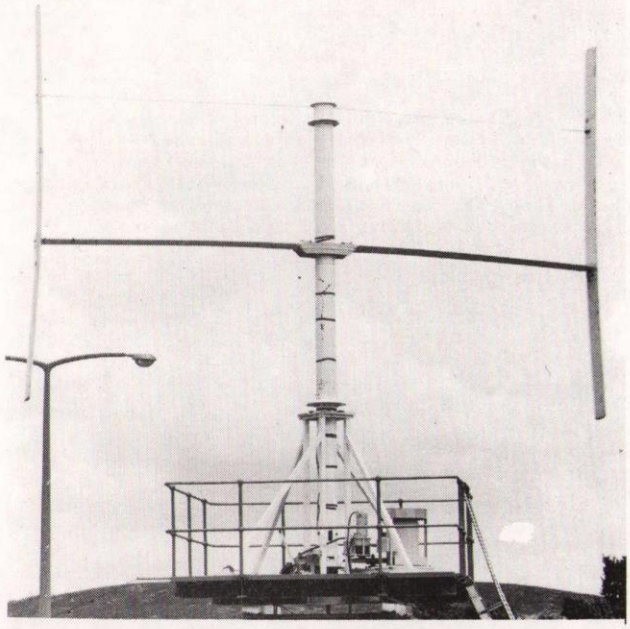
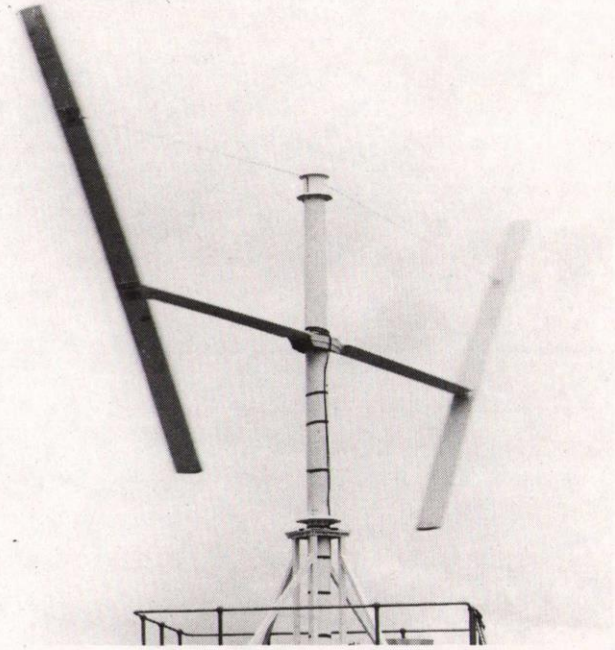
RUTHERFORD

Bulletin 15

21 August - 11 September

THE WIND IS FREE





THE WIND IS FREE

Windmills were a well known source of power in the middle ages used mainly as the name implies for milling grain. With the coming of the industrial revolution the use of the wind for driving mills, pumps and of course ships was overtaken by the more effective coal fueled steam engines.

Nowadays the wind has again come to the fore as a possible alternative renewable source of cheap power which might be used to supplement the dwindling supplies of fossil energy.

The Rutherford Laboratory Energy Research Support Unit became involved with windpower following a request from the Department of Architecture, Cambridge University to assist with the design and construction of an aerogenerator (windmill) for their proposed Autarkic House (Greek: autarkeia, autos-self, arkea-suffice).

The variable geometry vertical axis machine developed by Dr P Musgrove of Reading University was chosen since some experience with this design was near at hand at Reading where Peter Musgrove had already run a 3m span machine.

The Laboratory's remit was to produce a machine that subject to the wind environment at Cambridge would produce above 1900 kW hrs/annum of electricity to be fed into batteries. This power would supplement power derived from solar heating and from the recycling of waste material.

The first fruits of this task can be seen in the photographs and also in a more substantial form in the brown car park on the extreme west of the Rutherford Site.

The machine built at the Laboratory, and soon to undergo testing, is two bladed, rotates between 60 rpm and 120 rpm and has a potential power output of 7½ kW at 13 m/s wind speed. The vertical blades are 4m long spaced 6m apart, the assembly resembling an H television aerial. As the wind speed increases, so does the aerogenerator's rotational speed which is limited by the vertical blades swinging outwards due to the increasing centrifugal force about offset hinge points. As the power output is proportional to swept area, both power output and rpm are thereby limited.

The offset centrifugal force is, on the mill at present built, balanced by a pneumatic spring, since a mechanical spring would raise severe design problems and unwanted weight. Future development will be to incorporate a closed loop hydraulic control system, so that the aerogenerator can be run either at constant rotational speed, or at maximum power.

