

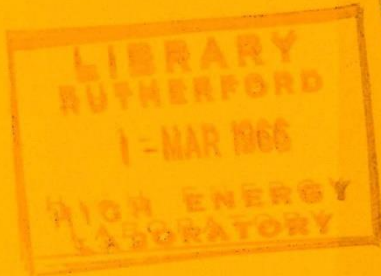


orbit

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COVER:

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Acting Editor:

T. R. Walsh, Building R 20,
Rutherford Laboratory,
Chilton, Didcot, Berkshire.

Assistant Editors:

H. F. Norris
F. J. Williams

Manager:

R. C. Pepperell

Editorial Board:

T. R. Walsh, M. R. Bird, D. R. Moore,
J. M. Coupland, K. G. McAinsh, D. Hudson.

Editorial

In a letter to ORBIT this month, Mr. McAinsh bemoans the lack of communication between physicists in the Laboratory and the engineers, administrators, technicians, craftsmen and others who support them. Recently, a commendable attempt was made to meet this problem: a series of Popular lectures was organised. The first lecture attracted a large audience from all sections of the Laboratory who were clearly interested in finding out what was going on. A later lecture had to be postponed because only six people turned up. The venture failed. Why? We would say that it failed because not enough thought had gone into the presentation of the introductory lecture. But no doubt in some circles the conclusion will be drawn that high energy physics is too advanced and complex an activity to be explained to outsiders, that to attempt an explanation is to cast pearls before swine. Such thinking is as arrogant as it is defeatist, and only lends force to the opposing attitude, that research scientists regard themselves as in some way superior to the rest of humanity, possessing a divine right to make demands on the national resources without offering any justification of their activities beyond an appeal to blind faith in the new religion of Science.

Mr. McAinsh points to the need to stimulate enthusiasm within the Laboratory. There is a similar need to convince a wider public of the importance and value of the Laboratory's work. Sooner or later a hard-pressed government will look critically at the expenditure of scientific establishments. It may not then be enough to answer awkward questions by pointing out our contributions to reversing the brain drain, to national prestige, or to technology. We still need to do a lot of hard thinking about what this Laboratory is trying to do, and how its purpose can be conveyed both to its own staff and to the taxpayers who foot the bill.

Early this month we heard from CERN of an accident to the PS power supply similar to the Nimrod accident of last February. On that occasion CERN gave us valuable help by allocating machine time on the PS to one of our experimental teams.

Our own experience enables us to extend very real sympathy to CERN in this misfortune. We in our turn have made an immediate offer of assistance.

BOOSTING NIMROD

Roy Billinge

Since Nimrod reached its design intensity of 10^{12} protons per pulse in August 1964, much effort has been devoted to increasing the accelerated beam. At the present intensity of 2×10^{12} p.p.p., we are close to the limit set by the mutual repulsion of the protons during injection, the so called 'space charge limit'. In order to reach 10^{13} it will be necessary to increase the energy at which the beam is injected into the main ring, as the space charge limit increases with energy.

In April 1965, Mike Russell suggested that a Separated Orbit Cyclotron might be a contender as a new injector for Nimrod. In ensuing studies it became apparent that since the present 15 Mev linac injector could already provide more than 10^{14} protons p.p., a very convenient method of raising the injection energy would be to take the present injector beam and 'boost' its energy. Since injection into the main ring becomes increasingly difficult as the energy is increased, it was decided to design for an energy which could just use all the available 15 Mev beam current. This came out as 70 Mev, giving a maximum possible final intensity of 3×10^{13} compared with the present theoretical maximum of 5×10^{12} .

Following the initial idea, several more people were subverted into a design study for a 70 Mev SOC. Before long this process was taken in hand and an informal study group formed including scientists and engineers, led by Mike Russell. John Lawson chairs a fortnightly meeting at which progress is discussed. The group aims to produce a complete feasibility study of a booster by June of this year.

In the Nov/63 issue of Orbit, Mike Russell described his 'Beehive' Accelerator, which has now developed into the Separated Orbit Cyclotron. The name 'Beehive' was never very popular (particularly in the U.S., where bees live in 'little rectangular boxes') and since a recent development permits this type of accelerator to be built with a flat spiral orbit, the SOC now bears no resemblance to a beehive. (Fig. 1).

This development was to shape the accelerating cavities to give an electric field which increases towards the outside of the machine. This increases the energy gain per turn at higher energies and so increases the turn-separation, removing the necessity to separate the turns vertically as in the 'beehive'. It considerably simplifies the construction of the machine so that, with its very high RF efficiency, the SOC has no rival for continuous high current beams in the energy range 15 to 1000 Mev.

The proposed Nimrod 'booster' is a 70 Mev SOC (Fig 2), situated to the North of the present injector hall. The beam leaving the linac could be deflected through 90° , pass up and over one side of the SOC and be injected into the first of the twelve sectors. After 17 turns, the beam would emerge at 70 Mev and pass into the magnet room for injection into Nimrod in straight section 2. It is proposed that the 90° deflector of the 15 Mev beam should be pulsed to permit the commissioning of the SOC on alternate pulses from the linac while running Nimrod normally. By leaving the present inflector system intact it would be possible, in the event of a fault occurring in the SOC, to return to 15 Mev injection within a few minutes. This illustrates one of the most important objectives of the design study, to cause minimum possible disturbance to the Nimrod experimental programme. This requirement severely restricts other possible injector schemes and the only reasonable alternatives are a completely new 70 Mev linac operating at about 200 Mc/s or additional linac tanks at 115 Mc/s alongside the present injector hall to supplement the present linac. It now seems likely that the SOC booster would be cheaper than either of these alternatives because of its compactness and consequent low building cost.

