



NOTICEBOARD

CLRC Notices

MKI control system support spares required
Standard TTL devices have become very difficult to obtain and many are now obsolete. These devices are still used in the SIS control system and are urgently required. If you have any of the following TTL integrated circuits which you no longer use, please send them to Peter Wright, B30, DL:

- 7400 7402 7404 7406 7407 7408 7410
- 7432 7438 7442 7474 7490 74121 74123
- 74154 74175 74193
- Obsolete: 7401 7413 7428 7430 7437 7440 7475
- 7485 7493 74155

RAL Notices

RAL Lectures
All lectures are held in the Prickeance Lecture Theatre at 3pm.

29 January
The role of all Medical Royal Colleges in relation to the Government's Policy on health
Dame Fiona Caldicott

19 February
Mathematical clues to nature's secrets
Prof Ian Stewart, Warwick University

Harwell film society

Films are shown on alternate Tuesdays throughout the season in the Cockcroft Hall at 7.45pm. Screenings are open to non-members at £3 per film:

- 20 January Antonia's line
- 3 February Emma
- 17 February The people vs. Larry Flynt

To let from beginning of Jan 1998, fully furnished 1 bedroom flat in Didcot, £360 pcm plus bills.
Telephone 01235 815204 for further details.

Robert Hack

Robert Hack died on 22 December. He came to Rutherford Laboratory in 1964, having previously worked at Dounreay and Harwell. He was in charge of health physics, first on the 50 MeV Proton Linear Accelerator, and later on Nimrod. He was the first Radiation Protection Adviser to RAL under the 1985 Ionising Radiations Regulations, and also advised on occupational hygiene, retiring due to ill-health in 1991. We send our condolences to his wife, Hazel.

DL Notices

Wednesday Wanderers

Whitegate Way and Petrypool
Seven miles of easy winter walking around Whitegate with a lunch stop at the Plough Inn. Returning via the village centre, New Pool and Petrypool.

When: Wednesday 4 February

Start: 11am
Maps: Landranger sheet 118, Pathfinder 258 and 775
Meet: Park along the verge of Kennel Lane, Sandiway (map reference: 602704)

Daresbury retirees

The first quarterly rendezvous is on 20 January for lunch at the Stratton Fox between 12 noon and 2pm. The pub can be found off Spark Hall Close from the roundabout at J10, M56. All retirees and spouses welcome.

Jigsaw Link Club

Jigsaw Link Club has opened its doors and we are now taking bookings for the February half-term holidays (16-20 February). The facility, which operates from Moore Rugby Club, is supported by Normande and registered by Social Services. It offers quality before-school and after-school childcare facilities for children aged 4-12, with transport provided to and from the Moore and Daresbury C.E. Schools.

The holiday club will run during every school holiday between 8am and 6pm at a cost of £13 per day or £7.50 per half day. If anyone would like a holiday booking form or further information about Jigsaw facilities please contact Sue Brierley-Jones, (A29) ext. 3359.

LABNEWS

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High pressure brings outstanding reward

Dr Malcolm McMahon, a Royal Society Research Fellow from the University of Liverpool who has worked at Daresbury Laboratory since 1991, has been presented with an award for his outstanding contribution to synchrotron radiation science at a conference in Grenoble, France.

To celebrate fifty years of synchrotron radiation, the European Synchrotron Radiation Society (ESRS) decided to award the 1500 ecu (about £1000) prize to a scientist under the age of 35 years who has carried out significant research in Europe using synchrotron radiation.

Malcolm's research involving the development of a technique allowing accurate measurements to be taken of small samples of material in high pressure experiments to determine their crystal structure. The basic method first developed in Japan in the late 1980s, involves using very intense monochromatic synchrotron radiation instead of a laboratory-based X-ray source and using a very sensitive image plate rather than traditional X-ray film. The original Japanese

techniques were substantially enhanced at Daresbury by Richard Nemes' group in which Dr McMahon worked from the start of the project in 1990 until his move to Liverpool in 1996. The result of their efforts has been a world-leading facility at Daresbury for high-pressure science.

