

Letters TO THE EDITOR

To all CCLIRC Staff

In preparation for my retirement at the end of January, I have relinquished the post of Chairman of the CCLIRC Trade Union Side.

As from 30 November 2000 you have a new Chairman of the Trade Union Side and I wish him all the best in his new role as the leader of the Trade Unions of CCLIRC. The role requires a significant amount of diplomacy and tact and I am sure he will find the job rewarding and as challenging as I did.

I have held the post of Chairman of the Trade Union Side for the last ten years, seeing through the changes from SERC to EPSRC, through DRAL and finally CCLIRC. In all that time I was fortunate enough to have a Committee behind me that supported me in my role as spokesperson for all the Trade Unions. I wish to thank all the members of the committee, past and present, for their loyalty shown to me in what were, sometimes, very difficult times.

I especially would like to thank Joe Hoskins who has been my deputy for the whole period and has carried out that duty with great enthusiasm in an exemplary fashion. Joe, together with Ann Treedy in the Support Office, have made up a team which I have been proud to be a part of. I will no doubt miss the convivial working environment and camaraderie that went with the post. My thanks go also to Jim Cooper, our IPMS national officer, and his team at Bristol office who have

supported me as an IPMS member in the position of the Trade Union Side Chairman. Their help has enabled me to draw on the wealth of information held by IPMS in its specialists' fields and has also enabled me to utilise the vast amount of information available through the IPMS Research Department. Without this help my task would have been a difficult one.

Last, but by no means least, is my thanks to all CCLIRC Trade Union members who have supported the Trade Union Side over the past ten years. Without you, the members, we may never have achieved the things we did.

I hope to see you all before I retire.

Regards,

Bob Chandler

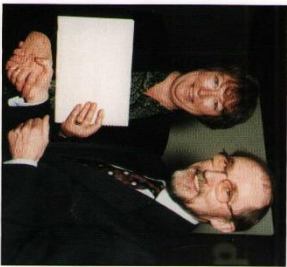
Dear Natalie

I would like to thank all my friends and colleagues at RAL for their most generous gifts on my recent retirement, and also for the lovely bouquet of flowers presented to my wife. Best wishes and goodbye to all those I was unable to see before I left.

Yours sincerely,

Paul Pennington

(0193C518)



Judy Lay

Dear all
Many thanks for the wonderful presents, the Ray Roberts' card and for the send off last month. I am overwhelmed by your generosity; the books will give many hours of pleasure - I needed a new Atlas to keep track of the country name changes!
It was good to see so many of you yesterday and I'm sorry I wasn't able to see everyone before I left. Best wishes to you all for 2001,

John Lipp

Dear Natalie
During our Carol service in December, we held a collection which raised £24.93. It will be given to the Faringdon Family Centre. Many thanks to everyone who gave at the service.

Articles, ideas and letters are very welcome!

