

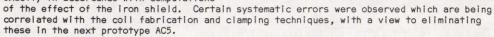
R(12)-NDT(40,3), ISW(3500)+ANGLE(60) YINT(60), DUMMY (6, 25) AC September, YEN(2), October (c 1972, AR MMON/CFID/MFX(20,3), MFY(20,3), NFDX(10,3), NFX(3), NFD(3), IB(2,20,3), NX(100,4), NY(100,4), XN(2), YN(8), IB(DY(100,2), JDX(4), JDY(4), YHS(4), IOV(2), IUN(2), IUN(2), IDECF(16), IFS, NFS, FX, FY, JK, PIC, KPIC, NCOUNT, NBIN, MAY, AXN, CTA, CTB, MX, MY, JA, JB, JC, JD, JE, JF, XF(20,3), MMON/CJACK/NSY(20,30), NMS(20), NDR(2 bulletin (60), NST1(20), NST1(20), NST1(20), NST2(20), INER(20), NSX(20), NSX(20)

SUPERCONDUCTING DIPOLE MAGNET AC4 - SUCCESSFUL FIRST TEST RUN Another step forward in the development of superconducting synchotron magnets has been achieved by the successful first run of dipole model AC4 during the weekend of September 8th-10th.

This is a horizontally mounted, 9 cm bore superconducting bending magnet, designed to the 0.1% standard of accuracy which would be required in a synchrotron magnet. It is surrounded by a cylindrical iron shield which augments the central field by nearly 50% and also shields the surroundings from the high magnetic field.

During the test run it was brought up to its design field of 45 kilogauss (at a current of 5,200A) and pulsed with a 2 second rise time. Even with a 1 second rise time (three times as fast as the design specification) the magnetic field reached was only a few percent lower.

Magnetic field measurements were successfully carried out at all field levels to an accuracy of better than I part in 10⁴. These showed that the magnetic field shape changed by only a few parts in 10⁴ as the mean field level was increased. This is exactly in accordance with computations



In addition, measurements were made of a.c. losses and remanent fields, also giving results in agreement with expectations.

Further tests of this magnet will be made, to assess repeatability of performance and the effects of continuous cycling

This Superconducting Applications Group project was carried out under the direction of \mbox{Dr} J H Coupland, in conjunction with a Department of Engineering Science design team led by P T Clee.

HERBERT WHITBY RETIRES

Friends of Herbert Whitby may like to know that there will be a presentation by the Director in the Lecture Theatre at 1500 hours on Friday 29 September.

VISITORS

Twenty Students attending the Low Temperature Technology Course at AERE, Harwell, will visit the Laboratory on Friday 22 September.

FILM BADGE NOTICE

It is Period IO. Colour Strip - RED for $\beta\gamma$ and fast neutron packs. Please check that you are wearing the correct dosimeter and that all old ones are returned.

Next film issue - Tuesday 3 October.

OVERSEAS VISITS

The following will be attending the SEAS Sub Committee Meetings and SEAS Conference at Gothenberg, Sweden, 24-30 September:-

Mr W. Walkinshaw, Mr H. Hurst, Dr B. Scott, Dr M.M. Curtis, Mr A. Mayhook and Dr A. Lea. Dr Lea will also yisit Copenhagen for discussions, returning on 6 October.

overseas visits continued on page 4

INTERNAL EVENTS

NIMROD LECTURE SERIES Monday 25 September 11.30 Lecture Theatre

A Dual Model of Inclusive Reactions

Professor G Veneziano/CERN

H E P DISCUSSION GROUP Wednesday 27 September II.00 Conference Room, Building RI Phase Shift Analysis and Amplitude Analysis in KN and πN Scattering $\emph{Dr R Kelly/Lawrence Berkeley Laboratory}$

NIMROD SCHEDULE

CYCLE 12 19 9 72	- 10 10 72	MACHINE PHYSICS	HIGH ENERGY PHYSICS
Team	Beam	Experiment	State
Glasgow University RHEL	π9,Ν4	Polarisation Measurements in $\pi^- p$ Charge Exchange	Setting up
Bristol University Southampton University RHEL	. KI5	$K^{\dagger}p$ and $\pi^{\dagger}p$ Differential Cross-Sections	Data
Churchill Hospital Oxford RHEL	πΠ	Radiobiological Experiment	Data
Cambridge University RHEL	KI3C	Associated Production Cross-Sections	Parasitic

EXTERNAL EVENTS

NUCLEAR PHYSICS COLLOQUIUM rsday 28 September 3.30 Conference Room, H8, AERE

1973 PARTICLE ACCELERATOR CONFERENCE 5 - 7 March 1973 San Francisco, California Irradiation Damage Experiments in the High Voltage Electron Microscope

Dr M J Makin Metallurgy Division, AERE

 $\frac{\text{NOTE:-}}{\text{in this talk, it is necessary to restrict attendance to those holding }}{\text{Red H4}}$

The 1973 Particle Accelerator Conference - Accelerator Engineering and Technology will be held from 5 - 7 March 1973, at the Sheraton Palace Hotel in San Francisco, California. The subject of the meeting will be new developments in the science, technology, and use of accelerators, and the purpose will be to provide a channel of communication for accelerator scientists and engineers, and for persons concerned with the applications of accelerators.

