

**HARLEQUIN**

**Spring / Summer 1971**

**Six New Pence**



HIGH STREET  
ABINGDON  
**E. H. BRESLEY**

## R. G. Bradley and Son

WATCHMAKERS AND JEWELLERS

*See our selection of Watches*

ROLEX · TISSOT · MARVIN  
AVIA · ROAMER · SERVICES  
INGERSOLL & HAMILTON

Free Insurance for Rings and Watches  
over £10.

208 THE BROADWAY, DIDCOT  
Telephone 3113

Open 9 a.m. — 5 p.m. (Thurs. 9—1) Tel. 33

YOUR STORE  
FOR  
LEISURE  
CLOTHES

MENSWEAR  
FABRICS  
FOOTWEAR  
LADIES WEAR  
LINENS  
SCHOOL WEAR

## Reynolds & Johnstone Ltd.

17, ST. MARY STREET  
WALLINGFORD

**Wine and Spirit Merchants**

*Telephone Wallingford 2035*

WE OFFER A  
WIDE SELECTION OF WINES  
SPIRITS Etc.

*Case lots available at trade prices*

**WEDDINGS & PARTIES**

*Goods on sale or return  
Glasses on Loan free of charge*

**DELIVERIES**

*Throughout the district weekly  
Wine lists & Order forms available  
on request*

We shall be pleased to see  
Personal Shoppers

# SPRING / SUMMER HARLEQUIN 1971

Leisure Magazine of the United Kingdom Atomic Energy Research Group  
and Associated Organisations



The Harwell Non-Destructive Testing Centre acted as host recently to an I.A.E.A. meeting of Consultants. The meeting drew up the agenda for an International Panel Meeting on N.D.T. of reactor core components and pressure vessels which is to be held in Vienna later this year.

Seated from left to right are Dr. Englander of I.A.E.A., Dr. Meyer of M.A.N. in Germany, Mr. Watkins of R.E.M.L. Risley, Mr. Roy Sharpe, head of Harwell N.D.T. Centre, Mr. Van Asbroeck of M.O.L. in Belgium, Mr. Mann of R.F.L. Springfields and Mr. Rice of the U.S.A.E.C.

## Editor

D. A. TYLER

Vol. XXVI No. 1 (71)

*in this  
issue*

## Sales Manager

J. DALEY

## Treasurer

R. WAKEFIELD

DR. R. JACOBI

R. WILKINSON

It's Going to Happen to All of Us

Is Retirement That Bad?

A.E.R.E. Archery

A Forgotten Waterway

Applied Chemists Apply Themselves to the Lakes

Twenty Years Ago — Harwell in 1951

SSSShhh

Aerial View of A.E.R.E.

11

13

16

19

23

24

28

40

# NAMES TO NOTE— THEY

*Official business travel agents*

*to the*

**A. E. R. E.**



OFFER THEIR HOLIDAY BOOKING

SERVICES TO A.E.R.E. STAFF

**WAKEFIELD FORTUNE LTD.  
109 BARTHOLOMEW STREET  
NEWBURY**

*Telephone: Newbury 3945*

ARE YOU  
BUILDING  
EXTENDING  
DECORATING  
OR MODERNISING  
YOUR HOME?

**THEN CONTACT US**

**THOS. H. FIDLER & CO. LTD.  
18, HAMBRIDGE RD.  
NEWBURY. TEL. 4898.**

**WE CAN SUPPLY  
& ERECT**

**JOINERY MANUFACTURERS  
MERCHANTS**

## **PROTOTYPE MACHINING CAPACITY**

FOR FULL INFORMATION  
RING BRACKNELL 24343. OR WRITE TO  
P. A. YOUELL. SALES DIRECTOR

**BRACKNELL ENGINEERING CO., LTD.**

**Market St., Bracknell, Berks., RG.12.4EZ.**

"The technical skill and experience we have at our disposal is of the highest standard and no item will prove too difficult if within our machining capacity"

## **READ & PARTNERS LTD.**

**ELECTRICAL ENGINEERS  
and  
CONTRACTORS**

*At A.E.R.E., Harwell  
continuously since 1946*

**READELEC HOUSE,  
59 BERMONDSEY STREET,  
LONDON S. E. 1.**

**Telephone 01 407 5332**

*Site Office*  
**A.E.R.E., HARWELL, BERKS**  
*Telephone: Rowstock 357*



# SUPPLY A.E.R.E.

## WALL CAVITY INSULATION

Your Heating Bill reduced considerably by OUR FOAM. Installed in one day from outside—NO MESS—NO FUSS. Low cost—High fuel savings—Quotations Free. Quality and Service Guaranteed.

'U' value of external walls without Insulation = 0.30.

'U' value of external walls after Insulation = 0.07.

**Special Reductions to  
A.E.R.E Personnel.**

**23A, Kiln Road, Shaw Newbury  
Tel. Newbury 4714**

# MILLETTS

**ELECTRICAL, ELECTRONIC, AUTOMATION  
AND INSTRUMENT ENGINEERS**

**H. G. MILLETT & CO LTD.  
18, MANNINGS HEATH ROAD  
PARKSTONE, POOLE, DORSET  
Tel: Parkstone 5163**

## W.D.M. LIMITED BRISTOL HIGH VACUUM MODULAR PUMPS

Before buying your next Rotary Vacuum Pump CONSIDER THE ADVANTAGES OF THE NEW W.D.M. MODULAR VACUUM PUMP. A standard Module covers the pumps 12M 3/Hr to 144M 3/Hr range. Each Module is simply adapted to convert, externally, for single or double stage pumping. The pumping module is so versatile that forty five different useful pumping variations could be made from a range of five pumps. Add to these features the additional advantages of: —

**ANTI SUCK BACK DEVICE**

**GAS BALLAST ON ALL PUMPS**

**FAST PUMPING SPEEDS**

**DIRECT DRIVE THROUGH A STANDARD GEARED UNIT**

**NO SHAFT SEALS TO VACUUM**

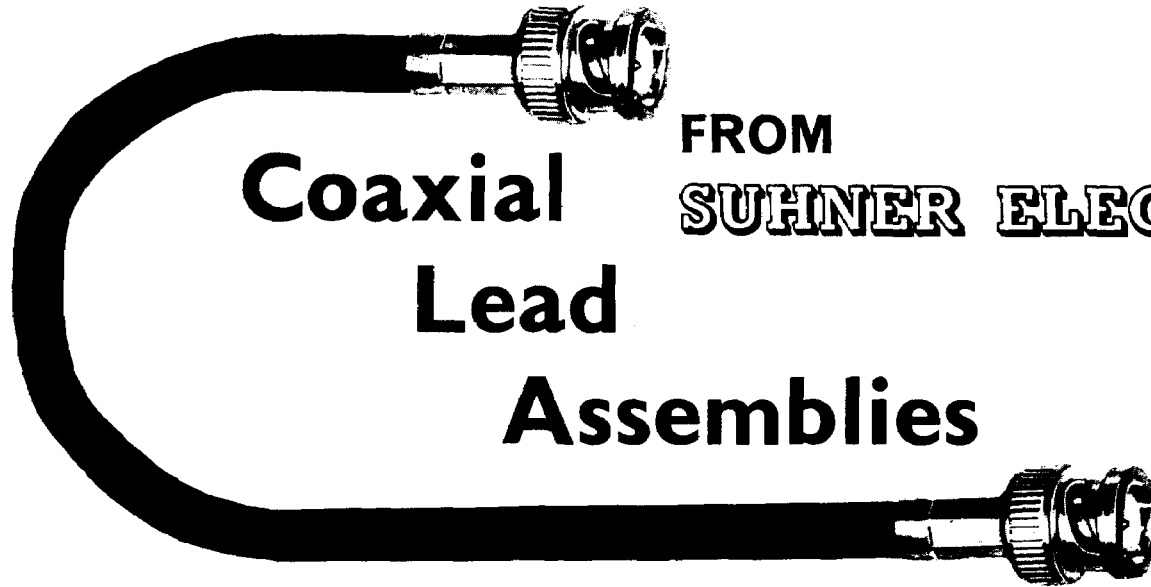
**SILENT**

*Contact: —*

**W.D.M. Limited.  
Technical Sales Dept., Vacuum Equipment Division,  
Western Works,  
Staple Hill,  
Bristol. BS 16 4NX**

**Tel: 656141**

**Telex: 44708**



# Coaxial Lead Assemblies

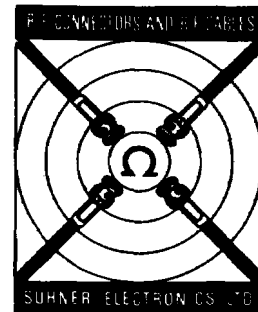
FROM  
**SUHNER ELECTRONICS**

*Our production programme now enables us to offer  
a fast, efficient lead service, with the  
following advantages to you:—*

**NO WASTAGE OF CABLE OR SCRAP  
CONNECTORS**

**ASSEMBLY BY EXPERIENCED STAFF  
WHO ARE SPECIALLY TRAINED FOR  
THIS WORK.**

**QUANTITIES OF MANY TYPES OF  
CABLE AND CONNECTORS STOCKED**



**H.M. Government Contractors**

NO MINIMUM QUANTITY REQUIRED.

# SUHNER ELECTRONICS LTD

172/176 King's Cross Road, London, W.C.1.

**NO TOOL COST INVOLVED – CRIMPED  
OR SOLDERED CONNECTIONS  
AS REQUIRED.**

DELIVERIES CAN BE SCHEDULED  
WEEKLY OR MONTHLY TO SUIT YOUR  
REQUIREMENTS.

**EVERY LEAD IS GIVEN A VISUAL  
INSPECTION – PLUS CONTINUITY  
AND VOLTAGE PROOF TESTS.**

*For Further Details telephone or write to—*

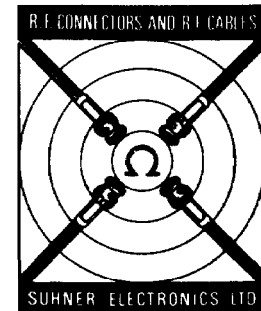
## **SUHNER ELECTRONICS LIMITED**

172/176 King's Cross Road, London, W.C.1.

Tel.: 01-278 2941/6

*Precision R. F. Connectors and Cables*

OUR TELEX NUMBER IS  
267217



H.M. Government Contractors



Cottages sleeping 6/8, convenient sea,  
Appledore/Northam/Bideford, also caravans  
sleeping 3/5, overlooking sea, Westward HO!  
Stamp please:

Mr. & Mrs. R. Sealy  
"Uplands"  
Orchard Hill  
BIDEFORD  
N. Devon

Tel: Bideford 2661

## OUR VITAL STATISTICS

### Into the 70's

Ten years ago this Society was only 72nd in size. Despite tremendous growth within the whole movement the Society is now 22nd largest, some measure of our exceptional growth rate. In the early 1970's it is confidently expected our assets will exceed 70 million.

If you wish to benefit from a better than average investment or would like further information please write, telephone or call.

## SOUTH OF ENGLAND BUILDING SOCIETY

1a High Street, Abingdon.  
Telephone Abingdon 528

## Griffiths Hackney Cabinet Company Limited

54 GREAT EASTERN STREET LONDON EC2

Telephone 01-739 4431/2/3

### DISCOUNTS PLUS: —

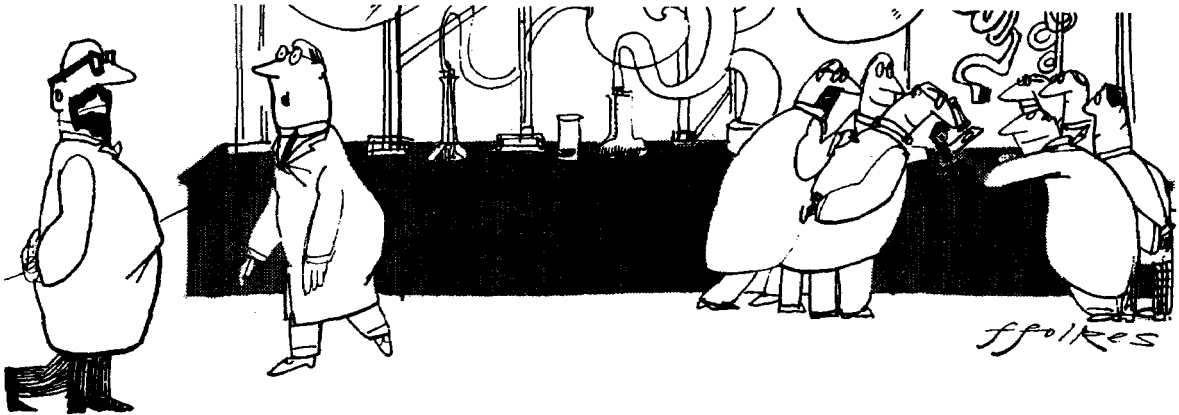
Good Branded Furniture Stocks. Expert Complete House Furnishing.  
Special Reproduction Regency Range. Curtains, Carpets, Carpet Fitting and ALL  
ancillary services. Long Established and Member-recommended.

