

eCHO



THE NEWSLETTER OF THE CULHAM SCIENCE CENTRE & HARWELL BUSINESS CENTRE

DECEMBER 1999

*A Merry Christmas and a
happy New Millennium
Year to all our readers*



The last year has been exciting for the Harwell and Culham sites and we look forward to growth and prosperity in the new millennium. We congratulate Sir Walter Bodmer on becoming chairman of NRPB, Sir Anthony Cleaver on being appointed chairman of MRC and Dr Andrew Taylor at RAL receiving the OBE.

We said farewell to Norman Taylor, Bryan Pierce, Bernard Partridge, Isobel Radley and Dave Trotman - each giving more than 40 years' service. We also say farewell to Jean Jacquinet and the JET Euratom team and welcome Jérôme Paméla and his team who will manage JET's scientific programme and look forward to the successful integration of the JET facilities into UKAEA.

Technical milestones included the opening of the Harwell ILW Vault Store, the Battery Technology Centre at Culham, TOSCA at RAL and the start of operations at MAST, Culham's new spherical tokamak. Harwell Instruments and Harwell Scientifics were launched. Forensic Alliance became the first official supplier of crime scene DNA profiles. New radioactive discharge limits were sought for Harwell and plans announced for major environmental remediation work.



*John Wilkins
head of site, Harwell*



*Derek Robinson
head of site, Culham*

National Power established a centre at Harwell for its revolutionary electricity storage system and Ann Griffiths set up a complementary therapy clinic. AEAT formed several partnerships - one with Benetton's F1 racing team. Harwell Dosimeters changed buildings and Beven Recycling received automotive awards from the FT.

To all at Culham and Harwell, to families, friends and neighbours, our best wishes for a happy Christmas and successful New Year."

In this issue: 3 New technology helps heart patients 5 Blue Cross dog joins Harwell patrol
6 Massage in a battle 7 Compton to Cornwall 12 First Euro Mars mission

Finding a common purpose

Oxford Common Purpose held a successful Economy and Development Day on Wednesday 17 November at Culham. Hosted and sponsored by UKAEA, the event had a central theme to explore the strength of the region's economy. Delegates examined issues of competitiveness, regionalism and globalisation. Speakers included Barry Giles, director of enterprise development, South East England Development Agency and Andrew Dilnot, director, Institute of Fiscal Studies.

What is Common Purpose?

Common Purpose is an independent educational organisation which aims to improve the way towns and cities work. It delivers a unique educational programme for the rising gener-

ation of decision-makers from all the different sectors in society: private, public, voluntary and community.

The programme concentrates on how a town or city ticks and examines the core issues that touch those who live and work in it. It begins with a



Oxford Common Purpose delegates at Culham.

two-day residential course and is followed by nine intensive single programme days, one a month, each concentrating on one central issue: housing, education, crime and justice, governance, planning and environment, arts, health or cultural diversity. The days include a

variety of locations and stimuli: guest speakers, behind-the-scenes briefings, workshops, visits, case studies and question and answer sessions.

For more details about Common Purpose contact Karen Mackley on 01235 555264.

Compustaff arrives at Culham

As its name suggests, Compustaff is an IT recruitment consultancy. The company was formed in 1997 by MD, Simon Hewerdine, and has recently moved to new premises in C2 at Culham.

Speaking about the principal aims of the business, Simon comments, "Any employer will tell you that IT recruitment is not easy and, in Oxfordshire, it seems to be especially difficult. Having worked with many IT employers and seeing their dissatisfaction I was convinced that there was need for truly focused, intelligent and driven staff."

A background in IT research, software engineering and project management gave Simon the ideal credentials to form a recruitment business in this specialist field.

"In addition to its technical expertise, Compustaff is also favoured because our clients find us much easier and less pushy to deal with than many traditional agencies," he says. "We have continually invested in people and technology and, as part of this investment, we have chosen to move to Culham



Simon Hewerdine (seated) two of the Compustaff team, Waqar Sabir and Paula Davies.

Science Centre. It provides us with an ideal, secure and well-serviced location from which to work, to the benefit of our customers. We are looking forward to the new millennium and our future at Culham with great anticipation."

Any organisation wishing to discuss their IT recruitment needs in confidence can contact Compustaff on 01865 408200 or email info@compustaff.ltd.uk. Compustaff also has a web site at www.compustaff.ltd.uk which has information about the company and a selection of current IT vacancies.

OBITUARY

Dave Codling 1948-1999

Dave Codling was a well-liked and highly respected member of Culham division having made an enormous contribution both professionally and socially over 30 years.

He started work at UKAEA in 1969 as a contract electrician on the installation of the HBTX control room and other D1 experiments. In 1971 he joined the UKAEA D6 workshop and was promoted to electrical foreman in 1978 before moving to the JET workshop in E1.

He joined particle beam division in 1990 where he worked on the CWDD project then moved to the RF group, tokamak division. Dave rapidly became a vital part of the team completing the installation and operation of the large 2MW ECRH/LH microwave heating system for the Compass experiment. In 1996 he became operations manager for the ECRH system and two years later his responsibilities also included the installation of the MAST NBI systems.

Throughout his career



Dave always brought a sense of fun to everyday work, playing a major part in the charity fundraising escapades of the Culham All Fools Club for many years. He was a member of the Culham Rec. Soc. committee and was a driving force behind many events without taking the spotlight. Dave was a determined footballer and rugby player. His love of sport led him from the rough and tumble of the UKAEA 6-a-side tournaments to be one of the founder members of the Drayton Golf Club.

He will be very much missed by his colleagues and friends at Culham and elsewhere and their sympathies go to Dave's family, especially to Joy and Alex.

New technology helps heart patients

An innovative new design of a miniature sealed radiation source by AEA Technology will enable cardiologists to offer better treatment to heart patients. The development was carried out for Novoste Corporation, the leading company in prevention of restenosis – the re-narrowing of a previously treated artery.

