nearly £1.5m AEA Technology's Environment business will monitor levels of damaging pollutants for the Department of the Environment, Transport and the Regions. Pollutants released into the atmosphere can harm the development of young children, exacerbate respiratory problems and contribute to serious diseases such as lung cancer. The data will help government form effective policies to control air pollution.

Under the first contract, AEA/T air quality experts will monitor the level of hazardous air pollutants (HAPs) in ambient air, including dioxins and furans which the World Health Organisation has identified as having a serious effect on the development of children. The sources of HAPs include waste incineration, industrial processes, and domestic and industrial combustion of coal.

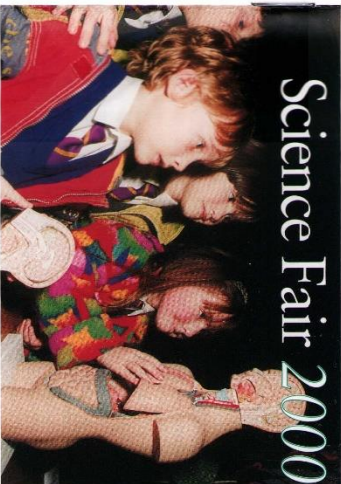


levels of PCBs. These chemicals, now widespread in the environment, were used commercially from the 1930s as dielectric and heat-exchange fluids, and other applications. Their use was banned in the mid-1980s. PCBs are thought to cause human health problems especially in young children. Trace metals

from industry and pesticides that can cause a range of health effects will also be monitored in this contract. Lead, for example, may affect the development of young children, and long-term exposure to cadmium may cause kidney damage.

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Science Fair 2000



For the third year AEA Technology is sponsoring Abingdon School's Group Science Fair, featuring interactive displays of students' work for both primary and secondary schools. The fair will be opened by Lynne Peleworth, a former teacher from John Mason School and one of the event founders. The closing address will be given by Dr Chris Wright of AEA Technology, location director for Culham and Harwell. The fair is open to the general public on Thursday 23 March, from 1pm to 5pm.

This Month

4 Cuban challenge



5 The Culham factor



8 Band land



8 Century of life



THE COPY DEADLINE FOR THE NEXT ISSUE IS: Monday 20 March for publication on Wednesday 5 April 2000.

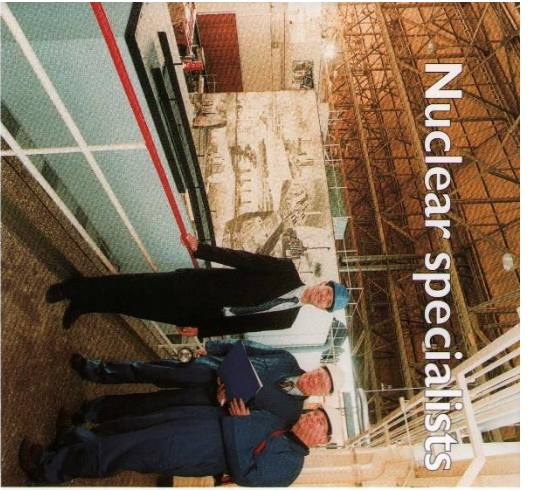


ECHO & published by UKAEA, 521 Harwell, Didcot, Oxon OX11 0BA.
Editors: Valerie Judd, Tel: (01865) 331153 Fax: (01865) 331154.
E-mail: vip@ghbdirect.co.uk

Your contact for: Culham/Harwell PR manager, Nick Hone, 521 Harwell, Tel: (01235) 436909 Fax: (01235) 436899
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Nuclear specialists



MD Victor Spink (left), with principal consultants, Dr Paul Harb (radiation management) and John Dicksch (decommissioning). A decommissioning options study is being carried out in Hanger 7 (pictured) and 18, which contain early research reactors.

Now based in B455 at Harwell, Nuclear Technologies plc is a contractor involved in some key projects as part of the site decontaminating programme.

