Rutherford Laboratory

26 May - 9 June 1975

bulletin 11

ENERGY CONSERVATION

Energy Conservation has become of increasing importance to everyone. There are many ways of achieving it from the use of the bicycle to better insulation in one's home. Another way is to wear warmer clothing! There is in fact a term which expresses the thermal resistance of clothing - it is called a 'Clo" unit.
The Editor is grateful to Roy Tolcher, Head of the Mechanical and Electrical Services Section of Engineering Division for the following article which tells of the efforts being made at the Laboratory to achieve energy conservation in the field of building heating.

When considering energy conservation one of the major areas for saving is that used for heating houses and commercial properties. In particular considerable savings can be made at a relatively small cost with better management of building heating systems using modern sophisticated controls.

At Rutherford Laboratory steam is used almost exclusively as the source of heating. It is bought from AERE and the supply is metered both on entry into the site and also at all of the major usage points, so considerable data with regard to its consumption is available. Over the past year various steps have been taken to reduce the use of steam and considerable work has been carried out in looking into further ways of reducing consumption. To give some indication of the scope for saving, the steam, consumption at Rutherford and Atlas Laboratories during 1974/75 was 126×10^6 lbs of steam, which showed a slight reduction on the figure for 1973/74 of 131×10^6 lbs of steam (1 lb steam is approximately 1000 BUT).

A considerable saving is made possible if one accepts the principle that comfort temperatures in offices, laboratories and workshops should only be provided during occupied hours. As most of these places are only occupied for some 45 hrs per week out of a total of 168, even allowing for cooling down and warming up periods, the scope for saving is obvious. In conjunction with the Department of the Environment, several control manufacturers have developed versions of an Optimum Start Control system (OSC for short) which automatically brings on a heating system on boost condition in sufficient time before a building is occupied to ensure the desired temperature when the staff arrive, taking into account the internal and external ambient conditions and with built-in frost and condensation protection. The heating is switched off again when the staff leave work. For instance the heating might be switched on at 2 am on a cold Monday morning, but at 7.30 am on a mild spring morning. Throughout last winter a Honeywell version of OSC has been operational in R1 West in order to gain experience of the system, and it has been found that the claims by the Department of the Environment of up to 40% saving in fuel consumption have been substantiated. During the next few months OSC units will be installed in further office blocks, where the cost of installation is justified.

In other areas systems have been designed and tested which provide fixed time control of heating. Manual override is provided in all cases to cater for out-of-hours working and frost/condensation protection is also incorporated. This form of control has already been installed in R15, R16 and R51 and installations in R56, R24, R4, R9 etc are planned to be complete by the Autumn.

Another potential saving that is being looked into is the question of the losses from the extensive steam main system on this site. The losses occur Summer and Winter and in overall terms represent approximately 17% of the total usage of steam. Unfortunately steam is used in parts of the site during the Summer months for hot water, humidification, reheat, dish washing, etc and there are reservations about possible damage to the steam mains with an extended shut-down. The saving by turning off the mains during the summer months has to be balanced against the cost and complication of alternative facilities together with the cost and disruption of a possible subsequent mains failure.

At the end of the day, automatic controls can only go so far and one has to rely on individuals, particularly those in offices which enjoy solar gain during part of the day, to control their own radiators, turning them down rather than opening the windows when temperatures begin to get too high.

BULLETIN NOTICE - EXTERNAL READERS (REPEAT NOTICE).

From time to time we would like to review our distribution list for readers outside of the Science Research Council. Peoples interests change and there may be a number of names on our list of external readers who at one time had reason to receive the Bulletin but who are now no longer interested. "In order to continue to receive the Bulletin, please complete the form at the bottom of page 4 and return to the Editor as soon as possible".

LOST AND FOUND

A sum of money found in Bldg. R2 and a ladies umbrella in an AERE/SRC feeder bus. Enquiries to Mrs S A Fones, Personnel Group R20, Ext. 495.

INTERNAL EVENTS

There are no lectures during the week commencing Monday 26 May

NIMROD LECTURE SERIES
Monday 2 June
11.30
Lecture Theatre

I = 0 KN Amplitudes - Last Chance for an Exotic Baryon?