Before beginning to build a new injector of any sort, it is necessary to consider the problems associated with running Nimrod at 10^{13} p.p.p. Fortunately most of these are already being studied, notably the most important one of attaining high efficiency of extraction.

Figure 1. Layout of the proposed booster

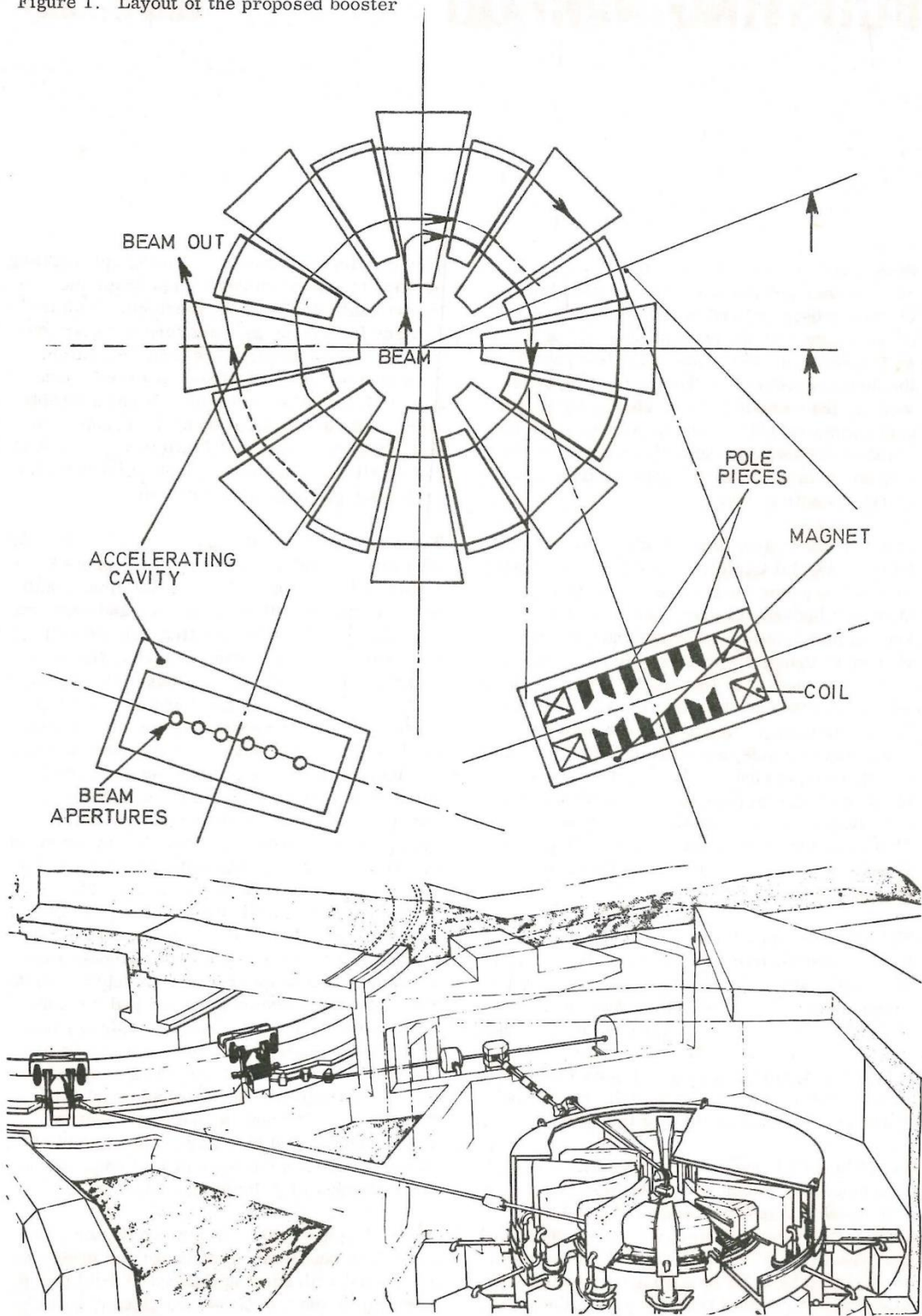


Figure 2. General View of the booster

From the outset the SOC study group has received encouragement and assistance from AERE since a high intensity SOC is undoubtedly the neutron source of the future. For the latter application a considerable amount of work is being done at Chalk River in Canada to design a 1 GeV SOC with a continuous output of at least 60 milliamps. (60 Megawatts beam power!)

Another group at Oak Ridge Laboratory, Tennessee, is designing a 50 MeV multiparticle

facility which could subsequently be the first stage of a 1 GeV machine. Since the SOC Development Conference last November, work has started at the Argonne Lab on the design of a 200 MeV SOC as a possible new injector for the ZGS, the 10 GeV synchrotron.

There is no doubt that the Rutherford Laboratory study group has played a leading role in the development of the SOC concept. To pass from paper to hardware now would be as much a boost for the Laboratory as the machine itself would be for Nimrod.