The Rutherford Laboratory was asked to construct the windmill with blades that could be built in the 'third world'. The construction chosen therefore is labour intensive and comprises a glass fibre laminate shell laid up around two glass fibre tubular spars, with a balsa wood infill. This construction could, at greater cost, be improved by using a glass fibre honeycomb infill rather than balsa wood. Testing is about to commence to satisfy the requirements of Cambridge University.

The size of this aerogenerator makes it a useful model on which to investigate some of the problems that will be met on large units. A programme of work is planned in conjunction with Reading University to investigate these problems.

INTERNAL EVENTS

NIMROD LECTURE SERIES
Monday 4 September
1130
R22 Lecture Theatre

Results from the Hyperon Experiment WA2

Dr R.M. Brown (Rutherford)

Monday 11 September
1130
R22 Lecture Theatre

No Further Details

SAFETY COURSE
Thursday 7 September
9.00
R22 Lecture Theatre

RL Safety Induction Course

Eric Hartley (Safety Officer)

RUTHERFORD LECTURE SERIES
Thursday 14 September
3.15
R22 Lecture Theatre

Alternative Energy Sources

Dr F.J.P. Clarke (Harwell)

Friday 15 September
11.00
R20 Conference Room

The Muon Spin Rotation (μSR) Technique and the Study of Muon Diffusion and Trapping in Metals" will be given by Dr Robert H Heffner, Los Alamos, Scientific Laboratory, at 11 am on 15 September in the R.20 Conference room. The talk will be focussed on the metals copper, aluminium, vanadium, and niobium which has been studied at LAMPF, and will also include an overview of the μSR technique. The relationship to hydrogen diffusion will also be stressed.

HEP SEMINARS
Monday 21 August
11.00
R61 Conference

Introduction to Current Application of QCD

Professor Cabibbo (Rome)

Wednesday 23 August
2.30
R61 Conference Room

Streamer Chambers (of special hardware interest)

Dr A Ladage (DESY)

Wednesday 30 August
11.00
R61 Conference Room

Forbidden Decays of Baryonium

Dr M Bishari (Weitzmann Inst)

Wednesday 13 September
11.00
R61 Conference Room

Meson Radiative Decays

Dr A N Kamal (Edmonton)

RUTHERFORD LECTURE

The next lecture in the series will be given by Dr F J P Clarke, Research Director (Energy), Harwell, on Thursday 14 September 1978 at 3.15 pm in the Lecture Theatre.

Dr Clarke will be talking on the subject of alternative energy sources and reviewing the status of work on solar, wind, wave geothermal and tidal systems.

PERIODIC SAFETY TEST OF PORTABLE ELECTRICAL EQUIPMENT

The test carried out during July has now been completed.

The current marker is green and is marked "do not use after November 1978".

Portable electrical equipment marked otherwise, or has no marker should be considered unsafe and must not be used.

All such items should be returned to Electrical Services Section Building R18.
Alternatively ring A Hipwell Ext. 573.

JOHN G. RUTHERGLEN MEMORIAL PRIZE

UNIVERSITY OF GLASGOW

The fund which was set up in memory of the late Professor J.G. Rutherglen is used to finance an annual award to a postgraduate student in experimental particle physics from one of the universities associated with the electron synchrotron NINA. The first recipient of the award will be George D. Lafferty, a Glasgow student who began his research career under Professor Rutherglen's supervision.

LOST - Would anyone knowing the whereabouts of a Solartron Fan-out Logic plug-in unit for a Solartron DVM type LM1604 having the legend RLLP 1807A inscribed on the outside of the unit, please contact G Arnison Ext. 6238 Building R1.

FOUND - A sum of money was found in the Library on Wednesday lunchtime. It had fallen down the back of one of the easy chairs. Please contact Personnel.

THANKS FROM THE ACTING EDITORS

The acting editors would like to thank Miss Karen Cross for her invaluable help with producing the last seven issues of the Rutherford Laboratory Bulletin. Karen will be leaving the Laboratory on 1 September.

LUNCH TIME FILMS. The Library, with the kind assistance of the Harwell Film Society and the Culham Music and Arts Society is organising lunch time films. These will be shown on alternate Wednesdays commencing in September. The programme is given below. It has been suggested that gramaphone sessions would be pleasant for the "off" Wednesdays. If staff would like this could they please contact the Library. There is a stipulation that programmes should not exceed 45 mins.