Curious things happen to materials under high pressure. For example, at atmospheric pressure iron is magnetic and hydrogen is a gas. However, iron loses its magnetic properties at pressures of 100 kbars (100,000 times atmospheric pressure) and it is thought that at extremely high pressures hydrogen is a metallic solid. The behaviour of these materials at normal conditions tells us nothing about how they behave in the enormous pressures and temperatures at the centre of the Earth and other planets. What is the crystal structure of iron under these conditions? At what temperature does it melt? How well does it conduct electricity? The image plate technique developed by Malcolm McMahon and his colleagues is allowing his research group and others to start to determine accurate crystal structures at high pressure - though the temperatures and



(DL97/148/5)

pressures achieved at Daresbury are still a long way from conditions at the centre of the Earth!
Malcolm was understandably delighted to be awarded this prestigious prize. "It's wonderful to be awarded a prize for work that I enjoy doing", he commented, but stressed that this was team effort. "A great deal of credit has to go to my colleagues, especially Richard Nemes, David Allen and Scott Belmonte from Edinburgh University, and to the staff at the Daresbury Laboratory".

LABNEWS is published by Press and Public Relations and printed by Photographic & Reprographic Services, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon OX11 0QX. Tel: (01235) 446865 Fax: (01235) 446665
Daresbury Laboratory, Denbigh Way WARRINGTON, Cheshire WA5 4AD. Tel: (01925) 60222 Fax: (01925) 60319

Editor: Nadine Harding (Tel: 841 ext. 5888, e-mail: n.harding@pl.ac.uk)
Correspondent: Tony Buckley (Tel: DL ext. 3072, e-mail: a.buckley@pl.ac.uk)
Articles, Ideas and Letters are very welcome!
Articles to the Editor or Correspondent by 15th of the month.



MAPS tank arrives at ISIS

21 November was an exciting moment for the team of scientists and engineers working on the MAPS project.

The 22 ton detector tank of the new spectrometer has arrived at the ISIS facility at RAL. It is the biggest detector tank built world wide for a neutron scattering instrument with a flight path of six metres from the sample position to the detectors and accommodating a huge detector area of 16 m².

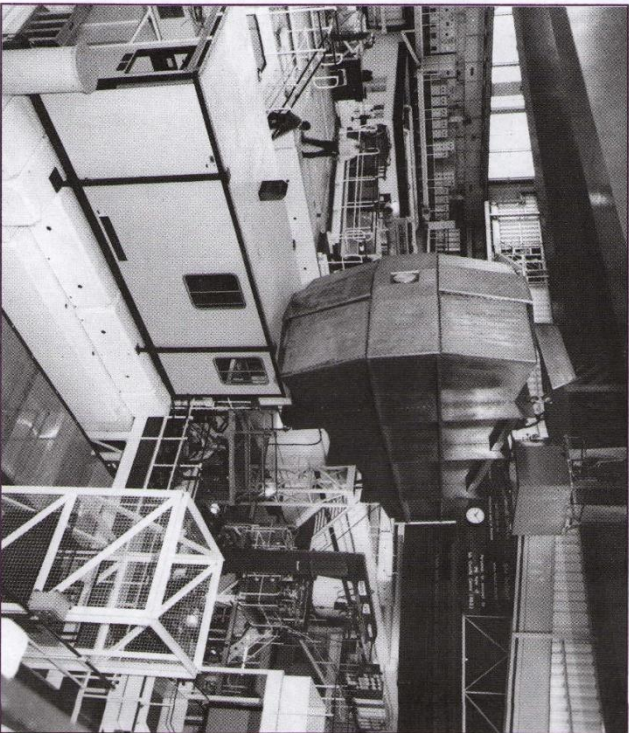
We could hear a number of bets being placed during the transfer of the tank from the lorry to its final position in the ISIS experimental hall. Would the tank fit through the door? Would it clear the shielding of the proton beam line? Would it fit between the ISIS

target station and the Karmen bunker? But with delicate and skilled manoeuvring all went well and the tank is now in its location, on the south side of the hall, where it will be lined with neutron absorbing material and later connected to the other instrument components. First neutrons are expected later this year.