The Spectrometer Magnets are the latest bending magnets to be produced for the Nimrod experimental area. When they were designed there already existed three major types of bending magnet, two of them 'H' type magnets with pole areas of 36" x 26", and 50" x 26", and the third was a 'C' type of 36" x 26". Several Nimrod users were asking for a magnet which had a larger volume of field to accommodate a wider range of scattering angles for secondary particles.

The spectrometer magnets were therefore designed as a basic 'C' type unit with the following special features. The unit magnet has a pole-face area of 40" x 40". It is possible to mount two units together to form one magnet with a pole-face area of 40" x 80" in two ways. Either the yokes may be placed together forming a long 'C' magnet, or they may be placed at opposite ends forming an 'H' magnet. In either case specially designed coils to match the new pole shape are used. It is also possible to join four units together to form an 'H' magnet with a pole area of 80" x 80", for which another special coil is used.

The standard gap size is 6", but this can be varied between 0 and 40" by means of steel spacers. In some cases the necessary reduction in maximum field with larger gap is offset by the gain in solid angle and consequent increase in flux of secondary particles.

It is also possible with this design to remove a portion of the yoke leaving a hole, say 6" x 6", which could be used for entry of the secondary particles which would then, after passing through the field, have free exit over a very wide range of angles.

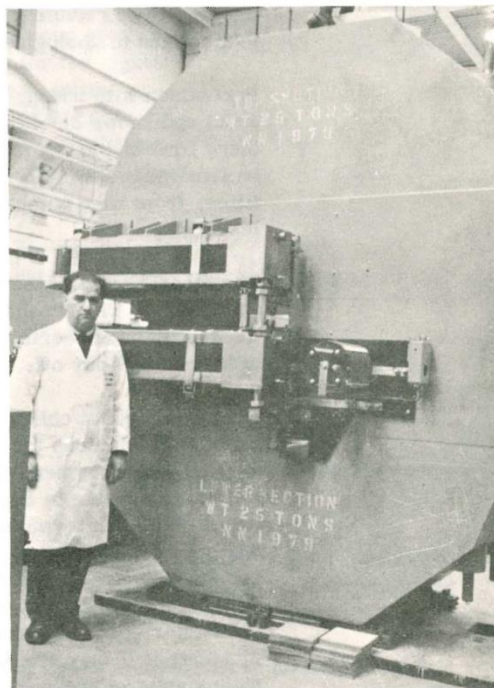
The recently completed order for spectrometer magnets was for four units with coils to allow all the proposed combinations. Demand for them has already outstripped supply, and teams at Daresbury are also planning to use the design.

NEW NIMROD MAGNETS

Mike Newman

Specification, single unit.

Max. field	15,3 Kilogauss
Effective length	1,17 Meters
Pole area	40" x 40"
Max. Current	500 Amps.
Max. Voltage	190 Volts
Max. Power	95 K. Watts
Cooling Water	8,5 g. p. m.
Total Weight	50 Tons



Letters to the Editor

(Pseudonyms are accepted provided the author's name is known to the Editor.)



Sir,

PHILOLOGOS must evidently be fairly new to the Laboratory, since his letter (January Issue) indicated a level of attainment for our administrators far above that actually required or expected.

To illustrate this, I will refer to the outcome of a suggestion put to the Awards Committee by an administrator whom I know well. The suggestion was minor, but it had the expedient aim of providing a safer entry/egress route to one of our toilets. The suggestion was adopted but no award made. The administrator was thanked for his interest and it was explained that an award was not appropriate as the subject matter fell within the originator's normal terms of reference.

A. Daniel.

Sir,

"Strangeness Minus Three" - an unusual title for anything, let alone a film for public consumption: one might reasonably be excused for expecting anything, and I mean ANYTHING. In fact, presented at a recent lunch time show, the film gave more than a lucid explanation of the excitement surrounding the discovery of the omega minus particle in 1964. It revealed an attitude of mind, an enthusiasm, among a group of intelligent, highly articulate young men which is, tragically, uncommon on this island.

I hope that this letter will precipitate such a barrage of abuse that I will feel obliged to apologize for having written it.

In common with living, science is only really worth doing if one is good at it, and knows one is good at it. Being good at science means getting there first and to get there first needs enthusiasm, enthusiasm verging on fanaticism. In "big science" this enthusiasm is needed in vast quantities, from huge numbers of people. To produce this is the trick of leadership.

The theoretical physicist is really a harmless creature in terms of economics. The expensive computers he requires are useful for other things, like engineering, and there is a good chance that some of his activities will pay off.

His experimental colleague is a different animal, particularly the nuclear breed. The figures for the consumption of national resources by our nuclear experimenters are pretty high, in spite of what they say, and it seems reasonable to expect that some, at least, should be seen to be of world class. In terms of physics there can be little doubt that some of our guys are as good as some of their guys but, and this is the point, our guys cannot or will not try to lead. They want everyone to follow but will not say where they are going. It is eyewash to claim that they really know their stuff but cannot communicate it, they jolly well must communicate it if they are going to get hundreds of support staff sufficiently enthusiastic to produce the equipment first, so that the results can be produced first and our guys seen to be of world class.

K.G. McAinsh.

Sir,

Recently I have read a comment attributed to a government committee that the 'National' centers of research should contribute in some way to the education of the youth of today. It is not clear to me, however, how an organisation such as the Rutherford Laboratory could participate in such a programme without seriously interfering with its normal functions. It is obvious that something should be attempted, nevertheless, but not necessarily from an official standpoint.