6 Sept - THE PERFORMING WINDOW - solar control glasses

20 Sept - WOMAN - To be announced

4 Oct - FOLLOW THE WIRE - B.I.C. Cables
CORNISH VENTURE - tin mining

18 Oct - CARPETS THROUGH THE AGES
NEWHART/HOLLERITH

21 Mar - THE CAMBRIDGE RADIO TELESCOPE ANTIQUES AT AUCTION

4 April - PIGMENTS - colour chemistry
THE IMPOSSIBLE VOYAGE - Chay Blyth's round the world trip.

18 April IMAGES - photography
WATER OF LIFE - Irish Distillers Ltd.

OVERSEAS VISITS Dr H-M Chan, to Hong Kong, Singapore, Kyoto, Tokyo, 3 Aug-2 Sept, to attend conference in Singapore (14-18 Aug); pre-conference in Kyoto (18-21 Aug); conference in Tokyo (22-31 Aug).
Mr M J Newman to USA, 14-31 August, to attend Siggraph 78 and consult with various centres on software for IC design, and graphics pre - and post-processors.
To Grenoble, 3-7 Sept, to attend COMPUMAG 78.
Mr L.L. Coulter and Mr T McCullough to DESY, 21-25 Aug, to supervise return of containers and equipment to RL.
Dr F.E. Close to Tokyo (Aug.Sept); Dr M.A.R. Kemp (21 Aug - 7 Sept); Dr P.J. Litchfield (21-31 Aug); Dr G.H. Stafford (21 Aug-1 Sept) to attend 19th International Conference on HEP; Dr R.J.N. Phillips (21 Aug-7 Sept) to attend Tokyo conference and Kyoto Summer Institute.
Dr C.M. Fisher to CERN, ∿21 Aug - ∿20 Sept, to work on High Resolution Bubble Chamber.
Dr R.G. Evans and Dr C.J. Webb to Innsbruck, 22-31 Aug, to attend the 7th International Conference on Plasma Physics and Controlled Nuclear Fusion Research.
Dr W.S. Howells to Grenoble, 24 Aug - 2 Sept, to carry out experiment.
Mr B.H. Glossop to Grenoble, 25 Aug - 22 Sept, to run SRC high pressure rig on scheduled experiment UK 6/137 on D2 and test experiments on D17.
Dr P.J. Hunter to San Diego, 27 Aug - 7 Sept, to attend 3rd International Congress on Biorheology and visit laboratories on West Coast of USA.
Mr J.W. Burren to Bonas, France, 28 Aug - 8 Sept, to attend Conference on "Interlinking of Computer Networks".
Mr D.C. Salter, to Grenoble, 28 Aug - 2 Sept, for technical liaison with ILL staff.
Mr G.T.J. Arnison to CERN, 30-31 Aug, to discuss RL contribution to central detector for UAI.
Messrs. C.S. Biddlecombe, C.W. Trowbridge, J. Simkin, C.J. Collie, AGAM Armstrong and M.J. Newman to Grenoble, 3-7 Sept, to present papers at the COMPUMAG Conference.
Dr G.C. Stirling to Rorschach, Switzerland, 3-9 Sept. to attend First International Topical Meeting on Muon Spin Rotation.
Mr R.T. Elliott to Grenoble and CERN, 3-8 Sept, attendance at COMPUMAG conference and have discussions with counterparts at CERN.
Dr J.D. Lawson to Padua, 3-12 Sept, to attend Reversed Field Pinch Workshop.
Dr W.A. Smith to Copenhagen, 4-8 Sept, to attend Decus International Symposium.
Mr A.L. Lintern to DESY, 11-15 Sept, to work on TASSO experiment.

EVENING COURSES AT READING COLLEGE OF TECHNOLOGY

Information is available in Training Section on the following evening courses to be run during the Autumn Term at Reading College of Technology

Non-Destructive Testing
Basic Electronics
Electronic Updating for Technicians
Electronics for Mechanical Engineers
Intermediate Electronics for Mechanical Engineers
Simple Feedback and Control Systems
Applications of Integrated Circuits, Laboratory Course
An Introduction to Analog and Digital Techniques
An Introduction to Microprocessors
Introduction to Microprocessors, Practical Course

SHORT COURSE AT ACTON TECHNICAL COLLEGE
"Some Aspects of Applied Cryogenics" - Monday evenings commencing 25 September. Further information from Training Section.

Enrolment
Attention is drawn to the green insert on Training 1978-79 in the last issue of the Bulletin. The notice is also displayed on notice boards throughout the Laboratory.
Please note that it will not be possible to enrol at AERE for Engineering courses at Reading College of Technology and prospective students must enrol in person at the College at the times prescribed in the prospectus.

SPORT

The Rutherford Folk Club is about to make a comeback. The first meeting is hoped to be held in September in the Coffee Lounge of R22 and anyone interested in singing, organising, or generally lending a helping hand will be more than welcome. Support of this club is essential, in any shape or form, or else the 'launch' will be abandoned and what could have been a worth while and relaxing evening listening and singing to the jolly sounds of folk music, will have been destroyed before it started. The club will be held once a month on a Friday night (a time to be decided later) so anyone interested in joining this club please contact Stephen Halliday Ext. 492/~~6297~~.