The design and construction of the MAPS spectrometer is a joint project between the Universities of Warwick and Oxford and ISIS, funded as a collaborative research project by EPSRC. MAPS has also received additional funding from the USA and Japan.

This new flagship instrument for ISIS is the world's first dedicated chopper spectrometer for the studies of excitations in single crystals. MAPS will provide unique possibilities for scientists to measure the vibrations of atoms in crystals and the movements of spins in magnetic materials, important fundamental research which underpins the application and optimisation of modern materials in everyday life.

Ulrich Steigenthaler



The MAPS detector tank on its passage through the ISIS Experimental Hall (97RC4603)

High Power Laser Users annual meeting

About ten years ago, a small number of UK theoretical physicists associated with the work at the Central Laser Facility (CLF) met at the Cosner's House to discuss and coordinate their work. Every year since then, the meeting has grown as it attracted experimental physicists and laser scientists working on high power lasers.

At the 1997 meeting in December, about seventy people from a number of universities, as well as CLRC, EPSRC and AWE, took part in another tremendously successful gathering. More than half of the participants,

including a large number of PhD students and RAs, gave scientific talks of a high standard. Henry Hutchinson, Director of the Central Laser Facility, started the proceedings by welcoming the user community and describing proposed new developments at the CLF which would enhance the scientific opportunities available to the academic community.

A series of talks dealt with X-ray lasers and their applications and it was explained that operation in the 'water window' should be achieved in the near future. The topic of harmonic generation from solid targets and gases, as well as clusters, was well

covered both from the theoretical and experimental viewpoints. The rest of the talks dealt with newly emerging areas including the fast ignitor, fast particles from laser-target interaction, spectroscopy of high energy density plasmas and new laser systems.

Feedback from the participants confirmed that this was an important opportunity for them both to participate and to be informed about the latest developments in a rapidly evolving scientific field.

Abduslem Dhanou

CCLRC Open Days 1998

RAL will host the 1998 CCLRC Open Days from Thursday 26 June to Friday 27 July 1998

The theme will be 'CCLRC - Partnership at the leading edge'. The aim will be to demonstrate to a wide range of actual and potential stakeholders and the wider public the achievements and capabilities of CCLRC in research and development. There will be three main strands: marketing, by which I mean exposing the capabilities of CCLRC to users and customers from universities and industry; accountability, showing the public at large what CCLRC is doing; and increasing public understanding of science and technology. The Days are planned as follows:

- Fri 26 June am Press, invited visitors and school visits
- Fri 26 June pm Tours and evening reception for VIPs
- Sat 27 June Public day
- Sun 28 June Staff, friends and family day
- Mon 29 June Industry day (including evening events)

The 30 June

Invited visitors and school visits

Wed 1 July

Invited visitors and school visits

Thu 2 July

Additional school visit day (if demand is very high)

It is important that CCLRC shows its wide ranging programme to its best advantage and the Open Days provide an excellent opportunity to do this. The LMB has appointed a Steering Committee, chaired by Andrew Krutzfeld, and with the following representative membership:

- Jeremy Curtis (SSD)
- Susan Hilton (DCL)
- Sonia Moon (Comm)
- Tony Buckley (ADN)
- Gavin Williams (ISIS)
- Robert Sekulin (PPD)
- Garth Noyes (TECH)
- Anna Orłowska (ASD)
- Alison Bowen (Lasers)
- Natalie Bealing (Secretary)

Please give these people your full support and, if you have a good idea on how to present your work, let them know.

Further news on the preparations for Open Days will be issued via Labnews via WWW pages and through more detailed circulars. The departmental representatives have the task of assembling lists of invites by the end of January, around 400 nominations from each department are required so please respond to their requests as fully as you can. In 1998, every CCLRC user and contact must receive an invitation; it is the opportunity for users to see what is going on in areas other than the ones with which they are familiar.

