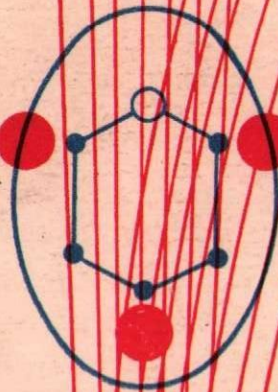


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SPRING NUMBER  
1955

VOL. 5 NO. 3  
PRICE NINEPENCE







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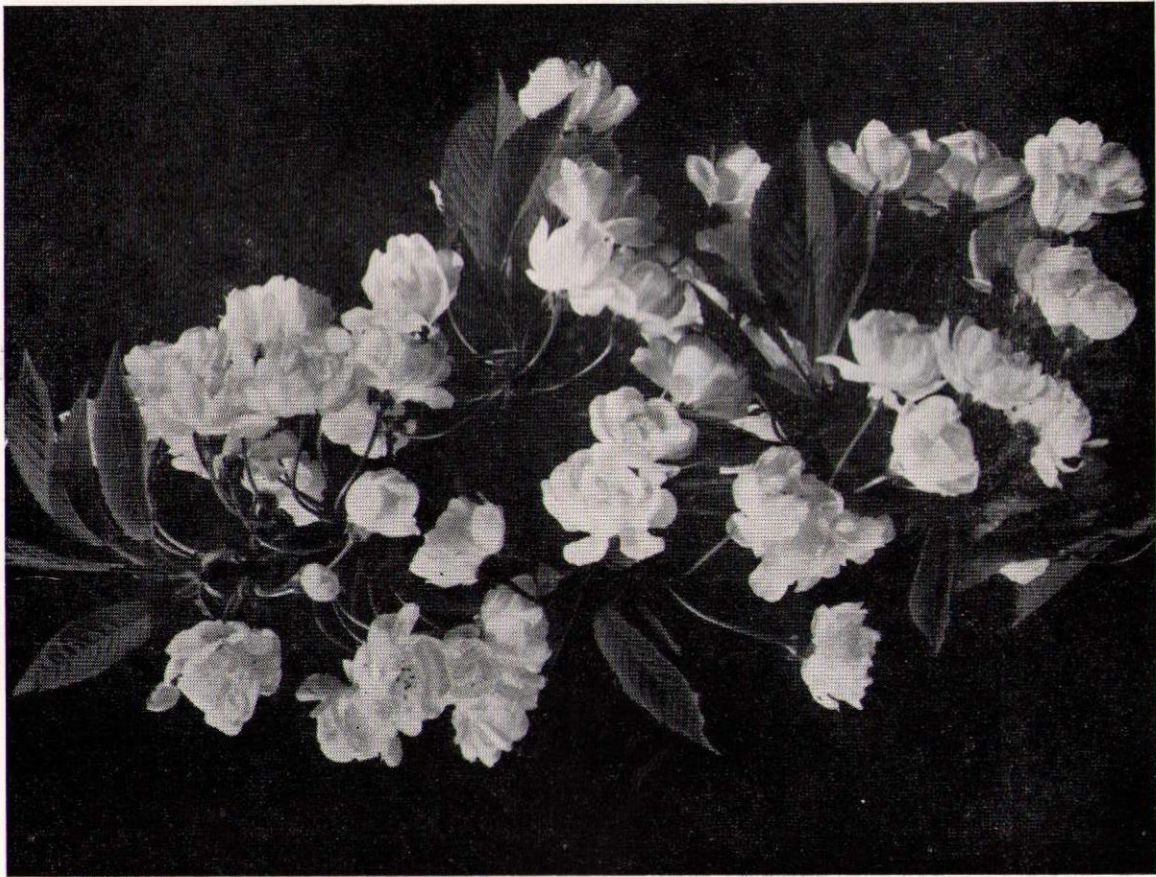
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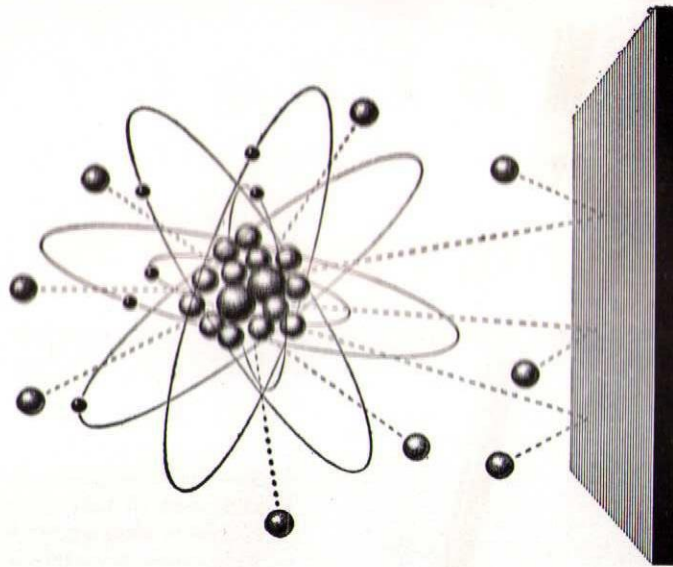


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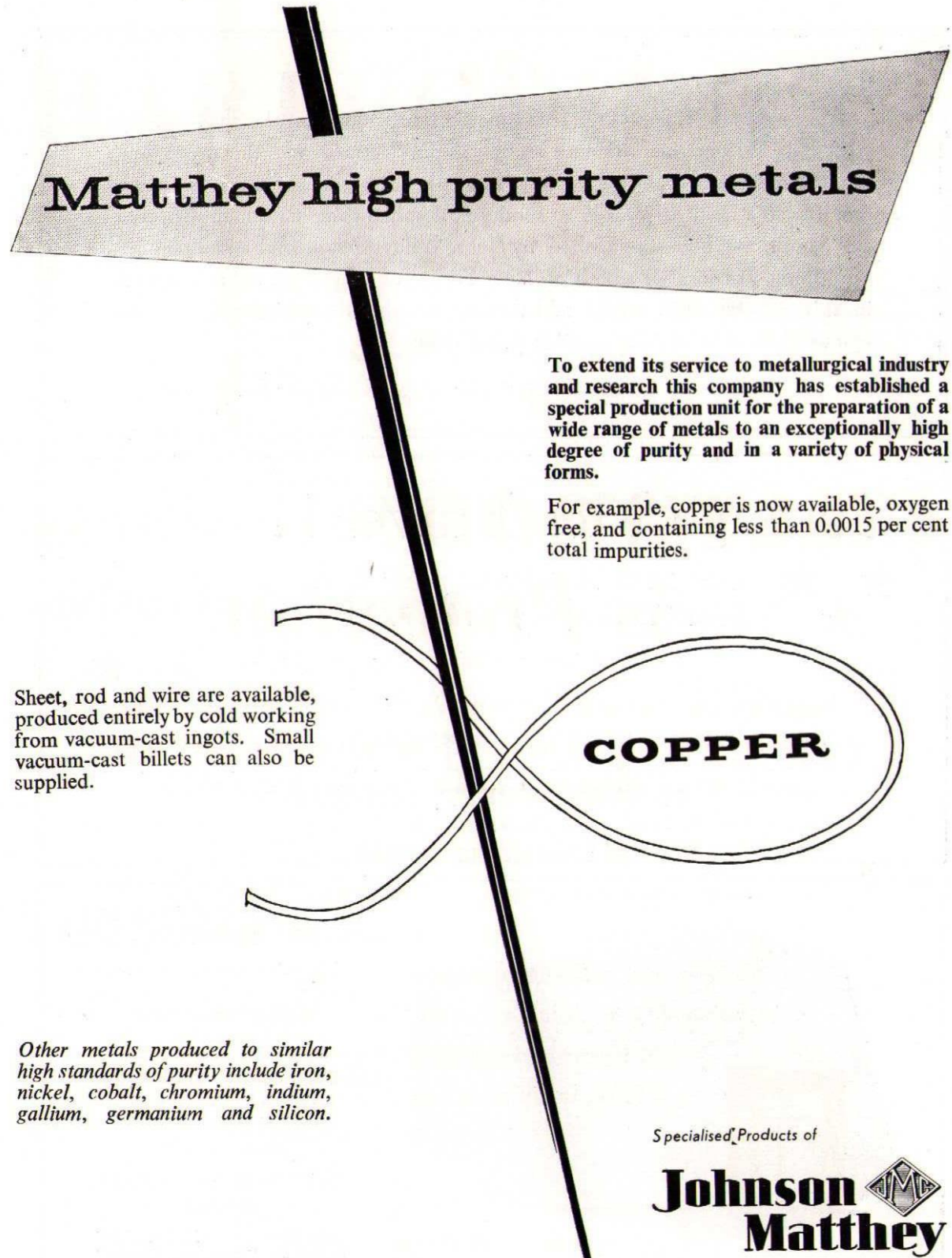
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## *magazine* \*

is published three times a year, at Harwell, by an amateur Editorial Board, encouraged by the Authority, and affiliated to the A.E.R.E. Recreational Association. It is intended mainly for the enjoyment of all who are, or have been connected with the Research Group. It is, however, becoming of increasing interest to a growing number of readers in the other Groups.

It depends almost entirely on its readers for contributions and would like more of them. It costs but 9d. a single copy, and a subscription (post free, anywhere) can be bought for 5/- for six issues, or if you prefer, 2/6 for three.

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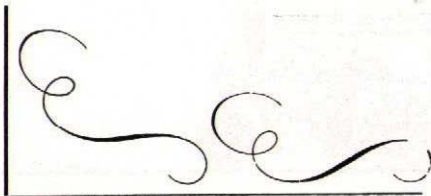




## EDITORIAL

**W**E are glad once again to welcome more new contributors to this issue. Percy Bowles tells us how the workshops are stretching further afield than anyone would have predicted a little while ago. Walter Busbridge, who is one of Harwell's "Oldest Inhabitants" and who has had a big influence on the leisure activities of the place, has not previously written for Harlequin. As you read this, he will already have helped to 'christen' the new lecture theatre, and perhaps also we shall already have begun to get used to its slight air of indecent exposure (some call it South Bank Exhibitionism) of its structure. Myself, I rather like the building, on the whole, but I have never understood the argument that flagrant functionalism alone should make me do so: To see the absurdity of this, you only have to look at the sheds on page 27. When that photograph was taken, I was eight years old, and mad about airships. So, apparently were people a great deal more influential than I, - - - on the evidence then available, aero-

planes were considered to have no future for long distance work. The previous summer, I had been taken to Howden to see R100 under construction; a magnificent sight (even without its outer skin and with its girders showing!) which I shall always remember with affection. I did not know what bitterness the airships had already aroused, and that worse was to come. A. B. Jones, (politely declining to shoot down Shute) recalls for us some of the lighter and airier moments at Cardington when R101 was being built there. If, however, your preference is for more permanent celestial objects, then you must let H. Mobsby show you how to build a telescope in this and the two succeeding issues. If these articles do not appeal, you will find some more in lighter vein. If you don't like any of those either, then its high time you wrote something for Harlequin yourself! Finally, I must remind you to watch out for your Lucky Number - - - it is printed on the back cover; this competition was restored in response to overwhelming popular demand (as they say).





# Something about Nothing

No matter what we do, most of us are interrupted from time to time by the request for a document euphemistically entitled a progress report. Because of their tacit assumptions, they are often a source of chagrin to otherwise phlegmatic scientists; for it is difficult indeed to write something about nothing.

Balm for the writhings and groans of the hapless individuals who must regularly wrestle with a progress report is now here. This valuable contribution to the progress of science is known as the standard progress report—it can be used anytime, anywhere. It is the result of long and arduous study by William Cohen, China Lake, Calif. As freely translated below, it is expressly for unfortunates who otherwise face extinction. Cohen says he never uses it himself. Type in batches of 100 and then date and sign a year's supply. Be sure the secretary omits the translations.

## STANDARD PROGRESS REPORT FOR THOSE WITH NO PROGRESS TO REPORT

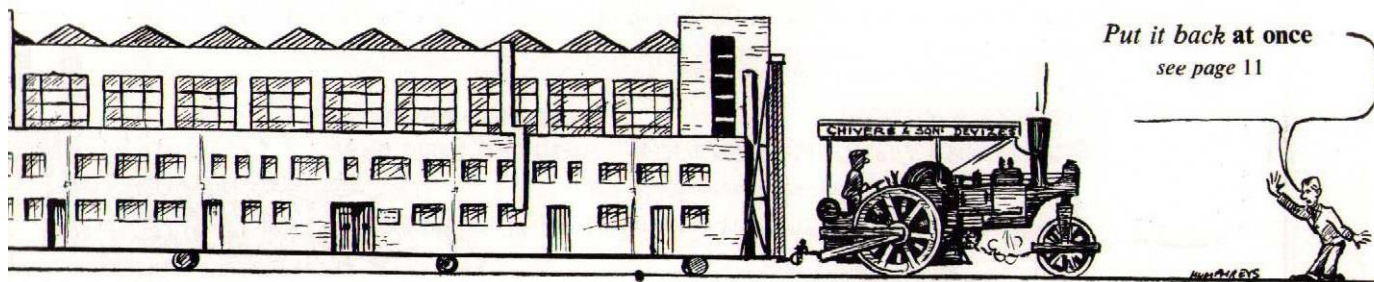
During the report period which ends—(fill in appropriate date) considerable progress has been made in the preliminary work directed toward the establishment of the initial activities. (We are getting ready to start, but we haven't done anything yet.) The background information has been surveyed and the functional struc-

ture of the component parts of the cognizant organization has been clarified. (We looked at the assignment and decided that George would do it.)