Those who have had or gained some sort of training in science generally tend to take for granted the advantages which such training gives them: the ability to follow recent developments in science, an understanding of the principles of operation of the many devices which surround us and even a deeper sympathy with Nature. Such fringe benefits are not easily explained or described but surely they form the basis for the continued fascination that science has for the scientist, for few scientists ever leave the field entirely.

But is this appreciation of the world of science that stems from a suitable training generally understood? I do not believe so, and certainly the youth of today could not be expected to have this knowledge. Here then, I suggest, is a way the individual scientist can help the general process of education.

Let those who care visit their old school or the local youth club, yes, even the university they attended. In each case they would find an audience curious to know just what a scientist does. Instead of presenting a typical conference paper I suggest that an illustrated talk should be given about one's own activities, including the more routine aspects as well as the highlights. For example, one might describe the problems involved in getting some project started, the uncertainties involved and how they were resolved, the pleasure of seeing the device operate as imagined - or the unexpected twist that led to new development. The visit to another country to attend a conference which in your eyes, although maybe not your wife's, more than compensates for the nights spent adjusting the knobs and the hours spent in trying to get the programme accepted by the computer. Even the unashamed joy at being invited to present a paper before a learned society for the first time. All this is part of the life of a scientist, and should be presented along with the financial side.

For my part, I recollect too clearly the uncertainties and questions I would have liked resolved whilst still at College concerning my future life to dismiss this suggestion offhand.

F. M. Russell.

JANUARY ISSUE

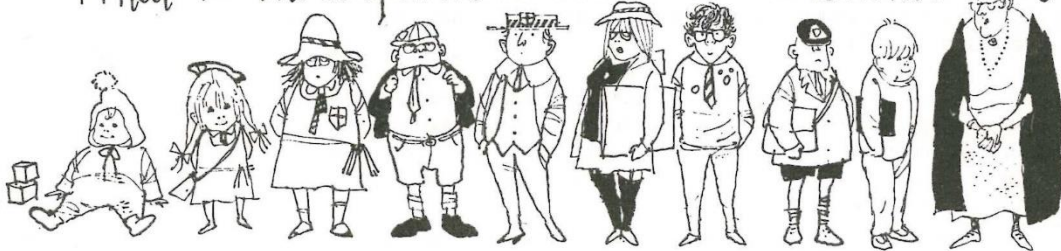
Outside Hours. Due to an unfortunate mistake, acknowledgements of the photographs were omitted. The picture on page 10 was taken by Mr. R. J. Hastie of Culham and the remainder by Mr. M. G. Hodges of Oxford. Our apologies and our thanks to both.

In the Report on the Nimrod Alternator the following figure numbers were omitted: Fig 2 - top of page 4; Fig 4 - top of page 5 and Fig 5 - bottom of page 5.

Many of our readers will have pondered in the nature of the government department to which we are now ultimately responsible. They are not alone.

A correspondent in CIVIL SERVICE OPINION asks:

What is the Department of Education and Science ?



From a forbidding fastness in Curzon Street, a nondescript outpost at Honeypot Lane and seedy premises in Richmond Terrace, the D.E.S. manages by more or less remote control what must surely be the most ramshackle of our national industries - one in which concepts from the dark ages and the renaissance jostle those of Matthew Arnold, and Mr Butler's Act of 1944 still seems to some a dangerous innovation.

The Department's mills grind slowly, and its bolder spirits make little headway in the 'unplumb'd, salt,

estranging sea' which enclaps the few fertile islands of English pedagogy.

Having invented a General Certificate of Education designed to remove the yoke of the School Certificate from the necks of the young, the pundits of Curzon Street have seen it in turn converted into an inflexible instrument of torture. And, having belatedly decided to mitigate the evils of selection at eleven plus, they have espoused a binary system of higher education which implies an even more vicious process of segregation.



Instrument of torture

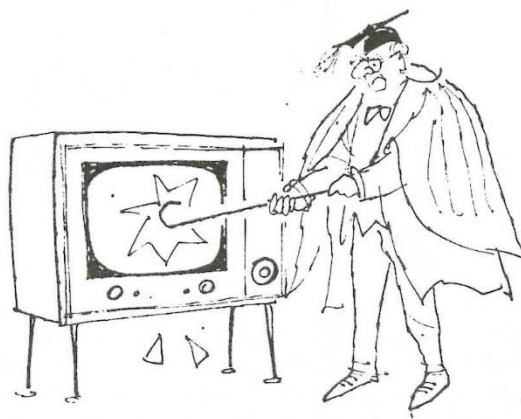


Doubly disqualified

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Minor heresies

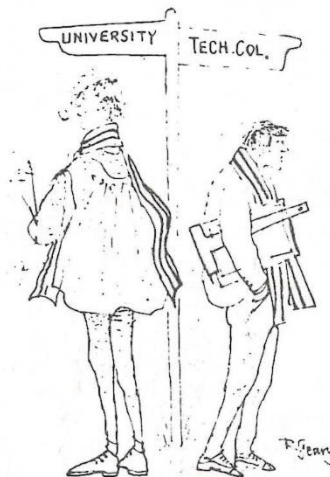


Luddite British teacher

Minor heresies and enthusiasm sweep the Department from time to time without actually permeating the schools, which are in fact run by the Local Education Authorities; and at moments of crisis the Department's instinct is to send not a gunboat but a circular.