RUTHERFORD v BRITISH RAIL (Didcot)
On Saturday 29th July, thirteen anglers from Rutherford took part in a competition against the British Rail team from Didcot. The match was held in a disused railway pit in Didcot. However, despite the fact that the British Rail were on 'home grounds' Rutherford held the glory.

The final weight of fish
Rutherford 3lb 12.5oz
B. Rail 2lb 10.5oz

Peter Craske scored the highest individual weight with 1lb 8oz.

Owing to a large number of entries for the first Crib Tournament, we have had to close the entrance. Sixty four names in total have been received. We apologise to those who would have wished to play, better luck next year.

On the 29-30 July, Peter Mills and Fred Robins, with two other colleagues, successfully completed a 24 hour sponsored badminton marathon. The sponsorship realised over £600 which will be put towards the cost of a kidney machine. Peter and Fred would like to thank all of their many supporters at the Laboratory whose contributions formed a large part of the total sum raised.

Blake 7

Rutherford was honoured with the presence of the BBC again last Tuesday 15 August, with the Blake 7 Science Fiction team. They came to film a few scenes using various paraphernalia such as old hydrogen cylinders and parts of Nimrod as backing. Among the artistes present were Gareth Thomas (Blake) Paul Darrow (Avon) David Jackson (Gan) John Bennett (Coser) and Candace Glendenning (Rashel) all in splendid costume. Rutherford employees gathered to watch, totally mesmerized by the palavor of film making.
'Quiet please' and the audience held their breath, not a russle of paper was to be heard.
'Down Gan' cried Blake as an imaginery ray gun is fired in Gan's direction. Blake and Avon move into the picture.
'Thanks' sighed Gan, relieved.
'Cut' shouts the P.A. almost simultaniously as the voice from a building's loud speaker echoes across the set! Dressers and make up artists fly up to the actors, making sure everything is immaculate for the next shot.
And so they continue until perfection (or almost perfection) has been accomplished. This particular scene was taken approximately six times due to unforseen disturbances and 'technical hitches!

The actors dismissed themselves around midday for a well earned drink at the Horse and Jockey! The Space Rebels descending in all their glory on the unsuspecting locals of Chilton Village.
The team travel around the country shooting film scenes for various episodes but the bulk of the programme is shot in their actual studio, T.V. Shepherds Bush, i.e. The Space Ship. The work involved in directing a serial such as this is so considerable that a new Director is appointed after every 2-3 episodes (approx) with the company. This also applies to the script writers, probably the most famous of all being Mr Terry Nation who was responsible for the birth of Blake 7 and also played an important roll in the structure of the Doctor Who series.

The new Blake 7 serial will be televised in January 1979, the Rutherford sequences to be shown in Episode 3 or 4. We thank the BBC team and all the Blake 7 cast for the above information.

RUTHERFORD CELEBRITY - It was discovered during the filming that we have our very own celebrity amongst the Rutherford Staff, none other than Mr Bob Swadling, at one time Magic Consultant for the Blake 7 Team. He has recently finished consulting on a programme for the BBC called 'the Magic Show', which is scheduled to be shown on BBC 2 some time in the late autumn.

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SALES TO EMPLOYEES **Sale of Scrap Metal/plastics as set out in RLN 12/75 will be made on 8 & 22 September.**

THE PLAYHOUSE OXFORD: Tel 47133
15-26 August Daughter-in-law - D.H. Lawrence - 8.00pm.
Tickets: £1.25, £2.00, £2.75, £3.00.
Friday and Saturday 5pm and 8.15pm
4-9 Sept. Comedy of Errors - Oxford and Cambridge Shakespeare Company - 8.00pm.
Tickets: First night £1.00, 5-7 Sept £1.25 and £1.50. Friday and Saturday £1.50 & £2.00. Saturday 5pm.

NATIONAL SAVINGS CERTIFICATES **weekly cycle ending 14.8.78. Certificates can be collected from the Cash Office, Building R20. New members wishing to join the scheme can obtain enrolment forms from the cash office.**

NEW THEATRE OXFORD: Tel 44544/5
28 Aug - 2 Sept. The Young Vic present BARTHOLOMEW FAIR
Tickets: £2.50 and £1.50.
12 Sept.- 16 Sept. The Royal Exchange Theatre Company present THE WINTERS TALE
Tickets: £2.50 and £1.50.

RUTHERFORD LABORATORY BULLETIN

Acting Editor Geoff Stapleton

Please mail or phone-in contributions to:
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