

## OUR MOTTO FOR THE MONTH

"You are never too old to learn if you are not too proud to be taught!"

## A New year Message



*Last time I made a contribution to our Company Newspaper, it was to wish it every success on the occasion of its first issue. I am now very pleased to see how well established it has become in fifteen months, and I look forward to even better things in the future.*

*New Year is traditionally a time for taking stock, and looking at the position of the Company today gives me great heart. Our order book is very healthy and once more, this year, we are looking forward to a significant expansion in real terms. Comparing this situation with that of many other Companies we have a lot for which to be thankful.*

*We are, however, facing a very tough challenge this year and that is to achieve the deliveries which we have promised our customers, with so many new systems going into production at the same time. In order to keep our customers happy, and to make sure that they come back to us next time, we shall all have to make tremendous efforts in the coming year.*

*May I wish you all a very happy and prosperous New Year both from a Company and personal point of view.*

W.H. Alexander  
5 January 1979

## ENGINEERING EMPLOYERS FEDERATION

### SAFETY AWARDS

The Company has received a second 'Golden Hand' Award from the Engineering Employers Federation. Each year the Federation makes Safety Awards to member companies for reducing or maintaining a reportable lost time accident rate. A target is set by the Federation based on a company's declared accident returns over a three consecutive years period.

The scheme, which commenced in 1973, was designed to assist in reducing industrial accidents by offering to managements quarterly safety programmes. The awards, which take the form of a certificate, are

divided into three categories:

- Three Gold Star** — For establishments which equal or beat their targets.
- Two Star** — For those which, while not meeting their targets, nevertheless achieve an incident rate of 20 or less.
- One Star** — For others achieving a 10% improvement over their average incidence rate for the three years under review.

Having won a Three Star Award, establishments then proceed to the possibility of winning a 'Gold Hand' in the next or subsequent years, the target rate being that achieved when the Three Star award was gained.

The award was presented to the Company at a luncheon at The Howard Hotel, London, on Tuesday 14 November 1978.

# VIP VISITS

## US Deputy Secretary of Defence visits Marconi Avionics

Mr. Charles Duncan, United States Deputy Secretary of Defence paid a visit to the Rochester head office factory of Marconi Avionics Limited (a GEC-Marconi Electronics company) on Friday, 3 November. He was accompanied by three United States Government officials.

The visiting party arrived at Rochester Airport by helicopter at 2.30pm. Beflagged official cars were standing by to take the party to the factory, where their host was Mr. Jack Pateman CBE, Managing Director of Marconi Avionics. The visit lasted two hours.

The visit to Rochester was part of a two-day programme of visits to two British companies and to government establishments, with the aim of briefing the Deputy Secretary of Defence on current activities.

Marconi Avionics is already established as a major supplier to the United States aerospace and defence industries, a factor which has made it possible for the Company to receive another Queen's Award for export achievement in 1978.



Our photograph shows the arrival of the US Deputy Secretary of Defence in conversation with Mr. J.E. Pateman CBE. (A)



## CARTOON COMPETITION RESULT

(Competition — MAV News No. 12, November 1978)

The winning caption, in the opinion of the judges, was submitted by G.W. Cook of MASD. Thanks to all who entered the competition, we even received one entry from Atlanta GA USA! Mr G.W. Cook will receive a prize of £5.



## Medway Aeronautical Branch has gala Battle of Britain night

The Medway Branch of The Royal Aeronautical Society and its sponsor, Marconi Avionics Limited, received distinguished guests from all over England, including famous fighter aces, at a lecture held at Airport Works, Rochester on Wednesday 8 November at 7 pm. The lecture, which members of the public attended, was 'Battle of Britain' by Derek Wood, UK Editor of the magazine group Interavia and author of the book of the famous film.

The President of The Royal Aeronautical Society, Professor Lew Crabtree, the Secretary, Mr. Jim Schaffter and his Personal Assistant, Mrs. Eva Dane, paid their first official visit to the Medway Branch since it reformed three years ago. It has now become the largest in the country, drawing its members from all over Kent. Other distinguished guests included: Cllr Clive Morman leader of Medway Council, who has been an active supporter of the scheme to bring the last operational Sandringham aircraft to Medway as a memorial to Shorts activities; Mr. Harold Rogers, Station Manager of BBC Radio Medway and Gerry Hinks, Editor of Chatham News and Standard. Also invited were famous Battle of Britain aces Sir Douglas Bader, Robert Stanford Tuck, Johnny Kent and Paddy Barthropp. A special guest for the evening was to have been Mr. Bill Littlejohn, 95, the oldest surviving ex-employee of Shorts in the Medway Towns, but due to illness was unable to attend.

No stranger to the Medway Branch is Wg Cdr Colin Campbell, Officer Commanding RAF Manston, the station which has lent its Spitfire to the Branch's Aircraft Preservation Group for refurbishing at

Rochester Airport. During the visit to Marconi Avionics, the guests were taken to see the Spitfire which is already showing real signs of progress. It is scheduled to be returned to the station, in perfect condition, on Battle of Britain Day 1979.

The lecture, which took the form of an illustrated talk, was designed to appeal to men and women of all ages and, in keeping with all Branch Lectures, did not require technical knowledge for it to be enjoyed. The great popularity of these lectures has enabled Branch membership to grow to around 1,500.

Branch membership, open to men and women over 14, costs 50 pence annually. Visitors are charged a nominal 20p temporary membership — refundable on joining. Lectures are held on the second Wednesday of every month, October to April inclusive, and all are welcome.



Sir Douglas Bader follows Branch Chairman, Malcolm Moulton MRAsS into the main canteen lecture hall. Behind Sir Douglas is Wg Cdr Colin Campbell.



# MEMORY LANE

The day before was bitterly cold, with a North Easterly wind blowing, threatening snow, and as the night fell, so did the temperature. The next day was Saturday, and the insurance agent was preparing his paperwork for the collection on Saturday morning, as the area to be collected was on the extremity of the 'agency' some six miles away. The bicycle had been checked over and oiled, the chain adjusted and was ready.

Saturday dawned, and at breakfast, as the snow began to fall, the landlady questioned the necessity of going out. Duty called, however, and the agent was conscious of the many people who would be awaiting him to pay out the sickness benefit – the insurance companies, called Approved Societies, acted as agents for the National Insurance, issuing and collecting insurance cards and paying out benefits – the village being one of the larger ones in Leicestershire, and having some local industry.