Considerable difficulty has been encountered in the selection of optimum materials and experimental methods, but this problem is being attacked vigorously and we expect that the development phase will proceed at a satisfactory rate. (George is looking through the handbook.) In order to prevent unnecessary duplication of previous efforts in the same field, it was necessary to establish a survey team which has conducted a rather extensive tour through various facilities in the immediate vicinity of manufacturers. (George and Harry had a nice time in Brighton.)

The Steering Committee held its regular meeting and considered rather important policy matters pertaining to the over-all organizational levels of the line and staff responsibilities that devolve on the personnel associated with the specific assignments resulting from the broad functional specifications. (Untranslatable—sorry.) It is believed that the rate of progress will continue to accelerate as necessary personnel are recruited to fill vacant billets. (We'll get some work done as soon as we find someone who knows something.)

(From *Chemical & Engineering News*,  
November 1954).







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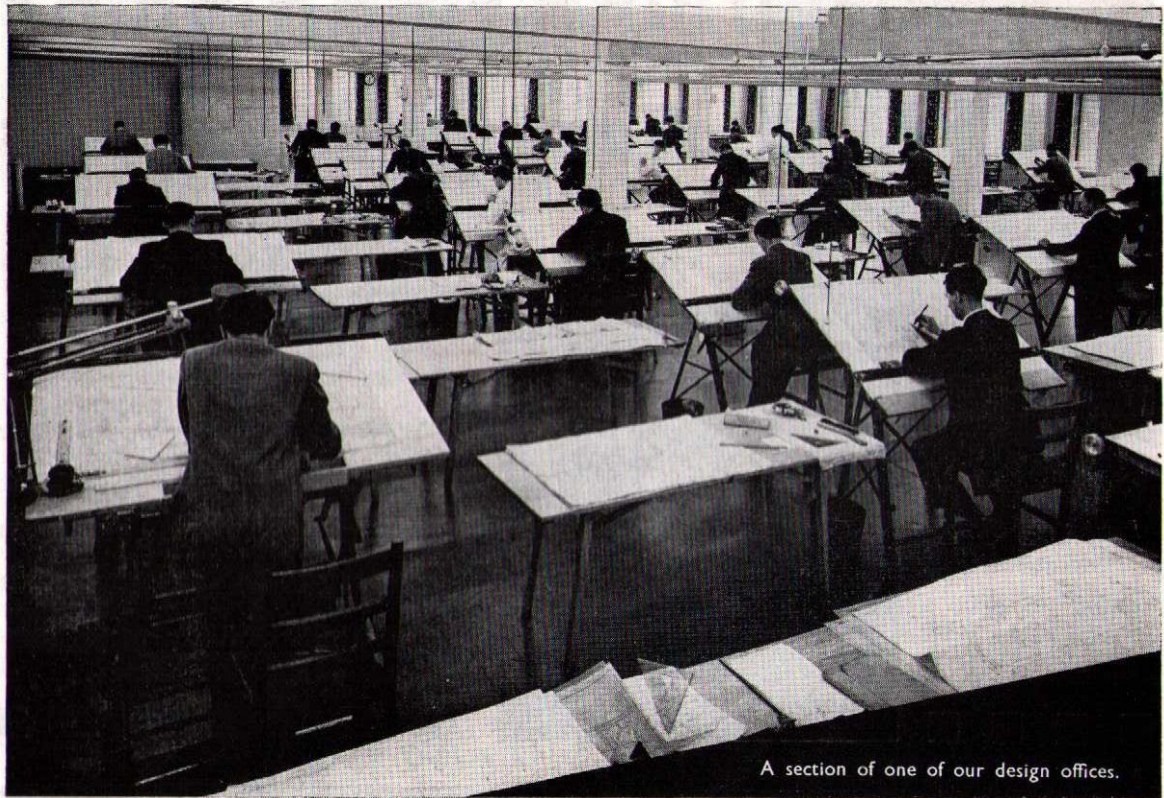
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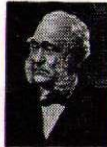


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# Bracknell Workshop

by P. BOWLES

---

IT is now approximately 9 years since the Atomic Energy project took over the airfield at Harwell and established its laboratories; the extent of the work and the size of the establishment have expanded to a size not envisaged in those days. So great has the programme requiring engineering support become that the district no longer can support the establishment's need for craftsmen, technologists and draughtsmen even after the design and manufacture of a considerable proportion of the scientific and engineering apparatus required for the establishment has been sub-let to industry. It became clear some six months ago that the size of the establishment's design and manufacturing organisation was inadequate and a decision has been taken to establish a satellite Design Office and Workshop at Bracknell New Town, in order that the research programme of A.E.R.E. can benefit indirectly by the craftsmen and draughtsmen leaving Greater London.

The history of the planning of new towns is rather interesting, and their development, it is said, can be traced as far back as Sir Thomas More's book "Utopia," published four hundred years ago, in which the present day policy is quite exactly laid down. The basis of this policy is that towns should be self-contained, complete units providing for work and leisure as well as for home life, and should never be allowed to grow too large. In fact, towns did very much fulfil these requirements in England until the industrial revolution at the end of the eighteenth century. From that time onwards, however, towns and cities became larger and larger, and living conditions more and more congested. Both the countryside and the people of England suffered and the country lost its young men and women to the lure of the towns with their social opportunities and high wages. The

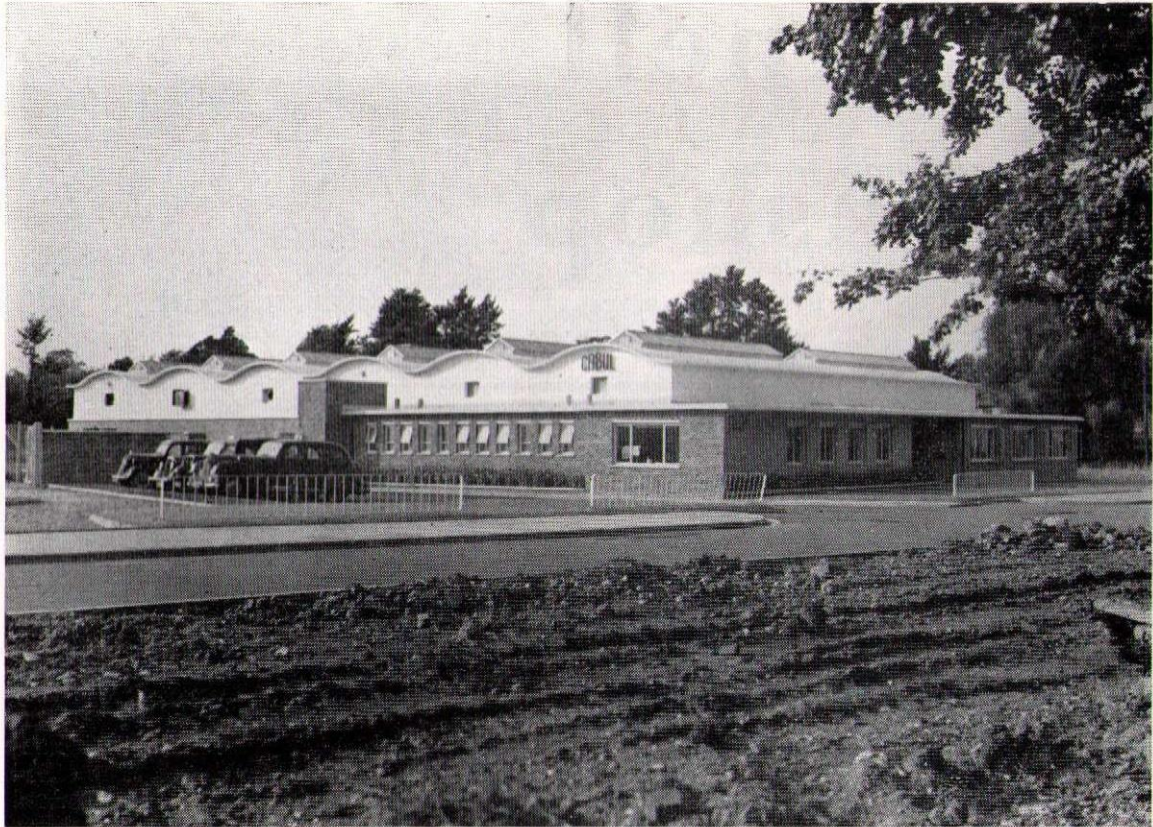
people who flocked to the towns made these illusory gains at the expense of the clean air and healthy living conditions of the open country.

In the early nineteen hundreds Ebenezer Howard and his fellow reformers saw both the evils of congested town life and the dullness and isolation of life in the country, and they set out to find a solution which would combine the advantages of both, without their disadvantages. From this, New Towns, then called Garden Cities, were proposed as self-contained towns of limited size, each set in its own green belt, offering the health and the open air life of the country as well as the society, excitement and opportunities for employment of the town. The first two new towns established according to these principles were at Letchworth in 1903 and at Welwyn in 1919, but since then little further development has taken place on these lines. Between the wars, however, the population of Greater London increased by more than two million and Sir Patrick Abercrombie was commissioned to prepare a plan for the whole of the Greater London area. He suggested that New Towns should be developed to relieve London, and eventually eight sites were chosen, at Bracknell, Crawley, Hemel Hempstead, Welwyn, Harlow, Stevenage, Hatfield and Basildon.

Bracknell will be the smallest of these eight new towns to be built in the South of England in order to relieve the metropolis of some of its population and industry, and if the Abercrombie plan is carried out in full Bracknell New Town will eventually have a population of approximately 25,000. Besides contributing to the relief of London, it will provide homes and work without a long journey and with opportunities for leisure.

Reference to the map will show that Bracknell





### A NEW FACTORY AT BRACKNELL

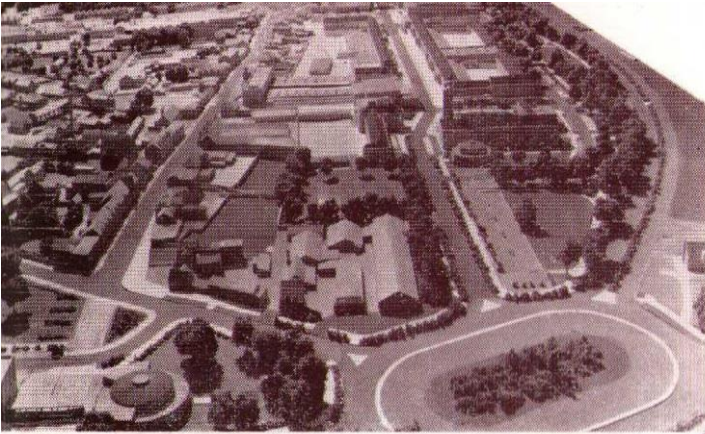
*(All photographs by Bracknell Development Corporation—drawing by A.E.R.E. Illustration Section)*

is geographically extremely well situated relative to Harwell; it is approximately 30 miles distant and can be reached quite comfortably by car in one hour. It is about 10 miles from Maidenhead and about the same distance East of Reading. This, then, is ideal for an A.E.R.E. satellite engineering unit, sufficiently near to be administered from Harwell and sufficiently near to London to attract artisans and draughtsmen wishing to leave the city for the benefits of the country, and the enjoyment of their first new home.