Studies have shown that up to half the patients experience restenosis within six months of the initial operation to open blocked arteries. Metal implants known as stents are also routinely used to keep the coronary artery open, but

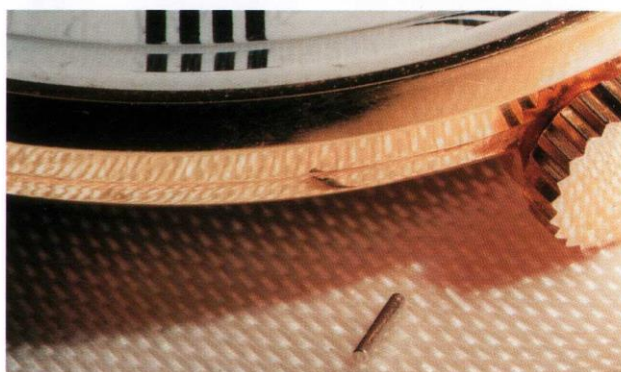


The tiny device will have a major impact within the field. In the USA alone, over one billion dollars is spent annually on medical devices used in coronary interventions.

restenosis still occurs in 20% to 30% of these patients.

Novoste Corporation has developed the Beta-Cath™ system for local delivery of beta radiation inside the coronary artery immediately following surgery to open up arteries and insert stents. Following a three-minute exposure to the beta radiation, the artery may be “frozen” in its expanded position, avoiding the need for additional procedures. Novoste is actively marketing the Beta-Cath™ system in several European countries, having received CE mark approval for the device in 1998.

AEA Technology, a world leader in the production of sealed sources, has developed a Sr-90 source so small that it will enable the use of smaller diameter catheters, allowing access to the smallest of coronary arteries.



The skills of Swiss watchmakers were enlisted to help design and manufacture this miniature radiation source, pictured here beside a wrist watch.

This offers a viable treatment to an even greater range of patients.

As a result of the successful development and prototype production of miniature sealed sources for clinical trials, AEA Technology and Novoste have signed a development and manufacturing agreement. Novoste is investing in a major automated production facility at AEA Technology's laboratory at Braunschweig Germany, that will supply Novoste's anticipated requirements for the smaller sources for the next five years.

Hugh Evans, AEA Technology business development director, stated that the strategic development and manufacturing agreement with Novoste underpinned a new focus in the AEA Technology QSA Business since its acquisition from Nycomed Amersham last year. “Currently only 15% of AEA Technology's QSA business turnover of £38m is in the medical sector. However, based on a number of new initiatives, projections show the medical business being larger than the core industrial sector within five years.”

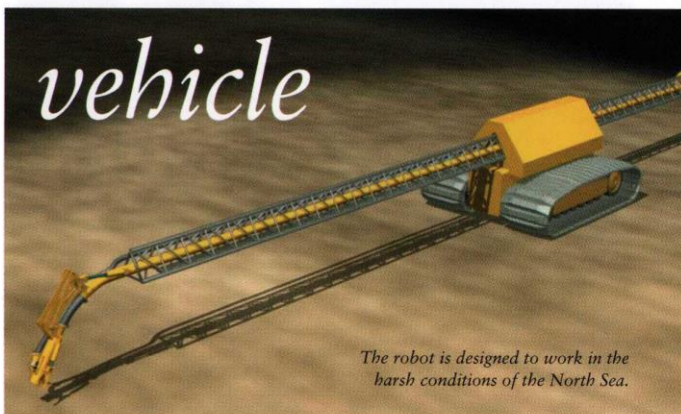
Subsea recovery vehicle

Up to 1.5 million tonnes of drill cuttings may be trapped beneath oil and gas platforms in the North Sea. They are produced when drills cut through subterranean rock to reach oil and gas reservoirs. When the platforms are decommissioned the cuttings could be dispersed and pose an environmental hazard. Offshore operators expect to spend around £50m a year dealing with drill cutting piles from 2001.

As part of the industry-wide search for a solution AEA Technology has developed the design for a cuttings recovery vehicle. The robot is capable of working in harsh seabed conditions and will pump cuttings back to the platform where excess water is removed and

cleaned before being returned to the sea. The cuttings are slurried before being re-injected into the strata.

The robot is operated via computers on the platform with a remotely operated vehicle working alongside to assist. The recovery vehicle has a telescopic



The robot is designed to work in the harsh conditions of the North Sea.

boom attachment that will reach under the platform and pump out the drill cuttings.

Gary Phillips of AEAT said, “There is a huge market in the North Sea for any company that solves the problem posed by drill cuttings piles. We have developed the design for a complete system that will re-inject the cuttings back into wells and protect the environment. We are now looking for a major partner to help us bring this system to market.”

DTI contract

AEA Technology has been awarded a £1.5m contract extension by the DTI to improve oil recovery. The company will independently advise government on the most effective use of North Sea oil and gas reserves, ensuring that field developments meet good oil field practice and are in the national interest. AEAT provides reservoir engineering consultancy, computer modelling of oil fields and laboratory measurements to a variety of customers.

AEA Technology half year results

Sales	-	£171.3m
% increase on 1998	-	3%
Operating profit	-	£12.4m
% increase on 1998	-	15%

Out & About

Festival of Science and Innovation

21 January – 4 February 2000



In January the Oxford Trust will be running its ninth annual Festival of Science and Innovation in Oxfordshire. Evening events will include Dr Neil Johnson - presenter of this year's Royal Institution Christmas lectures - talking about the science of complexity in his lecture 'Predicting the Unpredictable' and Dr Peter Kyberd tracing the history and future development of artificial limbs in 'From Captain Hook to Robocop'.

There will also be a Festival Forum looking at GMOs (genetically modified organisms), chaired by Judith Hann, with contributions from Sir Walter Bodmer, Professor Christopher Leaver and Dr Evan Harris MP. Events for the business community will include the Innovation Lecture by Professor Joe McGeehan who will be talking about future developments in the world of mobile communications. For families there will be a day of workshops, shows and performances on the themes of 'Circus, Stars, Light and Magic' and a wide range of activities at a local shopping centre.

The Festival has been extended into four regional parts for the year 2000. There will further events in West Oxfordshire in March, South Oxfordshire in July and North Oxfordshire in November. For further details of the festival programme and booking information contact Alison Hendry on 01865 728953 or e-mail: alisonh@oxtrust.org.uk

BNES lecture

The next BNES Central England Branch talk will be presented by Eric Hansford (AEA Technology) and Howard Broadbent (MOD) on the 19th January, in the ETSU lecture room, B153, Harwell at 5.30 pm for 6.00 pm. The talk will discuss the decommissioning of the JASON reactor at Greenwich. Everybody welcome.

