

January 1995

# DRAL News

• A Monthly Newsletter for DRAL Staff •

## Inside...

Surface Science and CCP Meetings, ISIS, Schools, News in Brief, Social News and Notices.

### **Paul Williams announces a brave new world for the joint Laboratories**

If all goes according to plan the Council for the Central Laboratory of the Research Councils (CCLRC) will come into being on 1 April 1995. The Council will be a single entity operating the existing three DRAL sites. In breaking the news to staff, Paul Williams stressed the 'brave new world' that we are about to enter, in becoming a single, independent and legal entity. The process of filling the post of Chairman and Chief Executive of the Council, uniquely among the Research Councils carried out by one person, is well advanced; an official announcement awaits final confirmation of the appointment.

The new Council will have three main aims as set out in the Royal Charter: 1) to promote high quality scientific and engineering facilities and technical expertise in support of basic, strategic and applied research programmes; 2) to fulfil the requirements of the Research Councils to procure research, and those of other customers and user communities, thereby contributing to the economic competitiveness and well-being of the UK; 3) to provide advice, disseminate knowledge and promote public understanding of science, engineering and technology.

Growth will be a key aspect of the joint Laboratories' future. Dr Williams spoke of opportunities for growth into new areas: next steps in supercomputing, virtual reality, new commercial initiatives and a broad attack on detectors were just some of the opportunities which he could foresee. There would be no constraints to marketing our services, he said. The Research Councils, other government departments and industry are all targets for increased business. We should also strive to increase our EU-funded work and attract more international partners to exploit more fully our facilities. There is much that can be done and Dr Williams highlighted some of the specific possibilities for the future: the replacement of the synchrotron radiation source - and upgrade of the SRS, possible upgrade of ISIS and the proposed European Spallation Source, LHC detectors and new space projects.

To maximise our future prospects, he encouraged anyone with new ideas to come forward with their suggestions for opportunities that DRAL was well-placed to exploit.

Dr Williams also spoke of the need to maximise the amount of science and engineering performed for every pound spent. We must therefore look to increase efficiency, every effort being made to avoid duplication of effort across the two sites. Dr Williams outlined how the new entity will operate to fulfil its objectives DRAL-wide. A new Technology Department was being created to operate across DL and RAL on the same lines as Administration Department. This he said, could lead to some small reduction in total staff numbers but Dr Williams clearly stated that he regarded compulsory redundancy as a last resort and hoped that a voluntary scheme would be successful. Dr Williams also commented on a new pay and grading structure which would come into effect on 1 April 1996, and said that he would be working with the unions to see all these changes through.

Dr Williams felt this to be the most challenging phase in the lives of the two Laboratories, a time when DRAL needed a high level of visibility and commitment to the future: "Never since the NIRNS days (pre-1965)", he said "have we had so much control of our own future. Let's make a success of it!"

In association with Dr Williams' talks to staff, Richard Lawrence-Wilson, Laboratories Secretary and Head of Administration Department, spoke to administrative staff at DL and RAL following up the theme of maximising the amount of each pound spent on the scientific programme by increasing the efficiency of administration.

He said that a reduction of up to 30 posts had been identified as necessary across the Administration Department. Pre-redundancy measures would be introduced to help achieve the reduction by voluntary means.

He explained that policy-making work would be centralised at RAL close to the Chief Executive and Council, and that many services were local and would continue at each site. Other corporate services would be centralised and the result of the call for voluntary departures would be taken into account in considering their location. The reductions are planned to be made by 31 March 1996.

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## Infrared Spectroscopy for Surface Science Meeting, Friday 6 January 1995



*The Surface Science line-up say "cheese" for the group photo (95/725/1).*

Using a technique known as reflection absorption infrared spectroscopy (RAIRS) the molecular vibrations associated with surface-adsorbate bonds can be studied at high resolution in a wide range of different environments. This allows studies of catalytic processes as they occur, providing new insight into some of the basic science of surfaces. A new RAIRS station has been built on the SRS (Station 13.3) and the aim of this meeting was to introduce the 'Vibrations at Surfaces' community to the facilities now available at Daresbury.