Dressed for the occasion with waterproof clothing and woollens underneath, with plenty of pockets easily got at, and wearing the usual bowler hat, the agent got out the bike and pedalled away. The snow by this time was beginning to lay, and made progress difficult. However, the destination how into view, and from the top of the hill it could be seen that the snow storm appeared to be heavier. Down to the main road, turn right – uphill. Head down pressing hard on the pedals, progress was laborious and slow, visibility was only a few yards, and the heavy storm caused the head to be held down. Fortunately, the grass verge was visible, and the rider knew he had to turn left into the village main street at the second turning. The first turning was passed and as the grass verge veered away to the left, so did the cyclist. Having got onto a level part of the road, with wind at the back he began to increase speed, still with his head down, when suddenly – bang! – the cyclist having hit something, fell off the cycle onto the ground, amid the snow. Picking himself up, he saw to his horror two more people lying on the ground, going towards them to give help one of the men, for such they were, began to get up amid curses and threats. The other, lying on the ground still, was bleeding and the snow was turned into a red sea. Getting

him to his feet, the cyclist noted it was one of his clients, and one to whom he would be paying out sickness benefit! Not being far from the homes of the two men, help was quickly forthcoming. Taken home, amid confusion and consternation, the bleeding man was cleaned up and put to bed to await the doctor who had been called out. The other man appeared unhurt.

The agent then continued on his rounds and called back from time to time to see how the injured man was. After the doctor had examined him, it was found that he had suffered nothing more serious than a badly bruised knee and cut nose. He had suffered more bleeding from the blow on the head. Rest and quiet was prescribed to overcome the shock.

It transpired that the two men were out for a quiet stroll when they were caught in the snow storm, and were walking slowly home (the injured man was very rotund and overweight at 18 stone) when the cyclist ran into them from behind, his front wheel going between the two men.

At the end of the day, the paperwork was completed for the employers, and the weekend gave a relaxation to get over the trauma.

No contact was made during the next week until the following Saturday, which by contrast was a bright, dry and crisp day. Calling at the house as usual, with some apprehension the agent enquired after the victim, to be told, "oh! he's fine, he is quite alright, in fact he has been signed off!" This was shattering news, as the man had been on sickness benefit for years, and was classed as a 'chronic invalid'. Seeing the surprise and disbelief, the wife explained that he had been suffering from persistent high blood pressure, and this caused his inability to work. After the accident and the heavy bleeding and damage to the nose, it somehow had caused a change, relieving the pressure and getting a normal flow.

The result was he started work in the stone quarries again after a period of 5 years, and some two years later, when the agent gave up the victim of that morning's crash was still working, was fit and down to some 12½ stone in weight.

Did someone say, it is an ill wind?

## Suspended Animation

Suspended animation, as many of you will know, has nothing at all to do with the frantic convulsions of hanged men. Nor has to do with strikes at the Walt Disney film studios, though you might be forgiven for thinking that it had. What it has to do with is 'the cessation, hopefully temporary, of the outward signs of life'. That, at least, is the way John Shamus Lee defined it in his notes. (Lee, you will remember, was the neglected Irish genius who discovered a means of seeing into the future and then killed himself).

His interest in the subject was aroused one afternoon when he was waiting in a long queue outside a cinema to see one of the science fiction films to which he was addicted. He had taken his place in the queue at two o'clock precisely and upon reaching the box-office had made an estimate of the duration of his wait. He guessed that he had been in the queue for about two hours and checked his guess by looking at his watch. To his astonishment he found that he had, in fact, been waiting for only thirty minutes. At that point you or I might have gone in to see the film and thought no more about the matter, but Lee did not. His penetrating mind demanded to know why his idea of the passage of time had been so much at variance with reality.

The answer to that question at first appears to be a simple one. He had been bored and it is well known that one's idea of the passage of time is likely to be very much in error when one is bored. We often say that time 'hangs heavy' or 'goes slowly' on such occasions. But time did not go slowly by for Lee. He snatched back his admission fee from the crimson claws of the ticket-lady, turned and strode at full speed back to his prefabricated laboratory where he locked himself in and would see no one for several weeks. That was his way when an idea took hold of him.

When this period of isolation was over, Lee was ready to give the world something which it had long sought. But, as all too often happens, the world was not ready to accept. Had he been born in the Middle Ages Lee would undoubtedly have been burned as a witch for his discoveries, but today we dispose of our great thinkers much more humanely; we ignore them until they go away.

What went on in his mind during those weeks of isolation we cannot know but I am prepared to conjecture that the train of his thought ran along the following lines.

When we are bored time seems to pass very slowly. Is this an illusion or does time really slow down for the bored person? How can I find out? I could make myself very bored for a very long time, objectively speaking, and then see if, at the end of it, I have aged as much as I ought to have done. But then if I am the subject of my own experiment I shall have an interest in it, and if I have an interest I shall not be thoroughly bored. Therefore, I must experiment on someone else. But who would consent to take part in such an experiment? Probably no one. Then I must make some thing bored, but what thing? A rat! (The laboratory rat was always his first choice of weapon in the fight to rid Nature of her secrets). But how do you make a rat bored? Several answers to this problem might have suggested themselves. Perhaps he considered taking the rat to church and forcing it to listen to sermons, but that solution would, of course, only be practicable on Sundays. He may have thought of reading the entire contents of MEA News to the rat, but then some of the letters to the editor might be inclined to be rather provocative. The solution which he finally decided upon, however, was a masterpiece of logic and scientific reasoning.

First, he arranged to have his rat fed intravenously so that it was not distracted by the desire of food. Next he severed various parts of the rat's nervous system so that it could not move, (the squeamish need not squirm: it was all done quite painlessly) and the little creature was rewarded for its services by the warm flush of a cubic centimeter of Guinness coursing

through its arteries. He then placed the rat in front of a screen on which he projected film of a test match between England and Australia in very slow motion. It worked perfectly.

The experiment was brought to a halt almost a year later when the RSPCA men in the laboratory in order to rescue their furry friend but the rat seemed hardly a day older than he had been at the start. Encouraged by this result Lee dashed off a letter to the Prime Minister recommending a number of plans to introduce more boredom into the daily life of the country in the interest of national longevity. He suggested that the chiefs of industry be called together to discuss ways of making the working lives of people as dull and humdrum as possible and that some chemical be added to the drinking water with a view to making the populace apathetic. "For," he said, "where apathy leads boredom is sure to follow." Needless to say, no one ever took him seriously.

Slim Llaw.

## TOWARDS BETTER SPEECH LANGUAGE PUZZLE

Remember, though box in the plural is boxes.  
The plural of ox should be oxen, not oxes.  
And, remember, though fleece in the plural is fleeces,  
That the plural of goose isn't geese, nor geeses.  
And remember, though house in the plural is houses.  
The plural of mouse should be mice and not mouses.  
And foot, it is true, in the plural is feet.  
But the plural of root should be roots, and not reet.

## A Tale Of Hope And A Moral Rochester Hill Billy

For Christmas time I'll tell to you, a tale both whimsical and true  
About a chap, we'll call Bill, who's life had mainly been – uphill.  
Ironically, and more's the pity, he lived on a hill outside the city,  
Now Bill had seen his share of strife, a navy chap most all his life,  
– A champion at fisticuffs, used to knocks and harsh rebuffs,  
In latter years with no contrition, he'd laboured in "XXX" division,  
Now Christmas meant a lot to Bill, and his wife Nellie – on yonder hill.