The Department has long known but never publicly admitted that education is too important to be left to the school-masters; yet one of its favourite agents is the H.M.I. - a man or woman doubly disqualified, generally speaking, by having taught and having been taught in a British school, from taking an unclouded view of any educational issue.

Sooner or later, despite the efforts of the Department, programmed learning, teaching machines, television and similar modern aids will displace the ill-paid, part-time, essentially Luddite British teacher. But there will still be important work for the Department: negotiating with the virtually air-borne universities, placating the Welsh, controlling educational trusts and holding a continuing dialogue with the public schools - until the latter are put out of business by a portable teaching machine guaranteed to impart the manners, accent and bearing of an English gentleman. The Japanese are said to have one on the stocks.



Vicious process of segregation



↑
Dusty Jeanes

↑
Mike Clarke

Out
sides
Hour

LIKE FOLK

Ricky Beswick →

The skiffle boom of the fifties lent momentum to a re-awakening interest in folk music. The situation at that time was rather peculiar, for the music that was being performed as skiffle was in fact popularised folksong, a prodigal offspring of genuine folk music. It is unlikely that folksong or dance will ever achieve the commercial success that is enjoyed by 'pop' or beat music; for if folksong were to become a commercial proposition then it would soon lose its identity and die. Nevertheless there is a large slot in our society which the folksong club is filling.

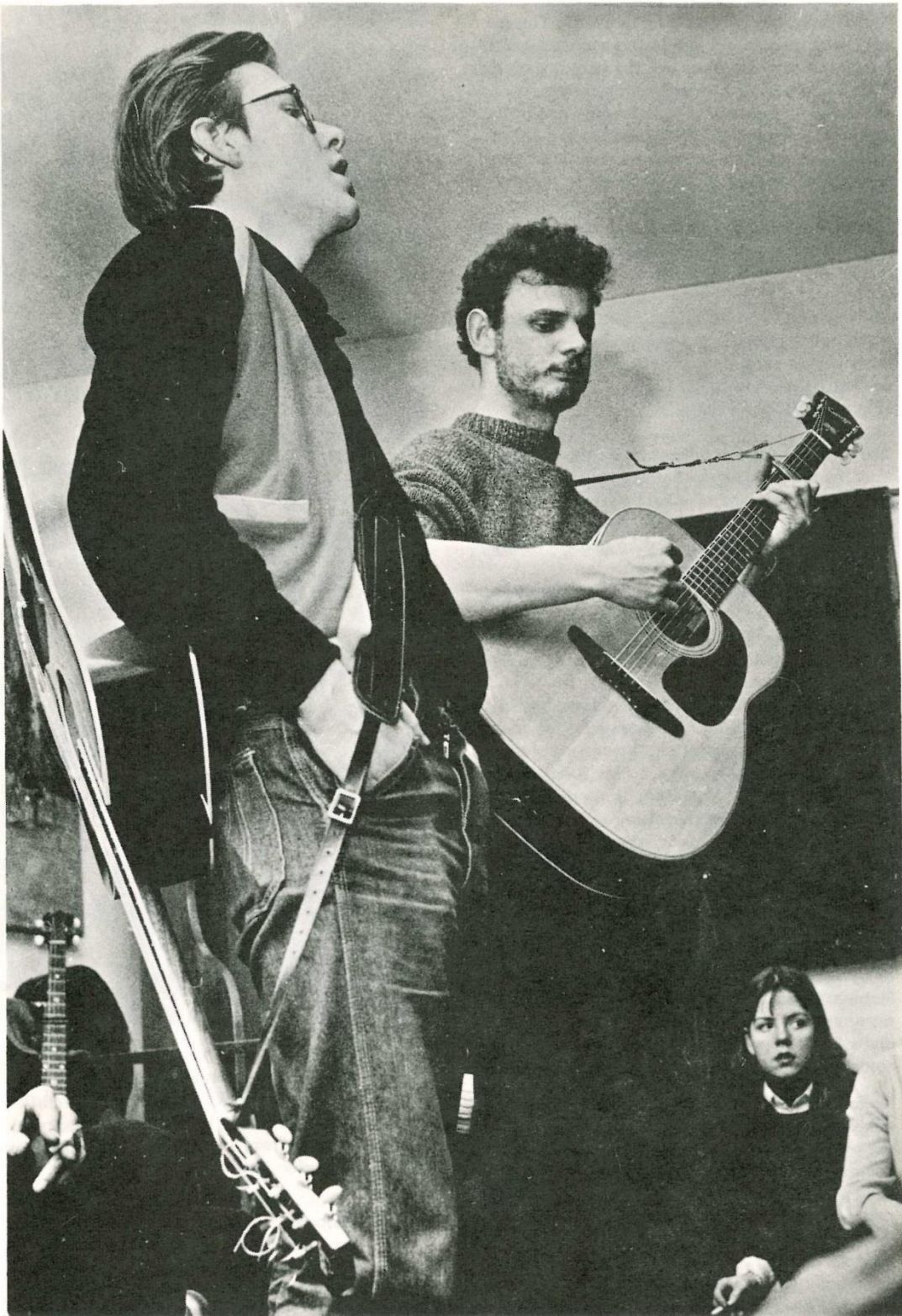
Approximately three years ago the first folkclub within a ten mile radius of Harwell, was opened. This club, which was called the Le Bois, was the forerunner of the Rusty Rails at Abingdon, the Cygnet Folk club at Wantage and the Sprat-Me-A-Riddle-Hole at Blewbury. Many local singers who now perform regularly in clubs all over the country gained valuable experience in the Le Bois, (now called the North Berks Folk Club), which has enjoyed a particularly successful life. When the North Berks Folk Club was first opened there were few people in the area who could perform a folksong and of the few, the majority came from the Oxford University Heritage Society. These singers helped many of the clubs to remain open after the initial novelty was exhausted.