'The Hunchback of Notre Dame'

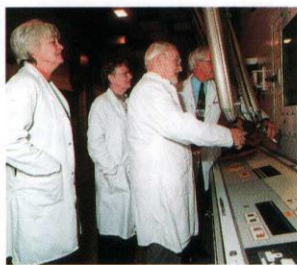
Oxfordshire Touring Theatre is performing its production of 'The Hunchback of Notre Dame' on Tuesday 21st December, in Harwell village hall. Tickets are £5 pounds (concessions available) from Martin Ricketts on R5454 or White Horse newsagent, High Street, Harwell.

Local councillors briefed at Harwell

Members of West Berks and Oxford City councils visited Harwell last month. Oxford City Council environment committee visited the Vault Store and West Berks Council toured the radiochemical facility (B220).

West Berks council, based at Newbury, were invited by Stan Gordelier, director of UKAEA's Southern Division. As well as discussing the chemical event that occurred in September the council heard about environmental restoration works and site development plans for Harwell into the next century.

Seventeen members of Oxford City Council toured Harwell's Vault Store and



Members of Oxford City Council environment committee at the Vault Store.



Bob Williamson (AEAT, right) explains the chemical event to West Berks Council.

enjoyed the 'hands on' experience of operating manipulators used to repack radioactive waste. Later they toured the partially decommissioned DIDO reactor.

At the Local Liaison Committee (LLC), held on 26 November, John Wilkins, UKAEA's head of site, briefed 40 local councillors and other local representatives on topical issues. He described the chemical event that arose from a possibility that an operation could have formed an unstable chemical solution during 9-10

September. He reported how remedial action was successfully carried out and how the safe condition of the chemical process was confirmed by analyses.

The main findings of internal investigations into the event were explained and the chemical rig was on view during the meeting. The LLC were also briefed on the start of restoration work at the Southern Storage Area.

Staff and public meetings were arranged for later that day.

ABC lifestyle study at Churchill

The breast cancer research programme funded by Culham-based charity, ABC, is being expanded. The ABC diet and lifestyle study forms part of a larger programme of research based at University College London hospitals and will establish a second research centre at the Churchill Hospital in Headington, Oxford.

Diet is thought to be significant in cancer prevention and an influence on how likely a cancer is to spread. The overall aim of the ABC study is to investigate the relationship between diet, nutritional and metabolic characteristics, lifestyle factors and survival from breast cancer.

Environmental factors have been shown to be important; for instance, when migrants move from one country to another they reflect the host country's incidence of breast cancer within several generations. Migrants moving from Japan, where incidence rates of breast cancer

are less than half those in the UK, have, upon settling in the USA, been shown to assume American incidence rates within two or three generations.

The ABC diet and lifestyle study is particularly interested in phytoestrogens, a family of plant compounds which may confer health benefits related to cardiovascular diseases, cancer, osteoporosis and menopausal symptoms.

For the ABC study women with invasive primary breast cancer are recruited after primary treatment has been completed and are followed up for a five-year period.

Questionnaire data is collected on diet, physical activity, reproductive history, alcohol and tobacco consumption, previous and current illnesses, current medication, anxiety levels and quality of life. Blood and urine samples are also collected.

Analysis of the data collected should allow the team to identify environmental factors which are modifiable and may be significant in improving survival after breast cancer diagnosis. The planned expansion should ensure that some 1,200 women - the number needed to make the study viable and valid - will be recruited. It is hoped that, in time, the programme will be taken to other regional bases around the UK, including Cardiff and Belfast.

Blue Cross dog joins Harwell patrol

Raffy, a two-year old German Shepherd dog, has joined the team of canine companions who, together with their UKAEA Constabulary handlers, are responsible for patrolling the Harwell site. Not long ago she was one of the many dogs waiting for a new home at the Blue Cross animal sanctuary at Burford, west Oxfordshire.

"Raffy was assessed to determine whether she had the right temperament to work as a patrol dog," explains her handler, PC Michaela Richardson. "She gave all the right signs and we embarked on our training together."

Michaela joined the constabulary in 1997 and when the position of dog handler arose she decided that it was a challenge she wanted to take. Paired up with her new partner Raffy an intensive nine-week training course was undertaken at the Force Dog Training Centre, Sellafield.

Michaela and Raffy work shifts as part of a team of police dog handlers to cover the Harwell site 24 hours a day. The dog handlers are quite distinct from the stereotypical security guards with their ferocious dogs

straining at the leash.

"Our dogs are very user-friendly and we play a very proactive role, patrolling the site continuously as part of the policing requirement," says Michaela. "However, the dogs are trained to carry out all the usual police duties such as tracking and detaining intruders and even though they very seldom have to put these skills into practice the dogs are more than capable of fulfilling these requirements."

With their highly developed sense of smell dogs play a vital role in police work. They could, for example, enter a strange room and indicate a foreign object which does not belong there or track down an individual from the faintest scent which remains in their wake. Although dogs have poor long distance



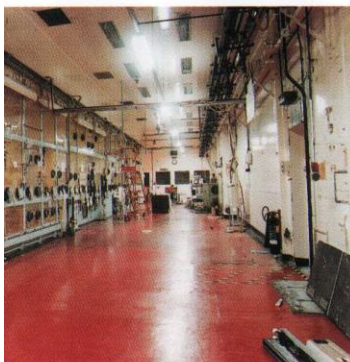
Working partnership, Michaela Richardson and Raffy.

vision, they are very aware of movement and will hear sound inaudible to the human ear.

When Raffy retires in seven or eight years' time she will live permanently with Michaela and her other dog, Tas - short for

Tasmanian Devil - a Staffordshire Bull Terrier cross. Describing Raffy's temperament, Michaela says she bears more than a small resemblance to the cartoon character, Scooby Doo, although she is much more intelligent!

'Shop-window' removed



Before - the shop-window area in 1989.



After - following decommissioning in 1999.

The removal of a suite of large glove boxes, known as 'shop-windows', marked the completion of decommissioning work in Harwell's B220 radiochemical facility costing £20 million.

This milestone was achieved when UKAEA building manager, Colin Lyon, walked into the previously radioactive area without the need for protective clothing. Colin remarked afterwards, "Now downgraded as a free-breathing area, I walked through places I last entered 15 years ago - at that time wearing a pressurised suit!"