When raffles came for wine and port – and sundry goods  
– The Christmas sort – Bill would head the massive queue  
In front of me and you and you.  
Seventy and still quite frisky, Bill had thoughts of winning whiskey.  
With a heave and a ho – and with luck by gum;  
He'd win a bottle of – navy rum! But, fate decreed 'twas  
Not to be – For tickets nine to ninety-three!  
But, luckily, I'll be bound – he won – a turkey, 15 pound!  
Now Bill was pleased with his change of luck  
'Til he found the turkey had ne'er been plucked!  
Ignoring all his daily chores he hid in a corner of the stores  
Plucking away at his xmas prize, with salty tears in his aging eyes;  
Thinking not to appease his belly, but, of presenting it – to his darling Nellie.

At five pm when the whistle blew Billy emerged with his parcels two!  
Briskly strode down city way – that extra tot just made him sway –  
In parcel one firm and round his christmas dinner –  
In parcel two clay, and down – somewhat thinner!  
O'er Rochester bridge he strode away – oh what a happy day.  
Threw those feather away in his stride – they floated away  
On the evening tide.  
He burst in his kitchen away on the hill,  
Nell looked bewitchin' at least to Bill!  
'Look what I've brought!' – with a massive grin  
Hacking away at the parcel's string.  
Face as red as burnished heaters  
Suddenly the room is full of – feathers!  
And the fish in the liver to complete this rhyme  
Are somehow having – a whale of a time!  
The moral must be clear as day  
Count not your chickens in the hay  
Albeit your turkeys north or south  
'Till they're on your fork –  
And in your mouth  
Alternately just act with succour  
Try not to be – a feather plucker

SCHH .....  
YOU KNOW WHO

## BIRTHS

To **Carole and Stuart Mackrell** the gift of a daughter at 7½ 29cos. Named Sarah Elizabeth, she arrived on 10 October 1978, and is the first grandchild of **Bob Walter** who works in MAV Standards.

**Ken and Marie Webber** (Ken is in IN) announce the arrival of Paula Jane, a 9½lb daughter, on 1 November 1978, being the second daughter. Ken and Marie have been married for seven years.

To **Roy Papworth** (MASD) and **Eileen Papworth** (Social Club secretary) two granddaughters, Kate on 2 November 1978 and Collette on 6 November 1978. They now have four granddaughters and one grandson.

## A FAMILY AFFAIR

We now have three generations of the **Goodear** family in the Company; grandfather, son and grandson.

There are probably more such families within the Company. We would be glad to report on 'the family connection'. Details of family groups working here are invited, send to the Editor.

## ENGAGEMENT

**Miss C. Goodrich** of IN Production Library became engaged to be married to **David Morris** on 30 November 1978.

## DEATH

**Mrs. Emily Hill** of IN Division, formerly in Fuse Division (Filter Dept.), died 1 November. She heroically bore her ill health.

## IN MEMORIAM

### A Tribute

We have now received this tribute to the memory of **WALTER WATERMAN** who passed away suddenly at the age of 57 years whilst on his way home from work on 26 April 1978.

Although only in the Security Department for 2½ years, following a period of 28 years with Featherstones Stores in Rochester High Street, he was very well known and greatly esteemed.

He was, and still is, greatly missed by his many friends and acquaintances, not least by those of his colleagues in Security. No greater tribute could be accorded him in that the memory of him still lives on.

## MOVING ON



**Joyce Francis** (FCO Production Library) with husband **Rev. Ted Francis** and son, together with the figurine, presented as a memento of her years with Marconi. (see November 1978 issue) (C)

## LETTERS TO THE EDITOR

On Wednesday 13 December I went to the works canteen for Christmas lunch, hoping to enjoy my dinner along with my friends. The meal was quite good, but what disgusted me was the behaviour of some of the personnel at lunch. I have seen animals with better manners. During the carol singing, some people were talking loudly or shouting across the tables. When the Choir finished a carol some persons were jeering, stamping their feet, and banging on the tables.

I personally witnessed one man attempting to spit into a collection box when we were all asked to make a donation for the Cancer Research Fund. To see this kind of behaviour from adults makes me ashamed to admit that I work for this firm.

I wonder what the Choir must have thought. I am sure they must have been as disgusted as my friends and I. We have vowed never to go to lunch in the canteen again on these occasions.

Disgusted.

### Editor's Note

The above letter is published, though the writer did not disclose his name and Division as we have received many verbal complaints on the same matter. It is a pity that a small fraction attempt to disrupt the enjoyment of many.

I have recently visited an exhibition of city treasures at Rochester Guildhall. Amongst a stunning display is a superb pair of candelabra which were presented to the city by Elliott Bros. (London) Ltd.

As there was no-one at the time to explain how or when these were given to Rochester, perhaps you can help.

### Editors Note

An article on this and other 'Elliott Gifts' to the city will appear in future issues. Meantime the council officers inform us that these items are in a display cabinet in the Guildhall, Rochester, and can be seen at any time during office hours.

## NOTICE

The Company has now extended its payroll facilities to enable those employees who are paid weekly in cash to have the whole or part of their wages paid directly into their bank accounts. Over 200 employees were taking advantage of this scheme at the last count.

Full details of the scheme can be obtained from the Wages department (on internal 365).



## Around the Divisions

### Marconi Avionics communications systems for new Westland helicopter programme

Most advanced avionics ever defined for a European helicopter.

The UK Ministry of Defence (PE) has placed a contract with Marconi Avionics Limited for project definition of the complete communications system to be fitted to the new Westland WG34, projected as a Sea King Replacement helicopter. The project definition is being carried out by the Company's Airadio Systems Division, Basildon, England.

To enable the Company to carry out such work they established the Airadio Systems Division just over a year ago. The Division is now also developing the complete airborne communications sub-system for the AEW Nimrod programme—a sub-system which alone contains over 100 line replaceable units.

Marconi Avionics has, in fact, been working for some time as sub-contractors to Westland on the integration of a whole range of new mission avionics for the WG34, a complex task which will ensure for the Companies a technological leadership in helicopter avionics systems design until well into the 1980s.

The Companies referred to this activity during the Farnborough Air Show, when it was also announced that Marconi Avionics has been selected to carry out project definition for the acoustic processing system of the WG34.

### F C D

With the announcement of the successful negotiations for the Rumanian contract, the Divisional Management expressed thanks to all those who had had a share in the extensive detailed preparation of the bid.

To demonstrate further the 'team spirit', a social evening was arranged at the club-house, Featherby Road, where Divisional Management acted as hosts to pay a real thank-you, in an atmosphere of gaiety, social activity and drinks.

Our picture shows George Bull, trying his hand at being a waiter, under sceptical yet watchful eyes.



## Where are they now?



Colin Harvey.