This specialist user meeting was held at Daresbury Laboratory on Friday 6 January 1995. An excellent attendance of 29 delegates met at 10am in the Merrison Lecture Theatre and were quickly ushered into the coffee lounge for a group photo. The delegates were officially welcomed to the Laboratory by Ian Munro, who also gave a brief historical perspective of infrared spectroscopy.

Dr Peter Hollins (University of Reading) and Professor Mike Chesters (University of Nottingham), both major grant holders for the development of Station 13.3, were invited speakers at the meeting. Peter both chaired and spoke during the morning session, giving a summary of the new experimental facilities. This included quite a lot of detail about the specialised mirror which directs the infrared radiation vertically through the roof of the shield wall to the experimental station. The mirror has a built-in water-cooled absorber to help cope with the potential  $50\text{W mm}^{-2}$  heat loading due to its proximity to the stored beam.

Mike Chesters presented the good news that the station is meeting its specification in the majority of areas, with just a few 'teething troubles' to be ironed out. Experimental set-ups were addressed in more detail by Dr Andrea Russell of the University of Newcastle-upon-Tyne, who discussed the early successes on 13.3.

The presentations centred around the SRS facility were complemented by Dr Pascale Roy (Université Paris-Sud) who described similar facilities at Orsay. Also, Mike Poole (DL) proposed free electron lasers as another source of infrared. Mike referred to the Dutch FELIX project, with which the UK has close ties.



*Ian Munro gives a cheerful welcome to DL (95/725/5).*

Lunch was followed by a tour of the RAIRS station and the afternoon session was set aside as an open forum for discussion. Towards the end of the afternoon Dr Tracy Turner (DL) gave a brief summary of the procedures for applying for the much valued beam time on the SRS. Concluding remarks were made by Ian Munro.

This is the first specialist user group meeting of its type to be held at Daresbury. It is hoped that with the establishment of this new technique for utilising the infrared part of the spectrum, many more such meetings will follow.

# ISIS: the 1st ten years

## ISIS: So much from one so young!

The tenth anniversary of ISIS on Friday 16 December was marked by an evening celebration of some 300 guests, including team members past and present and representatives of some of the Facility's many outside users.



Zoe Bowden lights the candles on the ISIS birthday cake (95RC1068).

In his keynote lecture, fittingly entitled 'ISIS: A vision of the future', Dr Andrew Taylor, Head of ISIS, reflected the fact that the Facility's position as the leading machine of its kind in the World had been achieved not through the effort of one person or of one team but through the dedication of many both past and present. The success of the last ten years was a fitting testimony to the 'scientists of vision' who had worked so hard in the early days to have the Facility built.



Cheers! Guests at the ISIS party toast ten years of ISIS (95RC1061).



Professor Alan Leadbetter, former Head of ISIS, presenting Dr Paul Williams with an effigy of the Egyptian Goddess ISIS, symbol of continuity, fruitfulness and renewal (95RC1093).

Although this was in part a celebration of past achievements, it was also an occasion for looking ahead. ISIS is a mere youth in terms of meeting its potential. As the scientists and engineers who raised their glasses in a toast to ISIS know, there is a lot more that can be done. More a case of 10 years' young than 10 years' old!

## 1995 CCP4 Study Weekend: 'Making the most of Your Model'

The 1995 CCP4 study weekend, organised by Daresbury Laboratory, was held at Chester College on the 6/7 January. CCP4 - the Collaborative Computational Project on Protein Crystallography - is one of 12 CCPs currently co-ordinated at Daresbury. This annual meeting attracts delegates from all over the World. This year's meeting boasted 360 participants, including 72 from Europe and 10 from the United States. 18 excellent speakers and an enthusiastic audience added up to create a very successful two days.

The meeting was aimed to help people to get the most from their protein model. This includes getting the best model you can, both in terms of data collection and refinement of the structure. It was encouraging to be told, by several speakers, that the best data is collected on a Synchrotron source. We heard the results of a recent experiment to predict the structure of a number of proteins about to be solved. Although the audience had not expected a high success rate, they were surprised at just how poor the results of the prediction exercise really were.

On the second day we heard how to explore the biological implications of your protein structure. Among the highlights was David Stuart (Oxford), who described important results from work on virus crystallography. Knowledge of the structures of the picornaviruses (which cause various diseases such as the common cold, polio and foot and mouth disease) is leading to development of new drugs and improved immunisation strains. The predicted drugs aimed at preventing colds would have been welcomed by a large proportion of the audience!