The shop-windows, essentially floor-to-ceiling fixed glove boxes designed to handle alpha active materials, such as americium and plutonium, formed part of B220's 'Alpha Wing'. Originally built in 1949, they were decontaminated and removed this year, as part of a ten-year long decommissioning programme that started in 1989. This

programme resulted from a review of business prospects that concluded commercial work should be consolidated in other parts of B220.

The £20 million decommissioning project also involved the removal of about 170 of the original 240 free-standing glove boxes, mostly using a robot, as well as a number of laboratories. Last to be completed were the shop-windows which included an area accessible only by pressurised suit workers.

In parallel with the decommissioning work was a programme of refurbishment costing a further £10 million. This included improving the ventilation system, rewiring and fire prevention work. As a result, parts of the original Alpha Wing have been reinstated as non-active laboratories and new offices.

Much of the decommissioning work has been carried out by AEA Technology and Rolls Royce Nuclear Engineering Services Ltd.

Commuter survey winner



Nearly 300 readers filled in the commuter survey questionnaire included in the October issue of ECHO and Gilly Otlet from Leeds University's Traffic Studies Department has begun to analyse the results. She would like to thank everyone who took part. About a third of the entries were accompanied by names and addresses and were entered into a draw. The winner of the £25 Smiths Gift Voucher was Dave Baker of AEAT Nuclear Engineering in B.351.28 at Harwell. We intend to publish the main findings of the survey in a future issue of ECHO.

Massage in a battle – sports and physical therapy *by John Hill*

Many aspects of the ageing process are quite avoidable, without great expense or effort. Much of the physical frailty to which we all seem to succumb is entirely down to mismanagement of our bodies rather than the decline of any intrinsic health or strength. It is not necessary to indulge in endless exercise programmes, although they have their place.

Eight out of ten of us will suffer from back pain at some stage. Guidelines issued by the Royal College of General Practitioners (RCGP) in 1996 stated that people reporting with back ache should be advised not to rest, but to stay at work if possible, use pain killers if necessary but encourage continued movement of the area and to consider physical treatment and manipulation in the early stages.

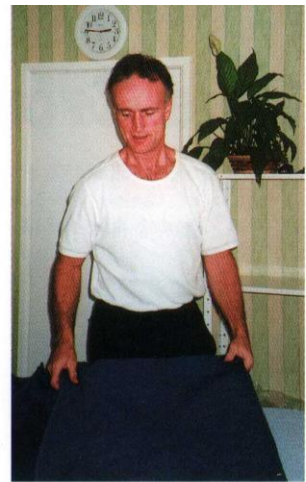
Without wanting to challenge the good practice of those GP's on whom we rely for almost all our primary health needs, there is, however, some valuable information which the public should know to allow them to be more responsible for their own health.

The first challenge of physical therapy is convincing people to take the step. The words 'sports' and 'physical' often deter people who believe sports therapy is only for the fit and athletic. However, this is only partially true. Physical therapy has been based around the study of athletes and their training. The adaptation of the body to stress and subsequent injuries and other conditions, recoveries and rehabilitation are the basis of the knowledge held by the therapist. However the most appropriate application of this knowledge is on people who would certainly not consider themselves as athletes and some scarcely as active!

The physical therapist has much to offer the sedentary

office worker or driver, for example. The most precious function of our skeletal body is flexibility. Without good range of movement, muscle use is going to be restricted and mobility will suffer. The best way of developing restriction in joint movement is to keep the muscles around the joint in tension without letting them move.

The two main sites where this happens most, is at the neck and shoulders and at the base of the spine. In each of these places, the postural muscles are supporting considerable weight but are not moving. Treat your minor niggles with respect. Don't ignore them and don't think that once the pain has gone, so has the problem.



John Hill - physical therapy has much to offer the desk-bound worker.

John Hill is a qualified Sports Therapist and Personal Trainer and lectures in Sports Massage at Abingdon College. He delivers treatments to clients' homes and to clubs and organisations by arrangement. He also runs a clinic at A Touch of Health on the Harwell International Business Centre on Fridays. He may be contacted on 01235 816396. Initial consultations and all pre-treatment assessments are free of charge.

Korean delegation

A delegation from the Korean government and KBSI (Korean Basic Science Institute) visited Culham recently. They were particularly interested in training young scientists to work on their new fusion project KSTAR. The Korean visitors pictured here are: Dr Young-Bok Chae, Dr Jung-Soon Lee, Mr Eun-Chul Choi, Mr Inho Gim, Mr Lee-Hwan Kim and Mr Jung-Hoon Han inside the COMPASS experiment with Garry Voss, Alan Sykes, Richard Buttery and director of fusion, Dr Derek Robinson.



Health & Safety first



Alan Haresnape, safety advisor, is pictured discussing manual handling issues with members of staff from B521, Becca Smith, Anita Harvey, Stuart Jolly and June Luker.

To coincide with National Health and Safety Week in October the UKAEA safety and environment department (HSED) at Harwell promoted a manual handling safety campaign, targeting organisations across the site. As prevention is better than cure the campaign advised that the best way to avoid injuries was to avoid lifting heavy or awkward objects wherever possible. If a task can be redesigned or a workplace reorganised to avoid lifting, this should be investigated. Where lifting cannot be avoided, then a risk assessment should be carried out beforehand to examine the task, the load, working environment and individual capabilities. For more information please call the Safetyline on ext 177.

Compton to Cornwall on two wheels

Terry Hacker of MRC recounts his 280-mile charity cycle ride

Returning to work I can look back with a sense of achievement, but must confess that those two days were the most gruelling I have ever had.



Day two, approaching Okehampton, 170 miles down, 110 to go. The strain is beginning to tell!

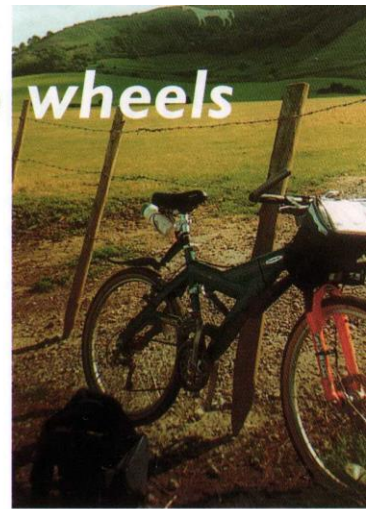
On Friday 24 September, I awoke at 4.50am to the sound of torrential rain and howling winds. The rain came, went and came back again over the next two days leaving many minor roads flooded, but the main problem was the strong and persistent wind (and getting lost on a few occasions). By Friday evening I was some 20 miles short of my possible overnight stop and found myself in the middle of nowhere, cold, wet and it was very dark, but I managed to find a B&B for the night.