Open Sats: 12.45; Thurs. to 7.30. Other weekdays to 5.30.

*Free Car Parking to Customers*

### SPECIAL NOTICE

We now have an  
ANTIQUES CORNER  
Browsers welcome any time



*"Sir—we have isolated a deadly bacillus, and we feel it ought to be named after you."*

# **Richard Nevill & Co. Insurance Brokers. 3c, Newbury Street Wantage, Berks.**

**LIFE & ENDOWMENT ASSURANCES. (UNIT OR EQUITY LINKED)**

**ANNUITY & GROWTH BONDS**

**MORTGAGE PROTECTION/MAXIMUM LIFE COVER POLICIES**

**SICKNESS & ACCIDENT INSURANCE**

**ANNUITIES – PENSIONS – UNIT TRUSTS**

**MORTGAGES & BUILDING SOCIETY INVESTMENTS**

**CAR – HOUSE & CONTENTS**

**LUNCHEON & EVENING APPOINTMENTS**

**PLEASE RING WANTAGE 4366  
TO ARRANGE AN APPOINTMENT**

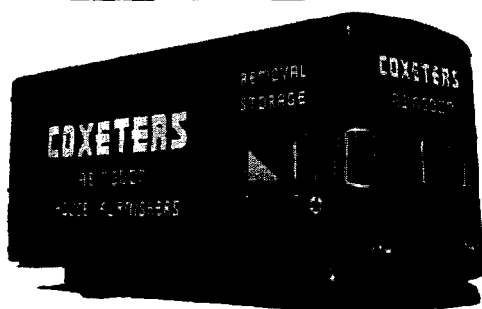


## The Symbol of your Friendly Trustee Savings Bank

*For further information of the many services of your Local Trustee Savings Bank, simply contact the Branch Manager at one of the undermentioned Branches.*

7 MARKET STREET, OXFORD ★ 1 STERT STREET, ABINGDON  
BROADWAY CORNER, DIDCOT

A Representative of the Bank attends at A.E.R.E. (Bld. 303, by Main Gate) each Friday between 12.30 and 2.30 p.m. when Savings Bank facilities are provided.



**COXETERS**  
LTD

### Complete House Furnishers

Established 1836

Furniture Removed and Warehoused  
China, Glass, etc.

Curtains Loose Covers & Carpets

Cabinet Repairs Upholsterers

Funeral Directors

Abingdon 4747

*We are pleased to arrange  
Hire Purchase facilities*

TRY ABINGDON FIRST

— Customers can park at rear of store —

OCK STREET. ABINGDON



**HARTWELLS**  
**of ABINGDON Ltd.**  
**THE VINEYARD**  
**ABINGDON**

Tel. 1831 2/3

- ★ Better Used Cars
- ★ Forecourt Services
- ★ Austin Spares
- ★ Autoshop
- ★ Tyre Dept.
- ★ Insurance
- ★ Self Drive Hire
- ★ Credit Facilities
- ★ Comprehensive Workshop

**ABINGDON'S LEADING DEALERS**

— AND NOW!

**UNIPART FOR MOST MAKES**

**SELF SERVICE PETROL (24 HOURS)**





## EDITORIAL



No apology is needed, we hope, for starting this issue with the subject of retirement. It involves the enjoyment of leisure, not for two days a week but for seven. A leisure magazine, we have neglected it in all the seventy issues that have gone before.

"Retirement - we have not done it before", said one member of Harwell's pre-retirement course. Another summed up the special problem of retirement from the Research Group (for it is not a close-knit community where we both work and live): "We shall miss the friends and colleagues who will be many miles away".

It was for these reasons that some Association for retired members of the Research Group was mooted. "Harlequin" attended the inaugural meeting and is happy to record the support given to the election of Arthur Burge, its first Chairman. We shall be glad to forward any letters sent in by retired readers and also to hear their comments on our treatment of this theme, which we shall continue in the next issue.

Attending as an observer the first pre-retirement course, we saw its value in dealing with some of the medical and financial problems that are likely to occur in retirement; but, despite the Welfare Services, the individual must depend most on his own inner resources.

The person who cannot find interest and satisfaction in his work is most likely to be dependent on commercialised entertainment in his leisure: "doing nothing" can be the most tiring job in the world because you cannot break off and rest!

How to avoid enforced leisure becoming mere idleness, an aimlessness in which we can give nothing to others because we have nothing within ourselves? True preparation for retirement should begin in the nursery and, by our own efforts, should continue through life - for retirement is part of life, and on the quality of life depends the quality of our leisure.

# **THE FIRST NAME YOU THINK OF FOR ALL FORMS OF LIFE ASSURANCE AND HOME LOANS IS FRIZZELL'S**

**Allow us to show you the way to easier  
home ownership**

## **MAXIMUM LOANS AVAILABLE**

The right medium for savings becomes an even more complicated subject with the continuing proliferation of contracts which are available. We can help you through the maze and suggest the answer most suited to your particular circumstances and that which will give you the most favourable immediate tax abatements and eventual relief from death duties

JAMES BERRY, the Regional Manager, visits the site most Wednesdays and appointments for discussion of your Mortgage, Savings or Life Assurance problem, may be made through your Extension 3224 or by phoning READING 585678

**MOTOR INSURANCE** On the first Monday of each month Mr. W. D. Reid, Manager of the C.S.M.A. Motor Dept., will be with Mr. Berry at A.E.R.E., Harwell. Appointments should be made through Ext. 3224

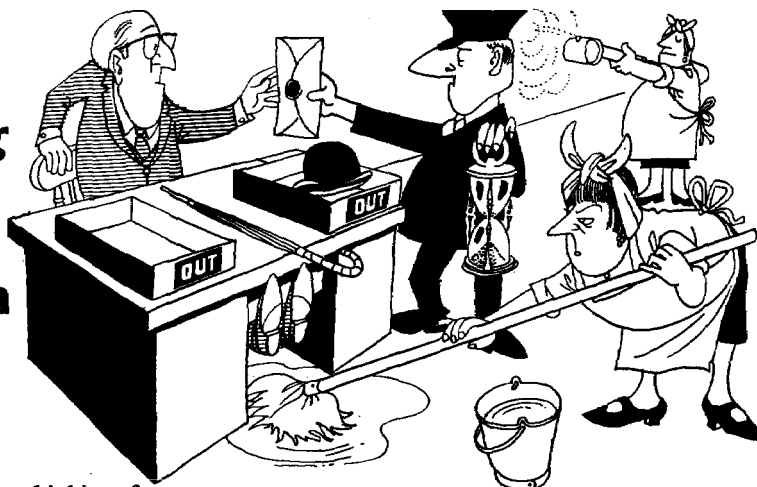
**NORMAN FRIZZELL** Life & Pensions Ltd.

(Incorporated Life Assurance Brokers)

35 Station Road, Reading, Berks., RG1, 1LS

Tel. 585678

# It's Going to Happen



**W**HEN you've been thinking for goodness knows how many years that retirement is something that happens to old people, you begin to realize as your time approaches that this is something that is going to happen to you.

Of course it's not a sudden shock, it's rather like discovering woodworm or dry rot. When you find it, you try to ignore it in the hope that it will go away.

One of the first indications is a slight change in the attitude of your various bosses when you suggest some little thing which would be of enormous benefit to the System. Where, in the past, you would be told not to be so ordinary stupid, they smile politely and tell you that there is a lot in what you say.

Your annual reports positively glow with faint praise and you wonder how the hell they will get on when you reach full term.

## to All

If you haven't kept up your subscription to the underground listening post you may find one day that the music stops and a chair has been taken away and Old Bones has merely a floor to sit on.

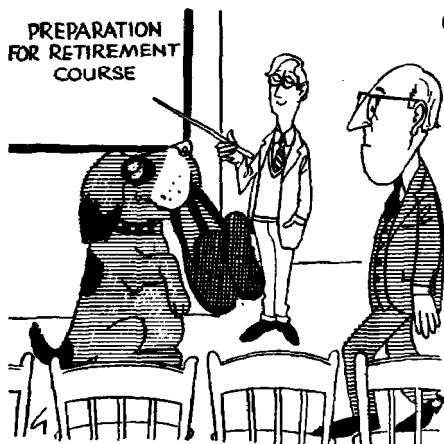
It is, of course, far too late to fawn, crawl, or merely protest because you shouldn't have got yourself into this silly position. All you can do is to smile and rise above it or, better still, smile and help some bright lad to rise above you.

One of the things to look forward to is the Preparation for Retirement course which does a grand job. You learn, for one thing, how to deploy all that pension money without giving a jolt to the national economy. Then there's cooking. Did you know, for instance, that an economical way of cooking an egg is to shove it in a compost heap that has gone critical? It's good to know too how to get a best buy in ascorbic acid.

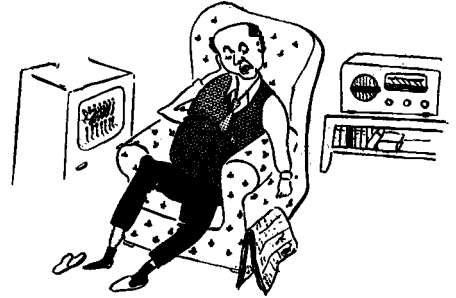
## of Us!

You may rate a farewell tea-party and because you have attended so many of those of your erstwhile colleagues you'll know the form. One of your bosses will have been beautifully but not necessarily accurately primed and he will say such lovely things about you that you may actually drink the hot sweet tea as a cure for shock.

— "ARIEL"



# Retiring Gracefully



**V**ERY few people are honest with themselves about retirement. The ostriches, loath to admit their age even to themselves, avoid thinking about the subject—until it forces itself on them. The pipe-dreamers, with a romanticized picture perhaps of a cottage in the country, persuade themselves that the day won't be long enough to do all the things they've always wanted to do and never had time for. Only the realistic few, by an effort of imagination, comprehend that enforced leisure, on a reduced income, without the status, the purpose, and the companionship that a job supplies, can break a man's heart—or even a woman's.

## **An unique social situation**

We are facing a situation now, the anthropologists tell us, unique in man's history. Never before has a person's job been ended, arbitrarily, by the calendar. The days when a man worked till he dropped are over. Compulsory retirement at sixty-five, sixty, or even earlier has become the rule. Yet people are living longer (the expectation of life for a man who retires is seventy-seven years and for a woman eighty); and increasing medical knowledge keeps us healthier. Most people in retirement can look forward to ten or fifteen years of active leisure before old age sets in—a period as long as the formative years of childhood. Twenty years ago there were approximately 6 million people over the present state pensionable age. Now it is  $7\frac{1}{2}$  million, and likely to be 10 million in twenty years' time. Whereas in 1962 there were forty-two workers for every ten pensioners, by 1982 it is expected there will be only thirty-six.

Today's pensioners are the shock troops, rocketed into enforced leisure with little or no idea of how to use it. It is to be hoped that future generations will be better prepared.

How do I know my youth is all spent?  
Well, my get up and go has got up and went.  
But in spite of it all, I am able to grin,  
When I think of where my get up has been.

When I was young, my slippers were red,  
I could kick up my heels way over my head;  
When I grew older, my slippers were blue,  
But still I could dance the whole night thro'.

Now I am old, my slippers are black,  
I walk to the door, and puff my way back,  
The reason I know my youth is all spent,  
My get-up-and-go has got up and went.

But I really don't mind, as I think with a grin,  
Of all the good places my get-up has been,  
Since I retired from life's competition,  
I busy myself with complete repetition.

I get up each morning and dust off my wits,  
Pick up the papers and read the "Obits."  
If my name is missing, I know I'm not dead,  
So I eat a good breakfast, and go back to bed.

GEORGE NORTHOTT.

The aim of this article is not to teach you a new hobby but to try to give a few pointers on how to enjoy your leisure now, so that when retirement comes you will avoid those two arch enemies of the retiree—boredom and the frustration that comes from that 'scrap-heap' feeling.

Counting travelling time most of us spend about ten hours a day, say fifty a week on the job. We do this for around fifty years, it gets to be quite a habit and—like all habits good or bad—it's hard to break. Moreover, though we all work for the Authority we all work with it too—that means we are members of the company of men and women who make up the U.K.A.E.A. After retirement we are only 'honorary' members of the team, we no longer have the —let's admit it—pleasant companionship of the workshop or office. So there we are, no work and in some cases—at least during the day—no friends. This is not an exaggeration, for many it is the tragic truth. The man who has given his whole life to his work, whose only interests and friends are bound up with his job, is the man that retirement hits hardest. For purpose and companionship go out of his life on the day he receives his long service certificate and that kind presentation his workmates have subscribed for. Are you like that? If you are, don't wait until you retire for you have a problem now!