Garry Taylor (Bath) analysed some of the changes seen in enzymes which are active at high temperatures of 55-100C. This is sure to be of interest to soap powder manufacturers who are keen to produce 'biological' detergents which operate at higher temperatures than at present.

An interesting presentation was given by Georg Schulz (Freiburg), who presented the results of over 20 structure solutions of an enzyme at various stages of catalysis. From these structures he has been able to deduce a detailed reaction mechanism, and to understand the large changes in enzyme shape which take place during catalysis. Georg presented these results in a short animated video; an unusual and very well received method of presentation.

On the social side, Chester College provided us with an excellent conference dinner, and a late night in the bar allowed time for much discussion into the scientific insights provided by the meeting.

*Sue Bailey (DL)*

## Back to school

After an eight-month break in normal service, RAL's School Liaison activity is now officially back on track with the appointment on 3 January of a new Schools Liaison Co-ordinator, Karen Whittenbury.

Karen joined the Scientific Administration team from Swindon Office where she worked as part of the admin support in Joint Internal Audit Service. Her background however is in teaching. She taught English in a mixed 11-18 comprehensive school.

Karen's first priority is to resume contact with local schools and with staff on site who have volunteered or would like to volunteer their services to help schools liaison. Longer term, Karen will be looking at ways to develop the schools liaison function at RAL.



*RAL's new Schools Liaison Co-ordinator, Karen Whittenbury (95RC1131).*

Karen is just one half of schools liaison at DRAL. Her counterpart at Daresbury is Colin Jackson. Colin spends one fifth of his time carrying out and promoting schools liaison for DL. The rest of his time is spent as SRS User Liaison Officer. A key aim of the schools liaison function both at RAL and DL is to raise public understanding of science, engineering and technology through such means as school visits, pupil placements, industry days and the development of new activities.

While local schools-related activities are handled by Karen and Colin at their respective sites, policy for schools liaison for DRAL as a whole is the responsibility of Tony Buckley, Head of Public Relations for DRAL. If you would like to help with schools liaison or would simply like to find out more about what it does, then why not contact Karen Whittenbury at RAL on ext RAL 5950, OV/VM KW38, or Colin Jackson at DL on ext DL 3486, e-mail [c.e.jackson@dl.ac.uk](mailto:c.e.jackson@dl.ac.uk).

*And finally...*

If anyone doubted how rewarding working with schools can be perhaps Dave Evans' experience will convince you otherwise. Dave, of Engineering Division in Technology Department at RAL, recently visited East Hanney Primary School near Wantage, to give a talk about materials, phase changes and radioactivity to a class of 10-11 year olds. Afterwards he received the following note from Rueben, a pupil in the class:

"Dear Doctor Evans, I liked it when you put the solids in the water. it was quit interesting when you stuck The tube in the cold liquid and snapped it. my self I think your a mad and crazy scienteist."

*(Reproduced with kind permission of Dave Evans and Mrs Allin, Head, East Hanney Primary School).*

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## News in brief

### Congratulations to...

**Phil Prewett**, Head of Research & Development Group in the Central Microstructure Facility at RAL, who has been made a visiting Professor of Physics at Kings College, London. He will be continuing to collaborate with the university on research in electron beam and X-ray lithography.

**Colin Horrabin**, DL, who has been awarded the 1994 Bennet Trophy, an inscribed Times Atlas of the World, for his contribution to radio communications. Colin's story will be included in a future edition of DRAL News.

**Professor Sir Martin Rees**, new President of the British Association, who is the new **Astronomer Royal**.

### Public Speaking

Two members of DRAL staff are giving talks at the Institute of Physics' Annual Congress at the end of March at the Telford International Centre. **Frank Close**, RAL, will be giving one of the keynote lectures entitled 'From the electron to the top quark - a century searching for the seeds of matter' and **Paul Drumm**, RAL, will talk on the status and development of the RIST project.

**Peter Litchfield**, **John Thresher**, **Lesley Gray**, **Sarah Ungar** and **Norman McCubbin** (all RAL) are participating in the Royal Astronomical Society meeting this month in London about particle acceleration in the solar system.