Saturday morning started wet and windy again but soon improved and roads were flat. It was not until I encountered hills past Crediton that I realised that I was very 'saddle sore'. This

proved to be a big problem with hilly Devon and Cornwall, and the final stretch down the A30 from Okehampton was horrendous.

I had to walk or stand and cycle on some of the hills as it was too painful to sit. This took its toll on my Achilles tendon and I felt it 'pop' which, combined with an increasingly strong head wind, torrential rain and spray, made the last 70 miles extremely hard going. To make matters worse my bike computer and telephone packed-up due to the wet! Stopped to help two motorists, one lost, the other broken down.

I finally arrived at St Agnes at 9pm, some 38 hours and 280 miles later, wet, cold and sore but in time for a drink, a bath



Day one at Westbury, with the White Horse behind, 65 miles gone and feeling good.

and Match of the Day! I would like to thank all those who sponsored me and have contributed towards the total of between £450 and £500 for the Anthony Nolan Trust.

Groovy

Staff from AEAT Finance at Harwell relished the opportunity to dress in bad taste for Children in Need. Paul Collins dug out the flares and a loud shirt in true 1970s style and together with Gill Marshall collected over £130 from colleagues in B392 and B329.



bad taste!

SAFETY Update

There were two reportable incidents at Harwell and none at Culham since the last issue of ECHO.

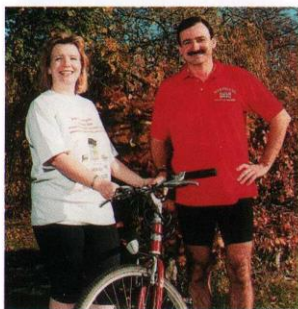
Both events involved more than three days' lost time and were therefore reportable under the Reporting of Injuries Diseases and Dangerous Occurrences Regulations (1995). A UKAEA member of staff tripped and fell cutting his head and knee and a contractor sustained a strained back while pulling a hand truck.



UKAEA
Restoring our Environment

Cuban charity cycle ride

Another Harwell staff member keen to jump into the saddle for a good cause is Fiona Digby-Grant, UKAEA contracts manager. She will be testing her endurance to the limit by cycling 350km on and off road over five days in Cuba in aid of the National Deaf Children's Society.



Fiona Digby-Grant with John Price, UKAEA communications manager at Winfrith who has already experienced the Cycle Cuba challenge.

Fiona will leave the UK on 15 January and after a few days' acclimatisation, she begins the arduous trek from Trinidad, passing through parts of the stunning Escambray Mountains on the first day. The route takes in Cienfuegos - the site of the historic battle between Fulgencio Batista and Che Guevara's guerillas - and Matanzas, known as the 'Athens of Cuba' before finishing in Havana.

The Cuba Cycle is one of the Global Charity Challenges which

take place in a number of countries including Jordan, Iceland and China, to raise funds for the NDCS. As part of her fund raising Fiona held a raffle and a quiz night and cajoled donations from colleagues, friends and contractors. To lend your support to Fiona's cause please contact her on H6958 or email: fiona.digby-grant@ukaea.org.uk



At this time of year we would usually send you the season's greetings with a festive card. However, as this Christmas heralds the start of a new millennium we have decided to do something different and will be donating cash to UNICEF rather than spending money on Christmas cards.

UNICEF is the United Nations' Children's Fund. It works in over 160 countries around the world, giving children better health and nutrition, safe water and sanitation, and practical education. Being a science and engineering business we felt it appropriate to send our contribution to UNICEF's technology programme which ensures that children living in some of the poorest parts of the world have clean water and sanitation. The work is vital and we hope you will agree with our decision.

May we wish you and your family a very happy Christmas and a healthy and prosperous millennium celebration.

With our very best wishes.

£1,000 science book give-away

Over 100 books with a value of £1000 were given to students from 40 schools, including four special schools, in Oxfordshire, Berkshire and Hampshire. They were the prizes awarded by RAL to the 14 year old student in each school nominated by their science teacher as 'having shown the most effort and enthusiasm in science' during the year.

"It is not necessarily the best science student who wins the prize, but the one who has achieved the most", explains Janet Haylett, schools liaison officer at RAL who organised the event, "This year we were delighted to include winners from four special schools".

RAL chief executive, Bert Westwood presented the books which had been chosen by the students. The topics of the books reflect the diversity of

science - UFOs, the Big Bang, special effects in film and TV and the search for life on other planets as well as some useful encyclopaedias and course books.

The winners and their teachers were able to see some of the leading edge scientific research facilities at RAL during the afternoon. The students were introduced to some of the mysteries of space science research and given a short talk

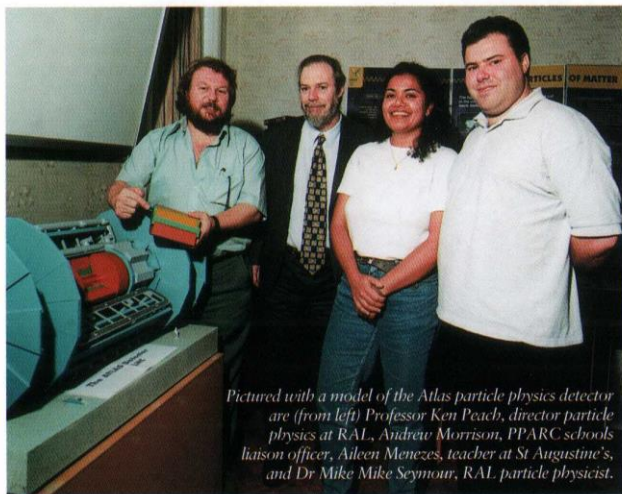


Kerry Crook of the RAL press office with some of the book prizes.

about discovering new stars. They were able to learn how lasers are used to study a wide range of problems such as how

vitamins undertake cell repair, and saw some of the equipment used in nanotechnology - too small for the human eye to see.

