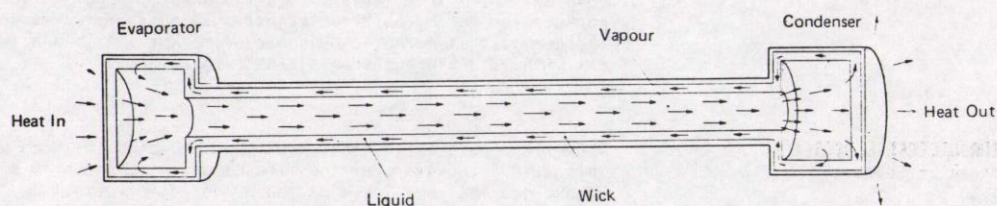


## PIPING HEAT

A Liquid Helium Heat Pipe was successfully operated in Building R8 at the end of January. The device used a 0.5 inch diameter stainless steel tube 8 inches long and was able to transmit 4.5 watts before "burn out" of the evaporator occurred. The temperature difference between evaporator and condenser was not greater than 0.2°C with a confidence level of 0.05°C.

Heat pipes can take many forms and have many uses. To those who are not familiar with the principle of operation, a simple explanation is offered below with a small explanatory sketch:-



A heat pipe is a very simple device for transferring heat from one point to another with a very low loss of heat. How does it work? Basically the device is a closed tube, lined with a wick. At one end is contained the fluid to be evaporated and at the other end is a heat sink or condenser. Heat is applied to the evaporator which causes the fluid to vapourize. Due to increased pressure the vapour and thus the heat energy, move towards the other end of the pipe. Here the vapour encounters a lower temperature which causes it to return to its liquid state. The cycle is completed by the transfer of the liquid to the evaporator end by capillary action through the wick. It is the use of the capillary action which is the unique characteristic of the heat pipe as it is not dependant on gravity for the return of the liquid.

One of the many advantages is the ability to transfer heat with a very small temperature gradient. An example can be seen in the figures quoted in the above note on the Liquid Helium Heat Pipe where the temperature difference was not greater than 0.2°C.

For further information on this subject, interested readers may like to know that a monograph entitled "The Heat Pipe" by D Chisholm (ref No 66.045) has recently become available in the Library, Building R20. See also page 101 of the 1970 Annual Report of the Rutherford Laboratory for a further application.

## REDUCTION IN THE USE OF ELECTRICITY

Staff are requested to minimise the use of lights and appliances and to put into effect such steps as can with safety be taken to reduce electricity consumption.

## AERE NEWS

The charge for classified advertisements will be increased to 10p for five words from 10 February 1972. The charge for 'Accommodation' and 'Holiday Accommodation' entries which can be accepted from advertisers who are not AERE Staff will be increased to 20p for five words. Entries under the latter heading must not quote official telephone extension numbers. (The words 'AERE Staff' include SRC Staff).

## FILM BADGE NOTICE

It is Period 2. Colour Strip - BROWN for  $\beta\gamma$  films and fast neutron packs. Please check that you are wearing the correct dosimeters and that all old ones are returned. Next film change - Monday 21 February.

## CRYOGENICS AND ITS APPLICATIONS

As in previous years, a series of one-day Seminars on various aspects of cryogenics will be held at the University of Southampton on Fridays of the Spring Term, commencing 25 February. Further details from the Editor.

Continued on page 4



## INTERNAL EVENTS

### NIMROD LECTURE SERIES

Monday 14 February  
11.30  
Lecture Theatre

Coherent Effects in Deuterium Collisions at High Energy

*Martin Block/North Western University USA and CERN*

### HEP DISCUSSION GROUP

Wednesday 16 February  
11.00  
Lecture Theatre

Two Nucleon Potential

*Professor I Ulehla/RHEL*

(PLEASE NOTE CHANGE OF VENUE)

### FILM SHOW

Wednesday 16 February  
13.15  
Thursday 17 February  
12.40  
Lecture Theatre

Faces in a Crowd - a 22 minute colour film

This film won the Golden Mercury Award in Venice for the best documentary of the year. International honours indeed!  
A superb film about the famous Square Mile of the City of London, showing how the Port of London and the City are complementary, mutually supporting a vast trading complex. The film reveals this in terms of people - working people - in the markets for which the City is justly famous: money markets, stock markets, metal and commodities markets, even street markets. This a triumph of the film makers art with 93 different scenes in 31 locations.

### NIMROD LECTURE SERIES

Monday 21 February  
11.30  
Lecture Theatre

There is a possibility that Professor N Cabibbo of Rome will give a lecture on this date. However, at the time of going to press this has not been confirmed. Please see the next issue of the Bulletin for details.