The programme will include invited papers, panel discussions, and contributed papers on all aspects of accelerator science and technology. Contributed papers on new developments in the following or related topics may be submitted:

Accelerators

Cyclotrons and Synchrotrons DC and pulsed accelerators Linear accelerators Storage rings Collective effect accelerators Heavy-ion accelerators

Technology and Theory

Cryogenic and vacuum technology Beam dynamics & high current effects Radiation monitoring and safety

Components

RF cavities and power sources
Magnets and power supplies
Ion sources and injectors
Beam extraction, transport and
targeting
Instrumentation and control devices
and systems

Applications

Industrial and Medical Non-nuclear Thermonuclear

Further information available from the Editor

RUTHERFORD LABORATORY BULLETIN

Published by the Scientific Administration Group

Editor: H F NORRIS Room 42 Building R20

Deadline for Insertions GENERAL & SOCIAL NEWS

INTERNAL & EXTERNAL EVENTS

Rutherford Laboratory Chilton Didcot Berks

Tuesday 1600

Wednesday 1200

Abingdon 1900 Ext 484

Mr C.W. Planner to CERN, 24-29 September, to assist in high power experiments on the TH 516 Power Amplifier Cavity.

Dr J.M. Valentine, to the U.S.A, 30 September - 6 October, to attend conference on Particl Accelerators in Radiation Therapy, at Los Alamos.

Mr J.M. Dickson, to the U.S.A, 30 September-15 October, to attend the 1972 Linac Conference at Los Alamos and to visit BNL and NAL for discussions.

SOCIAL NEWS

H.E.P. SUPPER DANCE

An H.E.P. Supper Dance will be held in the Restaurant, R22, on Friday 29 September, 8 p.m. - I a.m., with dancing to the Rhythm Aces. Tickets at 65p. (includes supper) can be obtained from Mrs V. Goodwin and Mrs W. Dance, RI; Mr Roy Brabben R20 and Mrs T. Batchellier, R34.

RUTHERFORD AND ATLAS CHESS CHAMPIONSHIP 1972-73

A last reminder that entries for the annual championship must be in by 27 September at the latest, to Pete Craske, Building R2 Ext 232. Ten pence will buy you approximately twenty weeks of chess and the chance to take part in matches arranged against other clubs in the district.

AERE HORTICULTURAL SOCIETY

Wisley is the home of the Royal Horticultural Society's world famous gardens and trial grounds. We are therefore delighted to announce that the opening lecture in the Society's Winter programme is to be given by Mr O.J. Clayton who is the Superintendent of the Floral Department at Wisley. We hope and expect that members, friends and others interested in gardens and gardening will make the effort to come along to the Rutherford Laboratory's Lecture Theatre at 7.30 p.m. on Tuesday 3 October. Mr Clayton will be talking on "Wisley Gardens throughout the year", illustrated by colour

slides.

Tickets at only 15p (includes light refreshments) from any committee member or from the Editorm will be available shortly.

Date for your Horticultural Diary:- Tuesday 14 November, 7.30 p.m. Mr J. (Joe) Elliott, acknowledged expert on alpines, on "Alpines without a Rock Garden"

RUTHERFORD CHALLENGE SHIELD COMPETITION -SEVEN-A-SIDE SOCCER

League Tables up to and including Wednesday 20 September:-

Y 10 10 10 10 10 10 10 10 10 10 10 10 10		GROU	P 'A'					
TEAMS	P	W	L	D	F	A	Pts	7
AERE 351	1	1	0	0	2	1	2	
Atlas	1	1	0	0	2	1	2	
R 9	2	1	1	. 0	3	3	2	1
AERE G.O.	2	0	0	2	6	6	2	
Hall 3	1	0	0	1	2	2	1	
R 18	2	0	1	1	5	6	1	
C.A. Div.	1	0	1	0		2	0	

TEAMS	P	M	L	D	F	Α	Pts
AERE 220	2	2	0	0	10	0	4
R 25	2	2	0	0	8	0	4
TRANS	1	1	0	0	8	0	2
D.O.	1	0	1	0	0	4	0
AERE ADMIN	1	0	1	0	0	0	0
STORES	1	0	1	0	0	8	0
CASUALS	2	0	2	0	0	14	0

FIXTURE LIST

Tues 26 Sept 'B' Stores v Casuals Wed 27 Sept 'A' AERE 351 v Atlas Thurs28 Sept 'A' R9 v C.A. Div.

Fri 29 Sept 'B' AERE ADMIN v STORES

Wed 4 Oct 'A' RI8 v Hall 3 Thurs 5 Oct 'B' AERE ADMIN v TRANS Fri 6 Oct 'B' R25 v D.O.

CHRISTIAN FELLOWSHIP

Friday 29 September. All welcome to join in a half-hour of Christian Fellowship at 12.30 pm in the RI2 Conference Room. Meeting led by Geraldine Wood.