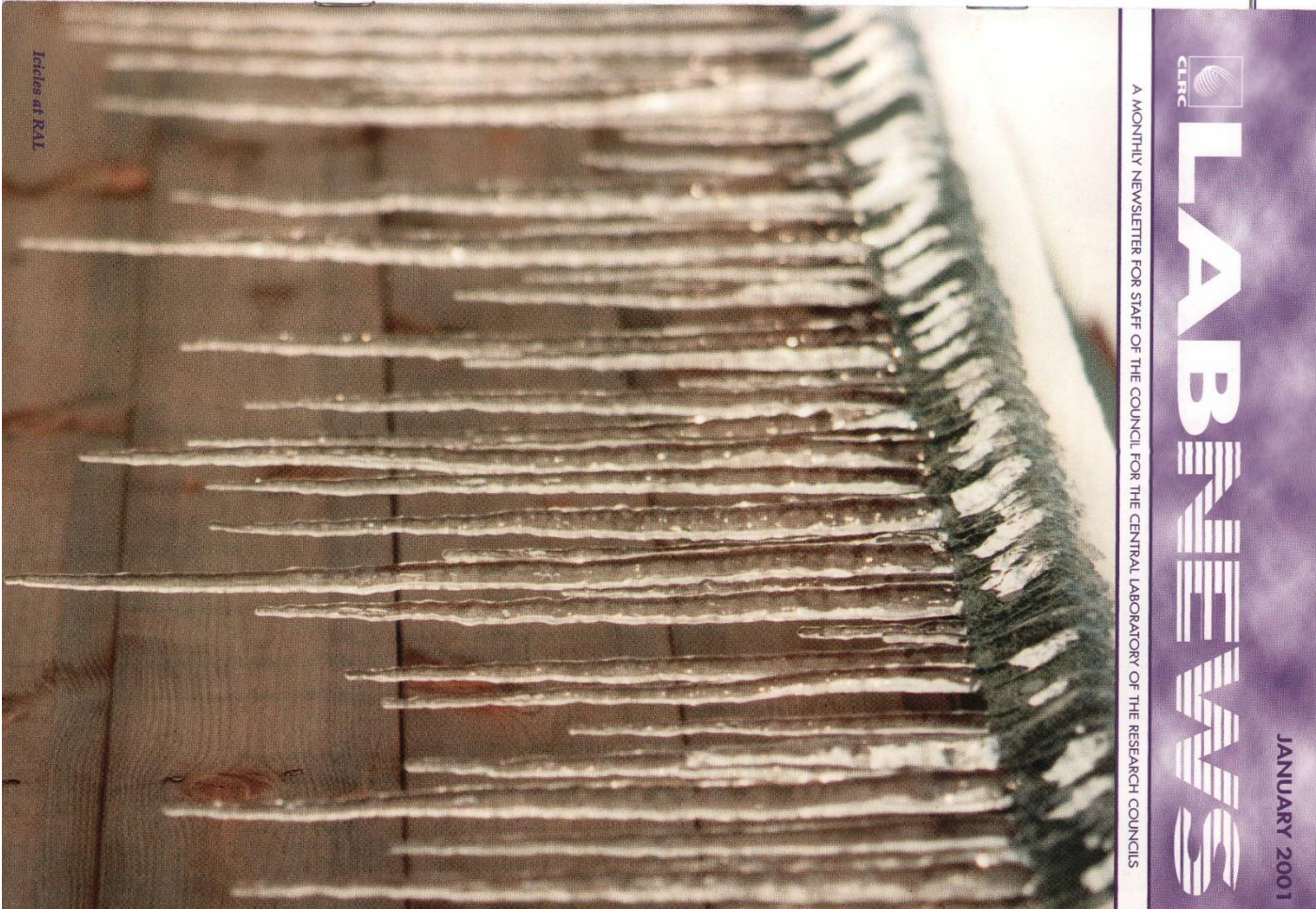
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Teles at RAL

Small is beautiful

Last year the Central Microstructure Facility took up the challenge to produce the world's smallest advert to advertise the launch of the new Guinness World Records website. It was so small that it fitted onto a bee's knee, with room to spare and the resulting photograph produced a great deal of publicity.

Dick Moody from CMF takes up the story...



Accepting a challenge like an image on a bee's knee produces interesting problems to resolve. The technical problems were relatively simple to solve, after all, making tiny things is what we're in the business to do. The real challenge was coping with the huge media interest that followed the website advertising campaign.

My first interview came within a couple of hours of the Guinness World Record story being released through the Press Association - all the publicity had been handled by the Guinness publicity consultants. Radio Oxford was the first and, as they know the facilities at the laboratory, they asked to use the ISDN link for the interview. Jacky Hutchinson came to my rescue, first arranging the link and secondly by giving me a crash course in radio techniques. During that Wednesday afternoon there were three radio interviews, two pre-recorded and one live, and each differed in the presentation and style. The Radio Oxford interview was pre-recorded and originally planned as a three-way interview with a Guinness spokesman but these had to be recorded separately. The interview was played during 'Drive Time' and the two segments merged together well. The live interview was for Radio Scotland during the afternoon news magazine

and followed a discussion on marine ecology and fishing. All the interviewees wanted to know how we did it, and what use it was if you needed a microscope to see it! The most formal was the Radio 5 Live interview. Here the format was rather question and answer rather than the light-hearted styles of the previous ones. The last interview was for SAIM, a South African Radio station. I had the option of pre-recording on the Friday or live from my home on Saturday morning and I chose to pre-record, which was useful as the introduction they were going to use described the laboratory as being part of a university, an error I was able to correct. The main messages were still important to get across. Jacky had said about five points was the maximum and they had to be short and punchy as radio listeners, especially those listening to drive-time programmes, only hear a few words in any item.

On the Thursday, several newspapers carried the story. The first article I saw was in the 'Metro', the free paper available to London underground commuters. Standing amidst the throng of people waiting for the Circle Line train somebody about four rows in front was reading the article which included a photograph

of me! In the same way as you recognise somebody across a crowd so this photograph stood out. My immediate reaction was to look around. Who else was reading about this? Did anyone recognise me? All totally naive. But it did make me wonder if a criminal whose face was in the news could travel through London unrecognised. For the rest of my journey that day I observed those people reading 'my' article in the 'Metro'.

The newspapers all printed pictures with incorrect captions, mixing 'Ted Blackford' and myself up, though the Guinness people confirmed that the captions were correct when released. Having survived these few days of media interest, with Jacky's help, I will await information on the media course to which she has had added my name. Most people have had technical training to enable them to provide the service they give but how many have had training in communication skills? Explaining science at its most basic level is not a simple task and I'm sure it can be improved with training.

Laser upgrade



Completion of the Petawatt target area building on time and within budget has been a key milestone in the project, according to CLF's Chris Edwards, project manager of the three-year Vulcan upgrade programme. With the building complete we can now begin the exciting task of installing the equipment needed to generate the super-intense Petawatt laser beam that is at the heart of the upgrade. The building seems spacious at the moment but that will change quickly once the large chambers are installed", he said. The largest of these is the pulse compression chamber - 15 metres long and 4 metres in diameter - scheduled for delivery in early summer. Weighing in at 75 tons, the chamber will house the one metre diameter diffraction gratings which will compress the output of the Vulcan laser to 0.5 ps prior to focussing in the target chamber.



News on the Vulcan upgrade will continue to feature in LabNews over the coming months.



Upgrade description

Over the course of the upgrade project, the output of Vulcan's ultra-short pulse beam will be increased to 500 J in a pulse of 300 fs duration giving a power on target of 1 Petawatt (10¹⁵ Watts). With the use of adaptive optics to correct wavefront errors, the Vulcan beam will be focused to a near diffraction limited focal spot, producing irradiance on target of 10²¹ W/cm². This level of performance will open up new regimes of plasma physics to the UK scientific user community and its international collaborators, including photon induced nuclear reactions, studies of relativistic effects in ultra high fields and new schemes for the acceleration of charged particles.

The most visible sign of the upgrade is the new target area on the east side of R1. The new building is about the same size as target areas east and west combined, though slightly taller and equipped with a 5 ton crane to enable the major pieces of equipment to be moved quickly and safely. The size of the building is set by the length of the vacuum spatial filter beam expander and relay and the size of the pulse compression system. The latter comprises a pair of diffraction gratings 92 cm in diameter with a separation of 13 m and housed in an ultra-clean vacuum chamber.

Genome exploitation

Essential work to further exploitation of the human genome will be advanced as a consequence of the signing of a collaborative agreement between Daresbury Laboratory and the Japanese RIKEN Harima Institute.

They will collaborate on research into the biomolecular and physical sciences and exchange knowledge through visits, joint symposia and mutual use of facilities.

One of the first areas to benefit could be structural genomics, which will be a key part of exploiting the knowledge of the human genome sequence revealed earlier this year. Each gene in the sequence contains the information needed to make a protein that performs an essential biological function. The sequencing of the human genome opens up the possibility of discovering which genes relate to which illnesses or biological functions.

X-rays from synchrotron light sources will be critical in revealing the structure of the proteins that these genes 'make', and so will open up the possibility of alleviating illnesses

caused by defects in our genetic make-up. The agreement was signed by Dr F. Sakaneh, Director of the RIKEN Harima Institute, and Hywel Price.



DARTS relaunches with a new image

DARTS, the SRD based Daresbury Analytical Research and Technology Service, has grown steadily since its launch in 1997. The customer base has remained relatively confined to major R&D invested companies, so to explore the potential for expanding the range of customers, a deliberate marketing strategy is being implemented to spread awareness of the service. This includes several concerted marketing activities including the first DARTS technology workshop held at Daresbury Laboratory in October. This was the platform for the launch of a new image for the brand and was attended by over 70 industrial scientists.

To follow this relaunch, a DARTS newsletter has been distributed to over 750 industrial contacts trumpeting the success of the day. Anyone wishing to receive a copy of the newsletter, DARTboard, should contact Stuart Eyles on ext. 3344.



Bullseye!

The new DARTS newsletter hits the mark for news and information!

No, this isn't a new magazine devoted to the arts, buty we're proud to announce the relaunch of our newsletter, DARTS - the Daresbury Analytical Research and Technology Service!

UNIQUE ACCESS TO THE SYNCHROTRON
With special access to the UK's synchrotron, DARTS can provide you with a leading edge and truly confidential materials in a commercial situation. We can respond to your needs, however complex or demanding, since we have an extensive range of techniques available to help you investigate materials - solid state and thin film systems of operation, we've worked with a wide range of industries and sample types.

IMPROVING YOUR LADDER MARKS
When currently conducting a range of activities designed to help people know the extent of the materials characterisation services DARTS can offer. For example, we had our newsletter is further evidence of our desire to communicate our range of techniques and scientific resources. So if any of



your colleagues are also interested in general chemistry, please pass this newsletter on to them, please call us if you want to learn more about DARTS and find out how we can help you. For more information, please contact us for further information or to request a copy of the newsletter. We can respond to your needs, however complex or demanding, since we have an extensive range of techniques available to help you investigate materials - solid state and thin film systems of operation, we've worked with a wide range of industries and sample types.

- DARTS hits the target

Chris Pickles
DARTS Marketing Manager

WANT TO KNOW THE SCORE ABOUT DARTS? THEN CONTACT US!
For more information about the materials characterisation services we offer, you can contact DARTS, email: info@dartscs.daresbury.ac.uk, or by phone on 01235 835911. You can also visit our website on <http://www.dartscs.daresbury.ac.uk>. The site contains details of numerous industrial applications case studies.



CLRC in the news

Following the flurry of media attention to Dick Moody's 'bee's knees' story before Christmas (see page 2) we had another flurry of excitement after the break with the lunar eclipse. This is an example of a story not generated by us, but which involved staff at CLRC as 'experts'. Helen Walker did interviews for three local radio stations over the ISDN line and Jeremy Curtis braved the roof of the Central TV studios in Abingdon to talk about Mir, and preview the lunar eclipse. The ISDN line was used for two other radio interviews that week. Alan Penny was interviewed by London Radio Services about his research to find planets round other stars. The LRS is an international producer and syndicator of UK news and programmes, serving international broadcasters in 120 countries. Richard Stephenson talked on BBC Radio Oxford about a new body scanner which has been installed and is being calibrated at the Royal Marsden Hospital in London, which is a small team from RAL has been helping to develop. This is a particularly interesting story as it is a spin off from particle physics research.

Media attention at Daresbury has been quite quiet over the Christmas period but, soon after everyone was back at work, the Financial Times printed what appeared to be a leak from the Byers report, of which we are all awaiting news. This was then picked up, as is often the case, by local papers (initially the Liverpool Daily Post).

Particle Physics for A level teachers

Christmas term drew to a close for 24 A level Physics teachers with a one-day Particle Physics conference at DL. The conference was organised by the Merseyside branch of the Institute of Physics and offered local teachers the chance to catch up with developments in particle physics and high energy astronomy. Dr David Milshead of Liverpool University opened the morning session with an overview of particle physics and was followed by his colleague, Dr John Fry, with time for Liverpool John Moores continued with the first three minutes and beyond. The teachers were also able to discover what resources are available for schools from IPPARC.

The afternoon offered sessions on particle physics, high energy astronomy, how to use visits to enhance the curriculum, and research undertaken at DL. The visit ended with a tour of site and visit to the Science Centre. Many thanks to David Holder, Elizabeth Duke, Steve Collins and Tony Buckley for helping to make the conference a success.

Honoured

Professor Richard Nelmes was awarded an OBE in the New Year Honours. Richard leads groups from the University of Edinburgh based full time at both ISIS and the SRS. Over the past decade he and his colleagues have developed many new techniques and facilities for studying crystal structures and transitions at very high pressures, using diffraction methods with neutron and synchrotron beams. They have a particular interest in simple molecular materials including ice and ammonia (knowledge about these at very high pressures is of great importance to the modelling of the outer planets and their satellites - such as Saturn's moon, Titan) and in semiconductors and elemental metals.

In a collaboration with the University of Paris VI, more than an order of magnitude increase has been achieved in the pressure range accessible for neutron diffraction since 1990, breaking through the limits of the previous 20 years. And a series of research grants from EPSRC has funded the construction and development of a dedicated high-pressure station at ISIS, making it the leading facility for high-pressure neutron diffraction. In the early 90s the Edinburgh team at the SRS developed the use of the image-plate detector for high-pressure X-ray powder diffraction - first pioneered in Japan - and devised the techniques now used worldwide for detailed structural studies at very high pressures.



Most recently, Richard has led a successful £7m bid to the Joint Infrastructure Fund to set up a Centre for Science at Extreme Conditions (CSEC) based in Edinburgh. This will provide the extensive laboratory-based facilities needed to make the most of the opportunities provided by modern neutron and synchrotron sources, and will be particularly effective when diamond is in operation. CSEC will bring together neutron and synchrotron facility users in five departments in Edinburgh to tackle a wide range of extreme conditions science including research into novel materials made at high pressures and temperatures, the use of pressure to tune and optimise applied electronic properties, materials and processes for extreme conditions engineering, Earth and planetary science, high-pressure biology and fundamental condensed-matter physics. This unique partnership between a university-based Centre and the central facilities should make the UK a world leader in the field.

In addition to Richard Nelmes, Professor Wilson Sibbert, a member of our Council and Professor of Physics and Director of Research at the University of St Andrews, received a CBE for services to science. Professor Erwin Gahnbauer, an international physicist from Warrington who worked at DL from 1965 to 1974 was awarded an OBE. Congratulations to them all.

HRPD upgrade offers more opportunities for scientists

A project to upgrade one of the main detector banks on the HRPD instrument at ISIS has just been successfully completed. The £300k project was funded through the multi-user project initiative by EPSRC, with support from the ISIS crystallography user community. Beginning in September 1999, the project has been completed well ahead of schedule and offers researchers still more exciting opportunities for carrying out structural research on HRPD.

HRPD - the High Resolution Powder Diffractometer - is the highest resolution neutron powder diffractometer in the world. One of the original instrument suite back when ISIS first began operating in 1984, the unique situation of HRPD, almost 100 m from the ISIS target at the end of a neutron guide, lends it unprecedented resolution in the main backscattering detector bank. This very high resolution



Jeremy Moor installing one of 14 neutron detectors in HRPD (00RC523)



A view of one half of the new detector array prior to installation and assembly of the shielding around the detectors

(λ/d resolution of $\sim 4 \times 10^4$, which is the best part of an order of magnitude better than available elsewhere) gives it unique power in the study of subtle structural details, for example in phase transitions. In consequence HRPD has been involved in some of the highest profile science undertaken on ISIS over the years, including high T_c superconductors and buckyballs. It is no exaggeration to say that HRPD has expanded the technique of powder

diffraction in novel directions. Mindful of this, and in order to keep the instrument in the forefront of structural science, the main detector bank, the backscattering bank, was upgraded several years ago. The capabilities of the instrument have now been extended further by the latest upgrade, involving the installation and technical commissioning of new, much larger detector arrays in the other main detector bank at 490° . The enhancement provides an order-of-magnitude gain in count rate over the

previous 90° bank and continues to provide the highest resolution at 90° available on any neutron powder diffractometer in the world.

Initial commissioning shows the resolution and count-rate to be up to specification, and work is progressing rapidly on both further commissioning and on the integration of the new bank into the science programme. The three main benefits of the upgrade are:

- The possibility for multi-histogram refinement of high-resolution count-rate matched data from both backscattering and 90° banks. This enables scientists to get more information out of their data, and makes that information more reliable. This is very important given some of the subtle structural changes examined by HRPD.

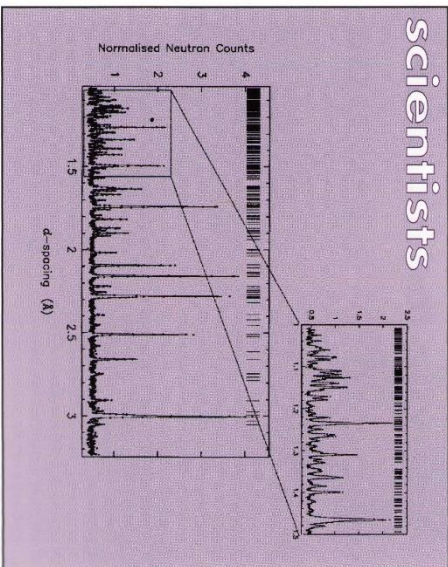
- Access to new areas of science - including the important areas of magnetism and large unit cell structures. The latter materials include the topical area of loaded zeolite catalysts, where the main effects of including small molecules in the zeolite cages are often seen in the diffraction pattern at just the positions the new bank is best at observing.

- The improved use of specialised sample environments, for example high pressure cells, where the large provision at 90° is especially beneficial.

There is also an improvement in overall instrument efficiency as a result of the upgrade, as the new bank now captures an important region of the diffraction pattern more effectively.

As well as the excellent technical performance, the first scientific results from the new detector bank are also very impressive, with initial measurements on the behaviour of the soft organic material *p*-dichlorobenzene under high pressure conditions providing high quality data (figure) which are already refuting previous claims in the scientific literature.

Richard Ibberson and Clive Wilson



Neutron powder diffraction data from commissioning studies on *p*-dichlorobenzene. The new detectors enable high-quality data to be recorded rapidly while using specialised sample environment equipment - in this case holding the sample at a temperature of 100 K (-173 °C) and under 5 kbar pressure

Cross reference solution

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

B	W	J	Q	N	F	Y	M	D	O	T	H	Z
A	S	L	C	P	U	X	E	R	K	G	V	I

A day in the life of Margaret Notley

By the time I joined Margaret she had already finished those morning tasks that we all have - looking at emails, opening the post and reviewing the day's to-do list. For Margaret every day is busy and purposeful but each day is different. In the Central Laser Facility where she works there is no such thing as a standard or routine day!

Margaret joined RAL in June 1997 having studied Physics at Imperial College. The experimental aspects of physics really appealed to her so after graduating she decided to look for a physics job. It turns out there aren't too many around but interviews at RAL and a couple of other similar institutions convinced Margaret that she really wanted to work at RAL, and she has been learning and building her considerable expertise in the target areas of Vulcan ever since. She is now in charge of target area east, looking after the experiment planning, diagnostics set-up and development, beam alignment

and referencing and the supervision and training of a student.

Later on in the morning everyone was awaiting a visit from Professor Brian Eyre. An important part of Margaret's job is to show the many visitors - undergraduates, A-level students, interested outside clubs, societies and VIPs - around the target area and explain how it is used. This she does well with good humour, readily adapting her talk to the level of the visitors.

Planning was also starting for a two-week 'training period' for new users. The introductory course is designed to give young researchers a good grounding in aspects of target area operations and in laser safety, to make their stay in CLF safe, more productive and save valuable time.

By the time I caught up with Margaret again, the introductory course was nearly over. At the end of this, the second week, Margaret was under pressure as final preparations were made for a 'shot'. There was an air of anticipation as final checks were made. Some of the eight PhD students in the group were preparing the target; others checked alignment and vacuum systems and the computer set-up. But there was a problem - no vacuum - an O ring which was distorted and couldn't seal the aperture. It was an opportunity for the students to look and learn.

The students were looking forward to coming back to conduct real experiments. One student I spoke to was part of a group from York University planning to simulate supernovae events, an exciting use of Vulcan.

As I left I noticed there is no clock in the target area. Life in lasers is obviously geared to Laser Time rather than GMT!



Janet Hughton

(00PRC3238A)

During the Administration and Finance Christmas lunch, Richard Lawrence - Wilson read out a crumpled sheet of paper in a dark corner of the Directorate. Can you solve it?

My first is in Personnel but not in Human Resources

My second's in cars and also in horses

My third is in Oracle but not in EAMIS

My fourth's not in Oracle but IS in EAMIS.

Important to transport my next four can be

And on the way home their buildings we'll see

My last is in the library and also photo-repo

If you've worked out the first word, concurring I veto.

Next starts with a letter extracted from jolly

And since it's near Christmas the next one's in Holly.

The third's not in Safety but is in Health

And the fourth is in money but not in wealth.

There's a gap here and it begins again

Initially this letter rhymes with trouble

And its two successors are also a double

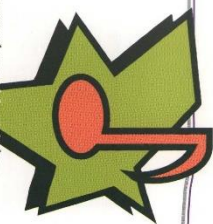
To finish the puzzle's a doddle to do

The fourth letter's...

and there the message ends, except that on the other side of the paper it says

The brilliant amongst you may already know the name of our possible next CEO.

Musical Squares



Last year's Christmas lectures at DL were aimed at families with young children. As usual the performances were very popular. The lecturers, Mike and Wendy Ginyas, are retired academics who spend the winter months performing various versions of Musical Squares around the world. Prior to visiting DL they had given their lecture in Poland for the British Council and at CERF as this year's UK's representatives at 'Physics on Stage'.

The fun lecture explored many

aspects of sound from ultra-sound to ultra-sound, its medical and industrial uses and its importance to both humans and animals. It can even be used as a lie-detection test in certain circumstances. This provoked great amusement amongst the school audiences when demonstrated using teachers as guinea pigs! Amazingly it can predict fairly accurately the age of people - the higher pitched sounds that we can hear start to reduce by the age of ten.

The lectures ended with a visit to the Science Centre with mince pies and wine.



(D100119/22)

Learning and Development

Learning and development events at RAL

For more information or to reserve a place please contact Marcia Griffith, RAL Learning and Development Manager on ext. 5783 or Steve Fiddling, DL Learning & Development Manager on ext. 3720

January

22 - 23 MS Excel 97 for new users (DL)

24 - 25 Presentation skills (RAL)

A one-day course with half a day further coaching. This course will provide you with the confidence and skills to improve your presentation whether one to one, in meetings or in a formal presentation situation.

25 Cooling and air conditioning (DL)

- an overview

7 - 8 Preparation for retirement (DL)

February

8 Practical air conditioning equipment and fault finding (DL)

13 Time management (RAL)

One day workshop to help you make the most of your time.

Reviewing and evaluating learning (RAL)

23 January R12 Training Room 10am-12pm

29 January R12 Training Room 10am-12pm and 2pm - 4pm

31 January R12 Training Room 2pm - 4pm

Objectives:

- Recall the main learning points from learning plans and learning styles workshop
- Explain what evaluation is and why it is important

Write SMART learning objectives

- Explain the dos and don'ts of conducting a learning review
- Explain CLRC's and home department's processes for evaluating learning activities

Giving feedback and assessing performance (RAL)

6 February 9.30am - 12.30pm and 1.30pm - 4.30pm

Objectives:

- To understand what feedback is and the benefits it can bring

- To learn tips and techniques for giving and receiving feedback effectively
- To understand the benefits of the APR joint assessment
- To learn some tips and techniques for getting the best from the process

Preparing a job plan and agreeing objectives (RAL)

20 February 9.30am - 12.30pm and 1.30pm - 4.30pm

Objectives:

- To define what is meant by job purpose, outputs and objectives - specifically:
- To be clear about the difference between them
- To understand how they relate to each other

To identify the benefits to the individual and CLRC of defining job purpose, outputs and objectives

To be able to recognise and agree SMART objectives

Developing learning plans and understanding learning styles (DL)

24 January 10am - 12pm and 2pm - 4pm

Objectives:

- Explain why developing staff is a key part of a manager's role
- Identify the competencies needed to be effective in this role
- Assess their own current levels of competence and areas for improvement
- Identify at least one new idea or technique to try out when drawing up learning plans with their staff with the aim of improving the effectiveness of the learning which follows

Learning Lunches

Learning Lunches are two-hour sessions held over the lunchtime period starting at noon. Light refreshments, including sandwiches are provided, but feel free to bring along your own lunch if you would prefer! They are open to anyone who feels they may find the topics of interest. The sessions are delivered

in an informal, interactive way and are designed to be both informative and enjoyable.

If you would like more information or to reserve a place please contact the Learning and Development team on ext. 5783 or ext. 3720.