An 'old boy' of Elliotts (Forerunner to Marconi Avionics), former apprentice, **Colin Harvey** has been in the headlines of the local and technical press, as a "... man with a message." Colin is the Quality Assurance Manager of the successful Tenderden based export firm of Unit Automation Limited and recently presented a paper on "Small Companies" to the 18th International Quality Assurance Conference at Oxford. He spoke on "the instigation and development of a quality organization within a small company."

Since joining his present company he has seen it grow, and with it an increasing involvement, with a firm sense of pride in product and achievement, by the workforce. His dictum of "Getting it right first time," helps the company economically, and gives job satisfaction to those engaged upon it.

He speaks with pride of his training at Elliotts, where many of the theories he is now putting into practice were first inculcated.

Unit Automation now has a turnover of £2½ million, most of it in exports, particularly to Saudi Arabia, to whom the company supplies turbine lubricating plant. A close liaison is kept with customers in Europe and the Middle East, which enables Colin to be a much travelled man.

At 31 years of age, his future seems to be assured, with scope to prove that ideals can work, to the good of all. He is married and lives at Loose, near Maidstone.

## AS & R Division Profile

In discussions throughout the year with many people in the Division I have often been asked questions concerning the progress of our support business and on the basis that this is evidence of a wider interest I thought it might be worthwhile to prepare a few general notes concerning the Division's present work and future projects.

Firstly it is perhaps useful to recognize that whereas the manufacturing division's have products which mainly consist of equipment hardware, the products of ASRD are actually the 'services' that we provide for the world's airlines and airforces. The products or services that we offer may be briefly defined as equipment repair and overhaul, sale of spares, logistic support data and planning, on-site service engineers, technical training, post design engineering services and technical publication activities.

In terms of the total business, the equipment repair and supply of spares together constitute by far the largest element and both areas are extremely busy and involve over half of the people in the Division. Repairs are currently running at the rate of some 900 per month and monthly throughput of spares orders is in the region of 700 and at this level of operation our computer aided inventory management and data tracking systems play a vital part.

In a sense our airline and airforce customers are also our main competitors since many of them, especially the RAF, set up their own extensive workshop facilities, this means that a proportion of the repair work coming into ASRD is essentially the surplus which for perhaps technical or overload reasons our customers cannot handle. Obviously this type of work is less predictable than we would like and therefore where possible we try to negotiate support contracts on an equipment type basis that allows us to deal with all the repair arising that a particular operator might have.

Since the situation is competitive we need to offer the customer advantages over his own DIY approach and for the civil airlines we may provide facilities such as fixed price repairs, guaranteed turn-round times and payment schemes based on the number of hours flown. On the military side our approach is adapted to recognize the normal service preference for ultimate self-sufficiency and typically we assume the 'total' depot level support responsibility for three to four years following introduction of an equipment into service use, after which time and to the extent required

we gradually transfer the task to the service maintenance unit (MU). During the period in which we handle all repairs we also develop and supply depot level test equipment and prepare 'worksheets' that provide comprehensive fault diagnosis and test procedures that help to simplify and speed up the repair process.

The most important contract of this type hitherto has been the support of the Jaguar NavWass which, operated in conjunction with IND, has performed and indeed still does perform an extremely important role in keeping the RAF Jaguars flying; a special feature of the programme is the very successful 'over the counter exchange' scheme of 'serviceable for unserviceable' items which has operated for all 97 units and modules of the NavWass.

Jaguar support is still a major task and our involvement in Inertial Platform repairs is very much an on-going commitment, but on this project we have now reached the 'transfer-phase' and the RAF is beginning to take over the job as we begin the cycle once more with preparatory work for support of the Company's products on the Tornado multi-role combat aircraft, since Rochester Division's manufacture some seven major sub-systems for this airplane, the future task for ASRD will be proportionately extensive.

As a more immediate new programme beginning in January 1979 under contract to ADD, ASRD becomes the European Repair Centre for the General Dynamics F16 Lightweight Fighter Head-Up Display system; as well as being a workshop task this programme also means a major data handling responsibility for our Logistics Engineering group.

On balance it looks as though 1979 will be as busy or busier than 1978. The strong on-going activity in the workshop will be shared by most of the other departments in their important supporting and co-ordinating roles such as quality assurance, administration, sales etc. For the engineering department, in particular, 1979 should see a significant increase in design activity related to Tornado and the publications group at New Road will progressively become involved in the programme as the year goes on.

ASRD accomplishments in 1978 have made an important contribution to the total Rochester achievement and we can confidently look forward to a repeat performance for 1979.

H.D.F. Eagles

## Appointments

The following appointments within FC Division have been announced:

A.P. Goode as Leading Hand (Test)  
B.J. Fever as Chief of Test  
M.J. Ambler as Foreman (Test)  
P.A. Walter as Section Leader (RST)

## Apprentice Activity

We extend a welcome into the Marconi Avionics family for the following members of the 1978 Apprentice intake. They come from a total of 41 schools/colleges and wide ranging geographical area. We give a special welcome to the five ladies, hoping they are not overawed by the masculinity around them.

Collinson M.P. (Astor of Hever), Styles P.E. (Borden Grammar), Balderston N.W., Boardman M.C., Dorey P., Goodair M.L., Goodearl M.S., Hunter A., Wootten M. (Chatham Tech.), Miss Horton L.C. (Chatham Grammar, Girls), Miss Spells M. (Chatham Tech. Girls), Miss Stephenson D.I. (Christchurch), Durbin A.J. (Cornwallis), Higgins M.D., Everest K.J. (Faversham), Dengate A.J., Swindell G.F., Ware M.K., Wood K. (Fort Luton), Morris P.H. (Geoffrey Chaucer), Rudd B.C., Shields K.L., Strachan C. (Gillingham Tech.), Sutherland N. (Gordon), Giles A.F.P. (Gravesend), Peskey D.C., Harden D.K., Page N.J. (Highfields), Bryant N., Collins T.J., Crayford I.R., Hunter J., Ives R., Newell K.D., Thomas G.W. (Howard), Bowen M.S., Cooper A., Denning E., Horton M.J., Irvine M.A., Wells L.A. (Hundred of Hool), Moller D.P. (Kings School), Bennett M.E., Bradley M.A., Chapman M.L., Crozier K.J., Driver S.W.D., Hann V.R., Inkpen J.W., Laws J.R., Orchard P.D., Tovey C.D. (Maidstone Boys), Liniker M.J. (Mascalls), Cooper L.L. (Oldborough), Perkins N., Pledger P.N., Foon N.J. (Fleed), Cross J.G., Reeves C. (Senacre), Munn A.R. (Sir John Leman), Camps R.W., Chapman M.A., Fisher R.S. (Sir Joseph Williamson), Bates M.G., (Sir Simon Stock), Ryall G.A. (Sir Roger Manwood), Gibbins S., Hodges S.A., Leech D.L. (Springhead), Tomlin J.C. (St. Georges), Mace J.G., Seale A.D., Miss Staff J.M., White A. (St John Fisher), Rosse V.A.P., Toppin S.A.P. (St Johns—Gravesend), Clark C.A., Cooper M.C. (St Johns—Sittingbourne), Whitebread D.L. (Temple), Carter A.J., Halliwell M.J., Hubert R.J., Flous S.J., Weller M.I. (Thamesview), Bird P., Cox R.M., Ferris L., Loveridge T.J. (Upbury Manor), Miss Dickerson K.P. (Vinters Girls), Brown A., Ede B.G., Osborne R., Richards R.A. (Walderslade), Babington P.A., Rye K.J., Thompson P.A. (Warren Wood), Austin P.C., Betts I.D., Drury D.F., Mason A.D. (Westlands), Williams G.C. (Weston Favell), Malone R.E., Parr D., Randall C.I. (Woodlands), Speed G.R. (Woolwich Coll.).