Bracknell town is at the present time only partly developed, but already some hundreds of houses have been completed, some typical ones being shown over the page. There are some ten to a dozen new factories and the photograph shows one very similar to the A.E.R.E. Workshop and Design Office at present in the early stages of construction. The drawing shows an artist's impression of the complete building. In planning a new town it is most important that great attention should

be given to the educational and recreational facilities and to this end a new Primary School has already been opened and Modern Secondary and Grammar Schools will soon be completed. Many large green belts have been left as parks and the most recent attraction is the opening of a new public house; 'The Admiral Cunningham.' The latter is an Edwardian mansion, formerly the home of a Greek shipping agent; it is thickly carpeted, and besides having the character and charm provided by the wealth of the original owner, the house has been well equipped with the amenities necessary to convert it to the traditional 'local.' This forms part of the development of one of several Neighbourhood Centres, to bring together as a community people from all parts of industrial London. A further feature is the Shopping Centre, where the housewives can carry out their daily duties at the shops away from the traffic of the road and in complete shelter. The picture shows clearly that a large canopy has been cantilevered over the pavement above the shop window level to give shelter from the rain. A further feature





*A model showing the projected  
development of Bracknell—  
looking west over the town centre*

*The Shopping Centre*

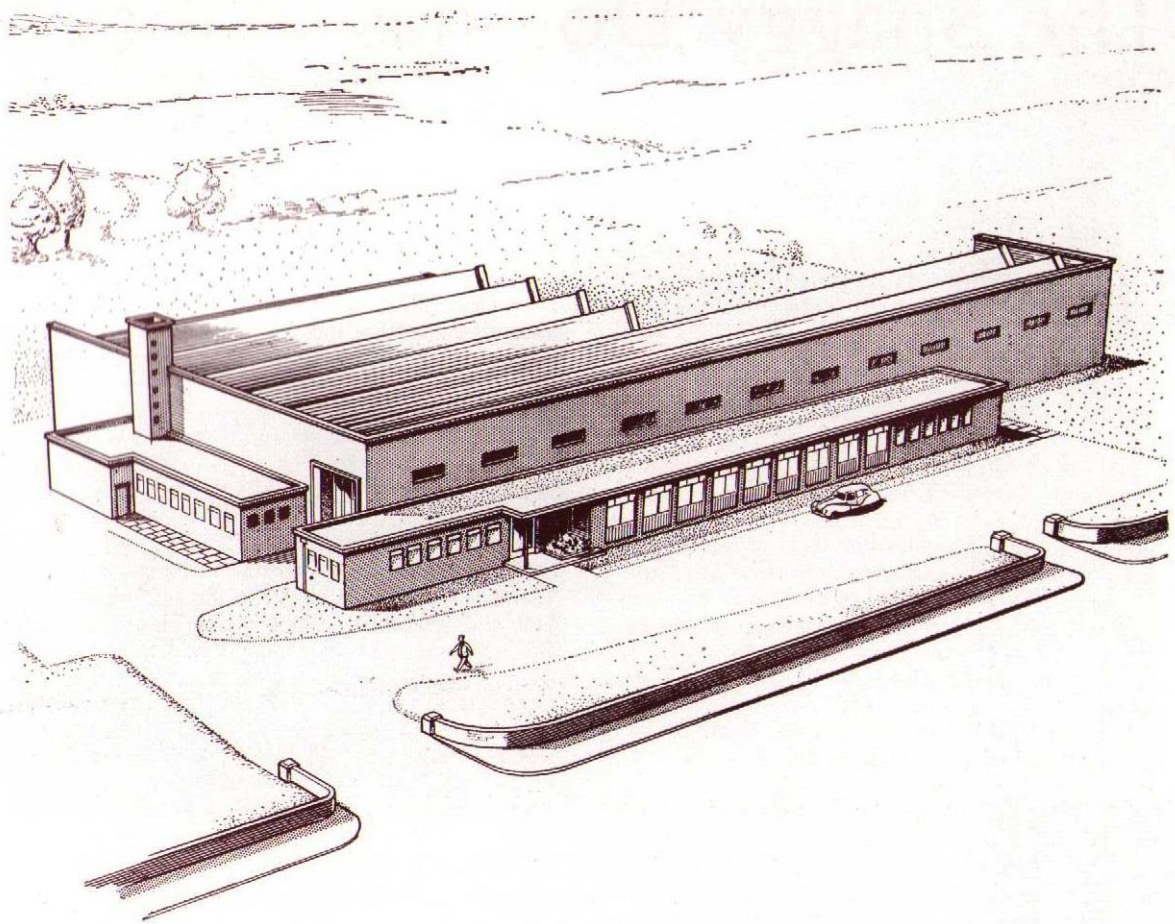


*Houses designed by Bracknell  
Development Corporation*

*Houses designed by  
Louis de Soissons*







*Artist's impression of the Bracknell Workshop*

of the design of the Neighbourhood Centre is the adequate parking space which has been provided for both cars and prams, skilfully contrived to prevent mutual confusion between mother and motorist. A church and church hall for this neighbourhood will be built adjacent to the shops.

A very tight programme has been laid down for the A.E.R.E. Engineering Unit, but it is anticipated that the first people will move into the premises from London by September, 1955. The present proposal is that we should endeavour to recruit some twenty-five design office personnel and fifty craftsmen, so as to support

very materially the establishment's growing research programme. In addition to satisfying this need it is considered the development of Bracknell will be of benefit to A.E.R.E. in that it will leave Harwell more free to expand those projects which for very many good reasons cannot be placed elsewhere.

It is in this setting of the New Town that A.E.R.E. has decided to establish a small unit, and with the family spirit which can prevail in the small factory and the pioneering spirit which will be present in the people leaving London, it is hoped a most efficient organisation will grow.



# The Shaggy Dog has Wings!

by ARCHETYKE

“JUST a minute, Sir, and I’ll get you a clean towel. There’s plenty of soap on the basin there. -- Well, that’s very nice of you to say so ; I do try to keep the place nice and clean. As a matter of fact, visitors often do remark about it ; these must be the most well appointed cloakrooms of any aircraft firm in the country.

Oh yes, I think you’ll find Hirsute-Canines are grand people to work for on the whole ; I’ll grant you Sir Charles himself is bit of a wee terror, though he doesn’t come down much now. The pay’s good, very good in fact, and the place hasn’t looked back since the day they got the old fleet of Corgis back in the air again -- before your time, of course. Oh it was a lovely plane that, you know. There are plenty still flying today, and every other plane since then has had very nearly the same design of wing, the Fluent synchopated root.

No, that’s all right, you’ve plenty of time, it’s only five to. Oh, dear heavens, no, I haven’t *always* had this job, and I do know a bit about the Corgi, I can tell you. You won’t remember much about it, but that was the most beautiful aeroplane that ever flew -- longer range, lower landing speed, bigger payload, better fuel consumption than anything else anyone had ever dreamed of at that time. They were years ahead of their time, and they began rolling off the line here, flying on all the world’s airlines. Oh yes, even the Americans gave them a C. of A. in the end, and the orders simply poured in. Everything in the garden lovely, and then the wretched wings started dropping off ! Showers of ’em ; left, right and centre. The row began gently at first. The first crash wrote off some unpopular diplomats, and nothing was said. The second killed a pile of U.K.A.E.A. reactor designers, and there *were* just an odd few murmurs, but the third one tipped a kiteload of Italian film actresses into the Adriatic, and then there *was* a howl and no mistake. No, none was actually killed, they were saved somewhat R.A.F.-war-time fashion, for the famous bosoms you know, turned out to be false *and* pneumatic. But still, people couldn’t forgive the Corgi a thing like that, and the Press really began to howl. You’ve never heard anything like it. (No, no, you’ve *plenty* of time,

they never begin on time anyway) --- there was *the* father and mother of a flap on here after that. The place was crawling with Farnboro’ types of course, and our test boys really got cracking for the first time in years. They whistled up a monstrous test-rig over there in No. 4 shop and started to pull wings off kites till you couldn’t walk for rivets. We put in every mod. we could think of, and every one failed under load ; we pulled every trick in the pack, and still the damn’ wings came off.

Yes. I did say “we,” for you see I was leading draughtsman in the wing-stress office at the time. The flap went on for two months -- half the planes in the world grounded -- and still no dice. At this stage, Sir Charles began to get really tough, and at last, threw the job open to one of his famous ‘Hirsute natter sessions’ -- a discussion group open to all down to the newest cleaner, a rare lad for a bit of bull, he was --- and asked for suggestions. That’s when my fate was sealed, for I suppose, having boobed on the job, I couldn’t grumble come what may. I was prepared for the sack, and I knew no other office would have me after that lot.

Anyway, at this session, up pops a gnarled old boy with a little sketch in his hand. Beautifully drawn in an amateurish way—not a clue about conventions of course, but still, very nice and clear, and neatly set out. Sir Charles took one look, and simply said “Try it.”

“Madness, impossible, the old boy’s nuts,” we all yelled.

“Have any of you any other single idea between you ?” asks he, and of course we hadn’t. One of the scientific types piped up “But Sir Charles, there is every indication that we are not without lack of evidence --” but Charlie boy soon shut him up. No one could argue with him ; any more than I could when, at the end of it all, he came along to my office (a damn subtle ploy, that. A lesser man would have had me in *his* office and turned on the heavy artillery) -- he came along with the bucket, mop, and basket of spare rolls and said “Right, down to the basement where you belong -- Mr. George E. Fluent is coming in your place.”

George E. Fluent, of course, was the old boy with the sketch -- and the result of it was that



a crew of fitters got weaving on the spot with electric drills and punctured a patterned line of holes right along the chord of maximum stress of that wing. Everyone was aghast ; even Sir Charles (frankly I don't think he ever had a clue how to read a drawing) began to go white. The job was soon done and the test gear connected up. They switched on the rams and the vibrators and off she went. There wasn't a word said as maximum load came and passed, and then the most colossal yell went up when the wing finally failed, somewhere near the tip, at eight times full take-off load. I'll never forget the face of old Scheinberger, the metallurgist. He grabbed the mike off Sir Charles, and boomed over the P.A. "The man is a veritable

genius. None save a genius could have the courage—courage as is seldom vouchsafed to Man - - actually to remove metal at the danger point and thus, by diversion of virtual plastic flow-lines, unilaterally sublimate an incipient tri-axial stress condition - - - -". Well, that wasn't at all a bad speech to say it was out of the hat (you should hear that boy speak from notes ; you can practically see the counterpoint of his minor clauses and firmly glued infinitives) but it was nonsense and Sir Charles knew it, as he damn' soon showed me. The fact was, of course, that the old boy had had this job down here for twenty years, and had noticed that in all that time, the toilet paper had never been known to tear along the holes."



## A BEE LINE

by SYDNEY GRAMMAR

**A** NGLERS have nothing on beekeepers when it comes to telling a yarn. And a fantastic yarn it often is ; about bees, of course.

Not so long ago I met a keen beekeeper at A.E.R.E. He was a lively chap and wasn't like the only two beekeepers I had ever met before who were very old and wore "which-way-are-you-going" hats. The expert soon had me fixed up with two hives of bees. Up till then I had thought that smoking bees had something to do with a pipe and tobacco and that honey just came out of a hive in pots. Later I found out that it takes about five years to learn beekeeping and a long time to understand the "patter." My expert friend handles bees barefisted. I like to use gloves.

An angler once told me that one of the advantages of fishing was that his wife couldn't come with him. So any prospective wife-eluding beekeeper should be warned. Women don't seem to mind bee stings and they come along willing to help or out of curiosity. One day the bees were in no mood to have their little home interfered with (people insist on putting these insects in a little box like a house with porch, gabled roof and painted white) my wife

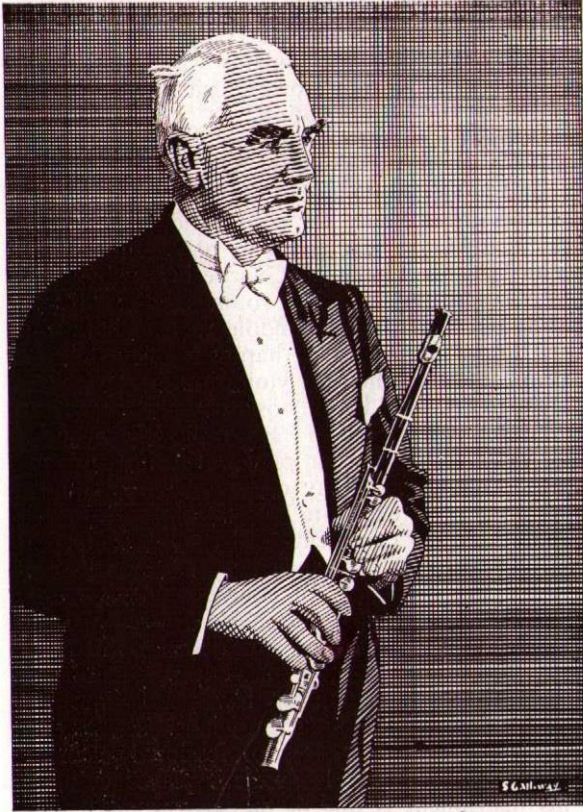
chose this particular day to come along. After a warm struggle the lady in the party retired under the onslaught to the safety of the car. Her laughter became uncontrollable when the expert and myself went behind the bushes to deal with stings, chiefly in the nether regions.

At last I thought all was well when the expert shouted "don't take that veil off ; there are about five hundred bees on the top of your hat." How could a beginner know that there were all those bees on his head ? Of course in four years' time I should be able to sense these things. Didn't the expert say so ?

I've tried all kinds of honey : Hymettus, from the slopes of a mountain near Athens, Buckfast honey, and wild rosemary honey from Narbonne in France. The honey from this part of the world is just as good as any, in my opinion.

All in good time I hope to be able to shoot a wonderful line about bees. I'm glad I listened to the bee expert at A.E.R.E. when he told me his story not long ago. Beekeeping is good fun. There's never a dull moment. If you came home with a black eye you could always blame the bees.





# Musical Amateur

by W. G. BUSBRIDGE

*"Hell is full of musical amateurs :  
Music is the brandy of the damned."*

Bernard Shaw (Man and Superman)

*(Portrait of Author by S. L. W. Galloway,  
cartoons by K. J. Salt)*

THOSE who pay homage to the astrological aspects of the times and seasons would think, no doubt, that it was inevitable I should become mixed up in music, for significantly enough I first saw the light of day on the anniversary of the birth of George Frederick Handel and Samuel Pepys and the date on which in later years was to occur the death of Edward Elgar.