Founded in 1994, the company also has offices at Bristol, Donureay and Warrington. Nuclear Technologies is best described as an independent supplier of consultancy and contract services to the nuclear industry. It specialises in radwaste management and decommissioning, safety assessment and regulations, health physics, radiological protection, contaminated land assessment, remediation and structural integrity and materials science. Clients include major nuclear plant operators, regulators and government departments, together with leading nuclear technology companies. Since 1996 it has been supplying consultancy services to UKAEA at Harwell.

Chemical pit clean-up

from page 1

In the second contract AEA staff will monitor the level in ambient air of polycyclic aromatic hydrocarbons (PAHs) such as benzolopyrene that are thought to contribute to lung cancer. Sources of PAHs in the UK include traffic, industrial installations, and domestic and industrial coal combustion.

During three-year contracts, reports to government will identify levels of each pollutant in the atmosphere. They will also assess how Britain is affected by sources of pollution in other countries and how much Britain contributes to European levels.

Peter Coleman of AEA Technology said: "Effective monitoring of these pollutants in ambient air allows the government to develop policies based on sound scientific data in order to protect public health. This monitoring will also give government the information it needs for negotiations with other European countries to reduce emissions."



Excavating the area to recover waste from the 1960s.

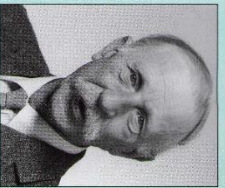
As part of UKAEA's constant review of historical records a small area at Harwell was identified for remediation work. The three metre square chemical pit was located in the north west corner of the sewage farm and had been used for the disposal of non-radioactive waste during the 1960s.

Last year UKAEA began a decommissioning programme for the chemical pit, working towards the ultimate release of the area for other uses. Initial investigation found no radioactive waste but traces of a phosphorous material, a by-product of the B8ED work carried out during the 1960s. At that time no restrictions controlled the disposal of such material. Old paint cans and glass bottles were also found with traces of their contents still detectable.

Safety documents were prepared and a 2.5-metre exclusion zone established during excavation. The waste was transferred to a licensed landfill site and soil samples taken from the boundaries show that the area is now free from chemical contamination.

"AEA Technology was the contractor carrying out the work under UKAEA's instruction," said Dan Misry, who was responsible for this project. "Thanks go to the management of Chilton Estate for their help and access to their land".

OBTUARY



Bob West MBE

ECHO is sad to report the recent death of Bob West. Bob would have been well known to many staff on the site, having worked at Harwell since 1947 and retired from Amersham International in May 1983.

Bob West joined the Atomic Energy Directorate in 1946 and worked on isotope production in the years to follow. Initially at the Cavendish Laboratory, he subsequently helped to start up the production of tracer materials for medical use on the cyclotron located there.

After his work was transferred to Harwell he joined the Isotope Division and helped to develop the use of the Harwell reactors for producing radioactive materials, first on experimental reactors and later on BEPO and DIDO.

When the Radiochemical Centre took over this work around 1960, Bob West became part of the Isotope Production Unit. There he was closely involved with organising the supply of irradiated materials to Amersham Laboratories for processing as well as supplying RPI's own customers.

After 29 years association with isotope production, Bob West was made a Member of the British Empire Order in 1975. He continued with his work until retirement in 1985 making his association with isotope production one of the longest on record. His many friends and former colleagues at Harwell will no doubt wish to send their condolences to Bob's family and friends.

'Beauty in the bath' murder solved after 16 years

The 16-year hunt for the killer of Cynthia Boshaw is over after Forensic Alliance provided new scientific evidence to police. John Tait was jailed for life at Liverpool Crown Court at the end of 1999 for the murder which has become known as the 'beauty in the bath' case.

Based at Chilton, Forensic Alliance is a joint venture between AEA Technology, Cellmark Diagnostics and Forensic Access. Launched 18 months ago, it provides an unrivalled forensic service to 28 police forces and was approached after a recent scientific review of the case concluded that nothing more could be resolved.