## Another Remembers

I was very interested to read Vic Spencer's 'EARLY DAYS' article, and especially his reference to the Jindivik. I wonder if he and any other founder members of the Aviation Division are aware—that Jindivik is still alive and kicking, in this country and auto-pilots are still in production.

We have come a long way since the first B. Auto-pilot, we have had the B2, the 2B2, the L2, the L4 and in current production the L5 Auto-pilot system. The overall system is still basically the same, some design changes have taken place and card assemblies have replaced the old type magnetic amplifiers. The latest units being manufactured bear the modification label EBTA 205. The Company name may have changed but the Mod Label is still Elliott Bros—Target Aircraft.

The role of the Jindivik has greatly changed since the B auto-pilot days—it is now capable of flying at 65,000ft and has become a drogue towing aircraft. It still flies from the RAE establishment at Llanbedr, North Wales, and is maintained by Messrs Short Bros. and Harland.

One of the Jindy's has completed over 100 flights, put into perspective, that is a hundred missions over enemy territory. The operators are highly delighted with the achievement, but for some of the maintenance crew the end can't come too soon.

Running parallel with the Jindivik in the early 1960s we had another RPV (Remote Piloted Vehicle) in operation. This was known as the MK. 16 Auto-pilot and was fitted to the Meteor aircraft. This project was run by Flight Refuelling at Tarant Rushton, and like the Jindy was operated from RAE Llanbedr. Anyone who was connected with that project will remember the dreaded Servo Motor. Strange to relate we are still working on a VTR with Flight Refuelling and a new breed of drone has been built. This time the aircraft being dromed is the Sea Vixen.

Therefore as you will see, from the humble beginning of Aviation Division and the type B Auto-pilot—we have come full circle to the mighty MARCONI AVIONICS LTD—still retaining the bread and butter job we first started with. The Jindy is alive and well—oh yes, I remember well. W.Caley



# EARLY DAYS

A reproduction of a paper read to the London School of Economics and Political Sciences on 20 January 1959 by Sir (then Mr.) Leon Bagrit.

## DEVELOPMENT AND ORGANIZATION OF ELLIOTT-AUTOMATION LIMITED

Introduced by Mr. Leon Bagrit, Deputy Chairman and Managing Director, Elliott-Automation Limited.

### WHAT IS AUTOMATION?

Although the line of demarcation is difficult to draw, automation differs from mechanization in that it employs 'feedback' or self-correction as opposed to mechanization which is concerned with pre-determined motions.

It divides itself into three main groups: the first deals with 'processes', the second with the automation of machine tools, transfer machines and conveyors, and the third with the automation of clerical information. While these three divisions are not entirely self-excluding, for our purpose perhaps it might be well if we treated them as if they were.

For us the most attractive immediate field, we decided, was 'processes'. Here we are concerned with materials which flow, i.e. gases, liquids, and energy, and with the measurement, control and integration of their flows, levels, pressures and temperatures.

About the time when we came into this business, many devices suitable for a variety of industries were known and available to the market, but we did not have them. Just then the Admiralty was prepared to place a research contract for an electronic fire control system with us. Such a contract would give us a basis for setting up a research laboratory to house approximately eighty people, consisting of physicists, mathematicians, engineers and workshop staff. The Admiralty specification incorporated digital computation, servo-mechanisms and radio and radar. We grasped the opportunity, now we could recruit scientific personnel who would later form the nucleus of our 'automation' team.

This same establishment today employs nearly 1700 people and an extension is being constructed which enable it to house 2500. But it was not sufficient to have ambitious dreams which would only be realized in the far and distant future. The problem of existence in the meantime was a pressing and urgent one. Furthermore we had set out to build a business which would be not only profitable for our shareholders but which would form the framework upon which our rather ambitious plans could be hung. For this purpose the trend of automation had to be visualized and forecast, the industries where it would be applied decided, the techniques necessary to make them happen acquired somehow. We found we needed what seemed an impossibly wide range of indicating, recording and control instruments, pneumatic, electric and electronic. We required a line of motorized valves to be operated by these instruments. We needed servo-mechanical apparatus and radar and radio communications techniques, together with expert application experience of these devices, as well as of electrics, hydraulics, pneumatics, electronics and mechanics, and above all we needed detailed knowledge and field experience of the industries we had set out to serve. It was soon obvious that apart from the sheer physical and financial task involved, we were far too much behind the United States even to attempt to develop everything from scratch, to design, to make prototypes, to get them tested, to get users to try them on their plants, to manufacture competitively and finally to sell, install, service and gain practical user experience in the field. This was clearly impossible.

So, in 1948, I went to the United States where many of these devices had been developed during and immediately after the war and I began to seek links with companies which had played a part in this development and who were most advanced in their own specialized fields. We needed not only their apparatus, their manufacturing and design 'know-how' but their practical application experience in the field. But at this stage we could not tell them of our overall concept.

### BEGINNING OF AUTOMATION BUSINESS

On this trip I managed to persuade a leading automation valve manufacturer in America, the Fisher Governor Company of Iowa, to grant us the sole manufacturing rights outside America. And very soon we began to manufacture at our new Rochester plant.

But while this was an important event, it was only a beginning. We needed an almost endless list of instruments and apparatus covering a very wide field of applications. The story of our pursuit of these would take too long. Suffice it to say that over the years we have persevered with the policy of obtaining, mainly from the USA, sole manufacturing rights which had to be very carefully chosen to cover specialized sectors of our overall plan. Every one of the businesses which we tackled covered such a sector of 'automation' as we visualized it. Since arrangements were made as opportunity offered, the pattern was not apparent to our competitors, some of whom expressed some surprise at what we were doing. But during this last year, having more or less founded off the first stage of our plans, it can now be seen that we have managed to assemble into one integrated organization all the techniques and businesses which, while capable of operating profitably by their own specialized activities, are the necessary elements in automating almost any kind of plant upon which we may be called upon to work. This gives our

systems-engineers considerable advantages which will steadily grow as complexity increases with fuller automation.