B R Martin/UCL

HEP SEMINAR
Tuesday 3 June
11.00
Lecture Theatre

News from the Labs : SLAC, SPEAR, FNAL, BROOKHAVEN etc.

I Corbett/RL

HEP SEMINAR
Wednesday 4 June
11.00
R61 Conference Room

Bags and Nuclear Forces

E Squires/Durham

RUTHERFORD LABORATORY LECTURE
Thursday 5 June
15.15
Lecture Theatre

Science and Politics

Professor Margaret Gowing/Oxford (see 'news' section for details)

SEMINAR IN COMPUTING
Friday 6 June
11.00
R61 Conference Room

Satellite Control and Data Processing at the Appleton Laboratory

B R Martin/Appleton Laboratory

This talk will describe the growing role of the Appleton Laboratory in the field of satellite data processing and control. A brief reference will be made to the earlier satellites in the Ariel series, but the main part of the talk will be devoted to the Ariel 5 project. A short account will also be given of the work currently being carried out on the UK-6 and International Ultra-Violet Explorer satellites.

NIMROD LECTURE SERIES
Monday 9 June
11.30
Lecture Theatre

A Summary of the British-Scandinavian I.S.R. Experiments

B Alper/RL

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RUTHERFORD LABORATORY LECTURE

It is with great pleasure that we welcome our first lady speaker in this series. Doubly so as it is Margaret Gowing, Professor of the History of Science at Oxford.

Her education commenced in Notting Hill where she attended primary school; at the age of 11 she won a scholarship to Christ's Hospital and a further scholarship, when she was 16, took her to the London School of Economics where she read economic history. After taking her degree she entered the Civil Service in 1941 where she had the opportunity of helping Sir Keith Hancock prepare and credit a series of official histories dealing with the social and economic side of the war. Professor Gowing joined the UKAEA in 1959 as its archivist and official historian but eventually moved in 1966 to the University of Kent as a reader in Contemporary history. The next move, in 1972, took her to Linacre College in Oxford and the newly created chair in the history of science, a position in which she is now firmly entrenched.

In 1964 Professor Gowing published the first results of her work in the Atomic Energy Authority in a book entitled "Britain & Atomic Energy 1939-45", which attracted considerable attention. This was followed by the publication at the end of 1974, of two more volumes, "Independence & Deterrence", covering the post war growth of the atomic energy industry in Britain. She is now working on a history of CERN and would like to add a further volume to the atomic energy story.

Professor Gowing has progressed a long way from the primary school in the Portobello Road; and indeed a long way from 1959 when she joined the AEA and started learning science from books written for primary school children.

Her talk is at 3.15 pm on Thursday 5 June in the Lecture Theatre, and she has kindly provided the following abstract:

"Scientists sometimes regret that politicians do not behave like scientists. In the mid twentieth century scientists have themselves become involved in political decision-making. Has their performance, in retrospect, been more rational or more consistent than that of the politicians?"

EXTERNAL EVENTS

OXFORD UNIVERSITY

ELEMENTARY PARTICLE THEORY SEMINARS/NP DEPT - 14.30 hours
30 May: Dimensional Regularisation & Infra-red Problems - Dr R Meuldemans/Leuven Univ.
6 June: Structure Functions F_4 and F_5 in Asymptotically Free Theories - Dr T Scharbach/ Dept of Theor. Phys.

ELEMENTARY PARTICLE PHYSICS SEMINARS/NP DEPT - 14.30 hours
26 May: Fragmentation Charge Ratios in Deep Inelastic Electroproduction off Neutrons - Prof. L Osborne/MIT
5 June: Deep Inelastic Scattering of Muons off Protons - Drs W S C Williams and T Quirk.

COLLOQUIA/CLARENDON LAB - 16.15 hours
30 May: Scientific R and D for Law Enforcement - Dr D F Shaw/Dept of Nuclear Physics.
6 June: Neutral Currents in Neutrino Physics - Dr G Myatt/Dept of Nuclear Physics.

LOW TEMPERATURE & SOLID STATE PHYSICS SEMINAR/CLARENDON LAB - 14.30 hours
29 May: Vibrational Properties of Amorphons Semiconductors - Prof M H Brodski/IBM.