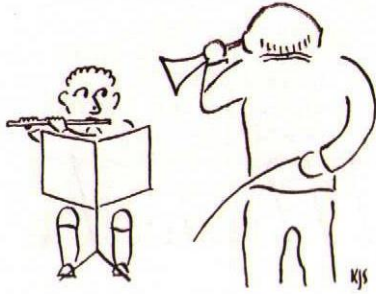
I can claim no proficiency in the composition of music and little in the performance thereof, but I have had, nevertheless, some measure of delight in the art comparable with that of Samuel Pepys who, priding himself "in the best company for musique that I ever was in, did wish that I could live and die in it." It could be asserted, too, that I have inherited an appreciation of a pretty face and a dainty ankle worthy of rank with that of the diarist, who was himself a performer of no mean ability upon a number of musical instruments, including the flageolet or flute of those days.

As for Elgar, I think one of the first works I ever played in a school orchestra was his "Pomp and Circumstance" March No. 4, and I can look back now on the many of his

works which I have played—"Cockaigne," "Wand of Youth," "Bavarian Dances," "Enigma Variations," "Dream Children" (a great favourite), "The Music Makers," "The Dream of Gerontius" (most regrettably known to the tough boys in the back row of the orchestra as "Jerry's Nightmare!") and many more.

One of my good fortunes of birth was to arrive in a family with a musical tradition; my father, himself a 'cellist, was one of thirteen children whom my grandfather insisted should each learn to play some orchestral instrument. One of my earliest recollections is of the family orchestra ploughing its way (interminably it then seemed to me) through the symphonies of Mozart and Haydn. Occasionally a gala night would be held when friends with French horns and trombones would come in and (great thrill for a child) the timpani, and we would endeavour to execute (an appropriate term!) the works of Beethoven and Brahms. I think I must be one of the few people living who has heard or played every one of the forty-one symphonies of Mozart and every one of the hundred odd of Haydn. Of many of them no impression whatsoever now remains.





. . . grandfather insisted

At the age of five my mother taught me to play the instrument of my choice—a tin whistle—and I well remember my first essays on the hymn “Now the day is over.” Whatever may be said about its musical shortcomings, this tune has the merit of moving mostly by steps of only one note, and over the course of years I have commended it to beginners on every instrument as a starting piece. My parents must have been most tolerant of my practice (this was, of course, in the days before the great Dolmetch recorder revival), for I cannot remember hearing a word of protest from them.

Arriving at boarding school as a new boy at the age of eleven, I recall being asked what I could do and replied “If you have a tin whistle, I can play it.” A tin whistle was produced and I rendered, note-perfect from memory, a performance of the Overture to “Die Freischutz” playing with a virtuosity that I should find difficult to achieve today. My first flute, bought with “tips” from kind relatives, was acquired soon after, and I settled down to steady practice. Prospects of a place in the school band and orchestra were held out before me if I could reach reasonable proficiency and there was the family orchestra (not nearly so critical) during the holidays.

I well remember my debut in the school orchestra which I entered with extreme nervousness clutching my flute. The symphony was the “London” of Haydn, No. 104. Three or four years later this was the first symphony in which I ever played the oboe (an instrument now discreetly abandoned), and it was the first symphony which, many years later, I ever conducted. The music staff of my school were devoted Bach enthusiasts and to them I owe an extreme fondness for the works of this composer and a knowledge of them which has been most useful.

During my Cambridge days I had the great good fortune to meet a fine old Hungarian violinist, who had played under the baton of Brahms and in Joachim’s quartet. The wave of

anti-Germanism of the 1914-18 War had deprived him of most of his teaching and concert practice, and he was glad (I think and hope) to play the Bach trio sonatas with a beginner like myself. To him I owe much instruction in phrasing and interpretation.

A most pleasant recollection is of an occasion after a recital in a village hall in Essex. My friend Elderhorst and I were invited to a neighbouring house for coffee and buns where my companion was asked to play. Elderhorst had left his violin—a Guarnerius valued at £1,500—in the dressing room of the village hall, but said that if a fiddle was available in the house he would be happy to play it. On being told that the only violin in the house was a cheap one used by the hostess’ young daughter who had just started to learn to play, Elderhorst nevertheless insisted on playing this instrument, and proceeded to play on it a Handel sonata with the most exquisite beauty of phrasing and tone. On my commenting later that the cheap fiddle sounded as good as the Guarnerius, my friend replied, “Of course, there are few players as worthy of fine music as even a poor fiddle.” One of the greatest joys of music is the way in which one meets a succession of delightful characters, for few people are so generous and lovable as musicians. No barrier exists between the greatest professional celebrity and the most humble amateur player who, if his instrument is one of the scarcer ones, will probably find himself in distinguished company from time to time whatever his shortcomings may be.

I have never failed to get a tremendous thrill out of the orchestra; the penetrating A of the oboe beforehand, embroidered with the arabes-

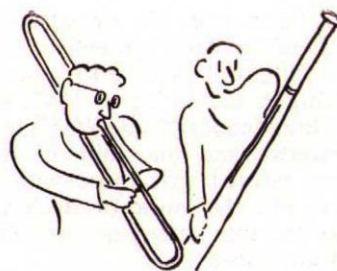


. . . 'cellos digging themselves in



ques of the wood wind getting their lip and reeds into form; the 'cellos (always a cheerful group) digging themselves in to the platform with their spikes; the horns, and Dennis Brain entertaining his neighbours by playing chords on his horn (almost unbelievable until you hear it); a spot of "hot swing" going on between a clarinet and a muted trumpet; sundry banter over the exchange of mutes among the strings; the harpist busily tuning her instrument with a large key (it has been said that a harpist forty years old has probably spent at least thirty-five of them tuning her harp). The entry of the leader and conductor, and hastily whispered messages between the players. Then a roll on the timpani and a deafening crash on the cymbals and we're off on the most important piece in the programme—the National Anthem. Orchestral players will assert that the standard of the whole performance is set by the way this is played. A good stirring National Anthem is invariably followed by a performance of great merit rendered with consummate artistry, the whole orchestra comfortable and happy and the conductor enjoying himself.

Looking back over the years I see a series of pictures of incidents each associated with some piece of music, and recording some pleasant experience or delightful person I have met. Undoubtedly the greatest of all works is the Bach Mass in B minor, and the obligato for flute to "Domine Deus," the duet for soprano and tenor, is one of the most rewarding and at the same time one of the most exacting solos that any player could give. I recall one performance of this in St. Albans Cathedral with Isobel Baillie and Jan van der Gucht, and Isobel's whisper to me as we finished, "Well done—it was beautiful." Another performance in the Plymouth Guildhall (since destroyed in the blitz) with Mary Hamlin and Sir Steuart Wilson, a performance which was broadcast on the Home Service. While waiting for the red light to appear comes the urge to rush to the microphone and shout some rude slogan, and then the feeling that one was on top of the job and playing at the best of one's form. I recall Steuart's "thumbs up" signal and nod of approval at the end, and the girl who came up and said, "I think you must believe in Paradise—I could see it before me while you were playing." The forty mile drive to a house in Cornwall, the post-mortem on the performance over food and drink until 3 a.m. and the expedition after breakfast to Dogmany Pool and Jamaica Inn in brilliant sunshine. The second Brandenburg Concerto at Winchester with George Eskdale; the picnic in the moonlight on the way home, the nightingales singing in a nearby wood, and my going off



*Beethoven's Fifth*

into the wood playing my flute to encourage them, for all the world like Mr. Coade in the second act of "Dear Brutus." Beethoven's Violin Concerto in Southampton Guildhall with Eda Kersey—her last and greatest performance before her death a fortnight later. Gluck's "Orpheus" under Arnold Goldsbrough with an amateur Eurydice, of incomparable quality; another under Sir Edward Barstow, who spent most of the rehearsal time making sarcastic remarks about flute-players and then after the performance insisting on sending the flautist alone on to the stage for his share in the Dance of the Spirits. Brahms' "Song of Destiny" under Boult—"come off it, flute, we all know you have a bit of jam, but we won't waste rehearsal time listening to you playing it." Beethoven's Fifth Symphony with the Panama National Symphony Orchestra, under Rudolf Meyer (played in an off-time during a scientific mission to a Pacific island in 1945) with the best line of double basses I have ever heard.

Over my own performances on the rostrum it is perhaps as well to draw a discreet veil. If one wishes to learn to play an instrument, one buys one. It is not possible, however, to buy an orchestra, so one's early essays in conducting are spent in learning "the hard way" with much pain and grief to all concerned. And sooner or later someone says "come off that box, we are short of flutes and any fool can wag that stick." My early efforts were all conducted in the theatre-pit in the days before canned music had displaced the live orchestra for entractes. During the late War, I formed a conductorless ensemble (vulgarly



known as "Buz and his Brandenburgers") for the study of the Bach concertos. The swan-song of this outfit took place in Ridgeway House on an evening in the spring of 1947, when we played two Brandenburg Concertos, the Double Violin Concerto, and the Suite in B minor. I have been assured that those who thought they did not like the music of Bach and who were dragooned into attending, left with their convictions confirmed!

Looking back over the years, I sometimes feel like the old lady in the Choral Society performing Spohr's masterpiece and who, on being asked to move to another seat, replied "I sat here for the 'Creation,' and I shall certainly sit here for 'The Last Judgment'." It has all been great fun, and there must be many who feel as I do, that music is a vital part of life. Lord Dunsany in one of his legends

tells of the great harpist Shimono Kami, out in the great starry spaces, playing a dirge upon a harp made of the heart-strings of the gods—"And the dirge and the voices crying, go drifting away from the Midst of Things till they come twittering among the Worlds like a great host of birds that are lost by night. And every note is a life, and many notes become caught up among the Worlds to be entangled with flesh for a little while before they pass again on their journey to the great Anthem that roars at the End of Time. And as there sometimes clings to a prisoner's feet some dust of the fields wherein he was captured, so sometimes fragments of remembrance cling to a man's soul after it has been taken to Earth, and weaving together the shreds of his memories, he maketh some melody such as the hand of Shimono Kami smites out of his harp."



*"No, I don't want a bloodcount — I'm following a serial in your magazines"*



## ***You wouldn't know . . . .***

**T**HIS picture of R.A.F. Station Harwell was taken in 1940 by an R.A.F. crew from 19,000 feet. It takes in Chilton village in the South ; Rowstock and Harwell in the North ; Downs House and most of East Hendred in the West.

Apart from a few additional R.A.F. buildings (e.g. the gymnasium at the top of the ' Burma Road ') and the obvious changes wrought by the coming of A.E.R.E., there are many other differences apparent on a second look.

The construction of concrete runways had only just begun . . . they had only barely been rendered necessary by the arrival of what we then thought of as big bombers (e.g. Stirlings and Manchesters). Clear traces of old Thorningdown Road are seen, running East to West across the centre of the airfield ; it is now virtually obliterated. The experimental catapult (a hideous device which was supposed to push an aircraft off with compressed air) can be seen with its twin tracks near the main road radiating from the sunken turntable. After several years of ' going to be ' a swimming pool, it was filled in. Notice too, the white blobs of the concrete pillboxes on the perimeter, and what a nasty bend has been removed from the main road by the ' Horse and Jockey.'

***. . . . the old place now*** ➔



## NORTH



*On the 15th of May, the Harwell airfield will be the scene of a ceremony closely associated with "D" day. A commemorative plaque will be dedicated in memory of the take-off from this field of aircraft of No. 38 Group, R.A.F. carrying airborne forces. These were the first British troops to land in Normandy for the main assault on Europe in June 1944.*



# Shakespeare at Harwell

by J. B. SYKES

THE researches of Bowen (*Harlequin*, 5 (2), 16, 1954) have shown that both Roger Bacon (the Admirable Doctor) and Francis Bacon visited Harwell, whereas no reference to anyone called Shakespeare is found. This provides further confirmation of the theory that Shakespeare's plays were not written by Shakespeare, who, as everyone knows, was an ignorant bumpkin who could not possibly have written his own plays. It is evident from an examination of the texts that the author had been to Harwell. We find references to his arrival:

"--- have their permissive pass",  
Measure for Measure I. 3;

a discussion on irradiation:

"--- I'll carry it to the pile",

The Tempest III. 1;

a rendezvous (for lunch?)