### CHANGES IN PRACTICE IN PROCESS PLANTS

Up to a few years ago, it was the practice to erect large control rooms filled with instruments; a staff of operators was employed in reading the various indicators which had to be examined before steps could be taken to improve the efficiency of the process. Although this was a great advance, it was not in keeping with the very latest ideas.

The next major step was 'data reduction'. Here the apparatus automatically scans all the variables and prints them at predetermined intervals of time, indicating which readings are outside pre-set limits and drawing attention to the points in the plant requiring corrective action to be taken. An electronic computer will make the necessary computation and since trends are clearly discernible, anticipatory corrective action is possible; this is the method now being introduced into plants all over the world.

Full automation, now in the process of being developed, will not only feed 'data-reduced' information into an electronic computer which will make the necessary calculations rapidly and print information but it will select the optimum decision under the circumstances and will send automatically corrective signals to the appropriate points in the plant.

In full automation we have additionally now reached a point when we have to introduce product quality as a factor. Studies will be possible from the computed and recorded information which will yield technical information on process improvements, both in operation and in design of plant. But 'quality' makes new and exacting demands upon the system. Instantaneous analysis of a most complex kind is required for the lengthy computations which are essential and which are only practicable with electronic computers so that correctives are introduced into the plant to ensure that the required quality is maintained.

Important steps have already taken place towards this goal but we are only now beginning to find just how to do all this effectively.

When you consider that it was essential that these trends in 'automation' be foreseen some years ahead, you will appreciate the difficulty and the complexity of the task of planning our activities in detail. Fortunately we did somehow make the right decisions at the right time. By observing very closely the technical picture throughout the world, we were able to assess which developments were likely 'winners', and which were doubtful. We had to decide if we should engage in those developments in which we believed, by our own research, or if we should attempt them by linking up with others who may have made advances in this field.

Quite early we realized the part that electronic computers would play in automation, but appreciated only too well that we needed an alarmingly wide range of practical and proven apparatus of all kinds if the Company were to operate successfully.

### DATA PROCESSING A DIFFERENT BUSINESS

We believed that electronic computer manufacturers, while they might have a reasonable chance of success in 'data processing', had very little experience and limited prospects in the 'process' industries. At the same time we realized that we were not in a position to erect a European sales organization which could compete effectively with the office machine industry already firmly entrenched in this field. A long term agreement was therefore negotiated with The National Cash Register Co. Ltd. for the sale of our data processing equipment destined for business applications.

This disposed of our sales problem for data handling but it left us free to use our electronic computer techniques for process control and industrial applications.

Perhaps a few examples may help to fix an impression of our activities and our policies. We make a large range of automatic control valves, from The Fisher Governor Co., a line of butterfly valves from Continental and relief valves from Farris, all more or less for the same industries. In particular these cover the major usage of valves for automatic control in the oil, chemical, power generation, and in a wide spread of smaller industries.

We have a complete line of pneumatic instruments originated by The Bristol Company of Waterbury, Connecticut, whose business, The Bristol's Instrument Co. Ltd. of England, we purchased and which is now one of our divisions, as you will have noted, but additionally we have an electronic instrument line designed by Swartwout of Cleveland, who are the most successful manufacturers of this type of apparatus in the USA. We manufacture data-reduction systems designed by Panellit, Chicago, who pioneered data-reduction logging systems in the USA, and are responsible for some of the most important installations in America, including a spectacular one at Tidewater Oil. We are now feeding technical advances made by us back to them. This is a good example of our 'leap-frogging' policy. We have developed our '802' computer which they are

selling in the USA for use in connection with their equipment.

Our quality control instrumentation, we now have forged a link with Consolidated Electrodynamics of Pasadena who are very advanced in this area of activity.

Our most difficult problem was how to carry out the very expensive process of starting so many activities and businesses in so short a time and, at the same time, make a satisfactory profit during this period. That we have succeeded is in no small measure due to our system of organization and to the methods employed.

### ORGANIZATION

The Company has numerous 'autonomous' divisions although some of them are small. Attached is a list of some, together with the names of any overseas companies in those cases where these divisions have such associations. Each is run as a 'separate business' with every Divisional Manager responsible for its profitability, and trading on its own in supplying its own line of equipment, as well as supplying apparatus for large schemes devised by the systems groups. These are staffed by specially trained personnel whose function it is to evolve appropriate concepts irrespective of where the 'hardware' is obtained. It will help to design hardware which may not exist but which is required by them.

We never sell 'fashion'. We insist upon supplying the customer with the most suitable devices for his particular requirements and being in a position to supply them all; we have no particular axe to grind. This puts us in a very strong competitive position since most of our rivals must, of necessity, sell a limited range of instruments. Our people have been taught the importance of direct and honest dealing with supplier and customer alike. We believe that the customer has to be satisfied no matter what it costs and that 'service' is of infinite importance.

### DIVISIONALIZATION

It will be apparent to you that, in effect, we are a collection of small businesses, all complementary but in some cases competitive with each other and each having a trading existence of its own. This raises an important problem of administration which has been solved by the divisional basis of organization adopted.

### DIVISIONAL AUTHORITY

Each Divisional Manager has complete authority and responsibility for all the activities in his division from design, manufacture, and cost accounting to sales and service.

His manufacturing facilities may range from a complete factory to a small corner, segregated by a white line on the floor in a large shop—but whatever size it may be, it will be his own. He can therefore easily oversee what is happening and he will have complete control over everything that is done in his division with a limited need of paperwork.

Of course, he has limits to his powers; for instance, he must use our 'standard' accounting practice, he must use the Company's common services because they can be procured cheaper and better outside the divisions, such as building maintenance, personnel, administration, wages, etc. The only restriction on the divisional manager, if one can call it a restriction, is the need to submit his budgets to a Joint General Manager who will discuss with him the financial implications of the proposed budget and make, with him, the necessary amendments.

The Joint General Managers who have a number of divisions to supervise, do not in fact make many decisions. Their function is to guide, integrate and exercise influence. We rarely, if ever, give orders. The policy is laid down after much discussion—but when it is decided, the Divisional Manager is in full control of his part.

This type of organization enables each division to function rapidly; it shows up the calibre of the Divisional Managers and their staff and pin-points weakness. Above all, it gives us the advantages of the larger organization with the flexibility, initiative and speed of a smaller one. It breeds executives and creates opportunities of advancement.

We believe rather less in past experience than many companies do in other fields. Ours is a new world and young men head most of our divisions.

The Company is run by a tight budgetary control, and it is the gospel of 'purposefulness' that is preached to all levels but we do not interfere or take away from Divisional Managers any of their initiative or responsibility.

On the technical side you will have noted that the size of our research and development effort does not conflict with the policy of making licensing arrangements. This is because it is our policy never to 're-invent'. If a good product or technique exists we would rather use our efforts to move ahead from there than spend our energies in equaling it but, above all, we believe in defining our objectives and then tackling the problems in our path vigorously and purposefully. These policies have attracted young men of the right calibre and they know that it is they who will inherit the future which they are helping to build.