### DRAL on TV

A film crew from Tomorrow's World recorded footage in the Central Microstructure Facility at RAL for a programme broadcast on Friday 13 January. A video copy is available for staff to borrow from Press & Public Relations.

### DL Librarian on radio

DL Librarian **Vacky Noble** was featured on the BBC Radio 4 programme 'One Born Every Minute', broadcast on 6 January at 10am. The series features people with 'unusual hobbies'. Vacky, who is an active member of the Cheshire Family History Society, described an ongoing project to transcribe all the gravestone inscriptions in Cheshire on to computer records.

### New Years Honours

No gongs for DRAL staff this time around, but Knighthoods were awarded to **Arnold Wolfendale**, former Astronomer Royal and former chairman of the Astronomy & Nuclear Physics Board, and to **John Maddox**, editor of Nature.

### BNSC Appointment

Dr David Leadbeater, formerly from the MoD, has been appointed Deputy Director General of BNSC, joining DG Mr Derek Davis.

### DTI First

DTI's first major video conferencing event, promoting the IT programme of the EC's Fourth Framework programme, took place between RAL and DL on Thursday 12 January. The event, involving over 130 people, allowed delegates at both sides to participate fully in the discussions.

### LHC announcement

On 16 December 1994, the UK and the other 18 member states of the European Laboratory for Particle Physics (CERN), gave their approval for the construction of the **Large Hadron Collider (LHC)** and the CERN council confirmed the go-ahead for one of the largest basic science projects ever undertaken. More news about this in next month's edition of DRAL News.

### Christmas raffle raises over £700 for local charity

Christmas came early for the Didcot Toy Library for Handicapped Children. On Wednesday 21 December the charity was presented with a cheque for £750.40, the result of the Christmas raffle organised by RAL's messengers.



*Rose Wadley, RAL; Madeleine Brookes and Alison Hobbs from the Didcot Toy Library for Handicapped Children with the bumper cheque, and behind them, just some of the prizes which were won in the raffle (94RC6704).*

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Over 40 festive prizes were won including an iced Christmas cake, assorted bottles of Christmas cheer, cuddly toys, (some handmade by staff), a basket of fruit, chocolates and toiletries. All of the prizes were donated by the messengers and other members of staff.

Madeleine Brookes, Secretary of the Library's organising committee, was delighted with the gift. "I'd like to thank everyone for their hard work in making this possible - to Rose Wadley in particular for co-ordinating it, to all the messengers for selling tickets, and to the staff who donated the prizes - they're wonderful", she said. The money will be used to pay for an outing to Chessington World of Adventures and to buy some new toys.

The Didcot Toy Library was set up 11 years ago for handicapped children and their siblings in the Didcot area. The Library is open from 10am to 12pm every Saturday morning at the Didcot Health Centre, where a wide range of toys, all chosen to stimulate the children, can be borrowed.

## Staff news

### Arrivals...

Welcome to:

**Mr J Brignall** who joined RAL on 5.12.94 as an AO in Admin Department

**Mrs L C Browne** who joined RAL on 5.12.94 as an AO in Admin Department

**Mr S J Canfer** who joined RAL on 5.12.94 as a PTO in Technology Department

**Dr D R Collins** who joined DL on 5.12.94 as an HSO in TCS Division

**Miss M M Ewen** who joined RAL on 5.12.94 as an AO in Admin Department

**Dr K J King** who joined RAL on 5.12.94 as an SSO in Space Science Department

**Mr A Mehta** who joined RAL on 12.12.94 as an HSO in Particle Physics Department

**Mr A E Oram** who joined RAL on 12.12.94 as an AO in Admin Department

**Mrs C M Parker** who joined RAL on 5.12.94 as an AO in Admin Department

**Miss L Purslow** who joined DL on 5.12.94 as a part-time SGB2 in Admin Division

**Miss A E Wright** who joined RAL on 1.12.94 as an HSO in Particle Physics Division

### Departures...

Goodbye and good luck to:

**Mrs A Bailey** who left RAL on 21.12.94

**Mr D Shah** who left RAL on 2.12.94

## Promotions...

Congratulations to:

**Dr Z Szotek** who was regraded from casual to permanent SSO in TCS at DL from 12.12.94

**Mrs R Wadley** who was promoted to SGB2 in Admin Department at RAL from 21.11.94

**Miss M E R Waters** who was promoted to HEO in Admin Department at RAL from 6.12.94

## Christmas Crackers a storming success

*Event:* Christmas Crackers.

