

# Bulletin

of the Rutherford Appleton Laboratory

2 Nov 1987 No.13

## THE DELPHI SOLENOID IS FETED

Saying 'Bon voyage' to the Delphi solenoid at a celebration party on Wednesday 14 October, Peter Clee, (Head, Engineering Division and Project Leader), took the opportunity to thank all who had worked on the project both physically and in supporting roles.

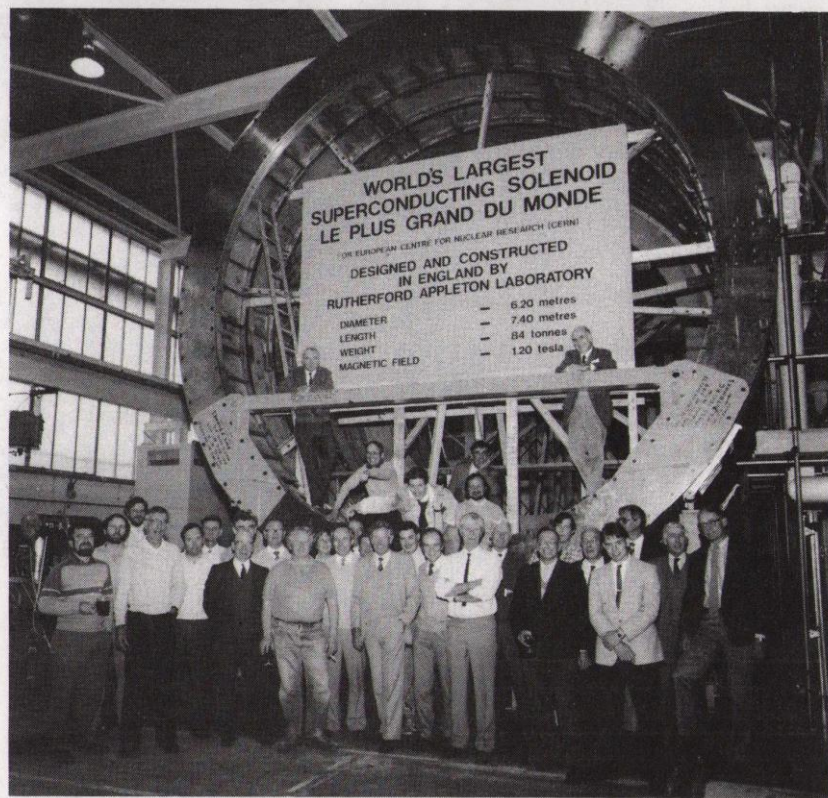
It was for him, he said, the culmination of a fifteen year long dream to prove that large superconducting magnets for particle physics experiments were feasible, and that RAL could build them.

Through the 60s and 70s when the original work on superconducting materials began at RAL, John Wilkins had the vision to release resources enabling Peter Smith and Martin Wilson et al to develop the techniques leading to this tremendous achievement. The superconducting cable, known world-wide as Rutherford cable, had been developed at the Laboratory.

This expertise and the magnet design computer programs of Bill Trowbridge and his team have been of immense value to the project. The efforts of advocates like Geoff Manning and the Solenoid teams presenting the proposals to CERN had convinced them that RAL could build the solenoid. A great debt of gratitude is owed to them all.

"The Laboratory can be justly proud of this achievement and I thank you all again for seeing the job through long hours, many frustrations and a tight time schedule," he said.

Representing CERN, Hans Hilke expressed pleasure and gratitude for the completion of this immense project of novel design. He realised that it had not been easy to satisfy the critical demands of CERN and they were grateful



The DELPHI Solenoid team celebrate a job well done.

87RC5231.

for the toleration with which RAL had treated the CERN contingent.

"We are confident", he said, "that your work will play an essential part in the successful outcome of the Delphi experiment".