"--- Bid them make haste, and meet me at the north gate",

Two Gentlemen of Verona III. 1;

a visit to Theoretical Physics:

"By computation and mine host's report",

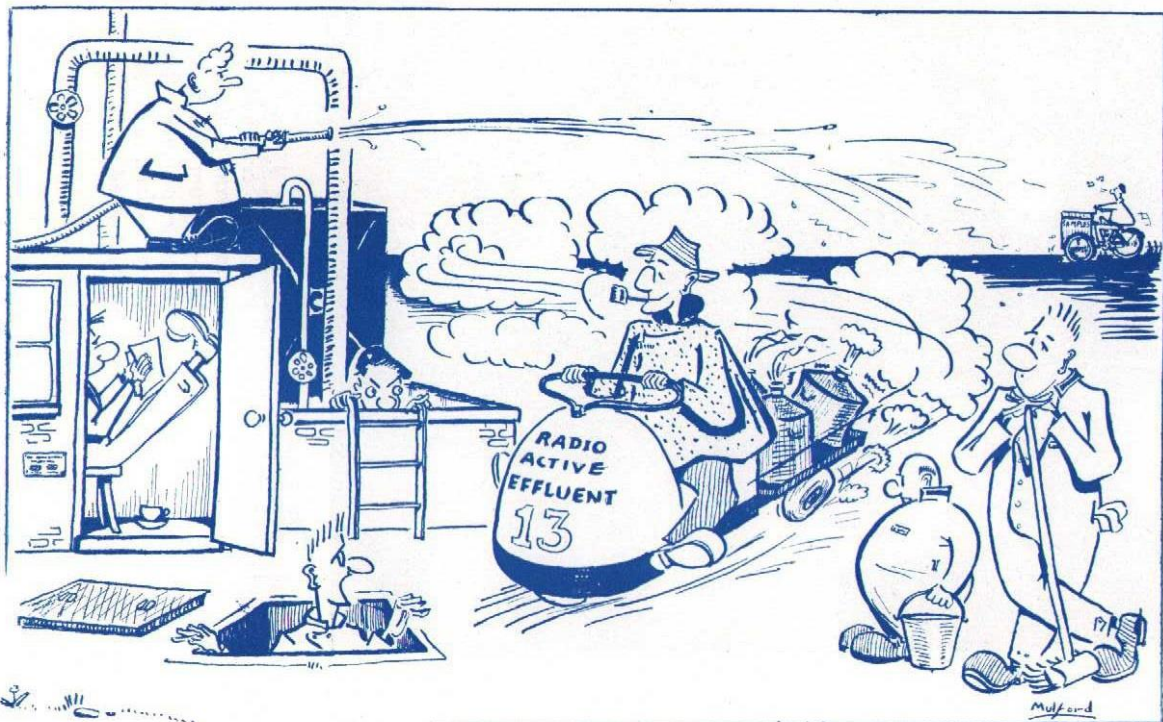
Comedy of Errors II. 2,

and the remark "we delight in physics" cunningly concealed in Macbeth II. 3; and finally his departure:

"Search his pockets. (He searcheth his pockets and findeth certain papers.) What hast thou found?",

1 Henry the Fourth III. 4.

The Baconian theory thus receives considerable support. Which Bacon is a more difficult problem. However, the appearance of this article may provide the answer. All we need to do is examine the respective graves of Roger (at Oxford) and Francis (at St. Albans), and see which one has turned over.



Life at Harwell — The Effluent Section



# LIGHTER-THAN-AIR

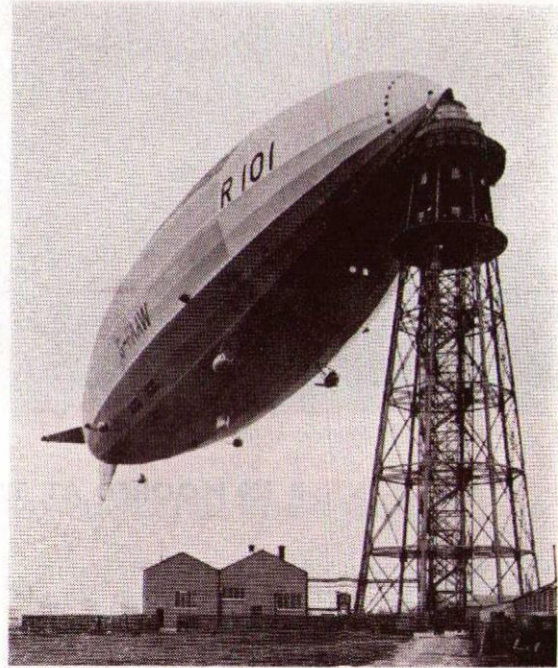
by A. B. JONES

SOME thirty years ago Mr. Ramsay MacDonald's Labour Government authorised the Air Ministry to embark on a programme of research and development designed to test the capacity of modern rigid airships as a means of long distance air transport. It was estimated that an expenditure of £1,200,000 would be involved over a period of three years in a scheme which envisaged the construction of two rigid airships each of five million cubic feet capacity, one of which was to be built at Howden, Yorkshire by private enterprise and the other by the Government owned and operated factory at Cardington, Bedfordshire.

A sum of £850,000 was earmarked for the Government portion of the programme and £350,000 was allotted for the private enterprise contract. The apportionment was not so unbalanced as might appear at first sight since the Government part of the scheme included the construction and erection of two new airship sheds; one at Cardington—making a pair with the one already existing—and the other at Karachi. Additionally, the cost of mooring towers at Cardington, Ismailia, Karachi and Montreal, together with plants for the manufacture of hydrogen, had to be met out of the £850,000 allotted. The three year programme extended to six and, as was inevitable, the estimates of costs were substantially exceeded.

The airship built at Howden was known as R100 and she was designed and constructed by the Airship Guarantee Co. Ltd., a subsidiary of Messrs. Vickers Ltd. She carried out her home flying trials in 1929 and in July/August 1930 successfully completed a double crossing of the North Atlantic. In this age of speed records the times for the outward and homeward journeys of 78 hours 49 minutes and 57 hours 36 minutes respectively were a trifle slow; perhaps the time taken to reach Montreal was explained by the fact that the ship was flying into head winds.

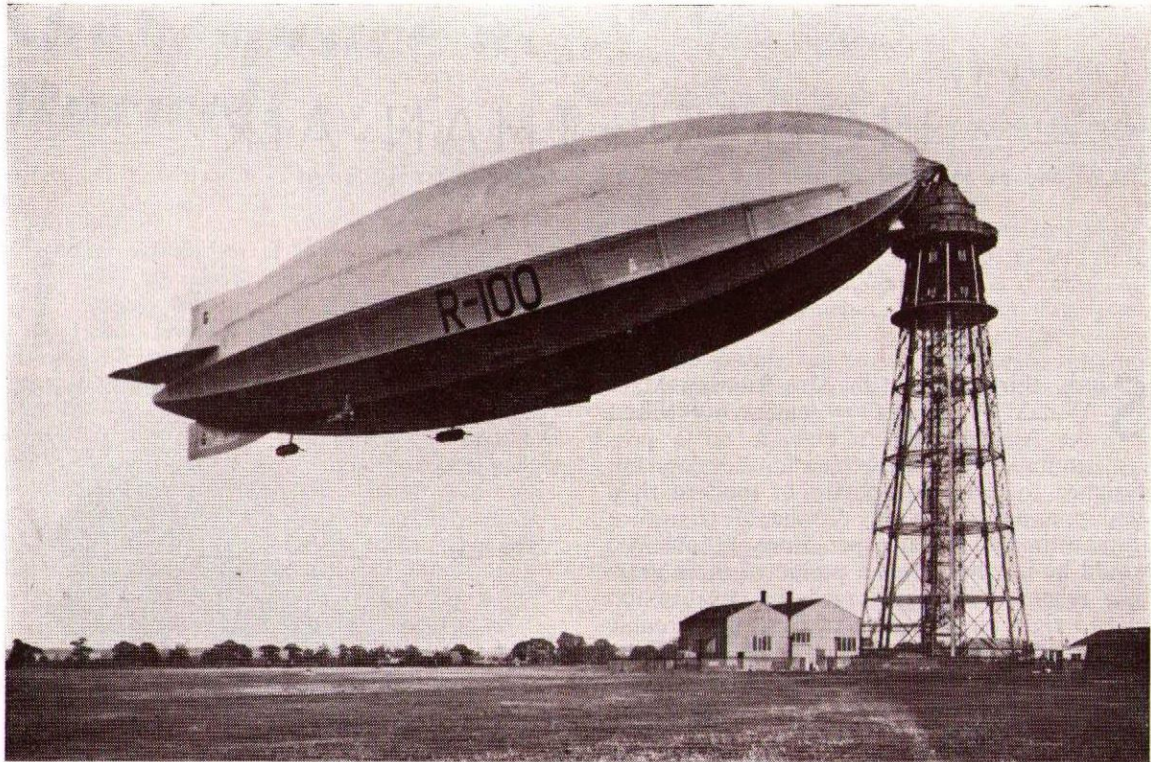
R100's sister ship built at Cardington was known as R101 and her flying trials provided for a flight to India (Karachi) with an inter-



*Photograph by courtesy of the Air Ministry*

mediate stop at Ismailia. Her first series of home flying trials in the latter months of 1929 suggested the desirability of increasing her lift and the ship had to go back into the hands of the construction team for the insertion into her structure of an additional bay. This was fitted amidships. These modifications delayed her overseas flight trials and it was not until October 1930 that, as the largest airship in the world, she was ready to set out, for what proved to be her last journey. On the evening of Saturday, 4th October, 1930, in the view of a vast gathering of onlookers, she slipped from the mooring tower at Cardington to begin a voyage to India via Ismailia. Apart from her officers and crew she carried her designer, the Director of Airship Development, the Director of Civil Aviation, the Secretary of State for Air and several others





*Photograph by courtesy of the Air Ministry*

### **R 100 MOORED AT THE CARDINGTON MAST**

who were associated with the programme. In the early hours of Sunday, October 5th she crashed just south of Beauvais and immediately caught fire : Of the 54 persons on board there were only six survivors. The disaster which befell R101 was fully reported in the Press of the world and was the subject of an exhaustive public enquiry in October/November 1930, conducted by Sir John Simon with whom sat Lt. Col. J. T. C. Moore-Brabazon and Professor C. E. Inglis as assessors.

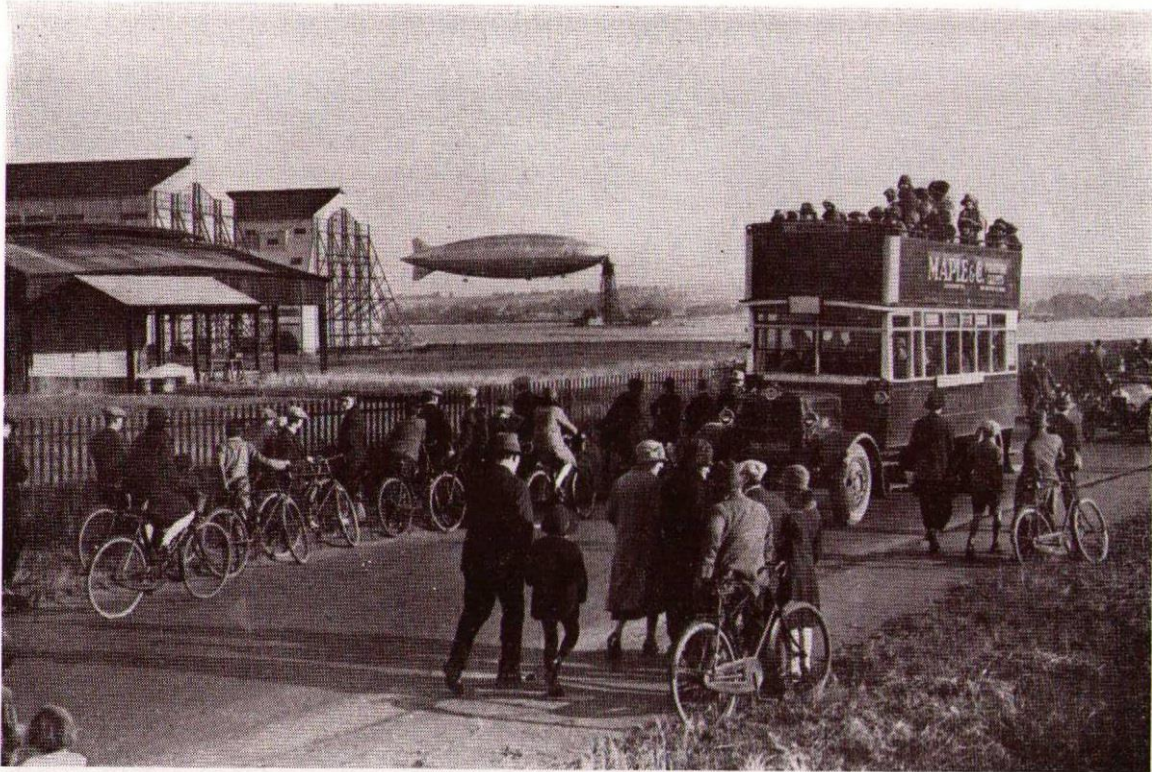
Thoughts both grave and gay come to mind in casting back over the happenings, in so far as it was my privilege to know them, of those eventful years and those which I now recount relate to lighter moments and happenings of which, fortunately, there were many.

The development programme was well under way in 1926 by which time the 1914-18 war had been over for about 8 years and there is, in some respects, a similarity of pattern between 1926 and 1955. A shortage of houses, for example, was something of a difficulty (although far less pronounced than now) for newly joined employees and there were grades of staff the

recruiting of which was a constant preoccupation. Even in the mid-1920's there was a scarcity of engineering draughtsmen—it seems to have continued ever since—and despite the reluctance of Government Departments in those days to advertise for staff, the needs of the Royal Airship Works in relation to draughtsmen were, on occasion, to be seen in the advertisement columns of the Press. It was a standard practice to specify in those insertions that applicants should possess "mould loft experience" : I think it was this aspect of the advertisement, rather than the rates of pay offered, which attracted a goodly number of enthusiastic and energetic youngsters from Clydeside.