THEORETICAL PHYSICS SEMINARS/CLARENDON LAB - 16.15 hours
29 May: Statistics of Many Polymer Chains - Relation to Magnetic Phase Transitions - Prof P G de Gennes/College de France.
5 June: Beyond the Boltzman Equation - Prof J Blatt/Univ. of New South Wales.

NUCLEAR PHYSICS SEMINARS/NUCLEAR PHYSICS LAB - 14.30 hours
28 May: Nuclear Physics at ANL Canberra - Prof Sir Ernest Titterton/Australian Nat. Univ. (postponed from 19 May).
2 June: Quantum heats with Tilted Foils & Spectroscopy on Highly Ionised Systems - Dr J Silver/N.P.L Oxford.

QUEEN MARY COLLEGE

THEORETICAL PHYSICS SEMINAR - 16.15 hours
2 June: A New Transport Phenomenon - Prof J M Blatt/New South Wales.

MANCHESTER UNIVERSITY

THEORETICAL PHYSICS SEMINARS/NIELS BOHR COMMON ROOM - 14.30 hours
28 May: Bound Pair States in Dense Fermi Systems - Dr R F Bishop/Manchester.
4 June: To be announced (Joint seminar with Low Energy Nuclear Group) - Dr S Kahana/Oxford.

SOUTHAMPTON UNIVERSITY

THEORETICAL & HIGH ENERGY PHYSICS SEMINARS/LECTURE THEATRE C - 14.30 hours
30 May: PCAC in a Bound State Model - Dr C H Llewellyn Smith/Oxford.
6 June: Chiral Confinement: An Exact Solution of the Massive Thirring Model - Dr S D Ellis/NAL & DAMPT

SUSSEX UNIVERSITY

THEORETICAL PHYSICS SEMINAR/PBIA6 - 16.15 hours
29 May: Particle Creation by Black Holes - Dr D W Sciama/Oxford.

DARESBURY LABORATORY

THEORETICAL PHYSICS SEMINAR - 14.00 hours
2 June: New Ideas in Few Body Phenomenology - S Humble/Daresbury.

SOCIAL NEWS

CHRISTIAN FELLOWSHIP All are welcome to come along and listen to Mr S M Houghton at 12.30 in the R12 Conference Room on Friday 30 May.

On Friday 6 June, Ken Potter will be leading our monthly prayer meeting. As usual, if anyone has any requests for prayers please contact any member of the group or come along. The meeting commences at 12.30 p.m in the R12 Conference Room.

ORNITHOLOGICAL NEWS That friendly blackbird is getting a little above herself. Obviously the headline reports in the papers has gone to her head so she is performing an encore. So far she has produced four eggs and is sitting on her nest with a defiant look on her face. What is extraordinary is that the nest was removed one day, replaced the next and she promptly took up residence again. We will issue a progress report in the next issue and maybe a picture. No doubt she will require prior notice from the photographer in order to get a hair-do, or should it be a feather-do!

RUTHERFORD LABORATORY BULLETIN *Published by the Scientific Adminsitration Group*

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Deadline for Insertions	GENERAL & SOCIAL NEWS	INTERNAL & EXTERNAL EVENTS
	Tuesday 1600	Wednesday 1200