\* \* \* \* \*

### EVENT AT AERE

#### THEORETICAL PHYSICS SEMINAR

Tuesday 15 February  
14.00  
Conference Room Building 8.9

Periodic Wave Propagation and Pattern Formation in Developing Systems

*Dr B C Goodwin/University of Sussex*



## EXTERNAL EVENTS

NUCLEAR PHYSICS SEMINAR  
Monday 14 February  
14.30  
Nuclear Physics Lab Oxford

$\beta$  - Decay Studies in the Nuclear 2s - 1d Shell

*Dr J A Becker/Lockheed and Oxford*

THEORETICAL PHYSICS SEMINAR  
Monday 14 February  
16.15  
Queen Mary College London

Fermi Particles Associated with a Two-Dimensional Boson Field

*Professor R F Streater/Bedford College*

PHYSICS & GEOPHYSICS COLLOQUIUM  
Monday 14 February  
17.00  
University of Bristol

The Thermal Evolution of the Planets

*Dr D C Tozer/Department of Geophysics and Planetary Physics Newcastle-upon-Tyne*

PHYSICS COLLOQUIUM  
Monday 14 February  
17.00  
University of Reading

The Optical Properties of Semi-Conductor Tellurium

*Professor P Grosse/Tech Hochschule Aachen*

ELEMENTARY PARTICLE PHYSICS SEMINAR  
Tuesday 15 February  
14.30  
Nuclear Physics Lab Oxford

Observation of the Reaction  $\pi^- p \rightarrow \pi^0 p n$  at 19 GeV/c. Evidence for One-Pion-Exchange

*Dr C Jones/CERN*

THEORETICAL PHYSICS SEMINAR  
Wednesday 16 February  
14.30  
University of Manchester

Self Consistent Singularities in the Theory of Critical Phenomena

*Dr M R Bhagavan/Bedford College*

JOINT IEE/IERE READING DISTRICT MEETING  
Wednesday 16 February  
19.30  
University of Reading

Thyristors and their Applications in Control Systems

*P Atkinson/Reading University*

ELEMENTARY PARTICLE PHYSICS SEMINAR  
Thursday 17 February  
15.00  
University of Cambridge

Zeros

*Professor E J Squires/Durham*

ELEMENTARY PARTICLE PHYSICS SEMINAR  
Friday 18 February  
14.30  
Clarendon Lab Oxford

Particle Mixing in Quantum Field Theory

*T Yoshimura/University of Essex*

RUTHERFORD LABORATORY BULLETIN

*Published by the Scientific Administration Group*

*Editor: H F NORRIS*

Deadline  
for  
Insertions

GENERAL & SOCIAL NEWS

Tuesday 1600

INTERNAL & EXTERNAL EVENTS

Wednesday 1200

Room 42 Building R20  
Rutherford Laboratory  
Chilton Didcot Berks  
Abingdon 1900 Ext 484



## NATIONAL SAFE DRIVING AWARDS

The Royal Society for the Prevention of Accidents, National Safe Driving Scheme was started in London only in 1918. It became a national scheme in 1927 and now attracts some 280,000 entries per year. Awards are made for periods from one year (diploma) to the 40 year gold brooch and gold bars for each further year of safe driving. These Royal Society Awards are deservedly, highly valued as they denote a continued high standard of safe driving.

It is with pleasure that we can announce awards to the following Laboratory drivers:

Mr H Paterson	-	15 Year Brooch (Red enamel centre)
Mr E A Smith	-	Bar to 5 Years Medal (for 9 consecutive years of accident free driving)
Mr A Hill	-	Bar to 5 Years Medal (for 8 consecutive years)
Mr D Stock	-	5 Years Medal

## SOCIAL NEWS

### FOLK CLUB

A meeting has been called for 8 p m on Friday 11 February in the coffee lounge of the Restaurant to discuss the formation of a local Folk Club. Any member of the Laboratory Staff who is interested is invited to come along.

### RECORD SOCIETY

Tuesday 15 February at 12.40 p m in the Lecture Theatre

"The Best of Dave Dee, Dozey, Beaky, Mick and Tich"

This record features the exciting sound of this group in such hits as "Zabadak" and "The Legend of Xanada".

### CHRISTIAN FELLOWSHIP

All welcome to come along to the Lecture Theatre on Friday 18 February at 12.30 p m to hear well known recording artists sing gospel songs. The singers will include Johnny Cash, Jim Reeves, Elvis Presley and songs will include "I saw a Man" and "This world is not my home".

### CHESS NEWS

The really crucial match in the 8th round was as predicted last week, between Bill Turner and Alan Gilby. Bill won, but an eavesdropping reporter says that even Bill admits that he was really let off the hook. Further reports on this round will be given as they come to hand.

### SOCCER

Don't forget that weather and pitch permitting the presentation to the Nimrod team and the Champions V Rest of League match is due to take place on Friday 11 February at 12.43 p m.