The Establishment boasted a small calculating team—it never exceeded four—one of whom was H. Roxbee-Cox—now Sir Harold—one time scientific adviser to the Ministry of Fuel & Power. An engineer who could be regarded as his opposite number with the Airship Guarantee Company was N. S. Norway, perhaps more generally known as Nevil Shute, the author. Some readers will recollect his recent book "Slide Rule" which contains outspoken views





Photograph by courtesy of the "Daily Mail"

**R 101 AT CARDINGTON, 1930** (photographed from the author's house)

about the airship programme in general and the performance of the Cardington organisation in particular.

The programme was not without its glamour and a fair proportion of the activities of the Cardington and Howden Works and the Pulham (Norfolk) Airship Station—where during 1926-27 some experimental flying with the airship R33 was in progress—was given full publicity in the Press of this country and abroad. Sundays were popular days for visits to the Cardington Establishment and those who were privileged to gain admittance were always fascinated with what they saw in the shops where gas bags and the ship's outer cover were fabricated. The Duke of Windsor—as Prince of Wales—was a visitor on one occasion and in November 1929 about 100 members of both Houses of Parliament journeyed from London and were shown over the ship whilst she rode at the Cardington mooring tower. Because visibility conditions were so bad at the ship's normal cruising altitude the short flight planned for the visitors had to be postponed. Airships undoubtedly caught the public imagination

and this was reflected in the applications for employment which reached the Royal Airship Works from a variety of sources. The letter reproduced below was perhaps a little out of the ordinary in its earnest appeal:—

James Anan Okine,  
c/o. Owoo Street house No. S313/5  
Accra, G.C. W.A.  
Date 10.5.29.

Dear  
Sir

I have the most honour respectfully apply for a vacant post of Airship Business in your Department, and request to offer me, sympathise to favour this humble Application meets in faithful compassion of your honesty. I am humble and obedient young-boy for all work which you will obtain me, I shall be experienced to improve better to your satisfaction. I have the honour to be sir. Please kindly send me form to fill it.

I am

Yours Sir  
remain

James Anan Okine.



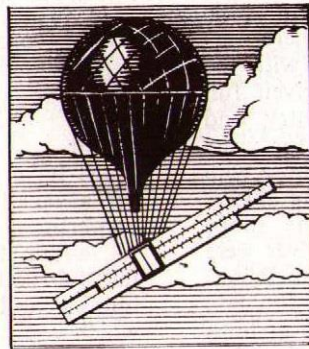
The address from which the applicant wrote has a flavour of a staff club, but it is doubtful if this kind of accommodation had then been invented. Another letter was from a lad living in a remote village in Western Ireland who appealed despairingly for a job as Captain although willing to begin at the bottom as cabin boy, failing which he said he would be satisfied by being allowed to help to "hold her down."

Interest in the airship development programme could be gauged by the number and range of questions asked in Parliament; it is no secret that nearly 300 were asked and answered during the six years from June 1924 to July 1930. Information regarding progress in construction was most sought after but some questions were directed to more purely technical aspects.

The crews of both ships were largely recruited at Cardington although some of those who served in R100 were picked from the Airship Guarantee Company's staff at Howden. Although, as was natural, a certain rivalry existed between them it was obvious even before flying trials began that there would have to be uniformity of treatment of the two crews. Since the Officer in Charge of Flying, the Navigating Officer, the Third Officer and the Meteorological Officer were common to both ships it was not difficult to apply a large measure of uniformity. It so happened, however, that authority was sought for the grant of a period of special leave to the members of R100's crew on completion

of the Canada flight; this was granted but not without the safeguarding clause so dear to the Civil Service that the concession was not to be regarded as a precedent whereby R101's crew could claim similar treatment on completion of the India flight. The remarks of R101's Captain when he learnt of the ruling were both brief and to the point.

It is perhaps appropriate to end this article with a brief reference to two exciting moments among the several which occurred. One in April 1925, was the return of airship R33 to her base from an enforced flight of 30 hours across the North Sea—almost to the Dutch coast—after being torn during a gale from the mast at Pulham. The fact that the airship was able to do this under her own power, despite the severe damage she had sustained, was a remarkable exploit for which her Captain and several members of her crew were decorated. The second occasion was the launch of R101 in 1929 when, in the dead calm of an October dawn the huge dirigible was moved slowly forward under the pull of a handling party of nearly 600 men. This was the moment for which many of us had long waited and no one who was present that morning on the Cardington airfield will forget the sight as, with daylight streaking over the eastern horizon, the airship left the hangar in which she had been built and gently responded to the ringing of her engine telegraphs and the subsequent turn of her propellers.







## Wanted for 1973

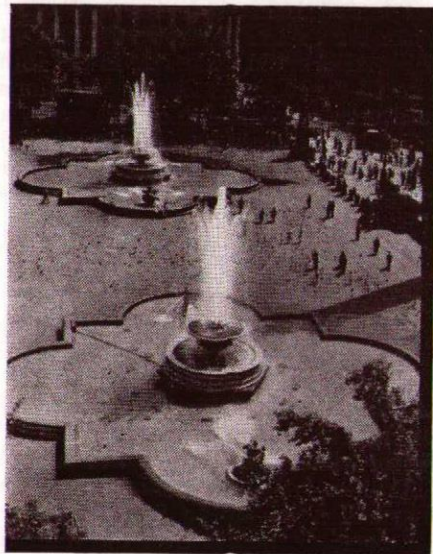
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# MAKING AN ASTRONOMICAL TELESCOPE

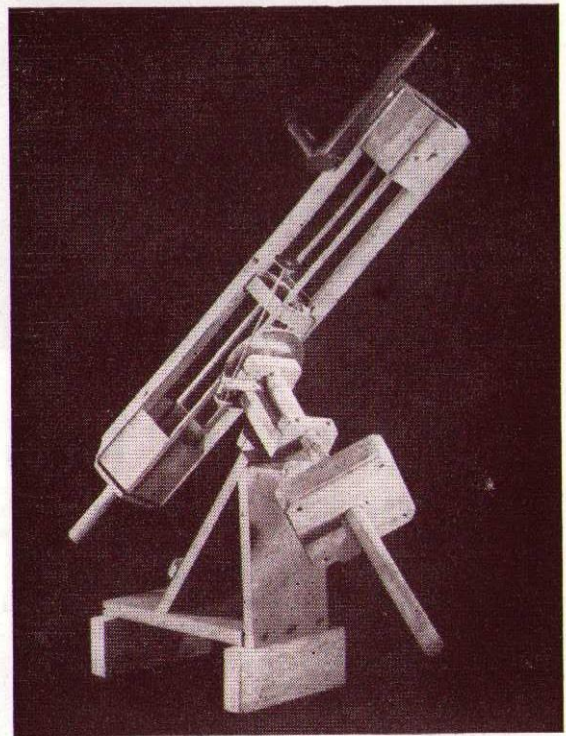
by E. G. H. MOBSBY.

**T**O me, astronomical books make most fascinating reading, and the wonderful photographs of stars and planets reproduced in them are beyond praise; yet there is something about an actual sight of these beautiful objects which leaves a lasting impression on the mind such as no photograph can produce.

It is for this reason that I feel sure a lot of people would take a practical interest in astronomy if they had the means to do so. "Bought" telescopes are a very expensive luxury, beyond the means of all but a few; few, however, realise that good telescopes are not as difficult to make as is generally supposed.

I myself have made six, and was urged to make the first of these by the conviction that, if Herschel could make one in the 18th century, I could do so in the 20th. My efforts resulted in a very passable 5 inch telescope, and those which have followed at intervals, have improved with experience. I would like to make this experience available to others, and hope that this article will arouse sufficient interest for some readers to make the effort. Much detail must needs be omitted, but all the essentials have been included.

There being several types of instrument, the first step is to select the one most suited to your purpose, and involving no serious difficulty of construction. This last consideration alone makes the choice between a refractor or a reflector almost automatic. For a refractor the difficulties of construction are formidable. In small sizes—up to 8 inches—the refractor has some advantage over the reflector. These are twofold; size for size the refractor gathers more light and gives more detail than the reflector; it is also much more robust. For apertures greater than 8 inches the advantages are all with the reflector, particularly where ease of construction is concerned; it will have to be a reflector then.



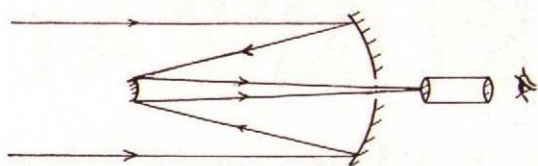
*One of the author's telescopes*

Now, there are three kinds of reflectors, the Cassegrainian, the Newtonian and the Gregorian. Which shall it be? The Gregorian having the disadvantages of both the others, and none of their advantages, can be eliminated.

In all reflectors the light is reflected to a focus on the optical axis—back in the direction from which it came—so the image cannot be examined directly with an eyepiece simply because your head gets in the way. To avoid this the Cassegrainian type employs a small convex secondary mirror on the optical axis, and just inside the

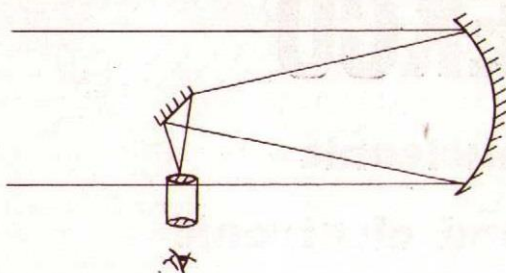


focus, which reflects the cone of light back through a hole in the primary mirror, where it can be viewed without obstruction:—



In the Gregorian, the secondary mirror is concave, and outside the focus.

In the Newtonian arrangement this small secondary mirror is a flat inclined at  $45^\circ$  to the optical axis. This brings the image to the side of the tube where, once again, it can be viewed without obstruction:—



The merits of the Cassegrainian over the Newtonian arrangement are that the same power is obtained with a telescope of half the length, and it has a wider flat field—(excellent for photography), whilst the Newtonian is of simpler construction and gives a darker background—(making fine detail easier to see). The disadvantages of the Cassegrainian are the convex hyperbolic secondary mirror, which is difficult to make, the hole in the primary mirror (which again increases the difficulty of construction—though this can be avoided with a third flat mirror), and less contrast between the image and the background.

The choice therefore—and certainly for your first effort—must inevitably be the Newtonian form.

Now to decide on the aperture and focal length. The aperture always wants to be as great as possible (except for the sun) but as the difficulties of construction and mounting increase about in proportion to the square of the aperture, I would suggest 6 inches for your first effort. The focal length selected will depend on the use to which you intend to put your telescope. Focal ratios of F3 to F6 are excellent for photography (but more difficult to make) whilst F6 to 10 are excellent for visual work.

F8 is a good average value; for a six inch mirror this means a focal length of 4 feet.

Next, the glass disc. For a mirror, the optical quality of the glass matters not at all; what does matter is that it shall be free from strain and reasonably free from bubbles. Plate glass answers the requirements very well and can be obtained up to  $1\frac{1}{2}$  inches thick—porthole glass—for only a few shillings. The thickness is important, one sixth of the diameter being a good minimum value, so, a disc of 1 inch plate will do nicely for a 6 inch mirror. If the mirror was thinner than one sixth diameter, you would find that it distorted under its own weight. Alternatively, a disc can be fabricated from a thin disc (say  $\frac{3}{8}$  in. plate) and one inch deep glass ribs cemented to the back. The mirror in the telescope illustrated has been made in this fashion.

A second disc is needed for the tool, preferably of the same thickness, but a thinner disc may be used.

If two glass discs are ground, one on the other, with a straight stroke using carborundum powder and water, the upper one always goes concave and the lower one correspondingly convex. A moment's thought will show the reason for this: the centre is ground all the time, whilst the edge is ground only part of the time. Thus, the lower disc is the tool and the upper one the mirror. Keep the stroke to one third the diameter of the mirror and walk slowly round it as you grind, and in addition, slowly rotate the mirror under your hands, in fact, do everything to avoid repeating the same stroke twice.

The ideal work-bench is an upturned barrel, but you can do well enough on the edge of a table, only with this difference; you can walk round a barrel as you grind, on the edge of a table you can only contrive a half-circle and keep repeating this in the same direction.

Now a word about fixing the tool. Select a piece of timber, about a foot square and an inch thick, and mark, in pencil, the outline of the glass tool. Light the oven and set it to its lowest temperature and pop the tool in; also put a quantity of soft pitch in a tin and set it to melt over a very small flame. Should you burn the pitch its usefulness will be much impaired—and it makes an awful mess! When the tool is quite warm to the touch quickly pour a layer of melted pitch over the area marked out in pencil on your board, and lay the tool on it and press down. When this has cooled you can get to work. The board carrying the tool may be screwed to the top of a barrel, but if you are using a table it is best fixed with two oversized clothes pegs, which are quite easily contrived.



Five grades of carborundum are sufficient, 100, 180, 400, 500 and 700, and six "wets" of each grade are sufficient to remove the deeper pits of the previous grade. So then, the procedure is to grind to the desired curvature with the 100 grade, and then six "wets" each of the other grades finishing with the finest 700. Wash off after each "wet," and very thoroughly when you change to a finer grade.