At this stage the keen gardeners will feel it's a waste of time reading any further. They have the best hobby of all — 'There's always something to do in the garden'. Well certainly gardening provides work for hand and brain and the satisfaction of seeing this work bear fruit. But gardening is not the answer for everyone nor is it the whole answer for any one. Some of us have no garden, or so tiny a patch that

# Is Retirement

## THAT Bad?

there's not much to be done with it. Even if you've half an acre you can't garden all the time, neither the weather, the hours of daylight nor your aching — and ageing — back will let you. You may enjoy the evenings and the weekends you give to your flowers and vegetables but do you want to give all day and every day? There is one other drawback—gardening tends to be a solitary pursuit. Even if you do 'invite Maud in' it tends to be your own domain, a place of escape. But do you want to be alone all the time?

We've not forgotten the other hobbyists. The collectors—stamps, coins, match box labels, cigarette cards, buttons, etc., or the handymen—model makers, carpenters, metal workers and so on. Nor have we ignored the animal lovers—the pigeon keepers, aquarium experts, budgerigar breeders and so forth. All these hobbies are good things. What we do suggest is that the single-minded pursuit of any one of these to the exclusion of other spare time activities is putting all your leisure eggs in one basket. What is needed is a combination of leisure activities that will in time fill (not kill) not only the hours after work but whole days when we become 'gentlemen of leisure'.

The combination required should fill this sort of bill. It must provide a definite target—a purpose. It shouldn't be too expensive—if it is, the lack of cash may bring frustration not recreation. It should bring

companionship — common interests that will replace workaday friendship and company.

Of course the sociologists have been saying this sort of thing for years. 'Active leisure' 'creative hobbies'—these phrases are becoming clichés and like most clichés they are true. We live in a world where entertainment is a highly organized business. Pleasure comes ready made in neat packages. In small doses it's a fine thing but no use if you grow so used to it that you can never entertain and amuse yourself. If after a fair assessment you find that all your leisure is taken up with 'canned' amusement we suggest you start doing something



**Gardening is not enough.**

about it. Plan your spare time so that the day never comes when all your time is 'spare'.

We can only indicate the general approach to the solution of the leisure problem. Each of us must find his own solution which must be 'tailored' to fit his own personality and environment. Gardening and philately may suit some but they will certainly bore many more. We have one suggestion to make, however, that we think everyone can use and you can start today. Get a notebook and start jotting down all those

things you'd like to do but can't find time right now. One of the most overworked phrases in common use is 'I'd like to but I can't find the time'. (Club secretaries know this one only too well). If you really mean it when you say it, then make a note of what you're missing. It may well be that what you are passing by is a chance that will never come again. In that case don't bother to note it or you will only have a sad record of lost opportunities. But if it refers to a book, a piece of music, a visit to a museum, a library, a beauty spot, etc.—then jot it down. If you are sincere about it you'll build a reservoir of interesting things to do and places to see. A store of interest that can be drawn upon at any time—it may help during a convalescence, on wet weekends, long winter evenings, and on those days when you just want a change from the garden or the workshop.

#### **What do you think ?**

Perhaps we are completely wrong. If you are already retired or are shortly retiring you may have some comments to offer from personal experience. Don't keep them to yourself. This problem is so big and so inevitable that every bit of information is invaluable. We have often asked you to write to us, to join in competitions, etc., and sometimes the response has been rather poor. In this instance we shall hope that a 'nil return' means that the advice we have offered is good. Mind you, we should still like to know if you agree and what you are doing about it. On the other hand, a flood of letters pointing out how wrong we are will be just as welcome—providing they point out why—for we can then pass the word along. So spare a little of your leisure to write about the rest of it to: The Editor.



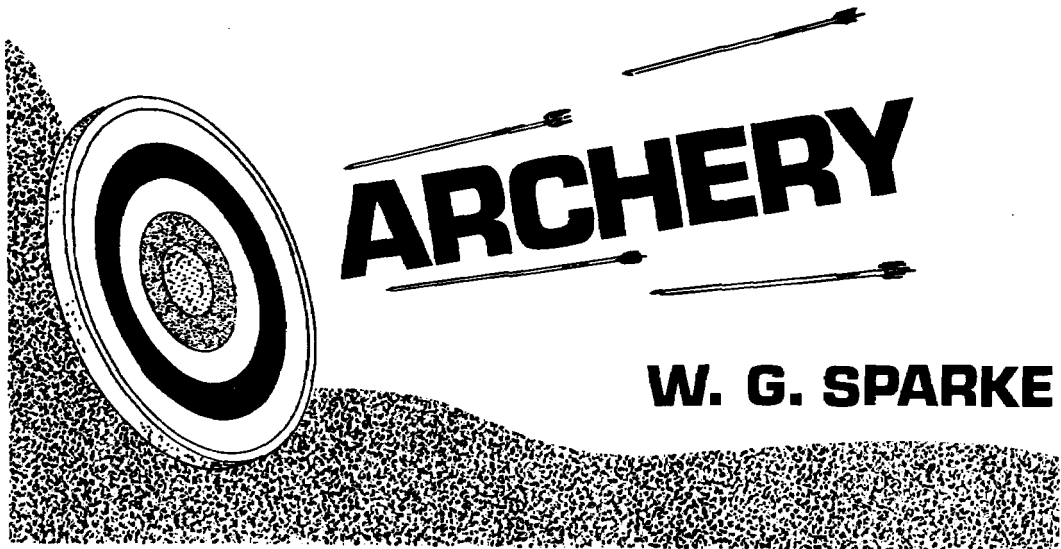




INTERMINGLED WITH  
THOSE WHO HELPED  
TO RUN IT –

MEMBERS OF HARWELL'S  
FIRST PRE-RETIREMENT  
COURSE





The first recorded use of the bow is in cave paintings such as those in the caves of Eastern Spain of the upper Palaeolithic periods, i.e. some 10,000 years B.C.

Some time previous to this the first arrow was loosed from a bow, and it seems more than likely that 10,000 years into the future man will still be finding pleasure in the use of this ancient weapon. It seems reasonable, considering the influence of the bow on numerous civilisations, to rank its discovery with that of the wheel.

Since those early times the bow has developed among the civilisations of the major land masses in directions dictated by the requirements of the chase and of war, the materials used being those most readily available.

In general, the western civilisations used the long bow or the cross bow. The long bow, some six feet in length, was in the main manufactured from yew and used by formations of foot archers, whereas in the east the bow was shorter, re-curved and composite, i.e. manufactured from bone and sinew, and used by the mounted archer. Examples of eastern archery can be found in the Persian and Assyrian sculptures and on the coins and vases of Greece.

The use of the long bow by disciplined bowmen was first conceived in the west in the reign of the first Edward from experiences in the Welsh marches. Subsequently, this new method of warfare was nurtured as a saturation weapon during the wars with Scotland, finally to be unleashed in France during the fourteenth centuries. In the east, horse archers of the Khans were dominant some two centuries before this and at one time threatened western civilisation.

What, then, has come down through the centuries from the bowmen of these islands whose cloth-yard shafts, fletched from the grey goose wing, sleeted across the battlefields of Europe? They did, I think, help in no small way to mould the national character, snatching as they so often did victory from the edge of defeat.

The AERE telephone directory shows that many of their names are still with us: Archer, Bowman, Fletcher, Stringer. Their sayings are also still in use: "highly strung" "straight as an arrow" "two strings to his bow" "a Parthian shot" "fast and loose" are but a few examples.



### **THE A.E.R.E. ARCHERY CLUB AFTER A SUCCESSFUL TOURNAMENT**

The modern bow and arrow may show little resemblance to their forebears but this is simply due to the availability of new materials such as fibreglass, epoxy resins and precision aluminium tubing with its high bend resistance. A.E.R.E. Archery Club is also part of this continuing tradition and is one of some 650 clubs in the United Kingdom.

This sport takes its devotees out to the quiet and calm of meetings to join in the delight of a well sped arrow, the good company and comradeship that has remained unchanged through the centuries. Here the novice and the seasoned tournament archer shoot side by side, for there is no differentiation in this sport.

The most practised forms of archery today are field archery, clout shooting and target archery.

Field archery is a continuation of the style of archery used in the hunt for food. Although the basic technique which is used for target archery can be successfully applied to field archery, additional techniques are required for consistent accuracy over unknown distances. These distances vary from five yards to sixty yards. Field archery targets are set out in undulating country and consist of drawings of a variety of wild life on a stout backing; superimposed on these are the scoring zones. Hazards to accurate shooting are trees, low branches, scrub etc.; the archer's body position is dominated by these considerations and by the requirement that each arrow shot at a target is from a different but adjacent position.

Clout shooting is thought to have originated in battle practice where distance and accuracy were required. The object aimed at was a white cloth (clout) and the distances shot, as far as can be judged, were in excess of 200 yards.

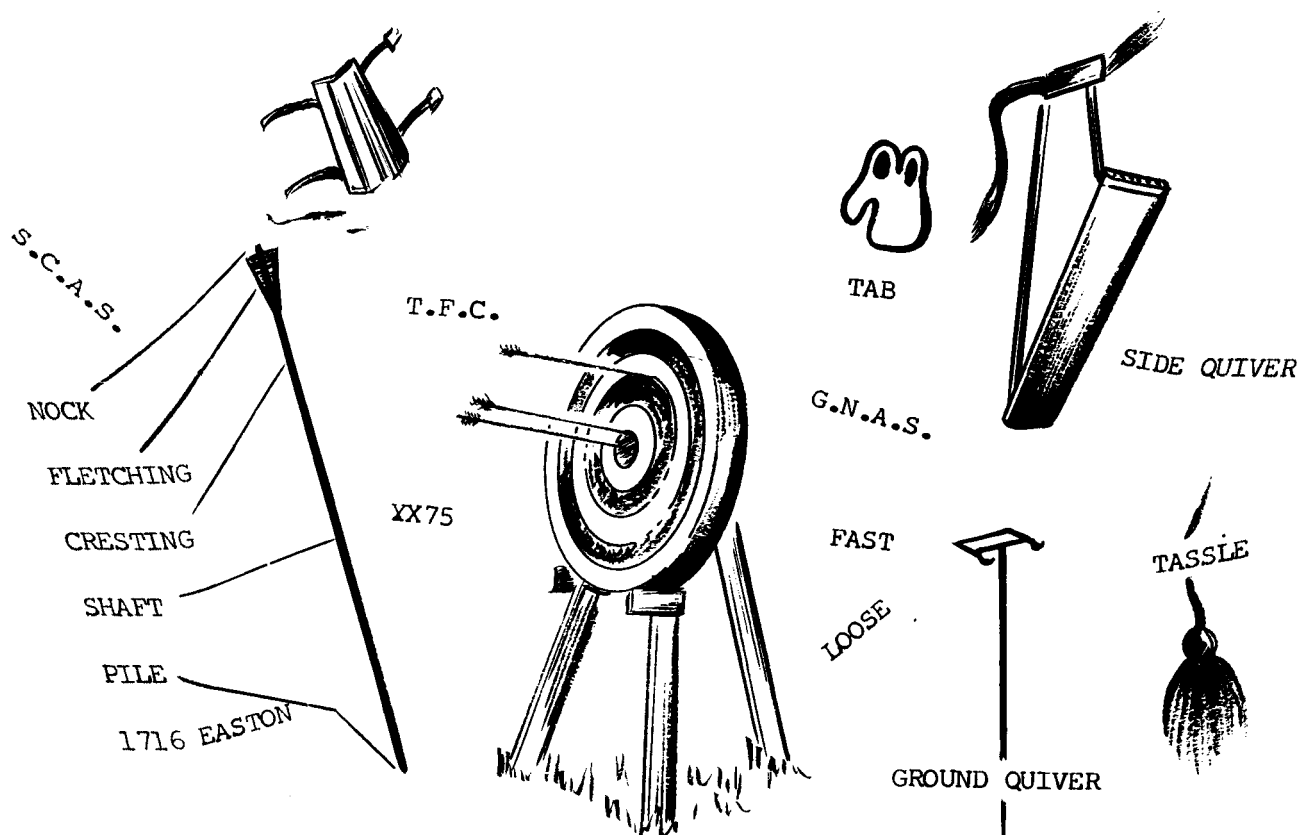
For this type of shooting the body is tilted back from the waist until the arrow is some 45° to the horizontal and consequently the trajectory of the arrow is high. Distances shot in modern clout shooting are seven score yards for ladies and nine score yards for gentlemen. The average tournament bow and arrow have a range of some 230 yards and so are quite adequate for this type of archery.

Target archery is shot over known distances, the maximum of which is 100 yards for gentlemen and 80 yards for ladies. These are for the York and Hereford, which are shot at many of the major tournaments in this country: for example the Grand National Archery Meeting which is held in the grounds of Worcester College, Oxford, at the beginning of July each year.