Sixth formers teach younger pupils



Pictured with a model of the Atlas particle physics detector are (from left) Professor Ken Peach, director particle physics at RAL, Andreia Morrison, PPARC schools liaison officer, Aileen Menezes, teacher at St Augustine's, and Dr Mike Seymour, RAL particle physicist.

A novel scheme designed to inspire sixth form science students and encourage them to help teach science to lower school pupils was deemed a great success. RAL joined forces with the Particle Physics and Astronomy Research Council (PPARC) and St Augustine of Canterbury upper school in Oxford to run a weekend of lectures and practical workshops on the wonders of particle physics.

Following the intensive weekend course held at The Cosener's House in Abingdon, the sixth formers will develop a resource package which will, in turn, be presented to lower school students under the supervision of teachers and RAL staff. They will later be encouraged to take these resources out to other schools.

Lectures on particles and how they are detected, and the

birth of stars and planets, were the starting points for web-based activities undertaken by the students who compiled their own web pages.

The scheme was the brain-child of Dr Mike Seymour and a group of particle physicists at RAL, working with Aileen Menezes and the physics teachers at the school, with funding from PPARC.

NRPB First report

The first report of the NRPB Ionising Radiation Incident Database (IRID) has just been published. Launched in 1996 the database acts as a national focus on ionising radiation incidents, primarily in the non-nuclear sector ie. industry, research, teaching and medicine.

The report provides the first coherent review of incidents on the database, which currently total 100. The information is anonymous and the 'case studies' have been formatted to make them easy to use as training material. To help readers find incidents pertinent to their field case studies are grouped under headings such as unsealed radioactive materials, industrial process gauges, recycling and scrap metal, X and gamma radiography, use and servicing of X-ray equipment and nuclear density gauges.

Initial analysis of IRID shows the most frequently occurring themes and lessons to be learnt. The report should be of interest to a number of different audiences and is on sale for £15 from NRPB information office at NRPB, Chilton, Didcot, Oxon OX11 0RQ, tel: 01235 822742, fax: 01235 822746, email: information@nrpb.org.uk

Twinning tour

Visitors from Meylan, Didcot's twinned town near Grenoble in France, toured RAL last month. They were welcomed by John Tomkinson, a senior scientist working on the world-leading Isis facility who also conducted the tour in fluent French, learnt during five years in France. He explained how Isis was used by scientists from around the world to discover the molecular structures of all types of materials from magnetic coatings on recording media to catalysts used in industry. "C'est magnifique!" commented one visitor as they entered the impressive Isis experimental hall. They were particularly interested to note the close connections with their sister institute in Grenoble.



The party also heard about the laboratory's space mission work from RAL's Jeremy Curtis (pictured left) with Denison van Uye (Meylan), George Stirling (RAL), Clotilde Durufle (Meylan), Tony Baker (twinning committee), Richard Alleaume (Meylan), Roger Childs (twinning committee) and Anotinia van Uye (Meylan).



End of an era

After 43 years as the headquarters of the Recreational Association, the Harwell Social Club (B161) is to close on 31 March 2000. At an EGM on 22 September 1999 a decision was taken to close the social club bar and catering operations on the last trading day of 1999 - 23 December.

The social club will remain open as an activities centre for affiliated clubs and individual members during the period January - March 2000, but no refreshments will be available. As a result of the closure of bar and catering services, all social club staff will become redundant on Christmas Eve.

As the rec. soc. has no pension scheme staff will receive statutory redundancy payments. It has been decided to initiate a staff redundancy fund to enable individual members and affiliated clubs to show their appreciation for the services provided on their behalf over several decades.

Any members wishing to contribute should make cheques payable to 'HLRA (staff)' and forward them to the association secretary, B161, Harwell. Alternatively, collecting boxes are situated in the social club bars for members' convenience.

In recent years, the rec. soc. has gone through financially turbulent times due, in the main, to a reduction in members from a diminishing site workforce. The committee hopes that members will, despite a reduction in benefits offered, continue to support the association during the transitional period ahead and thereby assist in providing a sound financial base for year 2000 and beyond.

Membership and other rec. soc. matters will continue to be handled by the HLRA office, B161 until further notice.

Enough of rounders? Let's play football!

Some of you may have noticed recently the silky skills, the slick passing and the multitude of goals that have recently adorned the playing field. But enough about the Premier League, Harwell has its own football competition - the 6-a-side Luncheon Autumn Championship.

A league of eight teams have been battling it out and trying to play football for (roughly) 15 minutes each way. The final results will be known shortly before Christmas. After that, there's a brand new league planned in the run up to Easter - The Spring Championship! Games will again be played at lunchtime with kick offs at 12:45. If you're interested in entering a team, please lodge your team list (between 8 and 12 players) with Colin Moody (H3898 or preferably on a spreadsheet to colin.moody@software.aeat.com. If you've not got the bottle to play, perhaps come out and gibe the players. After all, the terraces are normally where you find the fun and humour!

The Championship is open to players who are members of the Harwell Laboratories Recreational

AGM

The HLRA annual general meeting will be held on Wednesday 19 January 2000 at 12.30pm in the Harwell Social Club. Nomination forms for positions on the management committee are available from the rec. soc. office, B161, Harwell or call H3296. Proposals for consideration at the AGM should be submitted in writing (and seconded) to the association secretary no later than Wednesday 5 January 2000. Decisions will be taken at this AGM which will shape the future of the rec. soc. Members are therefore urged to make every effort to attend. Use your vote - support your association!

Fireworks spectacular

A 20-knot wind threatened to force the cancellation of the Rec. Association's annual fireworks show but dropped with an hour to go, allowing the event to go ahead as planned. About 3,000 people enjoyed a fine and dry evening watching a spectacular show of fireworks that cost £3,700 to stage.



Afterwards, parents and their children visited the Social Club for refreshment and to take part in an evening's entertainment including a magician and children's disco. The bucket collection raised £1200.

Association. If you're not a member yet, just get the forms filled in and returned to the rec. soc., and you'll be eligible to play. Closing date for the Spring Championship is January 21 with the league starting in the week beginning 31 January.

NOTE - During a game played on Tuesday 23 November the first yellow card of the 6-a-side autumn tournament was shown to Pete Burton of the 'B220 has beans'!