To determine the approximate radius of curvature (twice the focal length) whilst in the ground state, swill water across the ground surface of the mirror (to make it reflect some light) then stand it on edge, and holding an electric torch in your hand level with your face, back away moving the torch from side to side whilst watching the patch of light reflected from the wet mirror. If you are inside the centre of curvature the reflection will move in the same direction as the torch; if outside, it will be in the opposite direction. It is quite easy to judge the centre of curvature to an inch or so in this way. You should stop coarse grinding (100) when the radius of curvature is six inches more than you want to finish up with, as the fine grades will shorten the radius by about this amount.

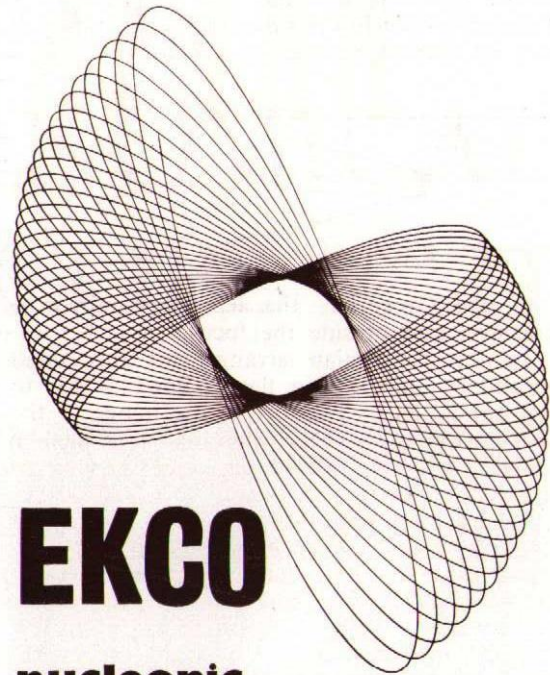
One word of caution when using both the 500 and 700 carborundum. Sprinkle the powder over the tool, add a few drops of water and mix the powder to a paste with your finger tip, spreading it out to cover the tool—keeping an eye out (or should I say "finger" out?) for gritty bits; nothing is more disheartening than to scratch your mirror at the last fine grind. Also a further warning: The edge of the ground disc gets very sharp, and even the lightest of taps may chip it seriously. Some mirror makers remove this edge with a fine file but this is not a good practice as even a minute bevel rather spoils the definition.

(To be continued).

Those interested will find more detailed descriptions of the operations in:—

**STRONG**:—*Modern Physical Laboratory Practice* (Blackie) and also in:—

**PORTER**:—*The Amateur Telescope Maker* (Scientific American Co.)



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# BREAKFAST

By G. STUART

I EXPECT you know Smudger, him as lives down in Mill Lane. He was in my lot during the War. R.A.F. Station up in the North of Scotland. Coldest place I ever knowed, it were. Well, I can tell you a tale about Old Smudger as 'ud make you bust y' sides a-laughing—though mind you, I ain't yet worked out whether the joke were on him or us, at the time. You can judge for yourself when you've heard the yarn.

'Course, old Smithy were just as dopey then as he is now. I reckon he were born that way; can't blame that on to his war service. Anyway, he were about the sleepest cove I ever seed in all my life; always went off to kip afore ten, 'e did, and was snoring 'is head off by the time our Pontoon school broke up at eleven, just afore the Orderly Dog came snoopin' around. Smudger didn't only snore, neither. Oh, no. 'Is most interestin' habit was to talk in 'is sleep, and I *mean* talk, too, as plain as if he'd been awake. Hear every word.

Time we'd all been together a few weeks we knew the names of all the bits o' stuff he'd taken out, and all the details of what had happened during the evening. I can tell you, I reckon I completed my eddification a-listening to him, night after night. Don't think I'm a nosey Parker, mind. There wasn't much entertainment up there, and anyway, at that time o' night you couldn't want *anything* more entertaining than Old Smudger nattering away in his dreams, believe me.

One night Smudger decided he was real weary—I reckon the wench he was supposed to be taking out that night had either found out his reputation, or she was sick. Anyway, he didn't go out, and he went off to bed before eight. When we all come troopin' in just after ten there 'e were wrapped up in 'is blankets like a cocoon, with his yellow hair all over his face. For a wonder he were sleepin' quiet. I expect the evening's commentary had finished afore we got in. Jerry, his mucker, he has a look at 'im, but 'e seems alright so we all starts getting into bed.

Now Jerry is one of these clumsy characters. He'd fall over anything that stood higher than a fag paper, and presently, while he was struggling out of his shirt, he steps back, and

wallop! Base over apex he goes over the big steel coal bunker in the middle of the hut.

Well, what with the crash, our laughter and old Jerry's cussing, and swearing, Smudger wakes up and peers around the edge of his blankets with eyes like organ stops.

"What time is it?" he says, yawnin' his head off.

"Ten to eight" says Jerry, before any of us could speak, "If you wants any breakfast you'll have to get a move on." And he starts putting his clothes on again. We all caught on, of course, and soon the whole hut was up and dashing around just as if it were mornin'. Smudger crawls out of kip and stretches.

"Crikey," says he, "I feels as if I'd only 'ad a couple o' hours snore!"

We fights hard not to laugh, but seein' as how me and Jerry was just about to bust, we doubles out the door a bit sharpish with our pots and eating irons in our mitts. We ran as quick as we could in the direction of the cookhouse, but it was pitch dark, and I could hear Jerry floundering around in a pothole he had fell into, and swearing fit to turn the air blue. When I found a pothole myself I did all I could to outdo him, though that takes some doing.

When we sorts ourselves out we ducks behind one of the huts, and only just in time, for Old Smudger comes plunging by, his tin mug rattling as he goes, and a cussing all and sundry because they hadn't put the lights on—which they mostly do in the mornings, though sometimes they forgets. Old Smudger disappears in the distance and we gets back to the hut as quick as we can, and gets into kip. You never heard such a chorus of snores come on so quick in all your natural. It was most realistic.

Five minutes went by, and still no Smudger, and it was plain it was a waste of snores to keep that lark up until we knowed he was somewhere near enough to benefit from the performance we was a-putting up for him. After twenty minutes we began to feel a bit worried about the little cuss, and even talked about going to look for him—and if it hadn't been so ruddy cold outside we probably would have done, too. Any old how, after half an hour his lordship comes clumping into the hut wiping his mouth with the back of his hand.



Then 'e 'as a swig of char out of his mug. Then 'e sees all the troops a-snoring their 'eads off in their flea-pits.

You should have seen 'is face. His eyes popped out on a couple of stalks, and 'is mouth gapes open with astonishment. He goes up to Jerry and shakes him 'til he sits up, a-swearing.

"Hey!" says Smudger. "You blokes won't 'arf be late for breakfast. What's the idea of creepin' back into kip? You lot was mighty anxious to get me out of it—and I was only just lucky for grub."

"What you talking about, you nitwit," bawls Jerry. "'Ere, take a gander at the time—ten to twelve", and he sticks 'is wrist watch right under Smithy's nose. "You've been dreaming again, that's what! Why don't you get down to it like a reasonable sort of bloke, and get some sleep. We want some shut-eye, too."

"What d' ya mean, dreaming!" hollers Smudger, all aggressive, like.

"You *must* have been dreaming, Smudge. It ain't morning at all. Its ruddy late at night, son, and I wants some sleep."

"Why, you perishing lot o' 'eathens," says Smithy, "It ain't night at all, you silly lot o' sheep. It's you dopes that's up a gum tree, not me. You please yourselves o' course, and don't let me put you off in any way, but I've just had a very good breakfast of bacon and eggs, and I'm goin' to get ready for parade."

"Listen, dope," says Jerry, though not quite so sure of himself now, "In the mornings the

lights are switched on all round the Camp roads, right? Well take a gander outside, and you won't see a glimmer."

"Not always, they don't. They wasn't on yesterday, now, was they, remember?"

That shut old Jerry up, 'cos 'e knew that was right. In fact the clot who was supposed to switch on the lights quite often overslept himself. He was always getting Jankers for it, but it didn't seem to improve his performance at all.

"What's all this about eggs and bacon?" says Jerry, slowly getting out of kip.

"Well, says Smudger, "I walks into the cookhouse, where a lot of blokes was lined up for grub, just like it is any other day. When I gets up to the serving hatch, the bloke dishing out the grub says 'Runway?' so I says 'yes' and he loads me up with the grub and fills me pot with char. I reckon you blokes'll go on parade without no breakfast this morning." And he starts getting 'is equipment down off the hooks over 'is bed.

We dressed as quick as we could, and all goes drawing off towards the cook house. When we gets there the ruddy place is in darkness, and all locked up. So after expressing our feelings we hobbles back to the hut, and there's old Smudger fast asleep on 'is kip, and mumbling something about Runway working parties.

So there it is; I still don't know for sure whether the joke was on Smudger or on us.



HARWELLIAN HOLIDAY

(Clive Spinage)



# Caravan Life in Winter

or

## Anyone can have a House !

By S. L. W. GALLOWAY

**T**HERE are at least a hundred reasons I can think of for taking up permanent residence in a caravan. One could do so in order to escape one's creditors in comparative comfort, for instance. One's wife could insist upon a caravan as an escape from the drudgery of housework—or one might have been left a horse. . . . !

Most of our married life, thanks to the war, has been spent in rooms, flats, or with in-laws, (in that order of discomfort and unpleasantness). Hopes of returning to the Civil Service foreshadowed a return to that miserable way of life for many years to come, and we were appalled at the prospect: a chance remark of an acquaintance made in fun, led me to toy with the possibility of taking up caravan life as an alternative.

We had just had an enjoyable, if wet, Summer holiday in an ancient 16ft. 'van of pre-war (and uncertain) vintage. It had been fun, and very comfortable, but to live in one permanently . . . ! Well, why not? Lots of folks actually claim to *prefer* to do so. Of course there are many types of caravans from which to select one's future home; the typical Gypsy caravan of 'one horse-power' is not nowadays regarded as a good investment! We finally decided to look at some of the modern caravans, and went very dubiously to a local Sales Site where we saw the latest models of one of the best known makers. We were not unduly impressed with what we saw, but we began to glean ideas and to see what we considered important features in any 'van we might perhaps buy. We began to obtain and study brochures issued by the leading manufacturers, and also "The Caravan", the official organ of the Caravan Club. We got quite a vocabulary of technical jargon. This latter we found useful when we met over-enthusiastic salesmen; we just 'blinded them with science.'

We found that the prices range from £100 for a little holiday 'van, capable of being towed by any 10 h.p. car, to well over £1,000 for a

super-de-luxe all-weather 'van weighing 1½ to 2 tons. As neither of us drive, the towing would be left in the hands of one of the firms who do it very expertly for as little as 1/- per mile. We also discovered that in the good modern caravan, the standard of comfort, not to say luxury, provided is very much greater than that normally found in a house. Later we discovered by experience that this was not by any means an illusion.

Our final choice was towed on to the Grove Street site at Wantage one very damp day in September. It is divided into three compartments. At the forward end is the well-appointed kitchen, with Calor gas cooker, dresser and sink, leading from which is the bathroom. The kitchen is shut off from the rest of the 'van by a door, and has its own external door on the near side of the 'van. Cooking odours and steam are carried off by a perspex adjustable roof light.

The lounge, the largest of the compartments, is fitted with a commodious sideboard, a settee along the offside wall, two deep wardrobes, a solid fuel stove with hot water tank above it, and an airing cupboard—a very efficient one at that.

The after compartment can be used as part of the lounge, but is designed to be shut off from the rest of the 'van by means of folding partitions, and the large settee under the rear window can then be used as a double bed. The front door comes just aft of the off side wheel.

I must confess that I moved in with some misgivings. My wife is one of those icy footed, 'let-me-warm-them-on-your-back' women; when you and I are sweating furiously in the blazing hot summers we never get, she is 'just nice,' if you please. I had some qualms as to her reactions in a caravan if we should get a severe winter. We got the winter alright, but I needn't have worried, for our main difficulty has been to have a decent fire and still keep reasonably cool; it is only by keeping the dampers



almost shut that we preserve a pleasantly warm atmosphere.

There are certain pleasant pastimes inseparable from caravan life, and which are not enjoyed by those living more conventionally. There is the question of water. Under the sink there is a ten gallon tank for cold water which is raised to the sink by means of a hand pump ; each of the ten gallons has to be carried from the nearby standpipe. Guess who carries it ! That's right. I do. The hot water tank also takes ten gallons of the best ; the same bloke carries that, too ! I'm not grumbling about carrying the water ; all I do say is, why does it have to be when it's raining or snowing that the tanks run short ? In fact, when I hear rain on the roof, I just reach for the water-bucket. I know my drill !