RAL's Director Paul Williams added his congratulations and thanks to the solenoid team and especially to Peter Clee, and relayed messages of congratulation from Saclay and Oxford Instruments.

## AND STARTS ITS MARATHON JOURNEY

On Sunday 18 October the RAL built Delphi Solenoid left the Laboratory just after dawn to begin its long journey to CERN.

The largest superconducting solenoid in the world, which when loaded onto its trailer measures 6.2 metres (20' 6") wide x 6.8 m (22' 6") high x 14 m (45' 6") long and weighs 115 tonnes is not the sort of load for a quick slip down to the coast.

From the earliest days of the project, plans for the journey have been in

hand, firstly with CERN's transport consultants and later in collaboration with the UK company Projector Transport Engineering Ltd. Establishing the road routes through England and France has alone taken over a year of careful planning and investigation.

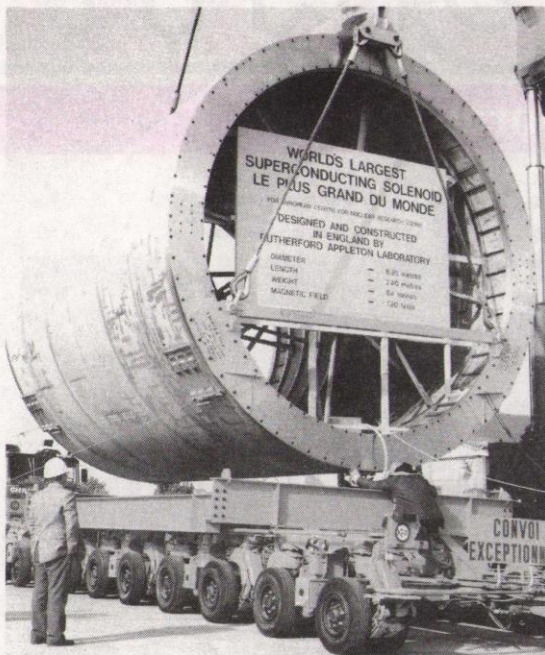
Initial studies led to the acquisition by CERN of the specially constructed 40 wheel hydraulic trailer. Onto this, at RAL, the completed solenoid was lifted by a 300 tonne telescopic mobile crane, (quite a monster in itself) before being hitched to an impressive 306 h.p. Mack heavy haulage tractor.

Christened "Bonzo Bear", this remarkable vehicle was previously used on the CEGE's Dinorwic underground power station project where it hauled the massive turbine generators under the North Wales mountains.

Bonzo Bear is capable of hauling a 200 tonne payload up a 13% gradient but just to be sure a second push tractor was standing by for the steep climb over the Berkshire Downs out of Wantage. But before that, in Wantage itself, the St Mary's School footbridge had to be removed to allow the cavalcade access to the Wantage - Hungerford road.



## DELPHI



87RC 5258.

Up a touch. ▲

Sunday departure from RAL. ▼

Easing its way through Wantage. ►

By 9.30 am on Sunday morning Wantage was crowded with RAL personnel waiting to cheer the convoy on its tortuous way, though there was a slight melting into the background when it was rumoured that the beer pumps of the town's Comrades Club had been put out of action by the accidental removal of a power cable.

The storms of the previous days didn't help progress. Though the overhead cables through Wantage were still there, staff to lift them for the solenoids' passage were necessarily thin on the ground and the journey out of Wantage was painfully slow. By midnight the

load had reached Stockcross outside Newbury having negotiated Great Shefford and the fly-over on the B4000.

On Tuesday the solenoid should have reached Southampton, but again the ravages of storm "Mike" upset the plans and at the time of writing it looks as though the ship onto which it should have been loaded, will have sailed. Never-the-less the load will eventually set sail for Rotterdam where one of the port's 1000 tonne floating cranes will transfer the trailer with the solenoid onto a Rhine lighter for its voyage through Europe's inland waterways to Strasbourg.