6-a-side league table at 19 November 1999

League Position	Team No./ Name	Team Captain	Played	Won	Drawn	Lost	For	Against	Points
1	8 —	Dave Wilkins	3	3	0	0	15	3	6
2	2 — B220 has beans	Pete Burton	3	3	0	0	13	1	6
3	4 — Only Fools and Donkeys	Austin Kinnane	3	2	0	1	7	2	4
4	6 — Oisis	Mark Telling	3	1	1	1	6	3	3
5	3 — Moody Blues	Colin Moody	3	1	1	1	4	3	3
6	5 —	Chris Mulhall	3	1	0	2	4	8	2
7	7 —	Graham Cosgrave	3	0	0	3	1	15	0
8	1 — Wigan Arthritec	Andy Thompson	3	0	0	3	0	13	0

Celebrate Christmas at Café Ridgeway

Christmas lunch will be served at Café Ridgeway (B455) at Harwell on 20th, 21st and 22nd December between 12 and 2pm. Please pre-book tables with a £1 deposit per person (refundable with 48 hours notice of cancellation) as numbers are restricted to 40 per day. Two courses £5.75, three courses £6.95. Please ring Dawn on H2598 or fax H2816 for your booking form.

Don't miss the post!

The last posting dates for Christmas 1999 are:

- First Class** - 21/12/99
- Second Class** - 18/12/99
- Parcels** - 16/12/99
- Europe** - 13/12/99

Harwell staff using couriers should phone the numbers shown below for Christmas collection/delivery details:

Despatch/Import/Export
H4108/4102

Post Room
H5880/5732/4452

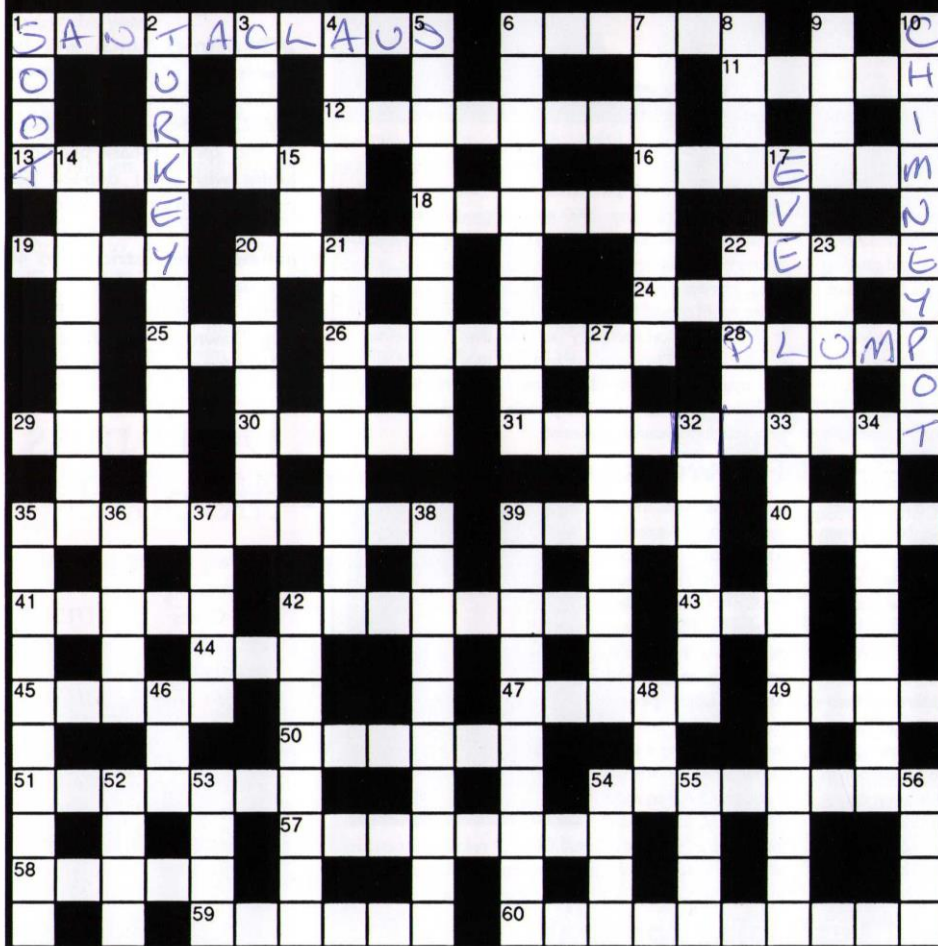
Christmas at Culham

Normal services will apply at Culham up to and including Thursday 23 December. The services will close on Friday 24 December and resume on Tuesday 4 January 2000. A traditional Christmas lunch will be served in the Culham restaurant on Thursday 16 December.

Millennium calendar

Harwell village millennium committee's year 2000 calendar is available from m.ricketts@rl.ac.uk R5454. It costs £5 with all proceeds to the millennium committee for millennium year events and village projects.

CHRISTMAS CROSSWORD



CLUES ACROSS

- 1 ✓ Father Christmas (5,5)
 6 Ancient fellow (3,3)
 11 A time of great events
 12 Having nothing to do, at a _____ / ____ (5,3)
 13 Drinking mugs
 16 The meantime
 18 Make certain
 19 This duckling became a swan!
 20 The sung part of a musical
 22 Drag with much effort
 24 Whatever
 25 Lodging house
 26 Eastern
 28 ✓ Fat and rounded like a turkey
 29 A religious image
 30 Twig of holly or mistletoe
 31 Eat a toffee, but don't bite! (4,1,5)
 35 Booming forth . . . from the hi-fi? (7,3)
 39 A series of paper links
 40 You lick them in anticipation of 2D?
 41 Brass horn
 42 Breaking out of prison?
 43 A titled gent
 44 Stir . . . the Christmas pud?
 45 The odds are one-to-one
 47 A mixture of metals, brass for example
 49 To serve at table
 50 A glut of Xmas fare?
 51 Noddy's urban area
 54 Danish tarts
 57 Competition run in a bag (4-4)
 58 King or dictator
 59 One of Cinderella's siblings
 60 People from North Scandinavia

CLUES DOWN

- 1 ✓ Black stuff which coats a 10D
 2 Traditional Xmas main course (8,6)
 3 Scorch
 4 Troubles and afflicts
 5 Clearing up the snow
 6 Exceeds the budget
 7 Of olden times in the Middle Ages
 8 Store of wealth, a _____ egg
 9 On the breadline
 10 ✓ A smoker on the roof (7-3)
 14 Cherubic
 15 Beauty and the Beast or Bill and Ben
 17 ✓ December 24th, Christmas ____
 20 Roast deer
 21 Choral singers
 22 Over-promotes
 23 Entertain
 27 Principal guardian spirit
 32 An international free pardon?
 33 Recompensed abundantly (4-8)
 34 Very pricey
 35 Tale from the Scriptures (5,5)
 36 To fish with hook and line
 37 Separate news snippets
 38 Weepie film (4-6)
 39 Ceramics stand at a fair (5,5)
 42 Out-of-pocket costs
 46 Hazel or cashew
 48 Eggs
 52 The season of Christmas
 53 Rowing blades
 54 A secret look
 55 Whiskey mineral-mixer
 56 Wrongs and vices

RGRF+

Just over 60 members of the former Research Group Retirement Fellowship (RGRF) gathered at Didcot's Civic Hall last month to approve a new constitution and relaunch the fellowship.

Membership of the fellowship, previously confined to ex-staff of UKAEA's former 'research group' is now expanded to include all retired persons over the age of 50 from Culham, Harwell, Amersham and other connected organisations. The fellowship will be known as 'RGRF+' and has been reformed as an independent self-funding body.

The AGM heard reports of various organised trips and guest speakers during the year and voted in a new committee to look after its affairs. Mrs Edna Piercy was elected as chairman for the coming year. The meeting approved the modest subscription that guarantees future viability of a fellowship of around 500 members.

If anyone is interested in knowing more about RGRF+ then please contact Mrs Piercy on 01235 835357.

Historical artefacts

Nick Hance, UKAEA's PR manager at Harwell, reports on recent donations for the Harwell 'museum' from staff and retired staff from Harwell and Culham. A major trophy has been the recovery of the LIDO lifebelt.

The LIDO swimming pool reactor at Harwell was used jointly by the Admiralty and UKAEA in the 1960s and was finally decommissioned to a 'green field' in 1994. Pictures of LIDO always showed a life belt on the operating bridge that traversed the length of the pool reactor. The life belt was donated to Bill Wood, the former research reactors division head, on his retirement. His son, David, now living in Harwell village, acquired the life belt when his father died and contacted Nick who collected it last month.

Two silver trophies have

been found. One is the First Aid cup, originally donated by Katherine Williams in 1955, the founder of Harwell's occupational health department. The other is the Inter-Departmental Football League Cup, dating back to 1948! Among the inscribed winners were Workshops (1948-49), Elec. & CTR (1959-60) and Nimrod (1970-71) - activities now carried out by JCL, Fusion and RAL!

Said Nick, "I've had several 'phone calls from ex-staff who tell me that they would like their retirement objets d'art to become a permanent exhibit at Harwell.



Holding the LIDO lifebelt are John Buffery, UKAEA DIDO decommissioning manager, and Nick Hance, PR manager for Harwell, standing on the site of the former LIDO swimming pool reactor, decommissioned to a green field in 1994. PLUTO reactor is seen in the distance.

We hope to display these in an exhibition in the DIDO reactor building in 2000."

He also has gifts returned by the nephew of JRV Dolphin CBE, former UKAEA chief

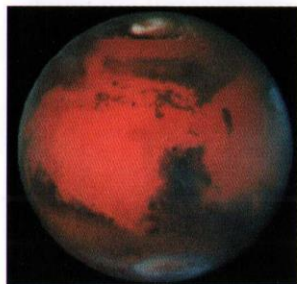
engineer, who retired in 1959, which were made by the apprentices at Harwell and Winfrith. Anyone who has something of historical interest, please contact Nick on 01235 436909.

Batteries power first Euro Mars mission

Scheduled for launch in June 2003, the first European mission to look for life on Mars will be powered by lightweight lithium-ion batteries supplied by AEA Technology.

The Mars Express mission will undertake the most thorough search yet for water on the 'red planet'. Seven scientific instruments provided by space research institutes throughout Europe will make observations from the main spacecraft in orbit. The instruments will produce high-resolution images and mineralogical maps of the surface, radar sounding of the subsurface down to the permafrost, analysis of the atmospheric circulation and composition, and will also study the interaction of the atmosphere with the interplanetary medium.

As it reaches Mars the spacecraft will release a small lander called Beagle 2 - after the ship in which Charles Darwin sailed around the world and developed his theory of evolution - that will journey to the planet's surface to look for signs of life.



The battery contract has been awarded by Matra Marconi Space of France, the prime contractor for the Mars Express spacecraft. AEAT's lithium-ion batteries will power the spacecraft during periods when it is hidden from the sun and will support peak power demands which cannot be covered by the solar energy. At other times solar power will be used to operate the craft and recharge the batteries. AEAT will also supply the lithium-ion batteries to power Beagle 2.

BEPO chimney bites the dust!

As ECHO goes to press, plans are being finalised for the demolition of the BEPO Fan House and chimney. The brick structure measures 56 metres in height and has been a landmark on the Harwell site for many decades. The contract for its demolition has now been agreed and work will shortly begin to systematically dismantle the disused chimney - no explosives will be used - for completion in spring 2000. A full report will appear in a future issue of ECHO.



ECHO 2000 PUBLICATION DATES

Why not pin on your noticeboard, or make a note of the copy deadlines in your 2000 diary.

ISSUE	COPY DEADLINE	PUBLISHED ON
FEBRUARY 2000	Mon 17 January	Wed 2 February
MARCH	Mon 21 February	Wed 8 March
APRIL	Mon 20 March	Wed 5 April
MAY	Mon 17 April	Wed 3 May
JUNE	Mon 22 May	Wed 7 June
JULY/AUG (12-page)	Mon 26 June	Wed 12 July
SEPTEMBER	Mon 21 August	Wed 6 September
OCTOBER	Mon 18 Sept	Wed 4 October
NOVEMBER	Mon 23 October	Wed 8 November
DEC/JAN (12-page)	Mon 20 November	Wed 6 December

THE COPY DEADLINE FOR THE NEXT ISSUE IS: Monday 17 January for publication on Wednesday 2 February 2000.



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