A body fluid stain found on a garment at the scene of the Boshaw murder had been cut out and destroyed in tests at the time of the murder in 1983, before DNA profiling became widely used. However a chitograph line that had been drawn around the original stain remained and

Alliance scientists identified a 0.5mm strip of stained cloth inside the line that had survived. With careful extraction a DNA profile was obtained and matched to that from a blood sample taken by police from Tait.

Following disclosure to the Merseyside Police, further investigations led to his arrest. Although Tait denied the murder, Liverpool Crown Court heard that the probability of obtaining this profile, if the stain had come from an unknown person unrelated to Tait, was 1 in 160 million.

'Flat pack' waste plant

AEA Technology Nuclear Engineering is working on two major contracts at Trawseyydd, to design, supply and operate waste retrieval and packaging plants.

The first project is for the recovery of Intermediate Level Waste (ILW) in the form of Miscellaneous Active Components (MAC) stored in vaults beneath each of the Reactors 1 and 2. The other project is for recovery of ILW comprising Fuel Element Debris (FED) stored in two vaults located at the North and South ends of the Ponds building.

Conventional design of these plants would have required substantial new structures and modifications on the Trawseyydd site. However, AEA Technology's innovative 'flat pack' design enables the plants to be installed in the small spaces already available on site with least modifications to existing facilities or buildings. The potential for contamination of other plant areas and the volume of secondary waste is also greatly reduced.



The innovative 'flat pack' plant design can be installed even when space is limited.

QSA joint venture with China

AEA Technology QSA has a joint venture in China with the AEA China Isotope Corporation. Called CIGAM, the joint enterprise has a factory in the Shenzhen region of China employing 60 people producing components for ionisation type smoke detectors. Mr Wang Jun, MD of the China Isotope Corporation, visited Harwell recently to discuss plans for expanding the CIGAM operation. AEA Technology QSA is designing a new range of high technology products used for smoke detection and home protection and it is planned to manufacture these in CIGAM. Mr Wang also believes that there is a large potential market for these products in China and is planning to sell them via a network of distributors.



Simon Wong, MD of AEA Technology QSA (standing), Danan Aston QSA (sitting), Alan Skipp, MD AEA Technology Corporation.



Minute amounts of DNA from blood and urine in 257 fluid can now be profiled.

The AEA Technology team is working with BNFL Magnox Generation to minimise environmental impact and to comply with radiological and safety guidelines. Currently the MAC plant is undergoing inactive commissioning and the FED plant is being installed. Retrieval waste from both locations is planned to be complete by 2004.

For more details see Nuclear Engineering International magazine (February 2000)

Cash boost for local school

The teaching of science and technology to primary school children has been given a boost from AEA Technology. Rush Common Country Primary School has received a total of £350 to buy electronic equipment for technology projects and headpieces that will allow children to listen to talking books and carry out interactive projects on computer. AEA Technology is supporting the work done by school governor Sharon Grossman through its Governor's Award Scheme. Sharon, whose children Mark, seven, and Jenna, five, attend the school, works as an IT administrator at AEA Technology's Harwell site.

Cycling and cockroaches in Cuba



Any adults were delighted when Fiona visited a school for deaf children.

OUT & ABOUT

National Science Week

March sees Britain's seventh National Week of Science, Engineering and Technology (17 - 27 March) with a packed programme of fascinating lectures taking place at CIRC (the Centre for Integrated Research in Complex Systems) at the University of Hertfordshire. The highlights include 'Microsome Magic' by Dr Peter Barham of Bristol University featuring lively mix of demonstrations especially for family audiences on Tuesday 21 March. On Friday 24 March Peter Joyce of East Anglia Science presents 'Antonie Lister - back to life one of the world's most famous chemists'. Professor Susan Greenfield of the Royal Institution, London, and of Oxford University gives a thought-provoking lecture on Monday 27 March entitled 'The Brain of the Future'. To book your place contact Eric Wharton, tel 01235 824335, fax 01235 820686, email eric@eric-wharton@herts.ac.uk

Male Voice Choir

Wantage Male Voice Choir presents its annual Old Mill Hall Concert on Saturday 10 March at 7.30pm. Tickets cost £5 (£4 concessions) and are available from Millers Bookshop, Wantage, Grove Community Pharmacy, or from Nick Fortenough (H 4287), Geoff Hooper (H 3915) or Paul Franklin (C 3594)

Spring recital

by Julia Reynolds (mezzo soprano) and Geraldine O'Connor (piano)

When Spring in mind, songs have been chosen to evoke images of country scenes of village life. 'SPRING SERENADE' - song of the country - is being performed on Saturday, 8 April at 7.30pm in Challow Park Recital Hall, near Wantage. Tickets are £6.00. Tel: 01235 762033, or from Wilkes Press in Wantage from mid-March.