OVERSEAS VISITS

Mr D Hadley, to Paris, 25-31 May, to attend International Conference on Technology of Scientific Space Experiments, ESRO.
Mr D Jones, to Brussels, 27 May - 1 June, to attend meeting of CAMAC committee.
Dr J Dias de Deus, to Poland, Czechoslovakia & Sicily, 27 May - 28 June, to attend Zakopane School of Physics, Prague Meeting on high energy hadron interactions and the Palermo Conference on high energy physics.
Mr H O Normington, to CERN, 28 May - 20 June, to work on WAS & MUON experiments.
Dr B Franek, to Juan-Les-Pins and CERN, 31 May - 10 June, to attend International Computing Conference at Antibes and for discussions at CERN on ORACLE & HYDRA.
Dr D Madon, will also attend the Antibes Conference, 1 - 5 June.
Mr K H Davies, to the USA, 1 - 26 June to attend final checking of the Oxford University Experiment prior to launch of the Nimbus F spacecraft and to attend a Nimbus G meeting at the Goddard Space Flight Centre.
Dr J M Valentine, to Paris, 1 June - 12 July, to attend course in Ecole Nationale D'Administration.
Messrs. R Morgan & C Page, to CERN, 3-11 & 2-13 June respectively, for packing and shipping of MUON experiment apparatus.
The Director, to Geneva, 3 - 6 June to attend discussions at CERN; and Nuclear Physics Research Committee, Restricted and Plenary ECFA meetings.
Mr P P Swan-Taylor, to CERN, 3 - 6 June, for maintenance & installation work.
Dr J C Hart & Dr R P Hand, to Czechoslovakia, 4 - 16 June, to attend Smolenice Summer School on Computing Techniques in Physics.
Mr N Sakai, to Poland & Sicily, 6 - 29 June, to attend XVth Cracow School of Theoretical Physics & the Palermo Conference on high energy physics.
Dr R A J Riddle, to the U.S.A., 7 - 14 June, to attend VIth International Conference on High Energy Physics and Nuclear Structure in Santa Fe.
Dr C J Batty, to the U.S.A. & Canada, 7 - 22 June, to attend Santa Fe Conference and to visit TRIUMF accelerator for discussions and to give a lecture.
Miss M J Eggleton, to CERN, 8 - 21 June, on relief administration duties.
Dr M J Jane, to CERN, 8 - 13 June, to work on Neutron Calibration Experiment.

OBITUARY NOTICE

We deeply regret to announce the death of Mr H J Bunce on Tuesday 13 May. He was aged 63. Henry Bunce a fairly recent recruit to the Laboratory had spent most of his working life on local farms. We extend our deepest sympathy to his wife and family.

MAIL FOR LLOYDS BANK, HARWELL

Mail has recently been sent unstamped through the internal mail addressed to Lloyds Bank, Harwell. There is no messenger service to Lloyds Bank and mail so addressed must be correctly stamped for transmission by the Post Office. Any letter not stamped will be opened and returned to the sender.

RL NOTICES & CIRCULARS ISSUED DURING PREVIOUS FORTNIGHT

Notices - Nil
Circulars No 8/75 AERE Main Gate Car Park
No 9/75 Spring Holiday 1975
No 10/75 Period Safety Test of Portable Electrical Equipment.

FILM BADGE NOTICE

Period 6 commenced Monday 19 May. Colour Strip - GREEN for βγ films. TLD six monthly change for people with surnames commencing UVWX. Please make sure you are wearing the correct dosimeter and that all old ones are returned.

THEFTS OF MONEY AND PERSONAL PROPERTY

Petty thefts of money and personal property continue to be a problem in various parts of the Laboratory. The most effective way of reducing the number of thefts is to remove the obvious sources of temptation: wallets, handbags & other valuables should not be left lying openly in laboratories & offices; lock drawers & cupboards.

TELEPHONE AMENDMENTS

Blue Page Section. Page 2 delete heading Directorate. After High Energy Physics Division & below University College, Dr D J Milner, insert HIGH POWER LASER PROJECT Project Manager - Dr L C W Hobbis 418, Project Officer - Dr P R Williams 582. Page 12 STORES Management RI add 6203. Stationary RI delete 6655. Page 2 Add DEPARTMENT OF ENGINEERING SCIENCE. Department Head - Mr M Snowden 517. Polarised Targets & Materials, Mr B F Colyer 452 NBRU Engineering Mr P D Hey 432, Superconducting Magnet Engineering Mr P T M Clee 6649 Electrical Engineering Mr J D Wheatley 6624. Chemical Technology Mr D Evans 297. Page 2 EPIC PROJECT TEAM. Insert 6655 against Dr J T Hyman. Page 12 PERSONNEL. Appointments (inductrial) & General (Industrial) under both headings delete Rm 64, insert Rm 65, delete 505 & insert 495. Page 10 CONTRACTS BRANCH. General contracts - delete 308, insert 380.

BULLETIN NOTICE - DEAD LINES

Contributors are reminded that the deadlines shown in the box normally printed at the bottom of page 3 refer to the very latest time for material to be with the Editor and not in your out-tray.

To Mr H F Norris, Editor of the RL Bulletin, Rutherford Laboratory, Chilton, Didcot, Oxon, OX11 0QX
I wish to continue receiving copies of the Bulletin. Please put me on your revised mailing list:

Name.....

Postal Address.....