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Folk songs are usually related to or adapted from people's jobs to give encouragement for the work at hand. For example many songs were written for sailors who were heaving a capstan round to weigh anchor. They would tend to forget the job partially whilst being engrossed in the song; in consequence the job was done with more vigour. On the other hand many English folk songs tell the story of the young man trying to gain a young girl, or the lady in question testing her love to see how faithful he is to her e.g. Broomfield Hill, Two Magicians and Sovay Sovay.

The word "job" is used very loosely to describe a folk song because the songs come in a very wide variety from digging people out of mines to catching fish, e.g. Spring Hill Mine, Shoals of Herring. Songs were not always written about people, animals were often included, a good example being a song called Donna Donna. It tells of a calf being taken to market in a cart: all the time the calf moans whilst the farmer chastises it.

Of course there is a funny side to most things, folk is no exception. A vast amount of funny material had been composed and one or two of these songs go down well with an audience because they break the serious spell and people like to laugh. Good examples of this type of song are Buttercup Joe and The Hermit.



Ricky and Mike at the Sprat-Me-A-Riddle-Hole

Occasionally these songs are sung unaccompanied but usually a backing is used. The instrument in greatest use is the acoustic guitar. Other instruments used are the banjo, usually 5 string, mandolin, Appalachian Dulcimer, violin and auto harp. The alternate use of these instruments for different songs lends a lot of help in putting them over to an audience. One instrument used all the time tends to become very boring even though the songs are good. All but the Dulcimer are easy to obtain but you need plenty of practice to become a competent player either in a group or solo.

An hour per night basic practice, is a must for every folk-singer. In a group however, two or three nights additional practice together is needed. Practice on this scale, makes folk-singing a full time hobby.

The first step in the career of a folk-singer is when he starts singing in clubs as a floor singer. This dedicated band of singers visit one or two clubs in their area regularly, and sing almost every time they attend. Unlike professionals they get no fee for their efforts, but gain a wealth of experience. Sometimes three or four floor singers form into a group, and become residents at a club. Again this is usually done for free, or at the most for one's supper.

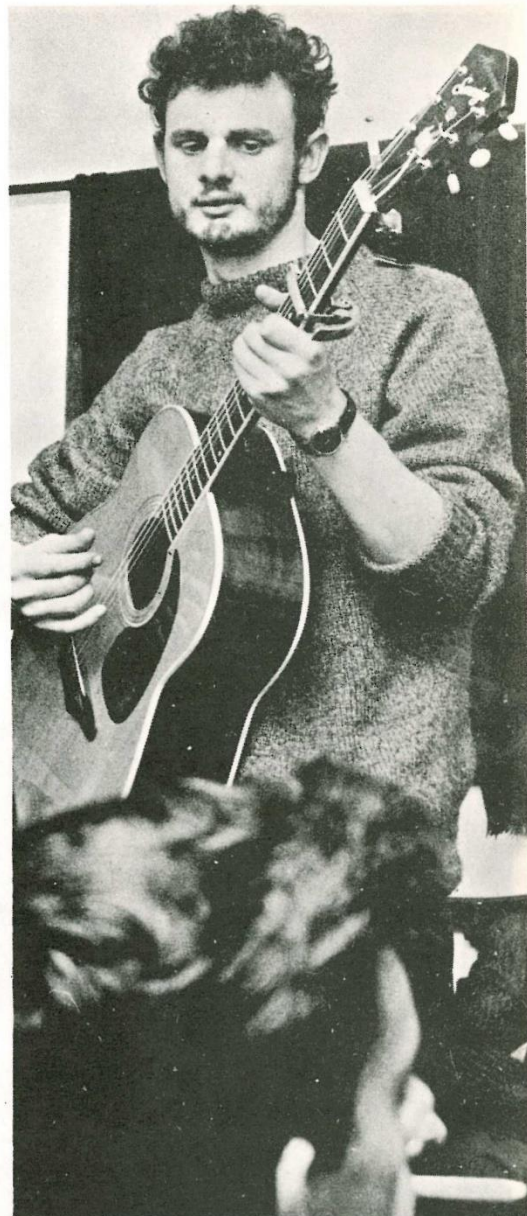
From this point the semi-professional world is open to the budding folk-singer. This entails moving from club to club over a relatively wide area singing for a fee. This form of singing although higher in status, is no means of earning a fortune, as travelling expenses, and capacity for beer also increase. The bulk of "guest" singers in clubs are semi-professionals.

One of the real difficulties that confronts a would-be performer is to accept that it is not sufficient to sing for one's own pleasure and expect the enjoyment of the audience to be a bonus. Unfortunately this attitude seems to be rife amongst many semi-professionals and is damaging to the clubs for it repels many people who wish to become actively interested in the folk music.

To entertain, the singer must work to create a relaxed atmosphere whilst retaining control of the mood of any song that is performed. To achieve this he must continuously watch his audience, for they will become tired of too many songs of exactly the same mood and tempo.

This all boils down to the fact that to entertain successfully the performer must never relax but must always appear to be completely relaxed.