Returned to terra firma for the final phase of its difficult journey, the solenoid will be jointly pushed and pulled by two giant French tractors through Dole (birthplace of Pasteur) climbing into the Jura Mountains and over the Col de la Faucille to Geneva.

When it will arrive is now in the lap of the gods. The perfidious English weather has played havoc with the time table and a sprinkling of snow has already been felt in the Juras. Heaven help the drivers in weather like this!



87RC 5274



87RC 5303

### Film Badge Notice

It is period 11. Film strip PURPLE  
Please be sure you are wearing the correct dosimeters and that all old ones are returned.

NEXT FILM ISSUE  
Monday 2 November.

### Sales to Employees

The sale of scrap materials to RAL staff will take place from 1200-1230 hours in the R24 Scrap Compound on 6 and 20 November.

### New editor for Bulletin

After 9 years as editor of the RAL Bulletin, Jean Banford is being given a few months remission - someone has to help with the Annual Report.

She sincerely thanks all who have provided news, copy, help and encouragement and asks that they should now transfer their allegiance to Tony Rush, Ext 5777 to whom the fun of producing the Bulletin has fallen.

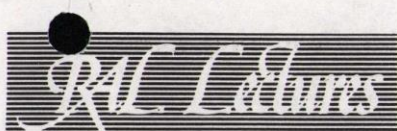
### Accuracy matters too

My apologies to Alan Hodge and Norman Beaton for the mix-up in the last issue of the Bulletin.

In the article on Health and Safety, para 2, after Alan Hodges it should have read: "(Ext 6323) as an electrical specialist and Norman Beaton (Ext6249) as the adviser on mechanical engineering"

Sorry to both. Ed.





The next lecture in this series will take place on Thursday 5 November in the R22 Lecture Theatre at 3.15 pm.

ALCOHOL - PAIN or PLEASURE  
BY

Dr J M Trowell, FRCP

Hon. Consultant Physician  
John Radcliffe Hospital

Dr Trowell will attempt to cover some of the epidemiology and statistical data appropriate to the subject of excess alcohol consumption. She will discuss the involvement of the medical profession, and other interested professionals, with the problems associated with alcohol excess.

## Astrophysics events

These seminars are held at 2 pm. on Wednesdays in the R61 Conference Room.

- 11 Nov 'Far Infra-red Astronomy - an overview'  
Prof. Ian Robertson (Lancs Poly)
- 25 Nov 'Active Galactic Nuclei: Star bursts or Monsters'  
Dr Robert Terevich (RGO)

## Computing Seminars

This lecture will be held in the Atlas Colloquium, R27 at 3.15 pm on Tuesday 3 November.

ECMWF and the CRAY WORLD  
by  
David Dent

European Centre for  
Medium Range Weather Forecasts

The European Centre for Medium Range Forecasts generates ten day weather forecasts on a daily time critical production basis. This is carried out on a Cray X-MP/48 supercomputer with support from CDC, IBM and VAX hardware. The installation also supports a substantial local research activity and a remote batch service.

This presentation will discuss the use of the Cray including aspects such as vectorising and multitasking.

The speaker has been at ECMWF for 11 years and was previously employed in the applications section of the Rutherford Appleton Laboratory.

## Poppy Appeal

POPPY DAY APPEAL 2 - 6th November

As Remembrance-time once again draws near, The Royal British Legion - Britain's premier ex-service charity, asks you to please give GENEROUSLY to ensure that their vital work goes on.

## Saying Farewell

John D Lawson



87RC 5038.  
Paul says thank you to John having said it with flowers to Mrs Lawson.

John Lawson's retirement ceremony was more like a re-union with RAL staff past and present gathered to say farewell to a very distinguished colleague.

Originally John had been destined for a Classics career, but changed to science (as he puts it) at the last moment. This, it appears caused him no problem for he graduated from Cambridge at the age of 20 with a degree in Mechanical Sciences.