Caravans use Calor gas in the kitchen ; the gas comes from a cylinder which lurks under the front end of the 'van. But in frosty weather the thing freezes o' nights . . . and you won't need me to tell you who goes out to baptise it with a jug of hot water, clad in pyjamas and dressing gown. The incantation which is used at such a time is known only to a Caravanner, and in any case is unprintable ! He uses similar mystic language when the bucket is found to be frozen solid just when water is wanted in a hurry ! You will also appreciate that since all the water used in the sink, etc., has to be carried in a waste bucket to the nearest drain, one discourages one's Spouse from being too liberal with it. Washing-up is done in a very little extremely hot water and detergent, using a remote handling device (otherwise known as a sink mop).

One quickly learns that there are one or two commonsense precautions which can be taken to minimise some of the more unpleasant risks. The chimney damper of the stove is kept almost shut at all times ; failure to do this is liable to convert the airing cupboard into a quite efficient incinerator. I lost a pair of socks finding this out ! It could have been much worse. One also learns that, outside, the water bucket, paraffin can and the shovel should always be kept in exactly the same spots at all times. After groping under a foot or more of snowdrift for half an hour trying unsuccessfully to find the shovel, one doesn't forget to put it in its proper place next time. Clearing snow away with the coal shovel is a laborious business.

One doesn't get caught for odd jobs of housework on Saturdays and Sundays in a caravan.

For one thing, Little Woman hasn't really got enough indoors to keep herself amused, even without sharing her jobs with Hubby. The Master of the House has other matters to attend to, such as tyre pressures. There is always a certain amount of movement in a 'van as people walk around, but the motion when the tyres are soft, and the four corner jacks are doing their best to support two tons of caravan is not at all pleasant, and slack tyres would very soon cause a badly distorted chassis. Washing down is another pleasantry. One carries this operation out when the farmers are praying for rain ; it has never failed to my knowledge. In a house, the cleaning of windows provokes a similar phenomenon. It is astonishing how filthy a caravan can get in a fortnight in winter, when the fire is in use. None of the combustion products seem to leave the vicinity ; they just settle down on the nearest panel.

The most exciting time in caravan life, I find, is in really windy weather. A high gale buffets the 'van so that one begins to feel that at any moment the brakes must fail and the 'van go cruising off down wind. Yet it never does, and one's alarm proves to have been groundless.

We are very fortunate in our choice of site. Standpipes are arranged in positions where they serve a small group of 'vans, and there is a central toilet block which provides flush lavatories, wash-basins and baths, with lots of scalding hot water at most hours of the day. In the women's section there are adequate sinks for washing. Each of the twenty 'vans stands on its own concrete pitch, connected by a concrete path with the roadway ; each has its own garden which is fenced off and which one is free to develop as one pleases.

Not all caravan sites are as well developed as this, however, and one often finds that the 'van has to stand on grass, sinking deeper and deeper as the winter progresses, and with the paths rapidly becoming more and more of a morass. Some sites have no amenities whatever, and these are to be avoided.

I can say nothing of the joys of caravan life in Spring and Summer. We have so far only had the 'sticky end' of the year. At least we have proved that our 'van is all that the manufacturers claimed, that it is warm and snug, and that no water leaks in and no heat leaks out. Also we have now no desire to live in a house again, and when we finally retire we have somewhere to live which will still be within our means.





# OPPORTUNITY KNOCKS

Once again we tempt you to enter for our competitions by dangling valuable cash prizes before you. The total booty available to adult entrants is two and a half guineas, which should be enough to make even Sir Bernard Docker ring for pencil and paper.

Entries to all competitions should be addressed to :—

“**Harlequin Competitions,**” c/o Central Registry, A.E.R.E., Harwell, Berks, to arrive not later than May 6th.

## REPORT ON CHRISTMAS COMPETITIONS Opinion Poll.

By a comfortable margin, Harlequin's readers (all 19 of them !) have given the Editors renewed confidence, but there are no swelled heads on the board as the result of the popularity poll. Most of our readers thought the magazine fairly bright. It produces a few novel ideas, makes a reasonable impression on strangers, but is too serious and falsely assumes readers are avid for local history. The less said about our adver-

tising the better, and the Harlequin salesmen could be more vigorous. The average member of our large readership liked the illustrations and greatly enjoyed the competitions—naturally, or he would not have entered for this one !

The reader who agreed exactly with the majority of the entrants is Mr. Alan Knight of Building 354 and to him goes our prize.

## Crossword Puzzle.

Whatever kind remarks we had on the popularity poll were soon balanced by comments on the Crossword coming in by 'phone and messenger during the week after publication. Not a single member of the Board has yet found that missing clue in spite of the Competition Editor's earnest pleas. Our readers supplied many excellent words for the blank 16A Down, some printable—some not—all beginning with A and ending with L. Out of seven all correct entries, that of Mr. K. R. E. Smith of Hangar 10 was first opened so he wins the Christmas Crossword Prize.



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### Children's Competition.

The winner of the Children's Competition is C. J. Marchbanks, who submitted the first of the correct entries opened.

### Proof Readers Competition.

Welcome once again to our corner where, almost cross-eyed with cross-examinations through critical competitors, we are at last seated to write up the errors of the last issue.

First off the mark were J. B. Sykes and M. S. Bretscher who tied for first place and to whom we have awarded the mean of first and second prizes, i.e. 15/-. The following are some of the errors as set out in their lists:—

+EV for +VE (All Power Supplies, p. 2) : this mistake, although inserted twice running, was missed by many readers.

Oxfords' for Oxford's (West Anglia School of Motoring, p. 40).

Bottle Beers for Bottled Beers (Carter Bros., p. 40).

Full stop after indium in list of metals should be comma (Johnson Matthey & Co. Ltd., p. 45)

h in 16th in wrong fount (Hare and Hounds, p. 11).

Second off the mark and consolation prize winner was F. T. Birks of 220.8 who was the only competitor to observe that the Carter Bros. telephone is 'Rowstock 391' and not 'Harwell 391.' Another consolation prize was awarded to A. Knight of 354, the only person to spot the various types of 'T' in the address of Pendell & Spinage (front cover).

So much for the deliberate errors. But let us press on with the red herrings, which led many a bloodhound off the trail. One reader points out that in the advert of the Trustee Savings Bank 'Up to £50' should read 'At least £50': we may assure him that is definitely not the case! One other point was raised by J. B. Sykes that 'silicon is not a metal.' On this we refuse to comment!

Wrong founts again cropped up by the dozen: good examples include the *a* in *specialised* (Johnson Matthey) and the second *e* in *Telephone* (Carter Bros.).

There is no proof-readers competition this time; for the time being, we have decided to give our own and our readers' eyes a rest.

(For the current competitions turn to page 40.)

**ANY DAY NOW**—Butterworth will publish, at 5/-, Kenneth Jay's new book about Harwell, an illustrated account of the activities of the Research Group. It will be obtainable from Miss Croker, or any Harlequin distributor. Another good 'five-bobsworth' of course, is a subscription to **HARLEQUIN**.



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## Opportunity Knocks—*continued*

### CHILDREN'S COMPETITION

Mr. G. C. Ashworth has drawn, specially for you, a picture which is crammed full of deliberate mistakes. (For example, did you ever see a car without a steering wheel?). We want you to send to "Harlequin Competitions" c/o Central Registry, A.E.R.E., by April 22nd, a list of all the mistakes which you can find in Mr. Ashworth's picture. Ask your mother or father to sign your entry, saying that it was your own unaided work. The first correct (or most nearly correct) entry opened will win a prize.—don't forget to put your age, this will be taken into account.

### THE SOUL OF WIT

Derek Condon has suggested that you should be invited to comment in **FOUR WORDS** (not more, not less) on a variety of subjects. We thought this a good idea, and a list of subjects is given below. Please read up the laws of libel before you send in your entry. The list of comments which the Editor considers to be the most apt will win a half-guinea book token.

1. The future of Harwell (e.g. "Deep hole in ground")
2. Our sitting Member of Parliament
3. Harlequin's Editor
4. A.E.R.E. Social Club
5. The new Lecture Theatre
6. Women who wear jeans





**"HARLEQUIN" LUCKY NUMBER**

When you have read this issue of "Harlequin," don't give it to the baby to scribble on. Let him scribble on the walls. (After all, if you live in one of the Authority's houses, it's not your worry). Printed on the back cover you will find a number. In our next issue we will publish a number which the Editor has drawn from a hat. If your copy of the Spring issue bears this number, the Editor will buy it back from you for one guinea—repeat, twenty one shillings.

**ACROSTIC**

This puzzle was submitted by Vernon Glenn, who is probably a descendant of Torquemada. The initial letters of the answers to the clues (in the order in which they appear) spell the name of a well-known character in U.K.A.E.A. Entries must give the answers to the clues as well as the name. A book token for half-a-guinea will be awarded to the sender of the first correct entry opened by the Editor.

**Clues**

1. The inventor of lithography (10)
2. Equality of political rights (7)
3. Author of 'The Stones of Venice' (6)
4. The chief representative of Syrian Neoplatonism (10)
5. Heraldic fur (4)
6. Theory of value (8)
7. He wrote 'Thus spake Zarathustra.' (9)
8. Former Japanese military caste (7)
9. El Greco (12)
10. The doctrine which subordinates ecclesiastical to secular power (11)
11. His dictum was 'Cogito ergo sum' (9)
12. Swiss mountain first ascended by Charles Barrington in 1858 (5)
13. Birthplace of William the Conqueror (7)
14. Ahura Mazda (6)
15. Reputed founder of the Russian Empire (5)
16. He painted 'The Soldier's Dream.' (8)

**Crossword Puzzle**

Compiled by R. S. BOOKER

Half a guinea will be awarded for the first correct solution opened. Cut out this page for your entry, or copy the puzzle on to a piece of paper, just as you wish. In either case please see that it reaches us by May 6th.

1		2		3		4			5		6
	■		■		■		■	■		■	
	■		7	8		9		■		■	
10											
	■	■		11		■		■	■		
12		13		■		14			15		■
	■		■	16		■		■		■	17
■	18					19	■	20			
21	■	■	■		■	22		23	■	■	
24		25							26		
	■		■		■	27			■		■
	■		■	■		■		■		■	
28											

**CLUES ACROSS**

1. Diet for impoverished Civil Servants on outside duty (5, 3, 5)
7. Let the saint off first (3)
10. The other alternative is stolen (4, 2, 7)
11. Likewise
12. "—!", as the American exclaimed, on hearing Goosens in action (4)
14. Flower of mixed lachrymosity (5)
18. To receive stolen goods in Scotland (5)
20. Track of deer (4)
22. If you do this, you're an underground drain (3)
24. Peace in horticultural form (6, 3, 4)
27. The Mohammedan from Australia? (3)
28. It counts trees to put together again. (Shades of dried egg!) (13)

**CLUES DOWN**

1. He was responsible for the damnation of Faust (7)
2. Cupid is aggrieved (4)
3. Creator (or possibly adversary) of Friday (5)
4. Scandinavian in two alternative directions (5)
5. Pronoun returned to New York, in short (4)
6. They produce the sound in 12 across (5)
8. Risk that annoys (4)
9. Attempt to join the short street (5)
13. You may do this towards the end of the month (3)
15. Measure, or Cockney infernal regions? (3)
16. Souvenir (5)
17. You see human ones at knocking-off time (7)
19. Even while the boat is steady (4)
21. The ranks of Tuscany found it difficult not to (5)
22. Saint Arthur in the vernacular (5)
23. Every woman wants a small one (5)
25. There is an Eastern and a Western one in world politics (4)
26. If you this this, you won't get the prize (4)



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	Number of Ranges	2	2	4	4
	Voltage Stabilization	±0.02%	±0.002%	±0.1%	±0.002%
	Effective Output Resistance (max.)	0.2 ohms	0.02 ohms	0.5 ohms	0.02 ohms
	Output Ripple (rms. max.)	2mV	1mV	3mV	1mV
-VE Supply Stabilizer	Outputs	—	—	250V 25mA 0-250V 1mA	250V 25mA 0-250V 1mA
	Voltage Stabilization	—	—	±0.05%	±0.002%
	Output Resistance (max.)	—	—	1 ohm	0.01 ohms
	Output Ripple (rms. max.)	—	—	2mV	1mV
Unstabilized +VE H.T. Supply 250mA max.		470V 630V	470V 630V	320V 470V 630V	20 V 470V 630V
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Data		Model 506	Model 507	Model 508	Model 509
Main + VE Stabilizer	Output	200-500 V 350mA	200-500V 350mA	0-500V 350mA	0-500V 350mA
	Number of Ranges	2	2	4	4
	Voltage Stabilization	±0.02%	±0.002%	±0.1%	±0.002%
	Effective Output Resistance (max.)	0.2 ohms	0.02 ohms	0.5 ohms	0.02 ohms
	Output Ripple (rms. max.)	2mV	1mV	3mV	1mV
-VE Supply Stabilizer	Outputs	—	—	250V 25mA 0-250V 1mA	250V 25mA 0-250V 1mA
	Voltage Stabilization	—	—	±0.05%	±0.002%
	Output Resistance (max.)	—	—	1 ohm	0.01 ohms
	Output Ripple (rms. max.)	—	—	2mV	1mV
Unstabilized +VE H.T. Supply 350mA max.		470V 630V	470V 630V	320V 470V 630V	320V 470V 630V
Unstabilized A.C. Supply		6.3V 10A	6.3V 10A	6.3V 10A	6.3V 10A
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