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If a semi-professional feels that he has the confidence, and the experience he may decide to become a professional singer. This entails working very hard at folk songs for they are his bread and butter, and as such the songs have to be near perfection.

The professionals are the cream of the folk world and most have a right to be there for their hard work and perseverance. Everybody in folk singing has his job to do, from the professional to the man who takes the money at the door. They all make up the world of folk singing.

Blind Date

LC Bartle

When I first called on the lady, whom I will describe as "Mrs G." at her home in Appleton, Berks. late one afternoon the front door was open. As I knocked a man in a butcher's overall emerged. I subsequently learned that he frequently called and hasten to say that Mrs.G. is 77 years old and is certainly the most cheerful old lady I have ever met. I should add that she has been totally blind for almost exactly half her life.

Were you to talk to her as I did, you would quickly have learned of her many friends, including the butcher, the "blind lady" Mrs Owen who has a telephone, Alvar Lidell, Franklin Engelman and Richard Baker and other well known people who often read to her - for she has a TALKING BOOK To the uninitiated, a talking book is an ingenious tape recorder, operating a CASSETTE containing some fifteen to twenty tracks, each cassette representing a complete book.

Not all my blind friends are elderly, for when I called to instal a talking book for "Mr. P." I found a man who was newly blind and barely 40 years of age. He had been a television engineer and was very bored. When I called on him again some three days later he was only half way through his first book - a Peter Cheyney novel, and I was amazed to find him much improved.

THE NUFFIELD TALKING BOOK LIBRARY FOR THE BLIND has a current reader membership of 19,000 and new members continue to join at a rate exceeding 3,000 each year. There are some 2,000 servicing volunteers throughout the country, whose job it is to instal and maintain the machines. Many more volunteers are urgently required, particularly in the areas listed below. If therefore you are acquainted with tape recorders and are able to diagnose and repair simple faults - do not hesitate, for I am certain you will find it a most interesting and worthwhile effort.

Incidentally if you have any doubt as to your capabilities, you may be interested to know that I have been a volunteer for nearly ten years and so far "undefeated" and when all is said and done - what should a quantity surveyor know about electronics?

Due to the complete lack of volunteers in the provincial areas listed below, failure of a machine means that the reader member must return it to Headquarters (WEMBLEY), and I know of an instance where this was done, merely because the mains plug had been poorly connected. This machine was damaged in transit and in consequence there was about six weeks delay before the reader member could resume her book and (quote) "one has to be blind to realise what a loss this means"

If therefore you are based in any area listed below - or have a technically minded friend who is - please contact me without delay by letter, addressed "Talking Book" c/o The Editor "Orbit" or by telephone - Ext 6208.

ABERDARE	GILLINGHAM (KENT)	LONDON N.W. 1	SHEPTON MALLETT
BARNSELY	HADLEIGH (SUFFOLK)	E.C. 1	SITTINGBOURNE
BARNSTABLE	HARLECH	LYDNEY	SOMERTON (SOM)
BIDEFORD	HAYWARDS HEATH	MABLETHORPE	STOWMARKET
BIRCHINGTON	HEATHFIELD	MARGATE	SUDBURY
BROADSTAIRS	KENDAL	NEWARK	TILBURY
BURNLEY	LAUNCESTON	NORTH LEACH	WELSH POOL
CAMELFORD	LEEK	PRESTWICH (LANCS)	WESTGATE
CANVEY ISLAND	LONDON W. 2	PETERSFIELD	WICKHAM MARKET
DAWLISH	W.C. 1	RADNORSHIRE	WINDERMERE
DRIFFIELD	N. 1	ROCHDALE	EDINBURGH
ELY	N. 7	ROCHESTER	GLASGOW
GILLINGHAM (DORSET)	N. 16	SELBY (YORKS)	

Orbiting Around

Editor: H F Norris
Building R20, Ext. 484.

Moving Shop



Viewers of the TV programme "Tomorrow's World" may remember a demonstration of the new thermal paint that is being developed by the Coal Board. The work on this project is being carried out at their Research Establishment at Stoke-Orchard, near Cheltenham. One man now working there is Cyril Daniel who, from September 1960 until the end of January this year was foreman in charge of the R9 workshops at the Rutherford Laboratory.

Before coming here, Cyril had spent ten years at the Royal Ordnance Factory Leeds where he was involved in the manufacture of fighting vehicles. Becoming foreman of the R9 workshops meant a change from fighting vehicles to fighting scientists who have a certain reputation for demanding the impossible.

The proof of his success is seen in a very wide range of work, from the development of stretched foils for spark chambers to a large pantagraph. Success, however is dependent not only on machines and facilities but on the skill of the operators, and Cyril recognised this fact. Outspoken, often to the point of bluntness, he earned the respect of his staff. This was very apparent at his presentation, especially in the speech made by the Shop Steward.

Cyril is a keen exponent of both Scottish and Ballroom dancing. He has three sons, one in his second year as a craft apprentice at Harwell.

His new position of Workshop Superintendant is much the same as Foreman at R9 workshop, but with the added responsibility of Apprentice Training. "Orbiting Around" would like to thank Cyril for his active co-operation in the past and wish him every success in his new post.

Record Programmes

Programmes will be held every Tuesday in February at 12.30 p.m. in the Lecture Theatre.