Also shot especially at international and world championship meetings is the F.I.T.A. (Federation Internationale de Tir a L'arc) Round. The maximum distances here are 90 metres and 70 metres respectively.

For junior archers, that is for archers below the age of 18, similar rounds to those for the seniors are shot.

It only remains now for me to acknowledge all those past and present who have contributed in their many and diverse ways to the knowledge and use of the bow. But for them these few notes could never have been written.



Information and guidance in all archery matters can be obtained from the secretary of the A.E.R.E. Archery Club. Instruction under the guidance of qualified coaches and instructors is now available on the centre sports field, A.E.R.E., on Friday evenings. For further details, contact K. Archer, Bldg. 521, Ext. 5224.

# A FORGOTTEN

Written and illustrated  
by Reg Wilkinson  
M.R.C.

## WATERWAY

**The Wilts and Berks Canal was one of three east-west canals built in the southern part of England. With four branches it cost £250,000 to build, and was nearly sixty miles in length.**

**A** CLOSE look at almost any large-scale map which includes the counties of Wiltshire and Berkshire will reveal an intermittent broken line which passes between the Cotswold hills and the Marlborough downs and continues on through the Vale of the White Horse to the Thames.

The line is given a variety of names. On most maps it is an "old canal" or a "disused canal," and very few give its proper name, the Wilts and Berks Canal. Opened 160 years ago, on September 22, 1810, and closed in 1914, the canal gave good service to the communities along its banks until the arrival of the Great Western Railway took most of its trade.

The canal era in Britain started in 1760 and lasted for about eighty years. In the midlands and the north the canals provided a cheap means of carrying the goods necessary for the industrial revolution. Coal was carried to feed the steam engines and blast furnaces, building materials were carried for the construction of factories and houses, and stone was carried for road works. In the south the canals were generally used to carry coal and stone to rural districts and corn from the agricultural areas to cities such as Bath and Bristol.

The Wilts and Berks Canal—generally

known as the W and B—was one of the three east-west canals built in the south of England. The other two were the Kennet and Avon Canal (K and A) and the Thames and Severn Canal (T and S). In their most productive years these three canals, together with the Somerset Coal Canal, exerted a great influence on the economy of the region bounded by the River Thames in the east and the Bristol Channel in the west.

Built under an Act of 1795, the W and B was a narrow canal which ran from Semington on the K and A to Abingdon on the River Thames, with branches to Chippenham, Calne, Longcot and Wantage. The canal reached Wootton Bassett in 1801, Swindon in 1804 and Abingdon in 1810. It cost about £250,000 to build, and together with the four branches it was nearly sixty miles in length. An additional branch from Swindon, to connect with the T and S at Latton, was completed in 1819. Named the North Wilts Canal, it was nine miles in length and cost a further £30,000.

The intention of the Wilts and Berks Canal Company was to carry coal along the Vale of the White Horse. The coal reached the W and B from the Somerset coalfield by way of the Somerset Coal Canal and the K and A. More than seventy-five per cent of the goods on the canal moved from west to east and consisted mainly of Somerset coal, Bath stone and timber. On the return journey a number of boats collected corn from the various wharfs *en route*, but many unloaded at their destinations and returned empty.

There was considerable rivalry between

The canal bridge at Belmont, Wantage. It now spans a muddy footpath and a few rusty sheets of corrugated iron.



the Oxford Canal and the W and B, the former moving coal to Abingdon from the midlands and the latter moving it from the west country. At times the W and B also handled coal which came by way of the T and S and the North Wilts. In the records of the Oxford Canal Company there is a letter dated April 13, 1830, in which the company's agent at Abingdon wharf, a Mr. Copland, says "Sold over 1,400 tons of coal. Severe competition from Staffordshire coal arriving via the W and B Canal."

As an inducement to traders, in an advertisement which appeared in *Jackson's Oxford Journal* on February 22, 1800, before the W and B was fully operational, the Oxford Canal Company offered a premium of 1/- per ton on coal taken from its Abingdon wharf to places ten miles away and 2/- if carried to places fourteen miles away. A similar proposal was made by the W and B a few years later:

"The W & B Canal offers 2/- per ton premium or drawback on all coal passing from their Longcot Wharf through the Faringdon Turnpike Gate as from 1st November, 1817.

Signed  
Jas. Crowdy, Principal Clerk."

A William Crowdy, possibly brother to James, was principal clerk on the North Wilts.

Other advertisements which appeared in the journal give some idea of the types of businesses which thrived along the canal.

"To be sold by Auction on 26th September, 1817, at Longcot Wharf, Nr. Faringdon. Eight Capital CANAL BOATS of about 25 tons burthen, each now lying at above Wharf; together with a quantity of paving stones; Tenby coals; ashes; weights; scales; oak planks; canvas; tarpaulins; sack; pitch, etc. The Sale will commence at 12 o'clock. N.B. A person will attend with refreshments."

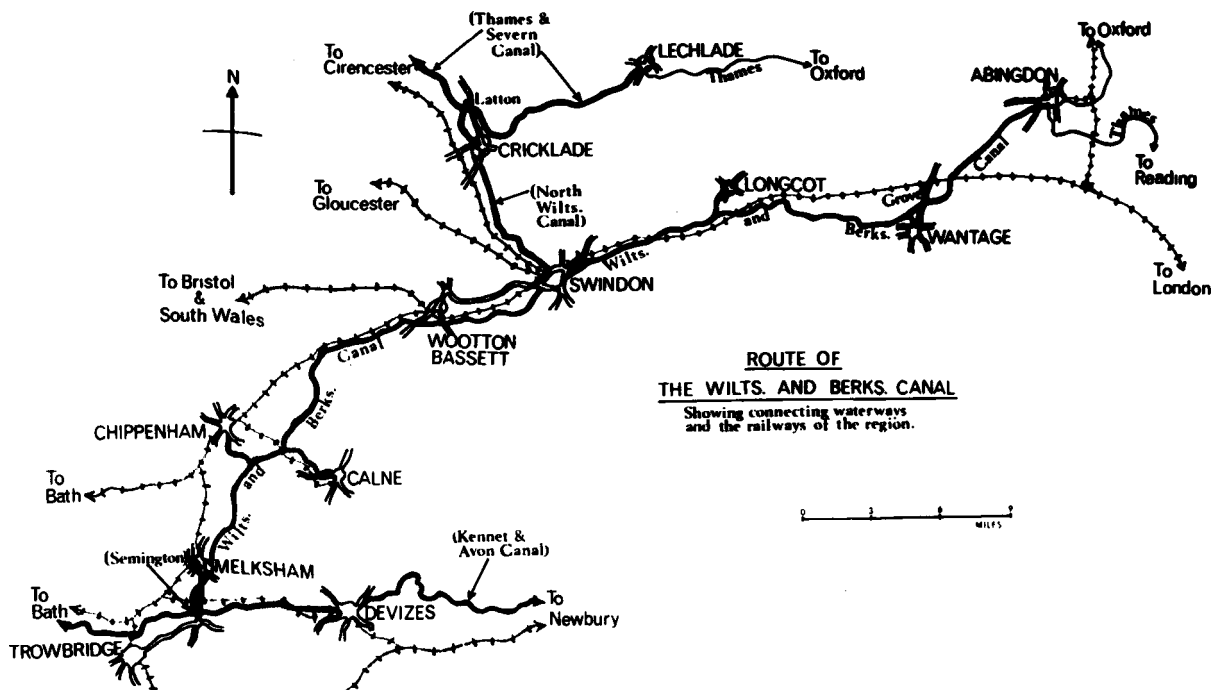
Another offers a barge for sale:

"To Bargemasters. To be sold by Auction by Messrs. Cripps & Cole on 19th October, 1818, at 3 o'clock at the Wilts & Berks Canal Wharf, Abingdon, a substantial well-built Thames Barge called *The Western Lass*, of 71 tons with full equipment and a punt."

The punt would be used for ferrying the horses that pulled the barge.

An advertisement which appeared at a much later date offers a business for sale:





"Auction Sale at Thames Wharf, Abingdon, on 13th February, 1840, by order of Mr. Allen Mason. Goodwill and Possession of an excellent business of a

#### WATER CARRIER

and Bargemaster many years established and successfully carried on between London, Oxford, Abingdon and Gloucester, deserving attention from persons desirous of embarking in a safe and lucrative concern, the present owner retiring. . . . Also the valuable stock of Barges, Canal Boats, Horses and Utensils of Trade, comprising three strongly built trows of 60 tons each, nearly new with the rigging and fittings complete; three excellent canal boats of 30 tons each, six powerful horses, tow lines, etc., etc."

As the W and B was a narrow canal the trows could only have been used for Thames traffic.

Financially the W and B was not a great success. Tolls increased slowly from 1810 until they reached a peak of around £15,000 in 1837, the last year before the railways began to exert any great influence. In 1831 shareholders began to receive regular dividends and they remained reasonable until 1839. Before 1831 most

of the profits from the canal were used to repay the loan which had been obtained from the Exchequer Bill Loan Commissioners for the construction of the North Wilts.

The company tried various methods of improving the annual income from the canal. The most successful venture was probably the construction of the North Wilts, an enterprise which was shared with the proprietors of the T and S. This provided the latter with a route to the River Thames via Abingdon which avoided the shallows between Lechlade and Oxford.

In 1825 a flyboat service was brought into operation between Bristol and Abingdon, and by the early 1830s flyboats also ran from London to Gloucester via the W and B, the North Wilts and the T and S. Flyboats were light barges which carried a load of about twelve tons and had priority over the other traffic on the canals. They ran to a timetable and by using relays of horses were able to provide an express service. By this method the journey from London to Gloucester took just over a week.

In common with many other independent canals that served agricultural districts the W and B was ruined by the coming of the railways. Railway lines which more or less followed the routes of

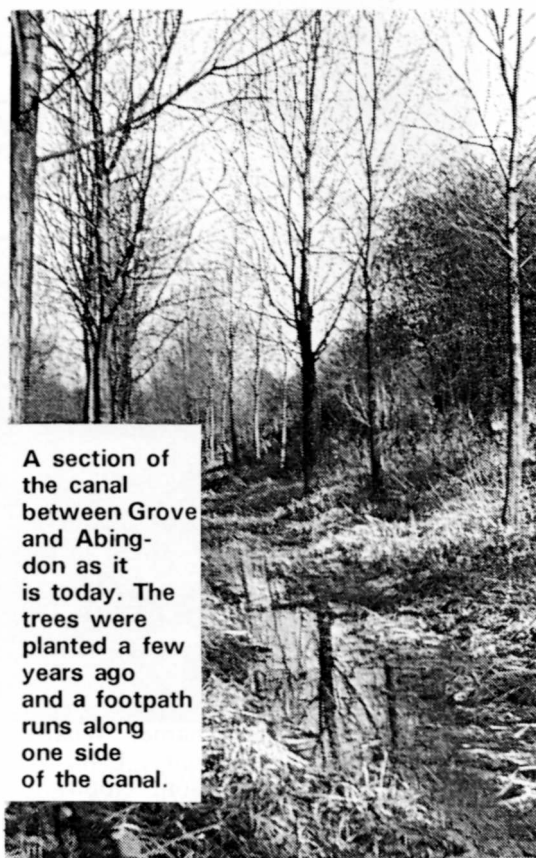
the W and B and the North Wilts were completed in 1841. Unlike some of the smaller canal companies, which either went into voluntary liquidation or sold out to the railways, the W and B decided to carry on the struggle. Cuts in staff and canal maintenance caused inconvenience to traders and did nothing to help the situation. The company even aided its rivals on occasions by carrying the materials used to construct the railways!

A new company was formed in 1876, its capital being reduced from £320,000 to £30,000. In 1882 the canal was leased for twenty-one years to a group of Bristol merchants, but after a few years they paid £1,000 to surrender the lease and the company of 1876 took over once more. Yet another company, the United Commercial Syndicate, decided to have a go in 1891 and started by spending £7,000 on dredging the western end of the canal from its junction with the K and A to Swindon. A dozen flyboats were introduced and operated between Swindon and Bristol. They had names like *Heron*, *Curlew* and *Petrel*.

However, it was all of no avail. The canal continued to lose money and in 1897 the syndicate applied for a warrant of abandonment. The abandonment was successfully opposed by the local landowners, the K and A and the Gloucester and Berkeley Canal Company. The T and S, backed by the Gloucester and Berkeley, took over the running of the North Wilts and the W and B struggled on until 1906, by which time all traffic on the canal had ceased due to a burst at its western end.

The canal soon became derelict, with stretches of murky water between the locks, stagnant and a nuisance to local communities. In 1914 Swindon corporation, concerned about the danger to public health, successfully applied for an Act of closure. The canal reservoir at Coate Water was taken over by the corporation and much of the remaining water was drained from the waterway. Since then long sections of it have been used as refuse dumps by local authorities and individuals alike, and equally long sections have been mercilessly filled in to make way for roads, housing estates and power stations.