### DIVISIONS

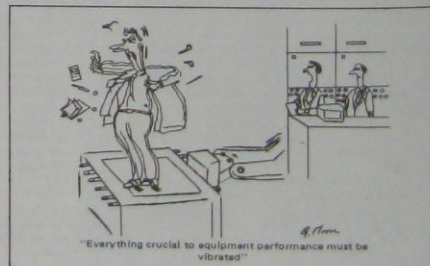
<b>Guided Weapons</b>	Detroit Controls Division of American Radiator & Standard Sanitary Corporation
<b>Inertial Navigation Servo Components</b>	National Pneumatic Co. Inc. Bendix Aviation Corporation Bendix Aviation Corporation
<b>Radar Microwave &amp; Electronic Instruments Telecommunications Vacuum Physics Rotameter Relays</b>	Western Electric Co. Inc. The Bristol Company C.P. Clare & Co.
<b>Office Machinery Heating &amp; Ventilating Controls Post Office Conveyors</b>	R.F. Sauter A.G. Jarvis B. Webb International Co.

Note: Divisions which are primarily concerned with research, service or installation, and divisions which are subsidiary to the above-listed, have not been included.

# Flying!!

The following seriously written report in a British daily newspaper by an 'Aviation Correspondent' was printed circa 1905. It is not without humour:

"There can be no doubt as to this machine's flying capabilities, because the distance between where the wheel marks stopped and the pile of wreckage was 25 yards."





# Queen's Award 1978

As announced in the summer of 1978, Marconi Avionics Limited (as a company) had been awarded the Queen's Award for export achievement, making the 7th award to the Company since 1967. The presentation ceremony took place in the main canteen on 30 November 1978, by the Lord Lieutenant of the County of Kent, Lord Astor of Hever, on behalf of Her Majesty the Queen, before a large gathering of representatives and distinguished guests.

The presentation was preceded by a reception for the distinguished guests and representatives of the two chief arms of the Company—located at Basildon and Borehamwood, with various divisions of the Rochester plant supplying personnel who acted as hosts.

There was an exhibition on the Mezzanine floor of the Towers, and tours of the various sections of the Rochester site including New Road and the Flying School. Buffet lunches were supplied in the conference rooms and waitress service canteen.

The ceremony of presentation began at 2.30 pm, under the Chairmanship of Dr. B.J. O'Kane CBE, Company Chairman. The Managing Director, Mr. Jack Pateman CBE, then gave an outline of the achievements of the whole company leading up to the granting of the award. Recalling the previous successes, he pointed out that the latest award was not to any particular section, but to the Company as a whole for its undoubted success in the field of exports. The products of the Company, covering such a large spectrum of needs for air and land defence requirements and industrial needs, are now spread world-wide—a success in which everyone had played a part. Advanced technology, reliable workmanship and delivery promises met are the basis of this remarkable success story.

Before making the presentation of the Award replica and citation certificate, Lord Astor spoke of the extent and diverse products of the Company, and in congratulating every member on its success, expressed his belief that, with such a foundation solidly built, the future was bright and that greater successes would be achieved. He then presented the Award replica to Mr. D.E. Newman of Basildon, an employee of 33 years, and the citation certificate to Mr. Jack Unwin of Borehamwood. On behalf of the Rochester organization, Mrs. A.M. Fisher (Welfare Officer) briefly thanked the Lord Lieutenant for graciously making the presentations.

On behalf of the guests and visitors, Councillor Mrs. Peggy Saxby (Deputy Mayor of Medway) addressed the assembled company.

*"My Lord, Mr. Bean, Distinguished Guests, Dr. O'Kane, Mr. Pateman. It is my pleasure to bring you*

*greetings from her worship the Mayor, Councillor Mrs. Daphne MacDonald and her regret that she was unable to be with you all today. However, as a very close member of my own family has worked here since 1950, I was delighted when she asked me to deputize for her.*

*In what seems now those far off days the name of the company was 'Elliott Brothers Limited' with Leon Bagritt and many lively characters who are gone but not forgotten. Today a new name Marconi Avionics Limited is very descriptive of the products of the work force you employ.*

*It is a very warming gesture that you, the Company, have gathered together here today representatives from the Borehamwood, Basildon and Rochester factories. For me your firm still retains many facets of the original family atmosphere, for one has only to attend the 'Long Service Association' Dinner and Dance, meeting many old friends, to realize how many employees have stayed with you, and indeed many of those who have left for various reasons often return.*

*The awards that you have already won, that you have received today and I'm sure will do so again and again, demonstrate the exceedingly high degree and quality of your work here, it never ceases to amaze me that so many people of youthful appearance possess such a high degree of technical ability.*

*With apologies to Lord Astor, it is a comforting thought that you are proven worthy challengers to those descendants of the Pilgrim Fathers—merciless competitors, worthy allies, the Americans.*

*I cannot finish without reference to the generous support your company have given to the Medway Branch of the RAeS (I might add that I am a member). The facilities you have provided for the lady who is stealing the affections and spare time of so many*

*husband/boy friends, including mine, I refer of course to the 'Spitfire'. And finally for providing storage space for the building belonging to one of our Residents Associations, thus proving that you as a company are a community, assisting in your own way a much wider community."*

## Three communities share the honour of Marconi Avionics Queen's Award.

At the presentation of the Queen's Award for export achievement to Marconi Avionics Limited, one hundred employees from each of the company's principal factories at Borehamwood, Basildon and Rochester, participated in the ceremony at Airport Works, Rochester. The Lord Lieutenant of the County of Kent, acting on behalf of Her Majesty the Queen, made the presentation in the presence of distinguished guests from all three communities.

These guests included:

### (i) from Borehamwood

Clr. H.J. Franklin, Deputy Mayor of Hertsmere Borough Council, Mr. J. Heath, the Council's Chief Executive and Mr. C.J. Watts, Chief of the Elstree and Borehamwood Manufacturers' Association.

### (ii) from Basildon

Clr. R.J. Austin (Chairman), Mr. R.M. Mitchinson (Town Manager) and Clr. Mrs. D.E. Austin JP; Mr. C.M. Jenkins BA, Principal, Basildon College of Further Education and Mr. J. Banville, Managing Director, John H. Burrows & Co. Ltd.

### (iii) from Medway

The Deputy Mayor of Medway, Clr. Mrs. Peggy Saxby, Mr. Bob Bean MP and from Medway Borough Council: Mr. Roy Hill (Chief Executive) and Mr. Clive Morman (leader of the Council).

During the past three years Marconi Avionics, a world leader in aviation electronics and allied high-technology business, has trebled the total value of its exports from its Borehamwood, Basildon and Rochester factories. The activities of the Company's team, now numbering 9,000, have been recognized since 1967 by no fewer than seven Queen's Awards to Industry, spanning both export and technological achievements.

The 300 employees taking part in the ceremony represented the great diversity of skills and activities within the Company. They and the distinguished guests saw a specially arranged exhibition of the Company's capabilities.