Radar having been one of the course subjects led to John finding himself at TRE in 1943 where, he tells us, he learned about aircraft aerials and how to climb towers.

In 1947 he joined the 30 MeV electron synchrotron group at Malvern where the first ever extraction of a particle beam started a lifetime interest in particle-field interactions.

By 1951 John was at Harwell leading the team developing the X-band klystron. In the following year he made a major contribution to accelerator theory by his identification of resonances in strong focussing synchrotrons.

In 1955 John turned his attention to fusion power and produced the paper, still most quoted in the fusion world, in which he formulated the 'Lawson Criteria'.

During the following years he continued to be involved in design studies for accelerators, leading the development of the variable energy cyclotron. In 1961, after a year in the USA at Stanford, he joined RAL.

Widely in demand as a consultant, lecturer and writer, his book "Physics of Charged Particle Beams" is a classic and the phrase 'talk to John Lawson' has become a by-word amongst accelerator designers and fusion practitioners.

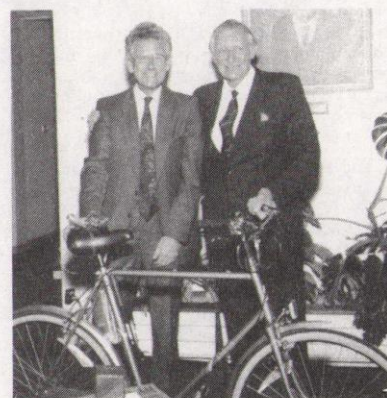
"To say that he will be missed, is the understatement of the year," said Director Paul Williams. "We have learned to trust and respect his counsel and so that we do not loose touch have invited him to become one of RAL's Honorary Scientists. Whatever he does we wish him well. He has brought great distinction to RAL and in token of the esteem in which we hold

him we ask him to accept this gift with our good wishes"

John thanked everyone for the gift (an elegant wrist-watch) and for the good wishes expressed. He believed that luck played a large part in life. It certainly had for him. He had, he said, been lucky in being in the right place at the right time and in the people he had worked with and for. On the whole his career had been a very happy one.

"This has been a wonderful occasion. Thank you all for coming", he concluded.

Ray Powell



Ray (right) tells Bill how it's done.  
87RC 5035

Another legend of RAL left us at the end of September. No longer will the duffle-coated Ray Powell be seen hurtling round the Lab. on his bicycle - a sight we shall all sorely miss, as we shall miss our favourite "Training" man himself.

Saying farewell to Ray on our behalf, Bill Turner thanked him for all the years he had conscientiously worked for the Lab. in Wages, Claims and finally Training section; for his gentleness and kindness, and above all for his sense of fun.

Then the gifts came thick and fast. A Ray Roberts' card (more of a book), a radio, a magnificent cake in the form of The Bible, a bicycle with all the trimmings and a Kent County tie.

"Is this a dream?", asked Ray, beginning an hilarious and totally disjointed speech that had the large audience rolling with mirth.

While in Bill Paying he had, he said, received a missive addressed to the National Institute of Unclear Science. That just about summed things up, though a couple of weeks previously he had been on his first Staff Tour, which had provided him with a glimmer of what it was all about.

"Anyway, it has been a delight to work with all you scientific chaps and I've enjoyed every minute," he said. "I've made many friends and my association with the Christian Fellowship has been a joy. People have been very kind to me, Tom's been a good boss and we've had a few laughs.

Thank you for all the gifts, entirely undeserved but welcome. I hope all goes well for each and everyone of you and in the words of an American evangelist, May the Lord bless you - real good."



## Dart's Presentation evening

RAL's darts players enjoyed a very pleasant occasion on Friday 18 September at a 'Presentation Evening' in the Social Club.

During the evening 12 pairs competed for the Rutherford Darts League Challenge Cup. There were some good darts thrown, with Fred Roberts, Martin Wrench and Pam King all finishing on over one hundred. Incidentally both Martin and Pam play for the Lunchtime League winners.