The closure must have been a blow to many of the people who lived in the towns and villages served by the canal. As well as providing work for some it contributed

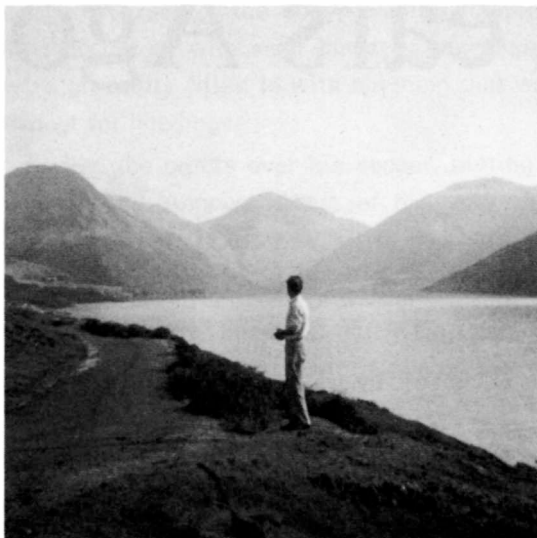


A section of the canal between Grove and Abingdon as it is today. The trees were planted a few years ago and a footpath runs along one side of the canal.

to the leisure hours of many. Very often during the winter months the canal froze over and it was possible to skate from Abingdon to Swindon. In summer Sunday school children set out for picnics in hired barges and the waters echoed to their cheerful shouts, much to the annoyance of the numerous fishermen along the banks of the canal. Unfortunately those days are gone for ever.

REPRODUCED BY PERMISSION OF  
"Thames Valley Countryside"

*I am grateful to E. Kingsley Belsten, of the Railway and Canal Historical Society, for the copious notes which he very kindly placed at my disposal. To readers who wish to obtain further information on the canals mentioned in this article I recommend the series of books on British canals published by David and Charles, of Newton Abbot, the most recent of which is The Canals of South and South-east England, by Charles Hadfield.*



Contemplating the day's walk: looking along Wast Water to Great Gable (central peak).



### Applied Chemists Apply Themselves to the Lakes

Those who work at Windscale, no doubt, regard a weekend in the Lake District as no special event, but for those at Harwell such an undertaking requires at least some thought to the problems of accommodation and transport. A group of eight men from Harwell recently spent a long weekend walking in the area around Wasdale, which is 285 miles by road from A.E.R.E., and were unanimously agreed that it was well worth the journey.

They stayed at Woodhow Farm, about half a mile from the southern end of Wast Water, which turned out to be an ideal starting point for the ring of mountains around Wasdale Head.

The first day's route, in perfect weather, consisted of Great Gable, Green Gable, Brandreth Haystacks, Scarth Gap, Black Sail Pass and so back to the welcome haven of the Wast Water hotel bar. This was a fairly ambitious walk for normally sedentary scientists, but even the effort of the final steep climb up to 1800 feet out of the Ennerdale valley could not spoil the enjoyment of the superb views and the sense of peace and stillness.

The second day brought, by contrast, constant rain and a layer of mist which started at about 800 feet and reduced visibility to a hundred yards or so. Nevertheless, four members of the party reached the summit of Scafell Pike, to become momentarily the most elevated men in England. Two others launched a vicious attack on Yewbarrow, but only succeeded in getting lost in the mist. Although soaked, no one was heard to complain (much), and the excellent farmhouse food and local beer soon compensated for any temporary aches and pains. ❀

# Twenty Years Ago

## **A SOCIAL HISTORY OF HARWELL...**

During the first six months of 1951, life was dominated by two main subjects: television and the Festival of Britain celebrations.

On 14th February Harwell was presented on television not primarily as a scientific establishment but as a community of people. There were general shots of a model "pile", as reactors were then called, and of buildings not of security interest, such as the effluent plant and the works at Sutton Courtenay. Pre-fabs, hostels, housing estates and the nursery school were also featured. Hockey and football matches were shown and Wilfred Pickles interviewed Malcolm Smith who was Football Club Capt. at the time. There were "live" interviews from the studios, which were then at Alexandra Palace. Naturally, many references were made to scientific work, but these were played down to show Harwell employees as ordinary people with ordinary interests who were part of the community as a whole. As such, the programme did much to counterbalance the Harwell of the newspaper cartoon and the sensational press.

Another aspect of television, which led to the "Terry Tric" column in the "AERE News", was the poor reception in this corner of Berkshire for the few people who had T.V. sets at the time. "Terry" was the mouthpiece of the Television and Radio Interference Committee, which had representatives on all the housing estates. He appeared nearly every week and constantly appealed to all motorists and D.I.Y. enthusiasts to have suppressors fitted to their vehicles and electrical devices at a modest cost of one shilling and sixpence (7½p).

Notices reminding readers of the impending Festival celebrations began to appear around the middle of February. In Didcot they proposed to hold a Carnival, a Horticultural Show and a Photographic Competition, whilst Oxford boasted three performances by the Royal Philhamonic Orchestra. An exhibition of "contemporary furniture" took place in Ridgeway House and an exhibition of "objects illustrating the history and activities of Wantage" was opened by Compton Mackenzie in the Town Hall, Wantage.

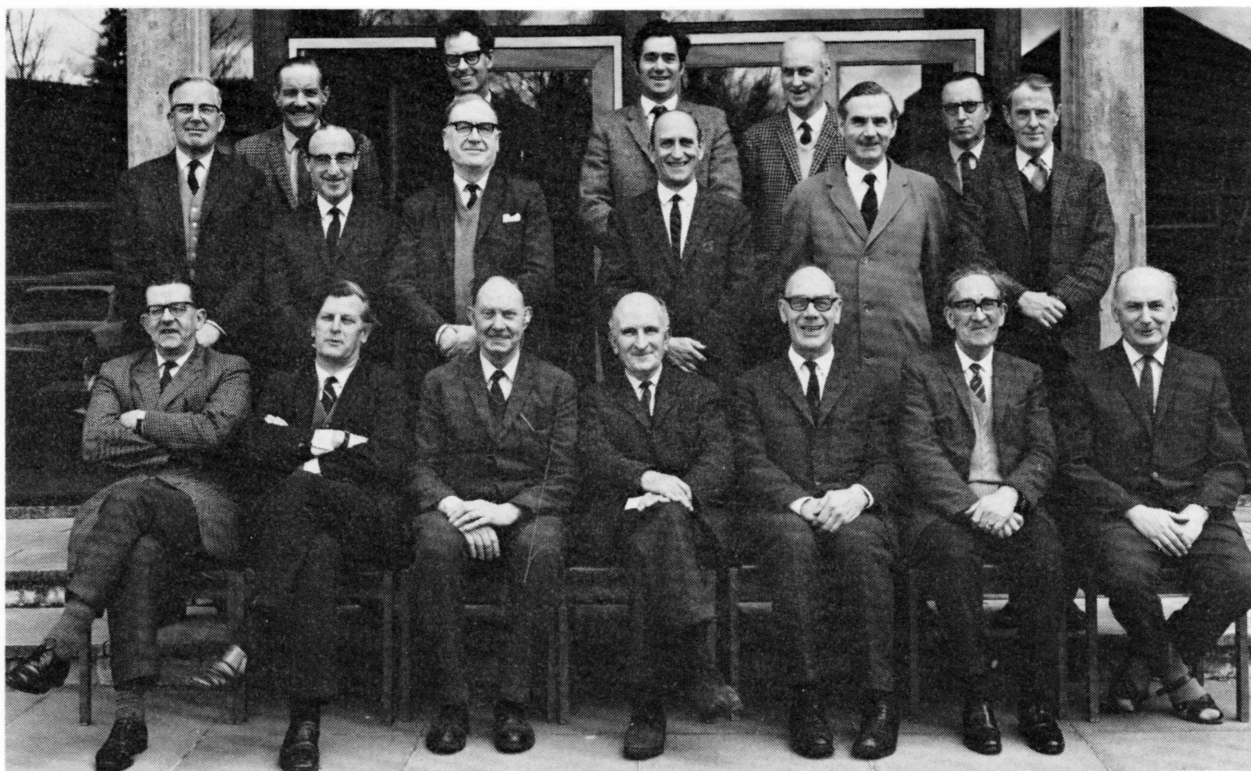
When the post of Editor for "AERE News" became vacant Guest Editors filled-in until Don Knight took on the job. He has described how the news-sheet was compiled each week.

Editorial practice was to accept copy up to 5 p.m. on Tuesdays, c/o Post Room. Between 5 and 7 p.m. the Editor and a typist prepared the week's "News" on a Rotaprint master, a kind of yellow

stencil. Order of typing was to start with the back page, (that perhaps explains a lot!), which included local theatre and cinema programmes and then on to Page 3, which gave details of Church Notices and the like. While these straightforward items were being typed the Editor worked through the rest of the copy, pruning, correcting and sorting as he went, so that the typist could then get on with such items as advertisements, (which were free), and Club News. The gaps were gradually filled in with anything that was offered, until the four small pages were complete except for headings.

The Editor studied the proofs over his supper, putting in "humorous" comments and headings as the fancy took him. Announcements of births, weddings and deaths, not necessarily in that order, offered scope, e.g. "So the Onions now have got. A little Lady of Shallot ....." and so on.

On Wednesday morning the headings etc. were typed onto the master and the mighty machinery, (the one and only rotaprint R.K.L. with one-a-second output), churned out about fifteen hundred

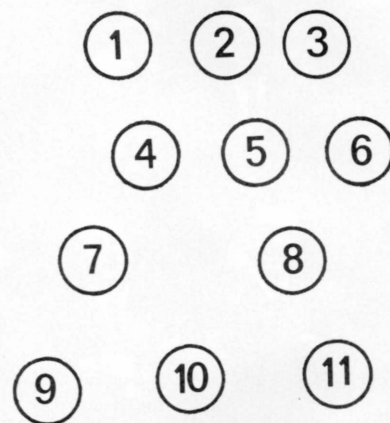
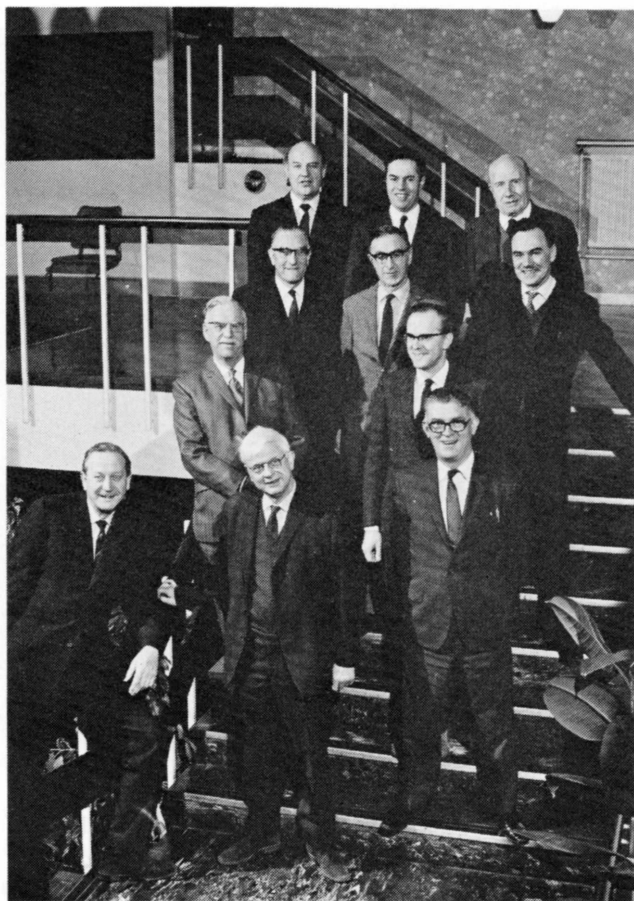


**TWENTY YEARS' SERVICE**, back row, standing, left to right: P. R. Parker, R. P. Dawson, D. B. Punter, J. Kendall, P. R. Hooper. Centre, standing: T. W. Hodge, R. Murdoch, C. E. Auting, A. M. Newman, G. J. Neary, I. P. Mason. Front row, seated: B. Longstaff, D. R. V. Silvester, R. F. Taylor, J. Sherman, G. Biddle, A. S. F. Smith, B. Bristol.

copies, some of which were distributed to the A.E.R.E. housing estates, but otherwise went out on the basis of one-between-two.

The "News" appeared on Thursdays which was not bad by any standard, but clangers were dropped from time to time such as the advertising for sale of return halves of railway tickets which turned out to be illegal. There was also an accusation of publishing pornography, dismissed by the Security Officer, Henry Arnold; none had been intended or, in fact, seen by anyone but the local bigwig who beheld it!

