Rutherford Laboratory

19-26 March 1973

bulletin 11

SCENE BUT NOT HEARD

For the first time for five months there is a dearth of information for the news section. This provides an opportunity to publish the second article in the series "Scene But Not Heard". The author is again David Evans of R34 and is a follow up of his first article on the cooling towers.

Articles about other aspects of the Rutherford scene are being prepared and will appear in due course.

The Kennicott Water Softening Plant (R10)

As explained in the first article in this series, the make up water to the cooling towers is fully softened. The need for such water is dictated by the need for economy in the use of water on the Rutherford site. The make up rate to the towers just to replace evaporation and spray losses, needs to be in the region of 4,000 gallons per hour. If raw water direct from the mains were to be used to feed the towers, additional 'bleed-off' from the towers would be required to maintain a concentration factor of about two in the recirculating water. This bleed-off rate would need to be as high as the evaporation rate.

Raw water direct from the mains contains two types of hardness - termed temporary hardness and permanent hardness. The temporary (or bicarbonate) hardness may be removed by boiling and this results in the 'fur' in kettles, boilers and heat exchangers operating on hard water. The water softening plant removes both types of hardners in two separate stages by a chemical process called 'ion-exchange'.

The bicarbonate hardness is removed when the water passes through the first stage in the plant. The bicarbonate salts in the incoming raw water are chemically converted to carbon dioxide gas which remains dissolved in the water. The treated water passes to the top of a 'scrubber tower' where a counter current of air removes the dissolved carbon dioxide from the water, which then passes to the scrubbed water sump beneath the floor of building R10. The second section of the plant removes the permanent hardness by replacing salts of magnesium and calcium with the more soluable sodium salts. Water to feed this section of the plant is drawn from the scrubbed water sump and the treated ('soft') water flows directly to the towers.

The softening plant is completely automatic in operation. A system of electrodes controls the water level in the scrubbed water sump and the cooling tower ponds, and a series of valves ensures that water only goes to the pond that requires water. Each section of the plant periodically becomes exhausted and when this happens regeneration is automatically initiated and proceeds via a system of air operated valves. The total output of the plant is some 8,000 gallons of treated water an hour at maximum, but in practice the plant only needs to cope with the evaporation and spray losses and hence seldom needs exceed 4,000 gallons per hour.

TRANSPARENCIES FOR THE OVERHEAD PROJECTOR

There are three simple rules to be observed when preparing material from which transparencies are to be made

1. Transparency sheets are 10½ ins x 8½ ins. Foolscap paper is 13 ins long and even A4 is 11¾ ins. Need one say more?

2. Only carbon based writing materials will reproduce. A sharp 'B' pencil or carbon based ink should be used. If however non carbon based ink (felt tipped pens for instance) is used, then it is necessary to make a Xerox copy which will reproduce very well.

3. Keep writing fairly large and use the minimum of information on any one sheet. The object of the overhead projector is to present information visually-if the writing/typing is too small it cannot be read. Too much information on one sheet also produces difficulties for the viewer for it is impossible to read everything in the time usually allowed by lecturers before the next sheet is displayed.

FILM BADGE NOTICE

It is Period 3. Colour Strip - BROWN for βγ films. Please check that you are wearing the correct dosimeter and that all old ones are returned.

Next film issue - Monday 26 March

INTERNAL EVENTS

NIMROD LECTURE SERIES
Monday 19 March
11.30
Lecture Theatre

New Data on πN Charge Exchange Polarization

Professor A Yokosawa/A N L

SPECIAL NIMROD LECTURE
Tuesday 20 March
11.30
Lecture Theatre

Proton - Proton Interactions at N A L

Dr R A Carrigan/N A L

PROPOSAL LECTURES
Tuesday 20 March
14.15
Lecture Theatre

Proposal No 119: 'A Proposal to Study the S = -2 Baryon Resonances using a Rapid Cycling Hydrogen Bubble Chamber'
RUTHERFORD LABORATORY/OXFORD UNIVERSITY

The lecture will be given jointly by Dr C M Fisher/RHEL and Dr D Radojicic/Oxford University

Proposal No 121: 'A Proposal to Study 6 GeV/c π^+p interactions using a Track Sensitive Target in the ANL 12 ft Chamber'
RUTHERFORD LABORATORY/ARGONNE NATIONAL LABORATORY

The lecture will be given by Dr W A Venus/RHEL

SEMINAR IN COMPUTING
Friday 23 March
11.00
Conference Room, Building R12

Why COPPER? A description will be given of why the COPPER/SETUP system was introduced and the advantages for the Operations Staff and users