January

25 Equal opportunities in CLRC (RAL)

February

4 Healthy living (DL)

7 A voyage through FAMIS (RAL)

15 Equal opportunities in CLRC (DL)

28 Risk management (RAL)

March

1 A voyage through FAMIS (DL)

14 Nutrition and health (RAL)

15 Risk management (DL)

28 Cash flow (CLRC) (RAL)

29 Continual development (DL)

April

4 Work/life balance (RAL)

12 Cash flow (DL)

18 Complexities of the budget system (RAL)

26 Work/life balance (DL)

May

2 Motivation (RAL)

16 Communicating with your team (RAL)

10 Complexities of the budget system (DL)

24 Motivation (DL)

June

7 Communicating with your team (DL)

13 Emotional intelligence (RAL)

21 Emotional intelligence (DL)

27 Interview skills for the interviewee (RAL)

June

5 Interview skills for the interviewee (DL)

NB: DL dates are provisional - see local notices for confirmation.



Retirements

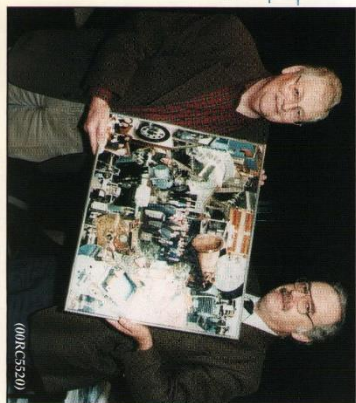
Paul Pennington

Paul started working at RAL in 1964 as a skilled craftsman on the NIMROD accelerator. In particular he worked on the plunging magnets, target mechanisms, refrigerators and cooling systems before moving into the design office as a draughtsman in 1966.

Clearly the move to design had been a good one and he was promoted in 1971. In 1972 Paul started work on the NIMROD upgrade - a new 70 MeV linac. This was never used on NIMROD but instead became the injector for ISIS and Paul worked on much of the accelerator, notably the support structure and the cavities. He must have done it right too as the linac is still there working successfully 28 years later!

After working on NIMROD, Paul moved to Technology in 1976 where his projects included helium systems, a gravity wave detector and the ISAMS project. He continued working in Technology until 1998

when he was 'poached' by ISIS to work on neutron choppers. Tim Broome said of Paul at his presentation "You have made an outstanding contribution to the success of ISIS and we all thank you for that. ISIS's choppers set the world standard for choppers on neutron sources. They are notoriously difficult to design, maintain and operate and are also an essential component of many neutron beam lines. The success of the ISIS instruments is very dependent on the superb work you have done over many years on the design and construction of the choppers and you should be very proud of your achievements".



(00RCS320)

In retirement Paul will have more time to pursue his favourite pastime of fly fishing for trout and inventing and making his own flies. He was presented with two sculptures entitled 'the noble trout' and 'the fly fisher', a set of whiskey glasses, a montage of photos depicting his work and a card. His wife, Pam, was presented with a bouquet of flowers.

New Director for Engineering

Ron Lawes took over as Director, Engineering on 1 January. He told me "I am pleased to take up the duties of Director, Engineering. I have worked at RAL all my professional life and seen both Directorate and Rutherford produce some of the world's most impressive engineering. Occasionally, I have managed to do a little myself and so will be bringing a few 'microengineering' skills to the Department".

"I know many of the people involved and their past achievements. I look forward to meeting even more of CLRC's bright engineers and helping them to reach new heights", he said.

Your ISS Management Board member

Our pensions are administered by the Joint Superannuation Scheme (JSS). There are regular checks that apply to us apart from those that relate to the law, scheme rules and audit requirements. We have to report twice a year to the Research Councils Pension Scheme Management Board who ensure that the schemes are administered properly and that, strategically, JSS is doing what the employers want. Each research council has a representative on the Board and it is the appeal body for disputes that cannot be resolved through the Internal Dispute Resolution procedure. The



Board members are Bob Price (BBRSRC), Paul Hartley (CCLRC), John Philcox (EPSRC), Mary Coole (ESRC), Steve Allsopp (NERC) and John Parsons (PPARC).

Rec Soc exhibition

On Friday 9 February between noon and 2pm in the R22 coffee lounge, representatives from a selection of the Rec Soc's clubs and activities will be available to answer any questions you may have and fine your enthusiasm. So, why not come along and see the wide range of activities that can be enjoyed? There will also be a free prize draw.