The earlier editorial troubles might have had something to do with the mistakes which appeared from time to time. One Sports correspondent was quoted as saying: "It's sincerely hoped that the **supporter** of the Rugby Club will turn up to cheer the team on". The Editor apologised in the next issue and pointed out that there were actually **two** supporters! One **green lady's** beret was lost at the beginning of March. About one month later the cryptic "Hugh - I only wanted to stop you - Hugh" appeared in the Personal Column; research reveals that the first "Hugh" was H. Roskell who was trying to give up smoking, and the second was H. Gaitskill who made it easier by increasing tobacco tax at that time!



#### CULHAM STAFF WITH TWENTY-YEAR SERVICE

- (1) J.W. Hill, (2) P. Reynolds,  
(3) R.E. Doe, (4) A.T. Digweed,  
(5) R.T.P. Whipple, (6) S.G.F. Blewett,  
(7) T.D. Condon, (8) D.S. Lees,  
(9) P.A. Shatford, (10) B.L. Tozer,  
(11) T.J. Hassett.

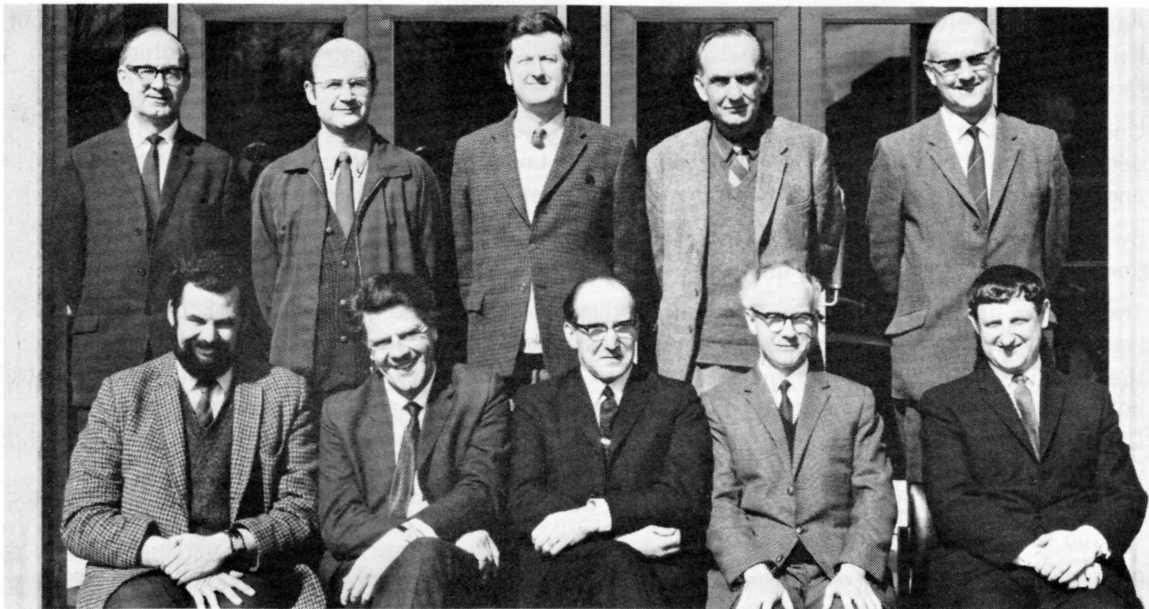


Twenty years ago, entertainment at Harwell appears to have been much less expensive than it is today, and perhaps a little more varied. Seats for the A.E.R.E. Dramatic Society's production of "The Reluctant Dragon" and "Alice Thro' the Looking Glass" were advertised at 3/- (15p) and 2/- (10p). The Berkshire Drama Unit gave a performance in the Gymnasium which consisted of several items, and charged only 2/- (10p) and 1/6 (7½p). A Choral Society and a Ballroom Dancing Club were in existence on the site and the ladies were catered for by the Netball Club and Ridgeway Women's Cricket Club.

Both "Harlequin" and "AERE News" were sponsored by the Recreational Association in 1951. Its decision to discontinue distribution of the latter on the housing estates did not please everyone, especially as the Association had just collected the annual subscriptions. Plans were initiated for the conversion of Building 161 into a recreational centre and the Association hoped to open it by the end of the year.

Obituary notices did not appear in "AERE News" as often as they do now, but they were much much longer. One for a 73 year old messenger who had worked in Hangar 8 for five years, described him as "familiar a figure as GLEEP itself". It went on, "He took pride in being, in one if not both respects, the oldest member of the hangar, and if he treated everyone with some condescension because of it, he made amends by taking upon himself innumerable little jobs that went almost unnoticed. He hated having nothing to do. If only for his pipe and his tea club we shall miss him". How many 73 year olds are there on the site today?

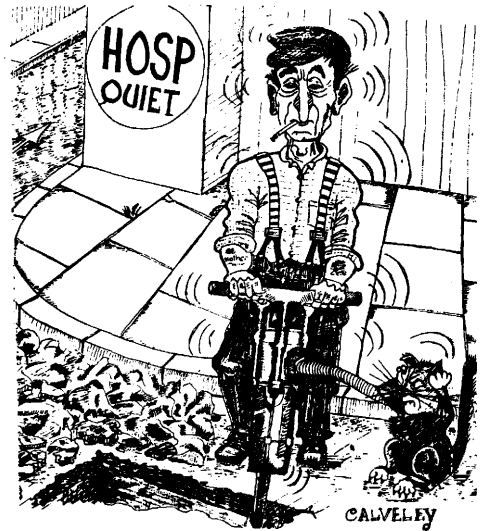
Continued in next issue



**TWENTY YEARS' SERVICE**, back row, standing, left to right: R. S. Campbell, R. A. Huber, A. H. Baston, A. R. Coward, E. Symonds. Front row: B. A. Sammons, V. W. Smith, J. Adam, A. W. Gardner, C. E. Halliday.

# Sssshh...

ROBIN ORR



## Eh? What Was That You Said?

-a-y -a- a -i---- -a-- may look like a secret code for Boy Scouts. In fact it is "Mary had a little lamb" without the consonants, and is the way someone suffering from noise-deafness might hear the sentence when spoken.

Amplification, either by the speaker raising his voice or the listener wearing a hearing aid, is of little help because this only serves to distort the words — just as increasing the volume of a radio does when it has not been properly tuned in.

Usually, it is in later life that noise deafness becomes important, because of the additional deterioration of hearing that accompanies ageing. Loneliness is a cruel penalty of growing old, and to be inflicted with irretrievable deafness as well causes much unhappiness.

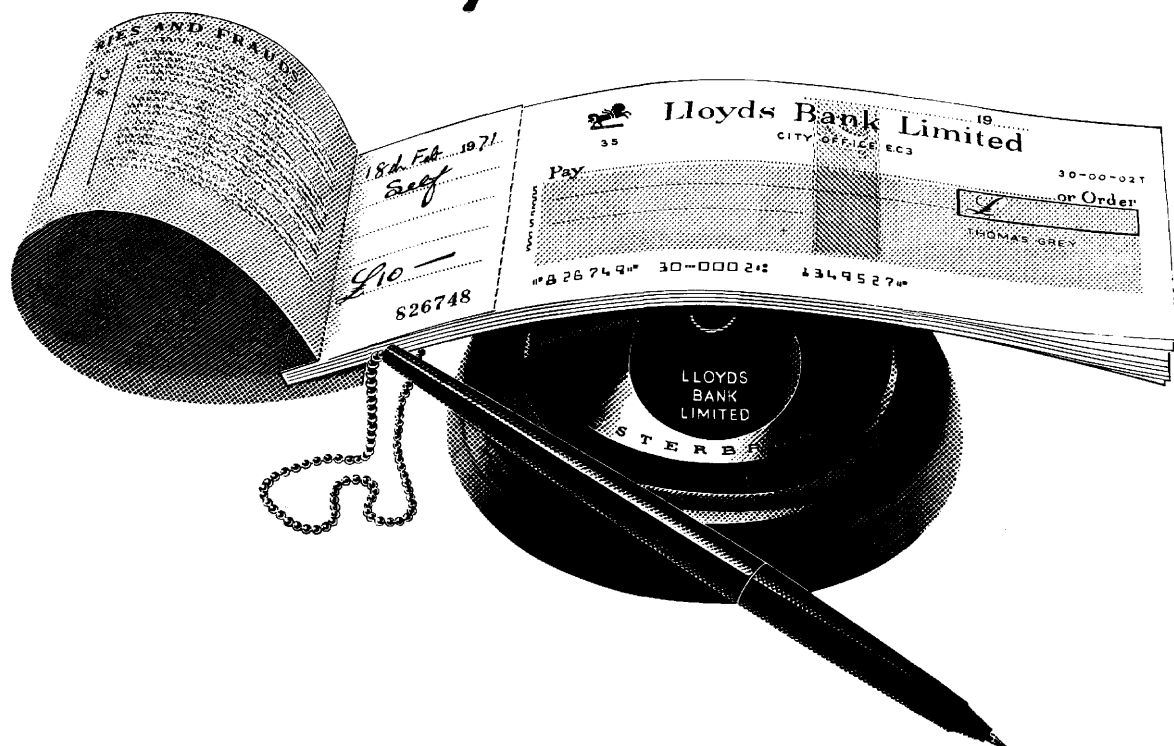
By avoiding long exposure to excessive noise this tragedy may be partly prevented, since help can be given to reduce ageing deafness. But is it always avoided?

The answer, inexcusably, is "no" — often through no fault of the sufferers. Inexcusably, because a link between noise and deafness was recognised as long ago as last century — from the experience of blacksmiths and boilermakers — and nowadays we know very well how to control noise. Despite this, the managing director of a textile firm in Lancashire told me just before Christmas how he had asked the manufacturer, on ordering a new machine from Germany, what had been done to reduce operating noise. Even though textile machinery is notoriously noisy, his question was greeted with incredulity — never before had a customer made such an enquiry. I am talking about 1970, by the way, not 1870.

Regrettably, deafness of employees in later life has seldom concerned hard-headed businessmen anxious to avoid expenditure on "unnecessary" frills in their equipment.

Often this must have been false economy, for work in a noisy environment imposes stress on an individual which increases the risk of mistakes and reduces output. Accident-proneness goes up too, especially with persons already suffering from emotional stress or who, because of impaired hearing, fail to heed a warning shout or the approach of a vehicle.

# You don't have to be a big name to sign on with Lloyds Bank



You don't have to be a big spender to have your name on a Lloyds Bank cheque book. In fact, you can open a current account with as little as £1—the size of your balance is for you to decide.

No matter how well off you are, you'll find having a Lloyds Bank current account a great advantage. It means you can sign for goods and services when you haven't got enough money with you. Or you can settle bills by cheque or standing order without actually having to hand over cash. It means you can

have your wages or salary paid directly and safely into your account by your employers—and so avoid the risk of losing your pay packet. And you can trace exactly where your money's coming from and going to, in your regular bank statements.

When you get one of our cheque books, you get a team of professionals working on your account. So it's not surprising that so many new names are signing on with Lloyds Bank.

**Lloyds Bank looks after people like you**



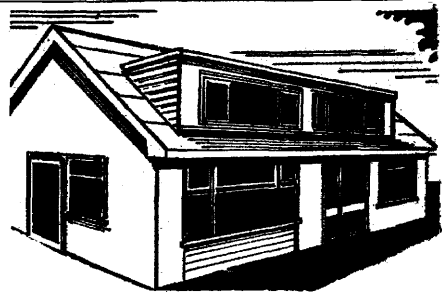
# OXFORD'S own permanent MOTOR CYCLE SHOW

MODELS FOR EVERYONE  
EXCITEMENT FOR  
THE SPORTSMAN  
PLEASURE FOR  
THE TOURIST  
ECONOMY FOR  
THE RIDER TO WORK

ESTABLISHED 1910

TEL: 57279

**FAULKNER & SON LTD**  
**55 WALTON ST**



## HOUSE PURCHASE

For **PERSONAL SERVICE** in  
confidence phone Abingdon 360 after  
6 p.m. Special Terms for Harwell Staff

**J. E. BUTLAND**

Insurance Broker

Mortgage Consultant

Investment Adviser

19 Norman Avenue, Abingdon



## TOUCHWOOD SPORTS LTD.

77-79 The Vineyard, Abingdon-on-Thames, Berks. Telephone Abingdon:8

Directors G. W. Clare, C. M. Clare, K. W. Clare

A FORMER Harwell engineer who started a camping business a few years ago named it "Touchwood" after his bungalow, and it's proved lucky for him ever since.

He is Mr George Clare, managing director of the new Touchwood Sports Centre which has just opened in Abingdon Road, Oxford. The centre, on the Red Bridge Garage site, caters for all the needs of campers, sportsmen, and outdoor enthusiasts.

It has developed from a small home-based concern to ever-increasing business at the shop in the Vineyard, Abingdon, and now on to the new and spacious centre with its floor space of over 10,000 square feet.