M M Curtis and A R Mayhook/RHEL

NIMROD LECTURE SERIES
Monday 26 March
11.30
Lecture Theatre

Resonances and Symmetries

Professor J Rosner/University of Minnesota

EXTERNAL EVENTS

THEORETICAL PHYSICS SEMINAR
Monday 19 March
16.15
Queen Mary College, London

Baxter States and XY Model

Dr R B Jones/Q M C

PHYSICS COLLOQUIUM
Monday 19 March
17.00
University of Reading

Recent Work on the Electronic Properties of Amorphous Silicon

Professor W E Spear/University of Dundee

DARESBURY LECTURE SERIES
Tuesday 20 March
14.00
Daresbury Laboratory

The Cornell Physics Programme

A Silverman/Cornell University

THEORETICAL PHYSICS SEMINAR
Tuesday 20 March
14.30
Imperial College, London

The Absorption Model in Twobody Scattering

Dr P Collins/Imperial College

BRITISH COMPUTER SOCIETY - READING BRANCH MEETING
Tuesday 20 March
20.00
I C I Pangbourne

A High Level Language for Process Control Applications

Mr J G P Barnes/I C I Pangbourne

THEORETICAL PHYSICS SEMINAR
Wednesday 21 March
14.30
University of Manchester

Theoretical Implications of X-Ray Astronomy

Professor M J Rees/Sussex

APPLIED PHYSICS COLLOQUIUM
Wednesday 21 March
16.30
University of Reading

Operational Research Studies in the Reading Hospitals

Dr D G Neal/Applied Statistics

THEORETICAL PHYSICAL SEMINAR
Thursday 22 March
16.15
University of Sussex

Theories of Hypernuclear Systems

R H Dalitz/Oxford

EVENTS AT AERE

THEORETICAL PHYSICS COLLOQUIUM
Tuesday 20 March
14.00
Conference Room, Building 8.9

Optical and Transport Properties of Molecular Solids

Professor W E Spear/University of Dundee

NUCLEAR PHYSICS COLLOQUIUM
Thursday 22 March
15.30
Conference Room, Hangar 8

Forty Years On In Nuclear Power

Dr G R Bainbridge/Reactor Group, Risley

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

IN A BEAUTIFUL PEA-GREEN BOAT?

Malcolm Davies left the Laboratory on Friday 9 March to go to sea with the Shaw Saville Line as a 3rd Engineer (Electrical). He was given plenty of useful advice by the "old salts" around the Laboratory.

Malcolm was an SRC apprentice who, having spent the usual period of time with the Power Supply and Ancillary Plant Group, made a special request to serve for a second period. At the first opportunity after his apprenticeship he applied for a post with the Group where he had worked as an electrical fitter for the last four years.

On behalf of his colleagues he was presented with a travelling clock and a pewter tankard by Mr H Brooks. Malcolm thanked all for the very useful presents, expressing the view that he had recently had a little too much experience of the use of one of these.

UNDELIVERABLE MAIL

A letter addressed to Mr J Fisher from Leisure Arts Ltd can be collected from the Editor.

OVERSEAS VISITS

Dr J D Lawson, to Paris, 18 - 21 March for discussions.
Mr F Atchison, to CERN, 19 - 23 March for discussions on beams for North Area of CERN Lab II.
Dr G Williams, to ILL Grenoble, 19 - 23 March for discussions on polarized beam instruments.
Dr L C W Hobbis, to ILL Grenoble, 20 - 21 March to attend various Sub-Committee meetings.

SOCIAL NEWS

CHESS - LATEST

Sensation in the final round of this year's tournament. Bill Turner has been beaten by Subodh Chanda. Peter Craske won his last game therefore he and Bill tie, both with 7½ points. The final round has not yet been completed and one vital game is that between Jim Riddle and Peter Hemmings. The very latest information is that Jim is one pawn up and if he wins this game the final result will be a triple tie.

A full report will be given next week.

RECORD SOCIETY

Tuesday 20 March at 12.40 in the Lecture Theatre

Greig's Peer Gynt Suite

This work comes under the general heading of popular classics, the suite containing such well known tunes as Anitra's Dance, Morning, and of course, Hall of the Mountain Kings.

CHRISTIAN FELLOWSHIP

John Thomas will be concluding his talk on the Rev Walter Cradock and it is hoped that there will be time for discussion. The meeting commences at 12.30 in the Conference Room R12 on Friday 23 March. All are welcome to come along.

SEVEN-A-SIDE SOCCER

LEAGUE FIXTURES

Week beginning - 19 March

Tuesday 20 March - R9 v R25
Wednesday 21 March - Casuals v C A Div
Thursday 22 March - R H G v Trans
Friday 23 March - Admin v 351

FOOTBALL LEAGUE TABLE - 14 MARCH

TEAMS	P	W	D	L	F	A	Pts
G O	3	3	0	0	16	4	6
351	2	2	0	0	4	1	4
R 25	3	1	2	0	5	3	4
Admin	2	1	1	0	6	2	3
Atlas	2	1	0	1	6	6	2
Casuals	2	1	0	1	3	4	2
R 9	3	1	0	2	4	5	2
Apprentices	3	1	0	2	9	10	2
C A Div	3	0	2	1	5	6	2
R H G	3	1	0	2	5	10	2
R 55	3	1	0	2	3	12	2
Trans	3	0	1	2	6	8	1