- | | |
|----------|---|
| 1 March | "Concerto for Orchestra", Bartok |
| 8 March | "Nights in the Gardens of Spain", Falla
"Guitar Concerto", Rodrigo |
| 15 March | "Princess Ida"- Act 1, Gilbert and Sullivan |
| 22 March | "Greek Folk Music", Old and New |
| 29 March | "Nutcracker Suite", Tchaikowsky |

John Wilkin's Prizes

The John Wilkins Prizes for 1965 were presented by the Director at the Staff Meeting on 21 January.

The prize for the best Engineering Apprentice went to William Burrows who chose "Wave Generation and Shaping" by L. Strauss as his prize. Mr. Burrows joined the Laboratory in September 1962 and has worked hard throughout his period of apprenticeship. By 1965 he had gained the Ordinary National Certificate with distinction in one electrical paper and high marks in the other papers. In addition he has been awarded the AERE Workshops Manager's Prize which is given to the third year craft apprentice who shows the best performance in time keeping, application and personal tidiness. Mr. Burrows will be returning to the Laboratory for his final training period later this year.

The prize for the best Scientific Assistant went to Michael Paul Ludlow who chose "Statistics for Technologists" by Paradine and Rivell and "Higher Algebra for the Graduate" by Weiss & Dubisch.

Mr. Ludlow was educated at Swaffham Secondary Modern School and Gordon Boys' School, Woking. He left school in 1962 with seven Ordinary level passes in the General Certificate of Education, and in September of that year he joined the AERE Scientific Assistants' Training School. In December 1962 he transferred to the Rutherford Laboratory and joined the Electronics Group of High Energy Physics Division. He has recently been working on the use of integrated circuits for processing data derived from Nimrod, converting a logical design on paper into working apparatus.

He continued his studies by day release at the South Berkshire College of Further Education and obtained very successful results in stages S1, S2 and S3 of the National Certificate in Applied Physics. He is now at the Northampton College of Advanced Technology, taking the B.Sc. sandwich course in Applied Physics.

Carol Pickles, probably better known to many people as the person in salaries who told them that their salary was correct, left the Laboratory at the end of January, to become a full-time housewife.

Carol who has lived in the district since she was born, was educated in the old Wallingford County Grammar School. Apart from five months with British Railway the whole of her working career has been spent at AERE Harwell and the Rutherford Laboratory.

After joining Harwell early in 1954 she worked in the old library for two and a half years, moving to wages section in October 1956. During the latter part of this job she dealt with various people at the Rutherford Laboratory, so she felt quite at home when, in September 1960 she joined our Personnel Branch. In March 1958 Carol became Mrs. Pickles having met her future husband Dennis when both were members of the Barn Theatre in Didcot.

For the last three and a half years she has worked in the Salaries Section. In the future Carol will only be interested in one salary, - "Dennis, hand it over!!" Our best wishes are sent to Carol for her future.

Ex-Student Awarded Ph.d

George Haskell who was at the Rutherford Laboratory from 1962-1965 as a research student in the high magnetics field group has been awarded a Ph.D. by London University for his thesis entitled "Studies relating to superconducting magnets and their applications in high energy physics". He is now in America where he has a teaching and research post at the University of Iowa.

Salaries to Calories



Comings and Goings

G G R Chambers, N D Stafford, J E Gurney, D W Martin and D F G Hale join Nimrod Machine Engineering Group; V R Pancott joins Nimrod HEPE Group; H J Olive joins Nimrod Beams Physics Group; J Penfold joins Nimrod Machine Physics Group.

Mrs. C G Harford, G S M Hedges and E Taylor join Central Engineering Group; J A Bourne and J C Powell join Applied Physics Track Analysis Group; D A Morris joins HEP Counter (Resident) Group.

J R Howe, Mrs S A Moore and Mrs P A Solway join General Administration; J K Parker joins PLA Nuclear Physics Group; Miss B Ellwood and D R Cooper join Atlas Operations Group.

P J Clare, Mrs S M Phelps, Mrs C D Wilson, Mrs D Jefferies, Mrs M A Cocker, Mrs J Mace, P F Alderman, R G S Couzens, R H Sewell, P Wingrove, G A Jackson and D G Yates have left us.

Congratulations to:

Margaret Snow, General Administration, on her marriage to Brian Davies, Queen Mary College, on 18 December.

Geoff Collins, R. 9 Workshops, and his wife Gloria on the birth of twin boys, Vernon and Dean, on 28 January.

Elaine Sweet, Atlas Operations Group on her marriage to Gareth Milliner on 30 January.

Roy Malton, Central Engineering, and his wife Nancy, on the birth of a son, Benjamin on 2 February.

Celia Pitson, Theoretical Studies Group on her marriage to Peter Beckett, Variable Energy Cyclotron Group, on February 5.

Suggestion Awards

At the Thirty Third Meeting of the Suggestion Awards Committee held on Wednesday, 5 January 1966, the following awards were made:

£10 to E W Stanbrook whose proposed modifications to the VS 4 Switch Control were being adopted.

£3 to A Smith and Joint Award of £3 to A D Wood and D H Collet for their suggestions relating to the R 2 Crane Control Pendant.

£2 to L E Wilson for his proposal to fit transparent inserts into the metal floor cover plates, R 34.

£1.10s.0. to L G Denton for his suggestion to modify the restaurant emergency exits.

£1.10s.0. to J W Scott for his suggestion relating to a vehicle maintenance trolley.

Encouragement Awards of £1 were made to D A Hutchings, H Davis, B Richardson and R Waltham.

B. Briscoe, Secretary.