- "Oxford Times"

&

## OUTDOOR LIFE SUPERMARKET

ABINGDON ROAD, OXFORD

**EVERYTHING FOR THE OUTDOOR LIFE  
ENTHUSIAST**

For Britons living in the 70's it is not only employees in noisy industries whose hearing is at risk — as anyone living near Heathrow, or London's newly opened Westway, will tell you. Yet in a way this threat to civil liberties may prove a blessing in disguise, by alerting public opinion to the need for action. Even so there are many difficulties to be faced. Whilst noise-conscious machinery designing may not add much to the cost of new equipment, modification of existing plant is often prohibitively expensive.

Two points arise from this. One is the need for persistent public agitation to have noise reduced wherever possible. I have a natural dislike of the Peter Hains of this world; nevertheless I am impressed by the results that can be achieved, if enough people are prepared to make a nuisance of themselves.

The other is the importance of personal protection where noise cannot easily be avoided. My experience of trying to persuade car drivers and passengers to wear seat belts, and those at risk from eye injury to wear goggles or glasses, made me realise this may be a forlorn hope. Perhaps I can make this plea more convincing if I explain briefly how noise leads to deafness.

We hear a sound because a series of pressure changes is set up in the air between our ears and whatever is causing it. I find it easiest to think of a vibrating tuning fork continually banging against particles of air, which transmit shock waves through their neighbours to my ears. The same kind of movement occurs, on a much cruder scale, when a shunting railway engine pushes a line of stationary trucks.

After entering the ear, the pressure waves pass along a short canal and strike a vertical membrane — the ear drum. Resulting vibrations in the drum then oscillate three minute bones which are arranged in a progressive line inwards towards the brain. By lever action these bones magnify the pressure waves ten times before passing them on, through another membrane, to the fluid-containing inner ear. Shaped like a snail's shell, this is called the "cochlea".

Floating from a fixed shelf spiralling within the cochlea are about 20,000 delicate hairs, each of which is connected by nerve fibres to the part of the brain responsible for hearing. The hairs at the base of the spiral are short and thick, and vibrate when there is a fast flow (high frequency) of pressure waves, which the brain interprets as a high-pitched sound. At the apex of the cochlea the hairs are longer and thicker, and vibrate with slow frequencies, thus enabling us to appreciate low notes.

If the pressure waves transmitted by the air particles are much too strong — as they may be with a really shattering sound — the ear drum is liable to burst. However, small and delicate though the components of our ears may be, they are remarkably robust, and seldom does injury of this sort occur.

I am more concerned with damage resulting from excessive wear and tear on the hairs in the cochlea. If they are made to vibrate too vigorously, too often, they stop functioning, as a consequence of which sound is no longer passed along the nerves to the brain. So a crucial link in an intricate chain is broken.

Not all hair cells wear out at the same rate. Curiously enough — and no one quite knows why — the same hairs always fail first, no matter what noise one has been exposed to. These are the hairs which respond to a pressure wave frequency of about 4000 a second. Only listeners who appreciate music are likely to be aware of such a loss and they will be unable to hear the high notes, which have approximately the same frequency.

Further damaging exposure to noise, however, impairs the function of neighbouring hairs, so that

As a member of the United Kingdom Atomic Energy Authority you are entitled to special reduced terms on all classes of insurance. Are you receiving a high no claims bonus on your motor insurance? **Plus** a discount from normal premium rates and worthwhile discounts for your life assurance requirements and householders' fire policies?

# are you taking advantage

## of these Special Reduced Insurance Terms ....?

Full information on these valuable concessions can be obtained, without obligation from

### MIDLAND ASSURANCE LIMITED

187 KING'S ROAD, READING, BERKS

Telephone: 50010 & 53734

Assets exceed £47,000,000

Established 1898



**MIDLAND  
ASSURANCE  
LIMITED**

HEAD OFFICE: Midland Assurance Building, Hagley Road, Birmingham 16. Tel. Edgbaston 4811 (17 lines)

*Member of the British Insurance Association.*

POST THIS COUPON FOR FURTHER DETAILS

Name .....

Department/Branch .....

Address .....

TC 62

### Children's Wear

Wool

Haberdashery



**ICKNIELD WAY P.O. .**

**SHOPPING PARADE**

**AERE HARWELL**



ROWSTOCK 259

Robin — Hayfield — Ladybird

Kiddicraft.

### HOBBS & CHAMBERS F.R.I.C.S.

**Chartered Surveyors, Auctioneers & Valuers,  
House, Land and Estate Agents**

#### House Agents

for the sale of Town and Country Houses and Cottages in Berks/Oxon/Wilts and Glos.

#### Valuers

of Houses and Furniture on sale, purchase and probate, Compulsory Purchase, Rating and Capital Gains.

#### Surveyors

Of Residential Property, Land and Estates on sale and Purchase

#### Insurance Agents

for leading Companies on all classes of Residential, Furniture and Motor Business

#### Auctioneers

for the sale of Houses, Cottages, Furniture Farms and Farmstock

#### Land Agents

for Farm Improvement Schemes, Farm Accounts, Stock Taking, Timber and Management

**Market Place, Faringdon, Berkshire  
(Tel: 2356, 2357 and 3261)**

and at Cirencester, Glos., Swindon, Wilts., and Carterton, Oxon.

(24 hour telephone answering service on Cirencester 2562/3)

eventually speech, which utilises the frequency range 250-3000 waves (or cycles) a second, becomes indistinct as well through loss of parts of words. Consonants, which have a higher frequency than vowels, suffer first — hence my opening remarks about Mary's lamb.

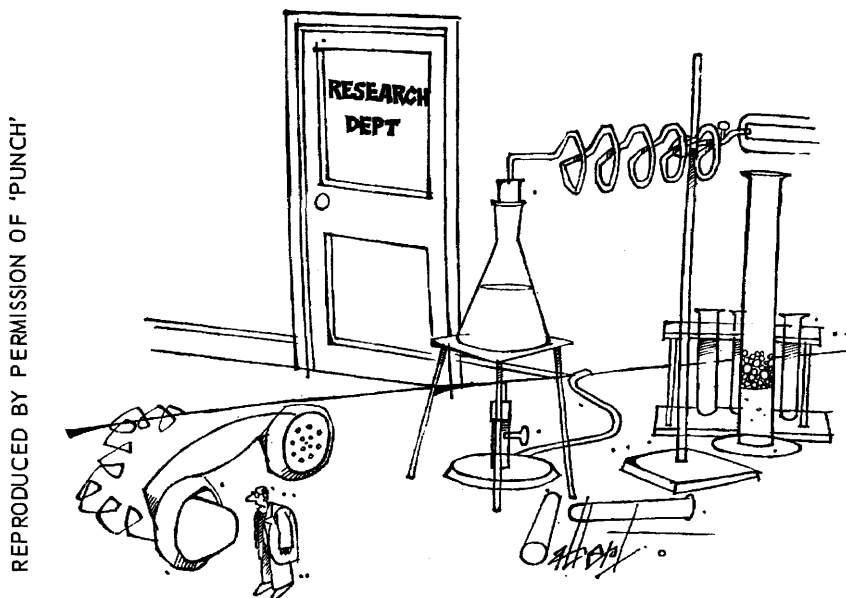
Though incredibly fine surgery can now be performed on the outer parts of the ear, nothing can be done to restore damaged hair cells. Nor, as I have said, does amplification of sound help, for if the hair cell "link" in the transmission chain doesn't work there is just no way of passing sound messages to the brain. You might just as well shine a light down an ear suffering severely from this defect, as shout into it.

It is impossible to say how much noise will damage any one individual — we vary too much from person to person in ear sensitivity. Nevertheless, enough research has been done for guiding tables to be drawn up, and industrial health experts often refer to these when advising management about the risk of occupational deafness to staff. However, a useful rough-and-ready check which anyone can use is to observe whether you are temporarily deaf after leaving a noisy area. If you are, it should serve as a warning that repeated exposure to such a noise may lead to permanent deafness.

Fortunately Harwell is not a very noisy place, but the Medical Department would like to hear from any who are subjected to noise causing temporary deafness if they have not been provided with adequate protection. You should look out for noise away from work as well. Motor-cycles with broken silencers and playing in a pop-group band are two obvious recreational hazards. So is mowing the lawn with a petrol-driven rotary mower, as I have found from personal experience.

Protection for domestic exposure need not be elaborate — moulded ear plugs or a shape-it-yourself plug of glass-down is usually adequate. I use small cones of cotton-wool smeared with vaseline when mowing my lawn, and no longer notice any deafness afterwards.

I am afraid life is generally too noisy for most of us completely to avoid damaging our hair cells, but with care there is no reason why anyone should develop noticeable noise deafness. \*



*"Hello, Doris, I think you'd better pop the dinner in the oven, and don't put too many potatoes on mine."*

# Norman Frizzell have a Scheme for lending you money

- \* Favourable rate of interest.
- \* Freedom to spend the loan as you will.
- \* No charge on your property (tenants may therefore apply).
- \* No 'hidden extras'.
- \* Loan automatically repaid in the event of your death.
- \* Facility to apply for further loans.

Norman Frizzell (Life & Pensions) Limited have been advising Government employees, professional and salaried people on financial matters for a considerable time. Now, in conjunction with National City Trust and Economic Insurance Company Limited, they have arranged a Personal Loan Scheme that features all these advantages.

You may borrow up to £1,000 with 4 years to repay, and get your own cheque book plus other benefits, and all you have to do is to take out an Economic Life Policy and assign it to National City as security. If you are interested why not just complete the coupon and send it to National City for full details.

## To: National City Trust Limited

Old Court Place, London W.8.

Please send me details of your Bank Loan under the Norman Frizzell Scheme.

Name.....

Address.....



F 2/71



## FOND FAREWELL

by Arnold Wiles



"Too late—he's dead."



"Jolly good luck—er, Benson, and forgive me for not getting up. . ."

# Would you stand outdoors all winter in nothing but a showerproof mac?



Some people think that by coating the outside walls of their home with paint, they're protecting the vulnerable structure against the elements. But do you know that the average coat of paint is little more than one thousandth of an inch thick? With a climate like ours, no wonder it flakes and wears so quickly. It's like going out in a snowstorm wearing only a showerproof mac.

Now with Huntex, it's different. It's based on a special resin and fortified with mica. So, coat for coat, it's literally 25 times tougher than paint. It is applied by a team of skilled technicians in a matter of days yet it is impervious to wind and rain, and guaranteed for ten whole years against even the tiniest flake – and it's up to twenty years before it needs recoating.

Above all, Huntex looks so much smarter than paint. And it stays looking that way, year after year.

Doesn't your home deserve the best protection – and the best looks? Clip the coupon for the full startling facts about Huntex, the beautiful winter overcoat.

Tell us more about Huntex.

Name

Address

Duratex Coatings Ltd, HQ1  
Commerce Chambers, Station Rd,  
London, SE25. Tel. 01-771 9631



“THE KNOWL”  
ABINGDON, BERKS.

The  
headquarters of the old-established  
INSURANCE BROKING FIRM of  
**POPE & CO: (Insurance) Ltd.**—  
a business set in the very heart of  
England, with its finger on the  
pulse of the London insurance  
market.

The avoidance of accidents and of the anxiety which they bring is a Combined Operation in which you and we both have a part to play — you, by driving carefully and avoiding unnecessary risks: we, by the skilful arrangement of your insurances and the exercise of painstaking care should claims arise.

We have specialised in Motor Insurance since the pioneer days and the benefit of our experience in this field is freely at the disposal of our client.

“Across The Channel & Beyond”

LUXURY COACH TOURS OF EUROPE

*Starting Didcot, Abingdon, Oxford, Wallingford  
you travel all the way in the same luxury coach*

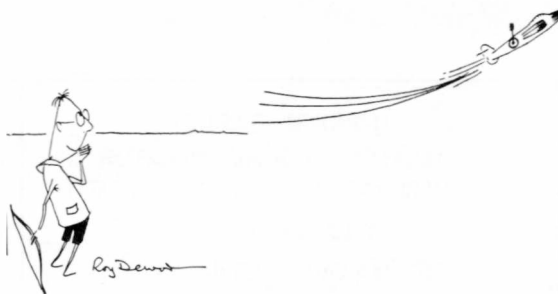
NO OVERNIGHT COACH TRAVEL

HAPPY WANDERER EUROPEAN TOURS

LOWER BROADWAY, DIDCOT, BERKS.

Telephone 2357 and 4657

*(Brochures on Request)*



Established 1857

## OVERSEAS REMOVALS LOCAL AND LONG DISTANCE REMOVALS

EXTENSIVE, SPECIALLY BUILT  
WAREHOUSES for the  
STORAGE of FURNITURE

ESTIMATES FREE

**Archer, Cowley & Co. Ltd.**

36—39 PARK END STREET, OXFORD

Telephone: Oxford 41061/2

Telegrams: "Removers, Oxford"

## Have you time -

to sit in your garden, as well as to  
hoe, dig, clip and spray, plant, cut,  
stake and tie?