Klondike Kalamity

For their spring production the Common Players have chosen a comedy melodrama 'Klondike Kalamity' written by Gary Robson and David Byrne. The great takedown of 1888 sees gold seekers for their fortunes lured to the Yukon. Invited, indeed encouraged, to join in the hilarity with hissing, boating and cheering at the Coronation Hall, Compton, on Thursday 13, Friday 14 and Saturday 15 April. Box office: 01635 576821.

The journey to Cuba for a charity cycle event. In the certainty that most of your fellow travellers have trained more than you, was an ordeal for Fiona Digby-Grant. The UKAEA contracts manager met her 58 colleagues at Heathrow airport and immediately began to doubt her ability to succeed on the 350km five-day endurance test to raise funds for the National Deaf Children's Society. Two had even brought their own bikes, carefully dismantled and packaged for the journey. Fiona had only packed her saddle.

Ranking in age from 20 to nearly 70, complete with hip replacement, the group flew via Malard with a party of rowdy Spaniards who performed a karaoke show, loudly. Fiona joined in and even when she reached the hotel in Havana decided to hit the town, even though she had been awake for over 19 hours.

The following day the group was taken by bus to the south of the island to be kitted out with bikes and equipment. The organisation was meticulous with mechanics, a doctor - who thankfully had little to do - and regular water and food stops. The group also had police couriers offering constant protection and forcing other road users to give way.

Fiona had done some walking for stamina and had even joined a local gym within a few days of the trip but was apprehensive about how physically demanding she would find it. After the first couple of days - one was particularly arduous with a 3km ascent - she knew that she could cope. She cycled mid-group to enjoy the chatter, camaraderie and support that was frowned upon by the serious leading cyclists who were out to notch up a fast time.

Being winter the climate was warm and sunny reaching 25°C during the day but chilly at night. One particularly cold night Fiona woke at 3am - 3am UK time - freezing cold under just a sheet but too worried to get out a blanket for fear of what might be hiding in it. She made do with a wet towel! The hotels were generally rudimentary and rich in wildlife including frogs, geckos, spiders, cockroaches and ants which Fiona had to clear from her bed.

One of the most memorable moments was a visit to a deaf school - each Cuban province has one - where the children, aged five and six, performed

dancing and poetry recitals. Much of the money raised by the trip will be shared between these schools and pay for quite basic facilities like playgrounds. Through sponsorship and other fundraising ideas Fiona collected over £3,000 for the charity.

"Having worked at UKAEA with some colleagues with hearing disabilities and knowing that the charity is not one of the most popular gave me the inspiration," says Fiona. "There were several profoundly deaf cyclists taking part and they helped us understand the barriers that face them every day."

She spent a further week in Cuba soaking up the unique atmosphere of a country that seems frozen in a different era, predominantly the 1960s. Locals are proud of their communist regime, being friendly and open with tourists who represent an important prop to the Cuban economy. Since coming back Fiona is sure she would do it again, or perhaps she is still affected by the eastbound jet-lag that can apparently compromise decision-making ability!

Unearthing the

In the first of a series of articles which examine different aspects of nature and ecology around the Harwell and Culham sites, ECHO features past and present work at the 'mound' behind the Marshall Building.

The history of the 'mound' behind UKAEA's HQ (B5321) is rather a mystery. Measuring over six acres and topped with a copse of trees, some of which are at least 40 years old, it is one of the curious features of the Harwell estate.