The finals between Tudor Morgan and Paul Angell, and Ray Smith and Pam King, were played with everyone huddled round the board in support. Both pairs showed nervous touches early on but gradually Tudor and Paul took control and ran out winners by two straight legs.

Mr and Mrs Roy Tolcher kindly made the presentation of the Trophies: The Britvic Shield to the winners of the Lunchtime League, the R3 team of Pam King, Sharon Head, Ray Smith, Don Denton and Martin Wrench (all of Reprographic Section), and the Rutherford Challenge Trophy to Tudor Morgan and Paul Angell.

Roy commented that he had been asked to present the Challenge Trophy when it was last played for in 1971. He hoped it would not be 16 years before it was played for again.

Everyone tucked into a meal of fish and chips during the evening washed down with a supply of good ale served up by Pat Wastle.

My thanks to everyone for their help and support during the evening. See you all on the 'Ockey'.

A. Napper



Repro's Britvic winners,  
Martin, Sharon, Ray, Pam, and Don.

87 RC 4 988



Pairs champions Tudor (right) and Paul  
with presenter Roy Tolcher.

87 RC 4 950

## Christian Fellowship

The fellowship meets in the R2 Conference Room at 12.30 pm every Thursday and at a coffee gathering in R1 Coffee Lounge on the first Wednesday of each month. All are very welcome.

- 4 Nov Coffee Lounge R1, 12.30 pm onwards
- 5 Nov Prayer Meeting - John Campbell
- 12 Nov Half-day Conference at Wantage
- 20 Nov Music & Praise R58 Music Room (Friday)
- 26 Nov Sisters from the Wantage Convent

For further information contact Frank Smith, Ext 5540.

## Thanks

Ray Powell would like to express his very sincere thanks to all friends at RAL who kindly contributed in so many ways towards such a marvellous and memorable send-off on his retirement.

Sadly, lack of time prevented a personal 'Farewell' to each one, so would you all, please, regard this as an intimation of his thanks and best wishes.

## Pub Quiz?

Is anyone interested in competing in a Pub Quiz, on a regular basis? Dave Gascoigne (Ext 6569/6860) would like to hear from you if you are.

'I intend to set the questions but need to know if the idea is viable, by getting a rough guide to the number of people willing to join in,' he writes.

## The Revolving door

On the way from R1, with my daily work done,  
as out of the lift I might blunder.  
There's a cupboard in view, full of cups all askew,  
has a burglar been at it I wonder.  
But with no time to wait, 'cause the thing I most hate, is there full of malice, unyielding,  
It's my bete noir you see and it waits there for me,  
the revolving door out of the building.

It's not the door's fault if you should be caught in the mad whirling frenzy of violence  
It's the youth with the spots, and the odd colour socks and a degree in physics and science.  
He whirls you around, at a speed fast as sound,  
until with a crash you emerge,  
Right under the tyre of the taxicab hire or else with your head in the verge.

I know what he looks like, I know where he works,  
and you'll know him too bye and bye.  
He'll be the one, wearing wings just for fun,  
and a pair of swing doors for a tie.

## Calais Christmas trip

The RecSoc is organising a Christmas trip to Calais on Friday 20 November.

The outing starts at 6.00 am from the RAL Main Gate, and will arrive back at 12.30 at night (or early Saturday morning, if you prefer). The cost is £20.

A £5 deposit secures a seat on the coach and the balance of £15 must be paid to Phil Walker, R20, Ext 5419, by 5 November.

## Apology

I referred to Glen Westlake making 33 runs in the Dave Craddock Cup match in the last issue of the Bulletin. It was, in fact, Derek Howe who scored the runs. Sorry.

A. Napper.

PANORAMA BBC1 is planning a programme on 'Space' to go out at 9.30-10.10 pm on Monday 9 November. No further details are known at this stage. Watch for 'Today' notices.

# Bulletin

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