*Date:* Thursday 22 December 1994

*Venue:* Lecture Theatre Daresbury Laboratory

*Attendance:* In breach of safety regulations (only joking)!

*Co-ordinator:* Beryl Rigby.

*Master of Ceremonies:* Colin Jackson

This year the organisation of the Christmas show surpassed itself with a demonstration of amateurism that went above and beyond all previous years. The show was saved by the supreme efforts of the cast who as usual demonstrated both talent and patience beyond the call of duty. The running order became somewhat arbitrary due to a combination of bad weather and strict security. Fog delayed Bryn & Son. Ron Makin's backing group were arrested by our security staff. Fortunately they were released in time for Ron and friends to give us the song "Sit Down You're Rocking the Boat".

Tracey Robinson opened the proceedings with a fine rendition, in spite of technical problems, of "You're my World", later singing "One moment in Time", unaccompanied and without a safety net.

From then on the remainder of the show is somewhat of a blur. Pierre Rizkallah entertained us with a monologue on CDP. Bob Cernik and Gerry Fitzpatrick told the tale of "Gerry's brain". Beryl Rigby tap-danced. Bryn Williams and Son added to the musical entertainment with "Guitar Duelling Banjos" and a number Bryn had written the previous evening. Santa Claus arrived a little early and delivered his now usual gifts from hell. I still don't understand the one about lingerie.

The show closed with Ron and friends leading the entire congregation in "I'm Dreaming of a White Christmas". Oh! Beryl and I were reduced to telling (bad) jokes. Duration one hour, and nobody fell asleep.

*Colin Jackson (DL)*

## Daresbury Laboratory Sports & Social Association Bonfire Night Party

The second annual fireworks party was held on Friday 4 November. A grand turnout of 450 people attended, slightly up on last year's numbers. Luckily the poor weather from earlier in the week had cleared to give a crisp evening. The event started with the lighting of the bonfire at 6pm, together with the serving of sizzling savouries by the catering party.

The firework display itself started around 7pm, with bangs, flashes and aerial displays to amaze the spectators, ending with a pyrotechnic 'Good Night'. The winners of the raffle prizes were then drawn (I hope you've all collected your prizes!).

I would like to thank everyone who helped in the organisation, both on and before the event, in particular, David, Chrissie and the rest of the catering party who again surpassed themselves in serving food to 450 people in around one hour.

Lorrie Murphy  
DL Sports &  
Social Secretary

## Daresbury Accelerators' Pete Weatherhead beats World record holder

Daresbury Accelerators' Pete Weatherhead gained his first Civil Service Athletic Association vest when he was picked to run for a veteran team racing against the RAF and Middlesex at RAF Halton, Buckinghamshire in the annual Sir Sefton Branker Trophy meeting on 4 January 1995. The six-mile cross country race took place over a testing course with athletes having to contend with a scything wind. Pete was 10<sup>th</sup> veteran to finish, helping the civil service to victory in the team competition. One of the runners he beat was the former World record holder for 10,000 metres, David Bedford.

## 1995 Daresbury Quiz League

Yes! It's that time of year again when this year's masterminds rack their brains in the annual quiz. The format will be similar to previous years. Heats will be held in the Merrison Lecture Theatre on Tuesdays and Thursdays where possible, commencing the first week in February and continuing until Easter. Notices around the Lab have prompted lots of entries and anyone interested in helping to organise/run the quiz is also welcome to get involved - just get in touch. Spectators are more than welcome - please come along if you wish!

Lorrie Murphy, John Charnock & Tony Bell (DL)

## RAL Notices

### CSMA Exhibitions

Did the recent Budget increase make you **SHUDDER**?  
Have your RAC/AA and insurance renewals been **FRIGHTENING**?  
Discover the best value-for-money motoring package by talking to Brian MacNamara (Frizzell Regional Manager) in the RAL Restaurant foyer on

Monday 6 February 1995  
or Monday 3 April 1995  
11.30am - 1.30pm

Application forms and other CSMA literature available from Tony Betteridge, Bldg 161, Harwell, ext H 3296.