The net must be cast as widely as possible, particularly in the industrial sector.

Paul R Williams



Training update

Part of Central Training Section's remit is to ensure individual training records are complete so that they can monitor training received and assist in planning the future programme. If you are attending or organising an event that could be classed as training please ensure that they are aware of it. Please remember to contact your local Training Section if you need any help or advice on training.

Forthcoming events

LETPRO
21-23 Jan and 4-6 Feb 1998

The LETPRO project (based in Oxford) is offering six modules in business skills and know-how for R&D scientists and engineers.

Business awareness and commercial knowledge are increasingly important, and attendees at a previous series have found the sessions very valuable.

JOINT BOARD FOR ENGINEERING MANAGEMENT
17-19 April 98 at Loughborough University.

JBEM Management Development and Skills Conference - the conference theme this year is Competing for business excellence and the keynote address for this conference is by John Battle MP. Attendees at previous conferences have given excellent feedback.

Further information on both events from your local Training Section.

Courses for the New Year

Appraisal Training
We will be running half day Appraisal Training sessions at RAL and DL in February 98.

This is a mandatory course and a follow on from the Objective Setting course. If you have not already attended a course, you will be sent an invitation shortly if you are completing an APR at the end of March 98.

Stress Workshops

Please send in your nominations. These workshops are open to all employees and will help to identify causes and suggest strategies for coping with stress. Dates to follow.

Objective Setting
This half-day workshop gives further guidance on how to set SMART objectives.

Customer Focus
Using the lessons learned from the pilot course a very relevant and successful one-day course has been developed which will be repeated in the New Year.

Selection and Promotion Interviewing
Always popular, and always gets the best reviews of all the courses. Mandatory for anyone who is about to sit on an interviewing panel.

Refresher - Selection and Promotion Interviewing
Have you been interviewing for years and want some reassurance that you're doing okay? Then this is the course for you.

Refresher - Management Training
Training section are in the process of identifying needs and designing a new course for managers who would like an update on the current thinking in management theory. Are you interested in such a course and what would you like to see covered? Please get in touch.

French Course for Scientists
29 June-3 July 1998, Universite de Technologie de Compiègne (France)
The Cultural Service of the French Embassy is organising a course for professors of Sciences or administrators of Science departments who already have a knowledge of French and would appreciate the opportunity to practise the language.

The purpose of this course is:

- to improve the candidates' knowledge of 'everyday' French;
- to improve their knowledge of, or become familiar with, scientific French;
- to acquire some knowledge of the contents of French programmes in science departments of French universities and to gain an understanding of university administrative structures and procedures;
- to establish or to reinforce contacts with colleagues in France.

The course fees and accommodation costs will be borne by the Cultural Service of the French Embassy. However candidates will be expected to finance their meal and travel expenses.

Please note that there are only 12 places available on this course.

For further information and application forms, please contact:

*Edwige Girardin, Education Attache
Cultural Department, French Embassy
23 Cromwell Road, London SW7 2EL
Tel: (0171) 838 2055
Fax: (0171) 838 2088
e-mail:
edwige.girardin@mail.ambfrance.org.uk*

Closing date for application is
27 March 1998.

RAL Computing Training

Microsoft Exchange - a new mail system for CLRC

Readers will be aware that there are currently three major mail systems in use in CLRC: Eudora/PD; ccMail and MS Mail. Because of the efforts required to ensure that these systems coexist effectively, it has been decided that it is more effective to move over to one mail system, Microsoft Exchange. A number of staff have already had Exchange installed, which will be extended to the remainder of CLRC early in the New Year. RAL Computing Training will be organising training courses from January 1998, so if you would like to attend please contact Viv Walker.