The mound is believed to date back to the RAF days when it was a spoil tip. Since then it has seen the addition of soils excavated when the foundations were dug for reactors and other new buildings at Harwell. What will archaeologists make of it 1000 years from now? In the 1950s the mound was planted

The Culham factor

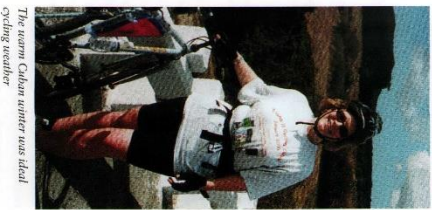
one-stop shop for solutions to scientific problems of all kinds is **Alan Dr Mike Walsh would describe his successful consultancy - Walsh Scientific Ltd - which will soon be celebrating ten years since formation and is shortly to launch its own website.**

Based at Culham since 1997, the company is focussed on design and consultancy in specialised optics applications. Recent clients have included the Brazilian Space Institute, UKAEA Fusion and AEA. The latest WSL product is the PL5.R Thomson scattering polychromator. This diagnostic, a vital part of fusion work, uses the scattering of laser light to measure temperatures up to 100million degrees C in addition to measuring the density at

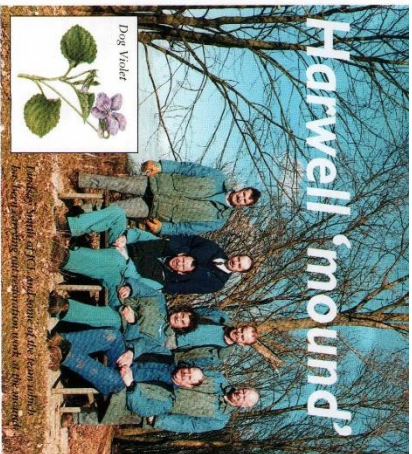
multiple locations inside a tokamak. "There is only one other company in the world that has a similar product" says Mike, "although ours is superior in many ways. We also offer the added advantage of continued advice to ensure proper installation and operation. In fact our experts take a keen interest in the physics results gained from our products and will follow an application until the system is up and running."

Other WSL projects currently underway include a radiation hardened optics lens for AEA's products and systems division and the provision of a Thomson scattering diagnostic to the MAST facility at UKAEA Fusion. WSL is also renting research facilities at Culham under the Industry Initiative such as spectrometry equipment and high performance data acquisition equipment which has enabled the company to take on larger projects.

"Our work has come by word-of-mouth so far but we are now ready to promote our services more actively with the website and targeted publicity," comments Mike who has a PhD in physics and gained a European Fellowship in 1989. "Culham provides the ideal base for a company in our field because the site is known worldwide and in 1999 more than two-thirds of our turnover came from outside the UK. We are delighted with the collaboration we have enjoyed to date."



The woman Culham winter was cold cycling weather



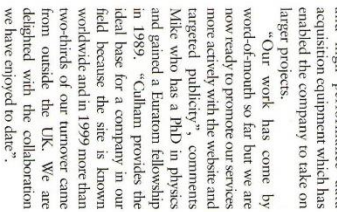
Dog Viola

completed to attract the maximum amount of wildlife with trees such as oak and ash, and shrubs including dogwood, holly and blackthorn. Attractive woodland wildflowers will

be planted. All the plants are known to attract large numbers of insects which provide food for yet more species such as birds. These activities, complemented by the rich grassland flora regained by clearing nettles and scrub along the perimeter track, will lead to greater biodiversity and illustrate, in microcosm, what is being planned for much of the Harwell estate.

Contractor compound moves

Work has recently been completed on the new contractor's compound at B404. The project involved the demolition of four asbestos clad sheds constructed in 1946 by Chivers' apprentices, later used to house the site's term contractors. The design of the new compounds is robust yet attractive and is similar to the barns recently constructed elsewhere on site. Existing contractors have relocated from the previous compound at the rear of B462 to the new premises. Anyone wishing to use one of the compounds should contact Harwell property management.



Commissioning the high spatial resolution MAST Thomson scattering system.