Lord Astor on his arrival at the Towers foyer with the chairman, Managing Director and Asst. Managing Director.



Lord Astor of Hever signing the visitors' book



A group of Basildon employees arriving at Rochester



A group of Basildon employees arriving for the celebration



A group of Borehamwood employees on their arrival at Rochester



Assembling the visitors from Basildon for their tour of Rochester works



Borehamwood employees being marshalled prior to touring the works and exhibitions



# A History of Q

1967 TECHNOLOGICAL INNOVATION – presented to the Marconi Company Ltd. Our Aeronautical Division team contributed to the Award with the AD370 Automatic Direction Finder.

1968 & 1969 EXPORT ACHIEVEMENT – presented to Elliott Flight Automation Ltd.  
 1970 EXPORT ACHIEVEMENT AND TECHNOLOGICAL INNOVATION – presented to Elliott Flight Automation Ltd.



The VIPs L to R: Councillor Austin, Chairman Basildon Council; Mr. P. Mariner, Asst Managing Director Borehamwood; Basildon; Councillor H.J. Franklin, Deputy Mayor Hertsmere Council; Dr. B.J. O'Kane, Chairman Marconi Avionics; Councillor Mrs Saxby, Deputy Mayor Medway Council; Mr. Robert Bean, MP of Rochester and Chatham.



H.W. Pout CB Deputy Controller Aircraft 'D' MOD (PE) pictured third from the left with some Marconi Avionics' Management.



Mrs. P. Saxby and Dr. B.J. O'Kane.



A group viewing the exhibition.



Guests and staff.



Lord Astor (Lord Lieutenant of the County of Kent) representing the Queen.



The platform party presided over by Dr. B.J. O'Kane, Chairman of Marconi Avionics.



Hertsmere Council representatives, L to R: Mr. J. Heath, Councillor Howard J. Franklin.



Councillor R.J. Austin, Chairman, and Councillor Mrs D.E. Austin J.P. of Basildon Council.



L to R: Mr. D Lord Astor, A certificate.



Explanations Basildon.



Councillor A



# Queen's Awards

1971 EXPORT ACHIEVEMENT – presented to Elliott Flight Automation Ltd.  
 1975 TECHNOLOGICAL ACHIEVEMENT – presented to Marconi-Elliott Avionic Systems Limited, the company in which the team

was first combined and which is now known as Marconi Avionics Ltd.  
 1978 EXPORT ACHIEVEMENT – presented to Marconi Avionics Ltd and a tribute to the successful performance and export achievement of the whole team.



Part of the large contingent of personnel who attended the award ceremony in the canteen at Rochester.



Group of VIPs at the Queen's Award ceremony L to R: Mr. Glyn Thomas, General Manager; Dr. B.J. O'Kane, Chairman; Mrs P. Saxby; H.J. Franklin, Chairman of Basildon Council; R.J. Austin; Mr. J. Heath, Chief Executive of Hartmans; Mr. Roy Hill, Chief Executive of Medway.



Mr. Roy Hill, Chief Executive, and the Deputy Mayor of Medway.



E. Newman (Basildon) with the award replica, Mr. Jack Unwin (Borehamwood) holding the



Mrs Toni Fisher (Welfare Officer) making her speech in reply to the Lord Lieutenant.



A question at the exhibition being answered.



Lord Astor and to Councillor Mrs Austin of



Viewing the exhibition.



explains a point to Lord Astor.



Certificates of previous awards.



Mr. M.B. Howe, with a guest.



# The Company's Business

Marconi Avionics Limited is a 9,000 strong company with its head office factory at Rochester, Kent and principal factories also at Borehamwood, Hertfordshire and Basildon, Essex. There are also satellite plants in the UK associated with each of these establishments. An associate company, Marconi Avionics Inc., has been established in Atlanta, Georgia, with its satellites in Fort Worth, Texas and Seattle, Washington. Principal business is in avionics: the airborne electronic system on which modern aircraft depend and which typically contribute a third of an aircraft's value, equal to that of its engines.

The Company's range of avionic systems and products is greater than any other company's in the world. In service on 150 different types of aircraft, military and civil, they are essential to sub-sonic, supersonic, vertical and short take-off and landing (VTOL and STOL) aircraft and on fixed wing and helicopters, of the United Kingdom, Europe, the United States and elsewhere.

Important business using allied technology is in industrial television, security systems and radiation sources, (e.g. x-ray, neutron and lasers), for industrial, civil, medical, scientific and defence applications.

## WHO DOES WHAT AND WHERE

**At Borehamwood** and its satellites at Radlett, Hemel Hempstead and St. Albans, 2,500 people are engaged in:

- Airborne radars, including the airborne interception radar for the RAF Air Defence Variant of the European Tornado aircraft and the Mission System Avionics (including an advanced airborne early warning radar) for the AEW Nimrod, which will defend the UK and its approaches as well as ships at sea.
- Fibre-glass dish aerials for radar and communications.
- High energy radiation sources and associated equipment such as:
  - x-ray generators for medical and scientific use
  - neutron sources, such as the HILETRON equipment being used for the treatment of cancers
  - gas lasers for industrial and scientific use, including highly frequency-stable CO<sub>2</sub> lasers for use in accurate meteorological studies at air-fields.
- Security systems using infra-red and seismic sensors for perimeter protection and as intruder alarms.
- Battlefield surveillance radars for three NATO armies and other armies.
- Precision mounting equipment for universal application to field survey and ranging instruments of all kinds.
- Research into new radar and other techniques and developments in hybrid microelectronics.
- Product support for these equipments and activities.

**At Basildon** and the avionics support facilities at Stanmore, about 1,500 people are engaged in airborne radio products and systems including:

- Radio navigation products, such as automatic direction finders, Doppler navigators, Omega (VLF) navigation systems, area navigation. Examples are ADFs for Concorde, Lynx helicopters of Denmark, Hawk trainers of Finland and airliners of Singapore; Omega navigators for Norwegian Boeings and computerized navigation systems for Italian MB339 jet trainers.
- Radio communications HF, VHF and UHF products such as VHF/FM comms and homing systems for Lynx and Gazelle helicopters and helicopters of other nations, VHF and UHF systems for large numbers of RAF and Army aircraft.
- Ground proximity warning systems for increased safety in airliners (these incorporate a talking computer which, literally, tells the pilot to 'pull-up' if he should need to).
- Integrated communications and data link systems for the AEW Nimrod and Britain's latest helicopter project, the Westland WG34. The important television and electro-optical systems business includes:
  - Television systems for civic uses, including traffic control on motorways, in tunnels and at congested areas. Television is also supplied for a very diverse range of applications from controlling steel mills and dangerous operations on oil rigs to superintending buildings, docks and harbours.
  - Airborne television, including the heli-tele surveillance system, the MARTEL missile guidance system, visual augmentation system for RAF Tornado aircraft, night vision aids for safer helicopter operations.
  - