

eCHO

THE NEWSLETTER OF THE CULHAM SCIENCE CENTRE & HARWELL BUSINESS CENTRE

OCTOBER 2001

Fusion energy takes a step forward

Scientists from the UK and Japan may have taken us one step further to the reality of fusion energy with a new answer to an old problem. Research about a new technique using lasers to start the fusion reaction was recently published in Nature magazine.

The research was carried out by Dr Ryosuke Kodama and his colleagues at Osaka University, Japan, and a UK team comprising researchers from the CLRC Rutherford Appleton Laboratory (RAL) and Oxford University, Imperial College, London and the University of York.

"We have provided the first demonstration that this new scheme of fast ignition can provide an efficient route to fusion energy," says Peter Norreys of RAL. Lasers are vital as, "There's no other way of depositing such a vast amount of energy on such a

small focal area," he says.

The laser beams are focused onto a hollow pellet of fuel and produce a plasma almost instantaneously. The combination of high temperature (10 million degrees centigrade) and high density where the laser energy is deposited (1/1000 the density of solid matter) means that the generated pressure on the outside of the pellet is enormous - equivalent to 10 million atmospheres. This causes a rocket-like effect - the shell implodes at high velocity and eventually compresses to super-high density.

In the conventional

approach to laser-fusion, the 'spark' to ignite the compressed matter is generated by the simultaneous collapse of a number of accurately timed shock waves, but this requires both precise implosion symmetry and very large drive energy. These can both be relaxed, in principle, in the fast ignition approach. Here a second ultra-intense, short duration laser pulse penetrates the now dense matter to start the fusion chain reaction.

"The problem is that if you have an ultra-intense laser beam propagating in a plasma then all sorts of instabilities can occur that deflect the laser beam," Norreys comments.

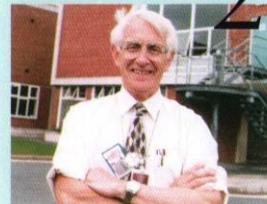
The team found the answer by inserting a cone inside the pellet that allowed the second laser to pass through the inside.

A vital part of the new technique is the accurate production of the millimetre high gold cone with extremely smooth sides by engineers at RAL. Using their experience of making extremely small, high precision parts, one of these engineers, Matthew Beardsley, and his colleagues happily accepted the challenge.

Funding for the research came from the Royal Society, the Engineering and Physical Sciences Research Council, the Japan Society for the Promotion of Science, and the British Council.

This month

Colin retires **2**



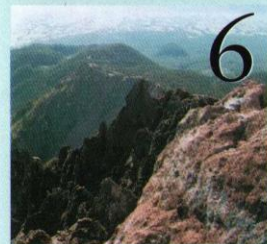
Ann on SSA



Free breakfasts



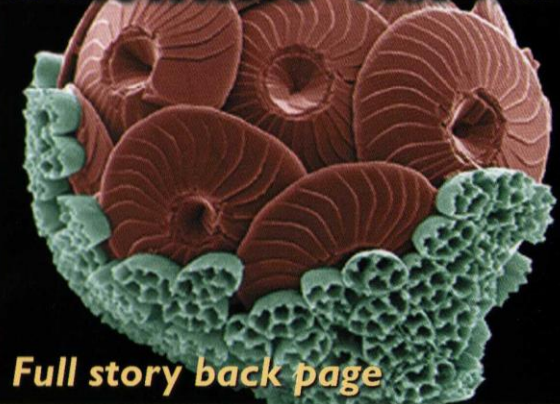
World challenge **6**



Winning image



Scientific visions



Full story back page

Plankton changes its appearance during its life and this is the first time it has been seen between its two forms. In the transformation it replaces the old outer covering (green) with one of plate-like units (brown).

Technical details: Philips XL-30 FEG digital field emission scanning electron micrograph. Coloured in Adobe Photoshop. Photographer Markus Geisen. By permission Novartis/Daily Telegraph Visions of Science.

Turbulent year for equities

The events of 11th September are devastating, to say the least. If you have money invested in the stockmarket, you could be concerned about what to do, says Danston Payne of Harwell Innovation Centre. Should you sell or not? The overwhelming advice from the financial press and advisers is "sit tight and don't panic". Stockmarket investments are long term investments and strategy should not be determined by specific events, however tragic.

Notwithstanding recent events in America, equity investments have had a turbulent year. The fear of recession has driven down stockmarkets worldwide and only consumer spending has been bolstering the US and UK economies. However this may now slow as people decide to save rather than spend. It is difficult to know how far to use historic parallels but big sell offs in the market after sudden shocks are usually short term and are corrected after the initial panic subsides.

When John F Kennedy was shot the Dow lost 3% in two hours but when the market reopened the following week shares rose 4.5%. Pearl

Harbour caused the Dow to fall 6.5% initially but the index then recovered rising by 4% in three weeks. The US entry into the war was more significant and the index was down 10% in three months. The next few weeks are likely to be as uncertain as any ever experienced since the Cuban missile crisis. Our advice to investors is to hold onto equities and wait until this first phase of the crisis passes.

Danston Payne Ltd.,
Harwell Innovation Centre,
tel: 01235 838599.

A member of Investment Strategies (UK) Ltd which is regulated by the Personal Investment Authority.

Retail Solutions



The principal aim of Oxford Retail Information Solutions (ORIS) is to make the most of business data. The company, based at Harwell Innovation Centre, operates in the highly competitive retail environment in the UK and Ireland. It creates software that extracts and analyses business information for decision-makers. ORIS can provide a range of options from creating tailor-made software packages to integrating computer systems, or providing support in data analysis and comparison. Chief executive, Andrew Wood, heads up the team. High street store chain, New Look is an ORIS client and MD, Phil Wrigley, commented "Our buying and merchandising incorporates a branch planning system that is difficult to work and produces lots of data. We wanted more focused information and the ability to compare stores. ORIS did an excellent job writing software to deliver specific tasks".

EFTA-JET press day

A successful press day was recently staged at JET, the flagship experiment of the European nuclear fusion programme, situated at the Culham Science Centre. Visitors were able to see at first hand the largest fusion machine in the world, hear how it operates under the European Fusion Development Agreement and to get the views of leading European fusion experts on the state of fusion research as its future is being decided by the politicians. Our photo shows journalists taking part in a live computer link-up between Culham, Caderache in France and Padua in

Italy to demonstrate the principles of remote participation. This will allow a true international collaboration in the next machine being planned.



Colin Lyon retires

After a distinguished career spanning 40 years at Harwell, Colin Lyon has retired from UKAEA.

He joined the special processing group of Chemistry Division in 1961 to work on development of the reprocessing flowsheet for use in the B205 Magnox fuel reprocessing plant under construction at Windscale. Special processing group then diversified into non-nuclear R&D and Colin began what was to be almost 20 years' involvement with sol-gel and gel precipitation processes.

The fast reactor fuel work led to his involvement in the development of other aspects of reprocessing such as the production of plutonium oxide, known as plutonium finishing. Colin moved onto R&D projects associated with radioactive waste disposal.

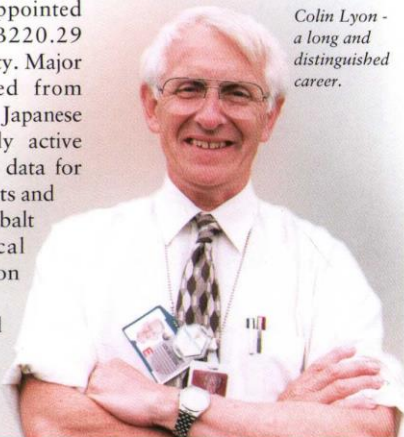
He was then appointed manager of the B220.29 remote handling facility. Major project areas ranged from corrosion studies for Japanese customers under fully active conditions to provide data for their reprocessing plants and replacement of the cobalt sources in a medical stereotactic irradiation unit for a hospital.

When UKAEA and AEAT separated Colin became UKAEA decommissioning

manager in B220. A major achievement was to decommission the pressurised suite areas of the building, which for 40 years had been used for plutonium operations. Some active laboratories were decommissioned and converted into office space.

In 1996 he took over as ATO holder and then facility manager of B220, part of which is let to AEAT. Within his work Colin dealt with various safety organisations and became secretary of the Chemistry Areas Safety Committee in the late 60s. He is also a member of the Harwell Criticality Committee and has taken up a variety of safety related posts including local incident controller in B220 for 30 years and, latterly, site incident officer and emergency controller.

Colin Lyon - a long and distinguished career.





Ann explains the site perimeter monitoring equipment with AEAT's Alan Briggs at the monitor.

Central TV broadcaster, Ann Dawson, presented the 'voice to camera' for a video production describing the work to restore the Southern Storage Area (SSA) at Harwell.

Eric Jenkins of the UKAEA Image Resources Centre produced the video which was filmed by Steve Makin of Swindon-based Laurelgrove. Nick Hance, Harwell's PR manager, wrote the storyboard and script. Filming took place

during some rare sunny weather in August.

The video will not be 'in the can' until final landscaping of the SSA is complete in the summer of 2002. The film shot so far includes excavations at the chemical and beryllium pits and removal and checking of wastes from the 18-acre site. This record of Harwell's largest remediation project also stresses the importance of keeping the local community fully informed.



While Ann Dawson learns the script ground monitoring takes place behind.

Fast talking academics!

A major upgrade to the high-speed academic and research computer network, known as JANET, has greatly improved the speed of communication between UCAS (Universities and Colleges Admissions Service) and its member institutions at the busiest time of the year.



Geoff McMullen, UKERNA's chief executive, experiences the immersive virtual environments laboratory in the department of computer science at University College London. Also pictured is Michael Wills MP, the then under secretary of state for learning and technology. The event at UCL was held to mark the launch of SuperJANET4, the latest upgrade to JANET, which is the education and research computer network developed and managed by UKERNA.

Following the completion of the £50 million SuperJANET project, the JANET network is able to deliver data at speeds of 2.5Gbit/s, which equates to 290 dictionaries per second! JANET is run by UKERNA (UK Education and Research Networking Association) based at the Harwell/Chilton campus.

The arrival of A level results prompted a period of intense communication between UCAS and the 340 universities and colleges that rely on the service to help them fill their courses each year.

UCAS has been offering a one-stop shop to students entering

higher education for many years. Web-based clearing services were introduced in 1996 and the recent upgrade to JANET provides the high speed links needed for up to the minute course availability details from academic institutions across the country.

Geoff McMullen, UKERNA's chief executive, comments "JANET's network capacity is now 16 times faster than it was prior to the upgrade, greatly improving the way we communicate. UCAS is just one of over 700 academic related institutions to benefit from the time and money that has been invested to upgrade JANET over the past 12 months."

AEAT Nuclear Consulting sold

Following AEA Technology's EGM in September the divestment of the nuclear consulting business is now complete and the 76 staff at Harwell and Culham are transferring to Serco Assurance, a division of Serco Limited.

Serco is an international provider of management services to government and industry with 32,500 employees worldwide. The acquisition provides a strong fit with Serco and will enable the business to expand its

science related activities.

The origins of AEAT's nuclear consulting business date back more than 40 years to the establishment of UKAEA's safety and reliability directorate. Today it provides safety and risk management services to ensure the safety

and efficiency of plant, processes and system. Last year the business had a turnover of £42m.

Under new managing director, Adrian Marks, Serco Assurance will operate predominantly in the UK nuclear industry continuing long-standing and

well-established associations with a number of leading operators in this specialist field including the MOD, British Nuclear Fuels, UK Nirex, and British Energy. Former head, Phil Holden, remains with AEA Technology.

The majority of the 480-strong workforce are employed at Risley with other sites throughout the UK including Culham and Harwell. All staff retain their employment terms and conditions.

HIBC travel update

Much attention has recently been given to the issue of transport, particularly how employees and visitors get to and from Harwell International Business Centre. A major travel survey of everyone who works on the campus was conducted earlier in the year. There was a really good response - 1,255 replies were received, a rate of over 30%.

Other work to establish travel patterns and preferences included analysis of postcode origins; traffic and car occupancy counts and a HarBUG survey of cyclists. When the results of all of these studies are analysed together the key findings are:

- On the survey day 75% of people who responded travelled in single occupancy cars and 25% of people who responded travelled by a mode other than single occupancy private car; 50% of respondents claim to have occasionally used a mode other than the private car.
- Depending on the survey, average car occupancy ranges between 1.11 persons per car and 1.15.
- Of the factors listed why people use their cars, personal preference is a major factor which suggests that achieving a significant shift away from car use at HIBC will not be easy.
- 11% of respondents travelled by bus on the survey day.
- In winter about 30-40 people cycle to work at HIBC most days; in summer this figure goes up to 60-70.
- For those who cycle the average cycling journey time is 35 minutes and the main origins are Didcot (20-25% of all cyclists), Abingdon and Wantage (in that order).

The feedback from all the research has been used to establish the main areas where further action is required. The key ideas for non-car improvements arising from the surveys are:

- Further improvement to secure cycle storage;
- Provision of shower facilities;
- Provision of good quality cycling routes off main roads, in particular the Didcot to Wantage route;
- Improve crossings for pedestrians (to/from bus stops) and cyclists (at the Winnaway and Icknield Way) on the A4185;
- Improvements to bus services to HIBC (ie greater frequency, reliability and more routes);
- Improve infrastructure in the bus station;
- Improved availability of discounted season tickets on public transport;
- Provision of better information on non-car alternatives.

All major organisations on the campus have endorsed the Harwell Transport Plan and will be working in partnership together to achieve the objectives that it sets out. The ideas above will be considered and prioritised in the next revision. Before Christmas a web-based campus information system will be launched, giving people on site easy access to a range of transport information.

In conclusion it's worth noting that the current Stagecoach bus service expires in December and is currently under review: use it or lose it!

Making us aware

October is Breast Cancer Awareness Month and Harwell-based charity, ABC (Against Breast Cancer) has launched its 2001 autumn campaign which has a Halloween theme. Why not celebrate Halloween by putting fun into fundraising to support ABC and its vital research work. Dr Anthony Leatham a local Oxfordshire man, heads up the ABC research team at University College Hospitals with units at the Churchill Hospital, and a number of other sites, concentrating on secondary spread after breast cancer. A fundraising pack with ideas for the Halloween campaign is available by calling ABC on **01235 820777** or email **info@aabc.org.uk**



Cyclists enjoyed free breakfasts at the Ridgeway Cafe on 'cycle to work day' last month. Other activities were arranged including a maintenance workshop and a group cycle ride to end the day, taking in a sociable drink at a Radley pub. Pictured here are (clockwise from top left) Chris Eley, Nick Beale, John Argyle (who cycled to work for the first time), Karen Burt, Addy Hardcastle and Jemma Howland.

All change on the buses

Following discussions over the last 18 months, West Berkshire County Council has started a new bus service (131) between Newbury and Didcot via Harwell. The service has been designed to tie in better with working hours at Harwell IBC and includes an 0808 morning arrival and 1721 afternoon departure. This is an additional service to the 34 / 234 operated by Stagecoach but please note that the 131 / 34 / 234 services may all be subject to changes after 29 October 2001 following further tender action by the county council. A new Harwell IBC Public Transport Guide will be produced when the changes are resolved.

eCHO BRIEF



New CCLRC chairman

Science minister, Lord Sainsbury, has announced the appointment of Professor Sir Graeme Davies (pictured) as chairman of the Council for the Central Laboratories of the Research Councils (CCLRC). Dr John Wood, CCLRC chief executive, said, "I am personally delighted about the appointment. I have known Sir Graeme for several years and have been impressed by his keen intellect coupled with a management style that is inclusive yet decisive. Sir Graeme is well known within higher education circles for his vision and diplomacy in taking universities forward in the past two decades. He will now bring these attributes to CCLRC as it approaches a period of considerable change."

particular issues. NRPB chairman, Sir Walter Bodmer, delivered the Stewart Report on 'Mobile Phones and Health' to the health minister, Yvette Cooper. In March this year the Advisory Group on Non-ionising Radiation (AGNIR) produced its report on 'ELF Electromagnetic Fields and the Risk of Cancer'. Both reports received a great deal of attention from government, industry, the news media and the public. They consolidate the reputation of NRPB for being able to produce independent, impartial and authoritative advice on important issues.

The NRPB annual report is available, free of charge from the NRPB information office, tel: 01235 822742 or email: information@mpb.org.uk

MRC Autumn seminars

An intriguing seminar entitled 'Targeting the cell cycle to mend a broken heart' takes place on 6 November. Presented by Dr Gavin Brooks from the School of Animal and Microbial Sciences, University of Reading, the lecture starts at 11.30am in the MRC lecture theatre. The full seminar programme can be found on the MRC website at <http://www.har.mrc.ac.uk/events/seminar.htm>

Annual report

In the annual report for its thirtieth anniversary year, NRPB shows how it caters for public and private sector needs for radiological protection. This ranges from high level advice to government departments to the provision of dosimetry services to hospitals and to industry. This year has been notable for the output of independent expert groups set up to give advice on par-

BBOWT events

Here are a few of the many interesting events being organised by the Berks, Berks and Oxon Wildlife Trust during October:

Wednesday 10 - AGM and Talk: Making a Wildlife Garden Pond

Meet: Wolvercote Village Hall, near Oxford, Oxon.
Time: 7:30pm. Book: 01865 377487.
An Oxford Meads Wildlife Group event. Barley straw for pond algal control on sale. **Admission: free.**

Sunday 14 - Fungus Foray and Fry-up

Meet: Shotover Country Park, Old Road, Headington, Oxon
Time: 10:30am. Book: 01865 715830.
An Oxford City Council Countryside Service event. **Admission: £1.**

Sunday 21 - Fungus Foray

Meet: Bomb site car park, Bury's Bank Road, near Newbury, Berks.
Time: 2:00pm. Book: 01635 40512.
Joint BBOWT-Newbury Field Club event.

Sunday 28 - Trees of Headington Hill Park

Meet: The Lodge, Headington Hill Park, London Road, Headington, Oxford, Oxon.
Time: 10:30am. Book: 01865 715830.
Organised by Oxford City Council Countryside Service. A tour of Headington Hill Park to enjoy the autumn colours. **Admission: Free.**

Sunday 28 - Apple Pressing and Walk

Meet: Ormandy Centre, Church Hill, White Waltham, near Maidenhead, Berks.
Time: 2:00pm - 4:00pm.
Book: Booking essential by 21st October 01628 824605.
Visit Waltham Place organic farm and gardens. **Admission: Adults £3.50, Accompanied children £2.**



One of the signs of autumn at Harwell, apart from cooler temperatures and the occasional gale, is the change to the colours of the trees before the leaves start to fall. Over just a few weeks in September everything is no longer green. Yellow, red and crimson colours appear with every shade in between.

The horse chestnuts in Dido Road are browning at the edges, the beeches beside Becquerel Avenue are beginning to turn gold, the acacias outside B150 will soon be bright yellow and the Persian Ironwoods (*Parrotia persica*) scattered about the site will soon be a magnificent deep red. What is going on?

Leaves get their colours from the green pigment they contain, which is called chlorophyll. This harnesses the energy from the sun for growth. But leaves also have additional pigments, yellow, red, purple or crimson which absorb light of different wavelengths. Before a

deciduous tree sheds its leaves the balance of the pigments changes and the result is often a brilliant burst of colour before the leaves fall.

Leaf fall is a complex operation. Minerals are reabsorbed from the leaves, but leaves are also used to get rid of toxic waste products. Just how this all happens depends on the climate. Frosts will hasten colouring and heavy rain will then speed up leaf fall. No two autumns are quite the same. If you know your autumn colours you can tell most of the tree species in the landscape at a glance - well almost!

OUT & ABOUT

Autumn concert

An autumn concert will be held on Saturday 20 October at 7.30pm at St Mary's & St Nicholas' Parish Church, Compton. It will be a concert of light music to include Joseph and the Amazing Technicolour Dreamcoat and songs from other shows. Proceeds go to the church fabric appeal. Tickets £5 from Helen Pearce on 01635 281570. For more information about Stevenston Choral Society, see website at www.stevenstonchoral.freeserve.co.uk.

Charity ball

There's still time to buy tickets for the annual charity ball which this year takes place on Friday 2 November in the Rutherford Appleton Laboratory restaurant. Guests will enjoy a three-course meal, and entertainment from the 'Unbelievables' band, a cabaret from the classically trained artist, Adua Bianchini, and Electroloom disco to round off the night! Five local charities will benefit from the evening. Tickets cost £26 and are available from Grahame Murphy at e-mail address grahame.murphy@aeat.co.uk. The charities that will benefit from this year's event are: Multiple Sclerosis, Reading; Helen House Hospice; Starlight (for chronic, critically or terminally ill children); Didcot Hospital Care Ward, and the Trindledown Farm Care Home (for elderly or abandoned pets).

Latin dance evening

You can take part in an exciting evening of Latin dancing and raise money at the same time. As part of the 2001 Didcot Arts Festival, Jerry Goff, mayor of Didcot who works for UKAEA at JET, is staging a Mayor's Charity Salsa Spectacular on Saturday 27 October at Didcot Civic Hall. Tickets cost £7.50 and include an introductory salsa/merengue workshop - for absolute beginners. Topping the bill will be a live appearance by Latin Fiesta, a London dance troupe. All proceeds will go to the mayor's chosen charities. Details are available on the web at <http://www.Didcot-Salsa.co.uk> or call 0709 235 6248.

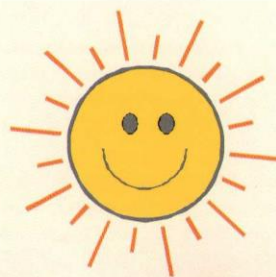
Fun with the sun

A scorching hot day heralded the arrival of 60 children and their families from all over Oxfordshire to RAL to take part in scientific activities with a central theme. 'Here comes the sun' was a collaboration between the laboratory and the Oxford Trust's Family Science programme.

It involved sun-based fun and education, including the opportunity to look at sunspots on the sun through special telescopes, constructing solar powered models - which were put to the test with a solar cell when completed, testing the virtues of sun cream in an experiment, and visiting the Soho satellite laboratory where a full-scale model of one of the instruments on Soho is kept in working condition.

Soho is a satellite whose 11 instruments all investigate different aspects of the sun, giving scientists an opportunity to study the physics surrounding our life-giving star and learn about its influence on earth.

The solar-powered models were a hit with young and old. "This event should have been advertised for ages 8 to 80!" exclaimed grandfather Percy Towler. "I've learnt so much this morning."



Youngsters see their merry-go-round spring to life when linked up to the power of the sun.

SAFETY Update

There were two reportable incidents at Harwell since the last issue of ECHO.

A UKAEA member of staff walked into an office and stumbled, twisting her foot. She was off work for more than three days, which made the event reportable under RIDDOR.

Operational checks on flasks were missed. This was due to uncertainty as to whether the checks were carried out as part of the flask maintenance.

Managing a Team Challenge Expedition

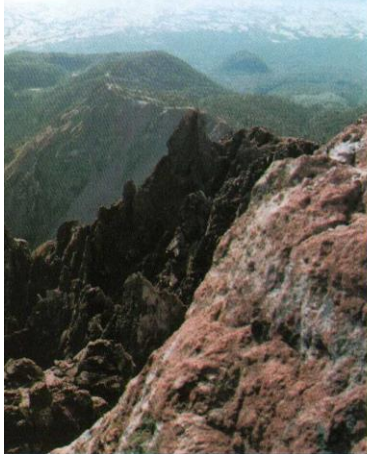
Rather than take it easy on a summer vacation, one Harwell member of staff chose to take on the ultimate responsibility. Ian Rodham, UKAEA commercial manager, was asked to lead an expedition of young people to Mexico on behalf of a company called World Challenge Expeditions.

To date the organisation has taken 10,000 young people on 'once in a lifetime experiences' that are both educational and character forming. With 15 years' experience of working with young people, mainly through the Duke of Edinburgh's Award, Ian was invited to be principal leader of a party of 15-16 year olds from St Edwards School, Oxford, assisted by two teachers.

"The young people plan and run their own expeditions to developing world countries but obviously need a qualified leader who can step in over issues of safety," says Ian. "Given the nature of the expedition it went very well although two of the party couldn't complete the volcano climb because of altitude sickness. We also made three hospital visits, but only for minor ailments!"

The expedition included a week spent in a boys orphanage where the party did heavy manual work. La Malinche is a 4,500m dormant volcano that was scaled during a 3-day climb. Six days were also spent trekking and camping in Copper Canyon.

A landscape of dormant and active volcanoes.



Ian (pictured second left) led the party of 11 boys and three girls.

"It was absolutely exhausting but very rewarding," he says. "The students that came home were quite different to the team that set out. The chal-

lenges they faced gave them confidence and a much more motivated attitude to life."

If you would like information on leading an expedition

with World Challenge Expeditions, please contact the leadership and development centre, on tel: 01298 767900.

24-hr 2CV race - the ultimate test for the epitome of French rural transport

by Mike Storey, UKAEA
Harwell operations manager



The race started after a downpour, the track was soaking and desperately slippery. Our strategy was to keep out of trouble. I started the race, a rolling start, and three bends later a car in front spun, blocking my way. About 20 minutes into the race I was ninth and about to lap another car when it too spun. As is normal with my car, it spun in sympathy and duly reversed into the other vehicle.

Undaunted, I valiantly carried on and after two hours, changed drivers while in eighth place. We were going well and around 10.30pm I had a second go. Racing in the dark is quite difficult; nobody dips their lights, it's pitch black and having your lights set up properly is critical; well that's my excuse. I didn't do as badly in the dark as I usually do and when I handed the car over at 12.45 we were in fourth place - unbelievable.

I went off to bed to work on my victory acceptance speech. An hour later there was a banging on the van door. Many adoring scantily clad females clamouring for my autograph, given my new

celebrity status? I rushed to the pits and there was my worst nightmare. Bonnet up and the car surrounded by a sea of electricians. The battery only had 10 volts because the alternator had been accidentally turned off by the driver - an act for which he was appropriately complimented!

Two hours later, more banging on the van door. "There's been a crash, it's a write-off, it's hanging off a forklift truck". The car had spun; another car had hit the front wheel and moulded it around the kingpin so it wouldn't move.

I got back into the car at around 7.30am in thirteenth place. It was sunny and getting hot, the brake fluid was starting

to boil and retardation was becoming interesting. You now needed a crowbar to move the steering wheel, an elastic leg for the brakes, but who cares. Into a hairpin I was knocked off once more by a demonic half-wit who decided he could brake from 70mph in around three feet.

The end of the race was an emotional experience as the bar had been shut for so long. We had completed a dizzy 942 laps and scraped our way to tenth place, which equals my best result in that race. On the charity side, it looks as if we raised approximately £1,000 for Sobell House Hospice. I'm quite stunned at the generosity of all that contributed.

eCHO

exchange

Adverts on this page are free to all staff at Culham, Harwell, JET, MRC, Nirex, NRPB and RAL. Please submit your ad (30 words maximum) to the editor, Valerie Judd, by e-mail: vjpr@globalnet.co.uk or by fax: 01865 331154. They can also be sent c/o Nick Hance, UKAEA, B521, Harwell, Didcot, Oxon OX11 0RA. For next copy deadline see back page.



All ads, apart from holiday accommodation, will be run for one month. Please resubmit any ads to be repeated. Telephone prefixes are: C Culham; H Harwell; JJET; M MRC; NI Nirex; N NRPB; and R Rutherford Appleton Laboratory.

FOR SALE

ACCOMMODATION

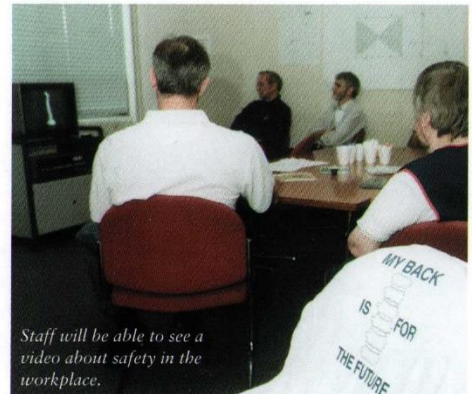
MOTORS

MISCELLANEOUS

HOLIDAY ACCOMMODATION

Health and safety plans underway

In preparation for the European Week for Safety and Health at Work (15-19 October), UKAEA Culham division will be running a publicity campaign emphasising the importance of safety in the workplace. There will be poster displays, free gifts and literature, and plans are underway to run a video show each lunchtime. In addition, a poster competition is currently being run for the children of employees (contractors and staff) on the Culham site. The theme for this year is 'accident prevention' and all entries will be displayed during the week itself. Following the success of last year's safety quiz a similar contest is being organised with prizes donated by UKAEA and other companies on site. Quiz papers will be available from mail collection points, the poster display points and from the safety group in J22. If you have suggestions or comments about the week please contact Trevor Hayes, C4135, or Lucie Cotmore, C4461.



Staff will be able to see a video about safety in the workplace.

RAF historians help Harwell

Ex-members of staff and a mechanic stationed at RAF Harwell during the war were among seventeen members of the Ridgeway Military & Aviation Preservation Society who visited the site in August.



The Ridgeway group on the roof of Harwell's former RAF Water Tower.

The RAF enthusiasts visited one of three underground petrol storage structures, which since the war served as a document archive for UKAEA. A bullet hole, made by an attacking German plane in 1940, was identified in one of the ventilation shafts. From there the group toured Hangar 8, the home of GLEEP, Europe's first experimental reactor. Members identified many original RAF fittings and fixtures in the former airmen's offices but occupied by nuclear physicists since 1946.

One of the 'finds' was an original slate blackboard used by airmen and scientists for 65 years.

The hangar is scheduled for eventual demolition but the visitors were able to put their mark on wartime radiators, a junction box and even an original 1937 coat hook! These will be handed over to the preservation group for permanent display in their museum at RAF Welford where they will be installed in an authentic replica setting.

Clark Colyer, UKAEA's manager responsible for ensuring the land on the Harwell site is suitable for future use, gave a presentation on the problems facing Harwell's decommissioning teams restoring land that had endured ten years of military occupation followed by half a century of scientific research. He said that the RAF's use of hard wearing



Three members of the group visited the Southern Storage Area at Harwell. The former RAF Munitions Storage Area is currently being cleaned up from its history of military and scientific use as a waste storage area. Two aircraft engines and other military equipment dug up in recent weeks were handed over to the group for their museum. The engines were a rotary seven-piston engine from an Anson and a rotary 14-piston engine that once powered an Albemarle bomber, both seeing service in the World War II. Don Summers, Brian Prior and Alan Bovingdon-Cox examine the Anson aircraft engine.

bricks, containing mildly radioactive granite, and radium coated instruments for night flying, contributed radioactivity to the site long before the atomic scientists moved in!

The preservation group and Harwell staff exchanged information about the use of particular parts of the RAF airfield during the war years. Malcolm

Crook, UKAEA's environmental records researcher, displayed a collection of photographs, plans and maps of wartime Harwell, which he had located from national archives.

Further information from: Don Summers, Ridgeway Military & Aviation Preservation Group, Grove, near Wantage. Tel: 01235 763756.

Scientific visions

All winning images can be seen at:
www.visions-of-science.co.uk

The award ceremony of the Novartis/Daily Telegraph's Visions of Science photograph competition took place at the Royal Society's HQ in London. Eric Jenkins, UKAEA's images archive manager and a Fellow of the British Institute of Professional Photography, was one of the judges who selected the winners from over 700 entries.

Sir Harry Kroto, presented the awards while Dr Adam Hart-Davis, BBC science presenter and one of the judges, gave the audience a commentary on the winning images. Of breathtaking beauty was an image of the DNA-helix constructed from repeating human forms revolving around the stream of life, which won the science concept category. It was created by Michael Dunning, a freelance photographer from Abingdon.

The never before seen image of plankton cells sloughing off their outer skin won the 'science in close up' category (front page). Markus Geisen of the Natural History Museum captured the picture of Mediterranean plankton using a scanning electron microscope. Dr Hart-Davis said, "The picture looks like a selection of chocolate biscuits in an ornamental bowl but, irrespective of what it actually was, it is a beautiful image."

This conceptual image represents the double helix (spiral) of the DNA molecule with a shaft of 'life' through the centre. DNA, which is the foundation of life, comprises our genes and determines our characteristics, from gender to eye colour.

Technical details: composite of computer graphics and photographs. Photographer Michael Dunning. By permission Novartis/Daily Telegraph Visions of Science.

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