**Doubtful, to almost certainly not.**

But recent gardening innovations go a long way to help. Hoeing can be almost eliminated by the use of Paraquat or Simazine weedkillers. Systemic insecticides give several weeks protection and Foliar Feeds can be applied at the same time.

Lawns can be given the single weed-feed treatment using a spreader.

Consult:

## **LANGFORDS GARDENERS CENTRE**

**Stert Street, ABINGDON**

for the best ideas on how to  
make it and take it easier  
also at WANTAGE and FARINGDON

58, Cornmarket Street, Oxford.  
16, Bartholomew Street, Newbury.

Tel: 40801  
Tel: 761

5, St. Martins Street, Wallingford.  
3, Market Place, Banbury.

Tel: 2651  
Tel: 3161

### A NEW DEVELOPMENT

Within 6 miles of Harwell

### GROVELANDS PARK ESTATE, GROVE, WANTAGE

New detached 3 and 4 bedroomed houses  
Detached 3 bedroomed bungalows all with full heating and garage.

N.H.B.R.C. Guarantee.

**Prices from £5,150**

95% Mortgages available

For further details of this development and other properties in North Berkshire & Oxfordshire

**2 MARKET PLACE, WANTAGE**

Telephone: 3611/2

**BB**

**BUCKELL & BALLARD**

*Auctioneers*

*Estate Agents*

*Surveyors and Valuers*

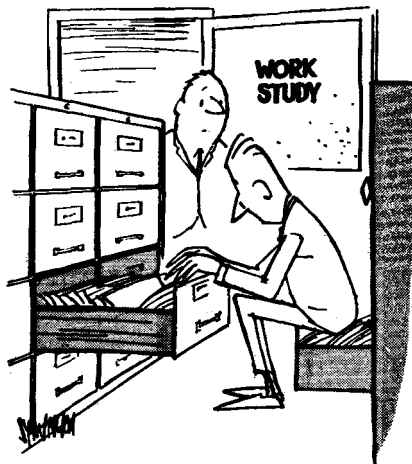
**TOPKAPI SAFARI**  
**YOUR OWN LOCAL OPERATOR**  
**FOR OVERLAND ADVENTURES TO EXOTIC**  
**TURKEY**

16 days £40    23 days £50

(This ad. is worth  
 20% Deposit Discount)

For exciting information on these all action  
 holidays write to:-

**TOPKAPI SAFARI**  
 48 EARLS COURT RD., LONDON, W8 6EJ  
 Tel. 01-937 4569



# **STEVENTON MOTOR REPAIR SERVICE**

**FOX INN GARAGE    •    STEVENTON    •    BERKS.**



Telephone: STEVENTON 304



**BODY REPAIR SPECIALISTS**

**RESPRAYS    WELDING    ESTIMATES FREE**

**TAXIS FOR ALL OCCASIONS**



**The Riverside Hotel**  
**Burcote-on-Thames**  
**Oxfordshire**

Tel. Clifton Hampden 382 & 232

**Every Saturday**

**Dinner Dance**

Catering for Private  
 Functions, Weddings etc.  
 Private Conference Room  
 Table Licence until 2 p.m.

**Fridays and Saturdays**  
 Spacious Car Park

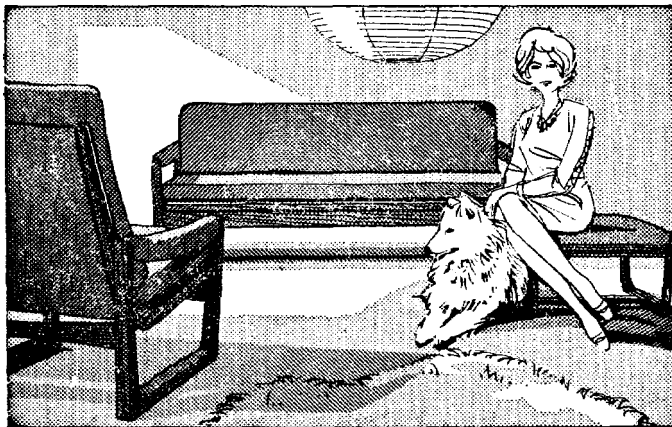
**ABINGDON 4½ MILES**  
**OXFORD 7½ "**

**Fully Licensed**

**-Fishing, Tennis, Boating,  
 Swimming & Golf**



## For Good Modern Furniture

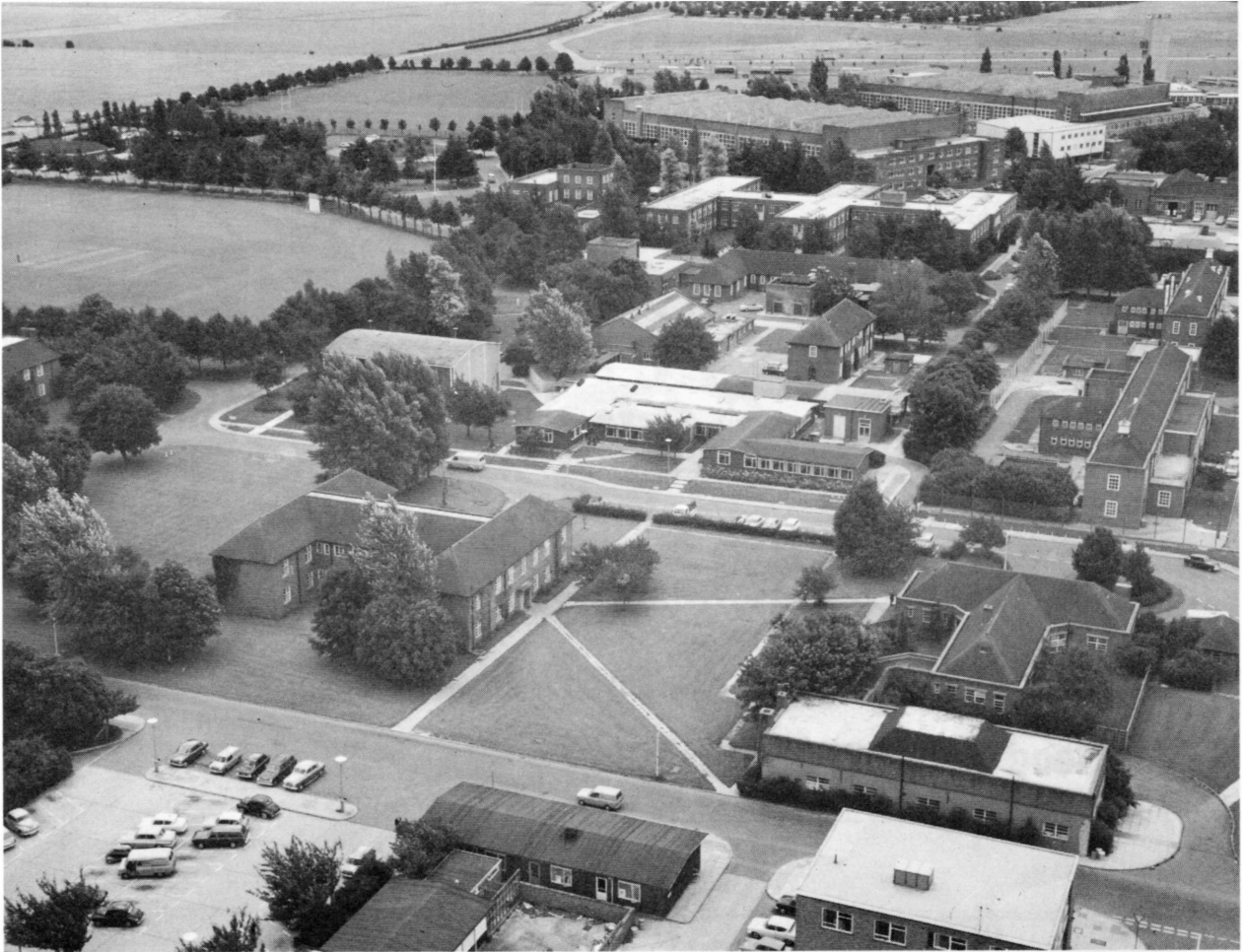


☆  
A.E.R.E. Employees  
Please enquire for  
Special Discount Terms  
☆

We have lots to offer

**VINEYS of ABINGDON LTD**

15 OCK STREET Tel. 1068



## A.E.R.E. HARWELL – NORTH END

**HARLEQUIN** Welcomes ideas, suggestions and contributions from readers without whom a better journal cannot be produced

**HARLEQUIN** Welcomes new advertisers with whose support also a better journal can be produced

Enquiries:-

**"HARLEQUIN", 1,05B, Bld. 77,  
A.E.R.E., HARWELL, BERKS.**

ENGLAND - SMOG - RUSH - CROWDS - WORK - ALARM CLOCK - STRIKES - CHILL -  
 BUSINESS - CLOUDS - RAIN - TRAFFIC - TRAFFIC JAM - WET FEET - RHEUMATISM -  
 STRESS - SLUSH - CLAUSTROPHOBIA - FRUSTRATION - DRIZZLE - SORE THROATS -  
 SKI - SUN - LAUGHTER - RELAXATION - SNOW - BLUE SKY - APRES SKI - CHEERS -  
 HANGOVER - CRISP AIR - JOKES - SKI BOB - FUN - HEALTH - SUMMER - DECK  
 CHAIR - SURF - SAND - SEA - BIKINI - HOLIDAY - BROCHURES - TRAVEL AGENTS -  
 ABINGDON TRAVEL AGENCY - EXPERTS - ASSISTANCE - ADVICE - FRIENDLY -  
 INCLUSIVE HOLIDAYS - CHANNEL FERRIES - MOTORING HOLIDAYS - CONTINENTAL  
 RAIL - BRITISH RAIL - COACHES - SEA PASSAGES - CRUISES - CAR HIRE -  
 INSURANCE - CURRENCY - TRAVELLERS CHEQUES - VISAS - PASSPORTS - ANYTIME -  
 ANYWHERE - UNDER THE SUN - GETAWAY - NOW.

THE NAME YOU ASSOCIATE WITH TRAVEL:-



**ABINGDON TRAVEL**

**24 STERT STREET, ABINGDON**



TELEPHONE 138 OR 4992

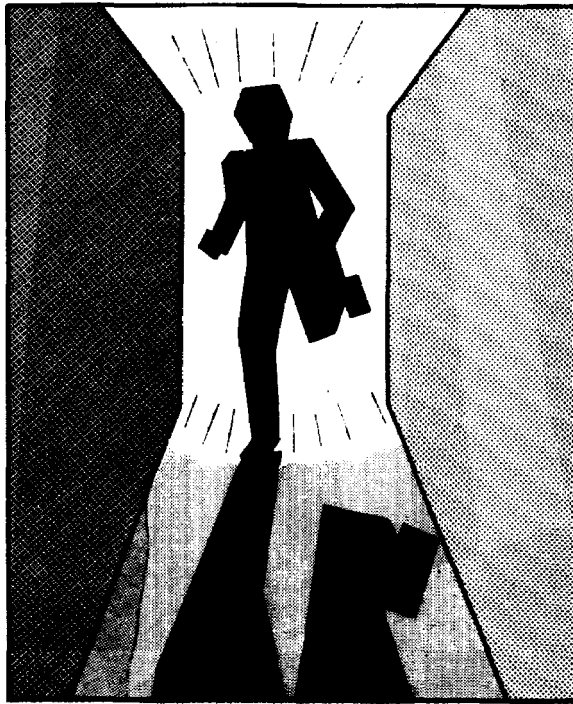


*For all your insurance needs  
 call in the man from the*

***Prudential***

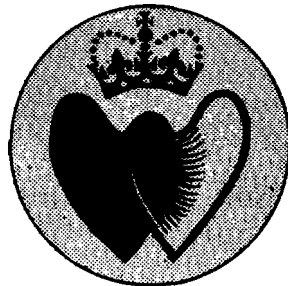
THE PRUDENTIAL ASSURANCE CO LTD 142 HOLBORN BARS LONDON EC1

# MAN ALIVE!



THIS IS OUR AIM—HELP US ACHIEVE IT  
BY BEING A **BLOOD DONOR**

mobile collecting teams make regular visits to —  
the A.E.R.E., Harwell,  
the Culham Laboratory,  
the Rutherford Laboratory.



IF YOU ARE BETWEEN THE AGE OF 18—65 YEARS OLD, PLEASE  
ENQUIRE AT YOUR D.A.O. OFFICE.

REGIONAL TRANSFUSION CENTRE,  
CHURCHILL HOSPITAL, HEADINGTON, OXFORD OX3 7LJ  
*TEL: OXFORD 65711*