New courses for 1998

1998 will see an extension to the courses offered. Some of the intended courses and seminars include:-

- Programming with Visual Basic
- Introduction to PCs - PC beginners know how
- Scientific Microsoft Word - covering topics equations, formulae, long documents
- Excel Workshops - e.g. managing budgets with Excel Microsoft Publisher
- What is Microsoft Office? - a seminar
- Microsoft Office Open Forum

Computing Training Courses for early 1998

JANUARY	
21	Word Introduction
22	Excel Introduction
27	Excel Intermediate
28	Word Intermediate
FEBRUARY	
03	HTML
04	PowerPoint
05-06	Introduction to Access
11	Word Introduction
12	Word Intermediate
13	NT Users
16-17	Access Basic
18	Excel Introduction
19	Excel Intermediate
23-25	NT Administrators

Contact information:

Susan Hilton, Head of Group
Email: s.chilton@ral.ac.uk Ext. 6154

Pat Athawes, Head of Computing Training Section for technical enquiries
Email: p.d.athawes@ral.ac.uk Ext. 6188

Viv Walker for information on course programme and dates and general enquiries including the availability of the Computing Training Facility.
Email: va.walker@ral.ac.uk Ext. 5272



Dear friends and colleagues
Thank you for all the cards and letters you sent to me after the sudden death of Alan. All of you who knew us will know what his death has meant to me, and your sympathy and condolences at this sad time have been a great comfort.

Kay Knight

Dear Natalie
Many thanks to all those people who attended the RAL Carol Service. £40 was given and has been sent to the charity that cares for the homeless. Caring at Christmas.

John Haggston
RAL Christian Fellowship

Dear Natalie
I have received a letter from The Royal British Legion thanking CLRC for staff contributions during Remembrance. Over £300 was raised at RAL and DL and the money will be used for the welfare of ex-Servicemen and women and their dependents.

Thank you all
Cris Taylor



The Oxford Trust Festival of Science and Innovation

The Oxford Trust are once again running this successful event from 12 January to 4 February. RAL is hosting several events including the popular Innovation and Growth Seminar which will be given by Prof Joshua Silver and Dr Trevor Baylis of clockwork radio fame.

There are tickets still available for the following events:

19 January, 6.30pm, Culham Laboratory
C¹⁸ Buckminsterfullerene: not just a pretty molecule - Prof Sir Harry Kroto will tell his own unique and fascinating story of the discovery of C¹⁸. Free entry with ticket.

30 January, 7pm, RAL
The Innovations Show - a family event suitable for children aged between 9 and 14 and their parents. Staff from Curiosity and the Science Museum will explore the science and history of innovations. £9 for a family ticket.

4 February, 6.30pm, HR Wallingford
Sex, scars and birth defects: unexpected discoveries from alligators - Prof Mark Ferguson from Manchester University reveals how his research into cleft palates using alligators proved to have dramatic implications for chicken farming and scar-free healing. Free entry with ticket.

Tickets are available from the Oxford Trust on 01865 728953.

Tickets are also available for a lecture at RAL organised by Young Scientists for Britain. 'Colourful compounds and chemical clocks' is concerned with three simple ideas about chemical reactions. Firstly, that reactions take place in stages, secondly, the stages may be consecutive or concurrent and finally, the reactions are reversible. Dr Malcolm Seddon will demonstrate these principles with a wide variety of colourful chemical reactions.

8pm, 12 February and 2pm, 13 February: tickets cost £1.50 for students, £2.50 for adults and are available from Eric Wharton on 01235 832335.

New perspectives

On 23 and 24 September CLIRC played host to 40 young scientists (and a few older ones) working in the areas of neutron scattering and muon spectroscopy. They were attending 'New Perspectives in Neutron and Muon Science: A Young Researchers Meeting' at The Cosener's House which was organised by the IoF's Neutron Scattering Group and the Faraday

Division of the Royal Society of Chemistry with sponsorship from ISIS and the EPSRC. The meeting was divided into three sessions entitled 'Structure, Surfaces and Interfaces: Muons; and Vibrations and Excitations'. The sessions began with keynote talks by Dr Andrew Harrison (Edinburgh), Dr Steve Blundell (Oxford) and Dr Stewart Parker (ISIS) respectively, who reviewed current research topics, followed by contributed talks by PhD

students and young postdoctoral researchers covering many aspects of neutron and muon science and instrumentation. A conference dinner on the Tuesday evening gave delegates the opportunity to exchange ideas and views in a more relaxed environment.