## DL Notices

### Daresbury lecture series

20 February 2.00pm  
Merrison Lecture Theatre  
Materials in the fast lane  
Dave Clark (DL)

Dave will talk about aspects of some of the specialist materials which go into the make-up of Formula 1 racing cars and associated goodies. This will be a general science lecture with demonstrations and videos. In his previous career with ICI, Dave had some interaction with the Williams Grand Prix team, and hopes to be able to obtain some F1 goodies from Williams, including Nigel Mansell's World Championship driving suit for the perusal of the audience. Everyone is welcome to attend.

Continued over

## RAL Notices

### Acknowledgements

Barry Brett would like to thank everyone who so kindly contributed to the collection that was presented to him just before Christmas and also for the card which was signed by so many. "I was really taken aback when the gift was presented (and for once lost for words!) as it was such a kind and thoughtful gesture. I am now feeling much better. Thank you all once again."

Peter White - "I would like to thank all my friends at the Lab for the marvellous send-off given to me on my retirement and to say thank you for the present and the flowers for Bridget. I am sorry that, due to sickness, I was not able to say cheerio to everyone but send my best wishes for the future and I will try to keep in touch."

### Lost

D2 DAT Drive (2Gb). Last seen on 8 December. Please contact Dr M van den Putte, ext RAL 6325.

### Sales to staff

Sales to staff of scrap metals and plastics will take place on Monday 6 February in the R24 Scrap Compound, between 12pm and 12.30pm. Please see DRAL Notice 10/94 dated October 1994 for details.

### Withdrawn books clearance

The Library is holding a withdrawn books clearance in CR3, R61 on Friday 24 February. Books and other material withdrawn during the past year will be offered free of charge to departments, groups or individual staff for their own use. All staff are invited.

### Recruitment and selection training

Four courses are to be presented at RAL during February and March by an external consultant. The courses will ensure that participants have the knowledge and skills necessary to conduct effective interviews for selection and promotion. Each course will be of two days' duration (13-14 February; 1-2; 9-10, and 30-31 March) and participants will conduct two practice interviews. If you wish to attend please contact the RAL Training Section on ext RAL 6018 or 5361. If you have already requested this training and are on the waiting list, you will be contacted direct. If you have any queries about the courses please contact Miriam Waters on ext RAL 5361 or OV/VM MRW1.



## DL Notices

### DIAMOND seminar series

8 February  
11am  
Merrison Lecture Theatre  
Engineering design  
Dave Bradshaw (DL)

22 February  
11am  
Merrison Lecture Theatre  
Beam stability  
Paul Quinn (DL)

The DIAMOND seminar series was established in late 1994 with the aim of providing regular seminars dealing with new synchrotron source issues at Daresbury. So far, Vic Suller has described the overall framework of the new source plans, Mike Poole has summarised the machine lattice options, Mike Dykes has described the proposals for RF systems and Ron Reid has detailed vacuum systems. Please come along to the next two seminars if you are interested.

### Wednesday Wanderers 'Around Beeston Castle'

Eight miles of easy walking along canal towpath, green lanes, field and woodland paths. Starting at the Candle Workshops car park, through fields and along the canal to The Shady Oak for lunch. Returning via Peckforton Woods to the Candle Workshops, where afternoon tea may be taken if you get a move on!

**When** Wednesday 1 March 1995  
**Start** 11am (prompt please! It's a fair step to lunch)  
**Meet** At the Cheshire Candle Workshops car park, Ref 523564  
**Maps** Landranger sheet 117, Pathfinder 790

How to get there: From the A49 of the A41, head for Burwardsley/Beeston and look out for the brown tourist signs for the Cheshire Candle Workshops.

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Rutherford Appleton Laboratory      Daresbury Laboratory  
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Tel: (01235) 445484 • Fax: (01235) 446665      Tel: (01925)603519 • Fax: (01925) 603195

DRAL News

Editor: Monica Brown (Tel: RAL ext. 5484, email MB@IB.RL.AC.UK)  
Sub-Editor: Lesley Welbourne (Tel: DL ext. 3519, email L.A.Welbourne@DL.AC.UK)

Articles, ideas and letters are very welcome!

Deadline for publication is the 15<sup>th</sup> of month preceding the cover date.