Roger Eccleston
Cluck Wilson

Delegates at the 'New Perspectives in Neutron and Muon Science' meeting (9/RC3756)

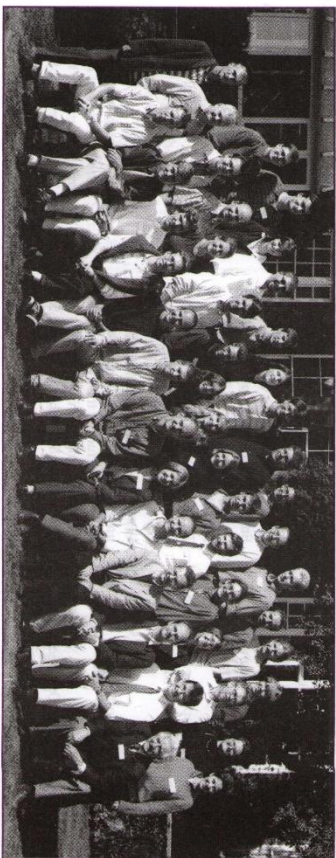


Photo captions

"Would anyone notice if I kept this to re-upholster my sofa?" - *Jeremy Curtis*

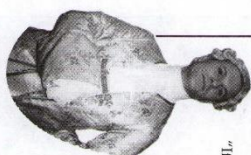
Jeremy's disappearing hand' trick went down well at the children's Christmas party - *Nigel Morris*.

"I think I may be able to sell that peroxide accident as a panto wig." - *Martin Prime*
"Do you think my surface luminosity and will turn me into a first magnitude star?"

"Mrs. Miggins, I have finally come to adapt your tea-dispenser to take the new groat. I will do the one in R68 as well for a small fee." - *Tony Richards*.

"If Ariadne's the Beast, I'll have to play Beauty." - *David Johnston*.

"I've got my LD, pass here somewhere..." - *Aaron*



Little Stars Christmas Party



Smith Clara visits 3 year old Luna Grammatel (97/RC4771)

SNIPPETS

Congratulations to...
Bob Chandler received an MBE in the New Year's honours. Bob, Chairman of the CLIRC Staff Trade Union side, received the award for his contribution to industrial relations in the SERC, EPSRC and lately CLIRC. "I am honoured to receive this award but the achievement has by no means been single handed as behind me has been a supporting team of willing volunteers within the Staff Trade Union side and the PMS Branch (and a very tolerant wife)", Bob said.

Daresbury Laboratory's Pete Weatherhead competed in the National Civil Service cross-country championships in London recently. In a closely fought battle for the veteran's medal, he missed out by only 14 seconds! He completed the grueling ten kilometre course finishing in 20th place overall (out of 180). Well done Pete!

CERN Council announced, at its meeting on 19 December, the election of **Prof Luciano Maiani** as the next Director-General of the Organisation. He will take up office from 1 January 1999, replacing Prof Chris Llewellyn-Smith. Prof Maiani has been President of the CERN Council since January 1997. The new President will be Dr Hans Eschbacher.

International WWW symposium DCL staff organised an international symposium on the World Wide Web which was held in London last month. Over 160 IT Directors, including the inventors of the WWW, Tim Berners-Lee and Robert Cailliau, met to discuss the evolution of WWW and particularly its impact on industry.

Bob relaxing with wife, Maureen



New magazine

BBC's Tomorrow's World is launching a new magazine and they are looking for interesting, logical or lateral thinking puzzles. The puzzles will preferably have a scientific tone and include some humour. Suggestions for interesting books or websites will also be very welcome. If you have any ideas please email Damian Carrington at the BBC
<damian.carrington@bbc.co.uk>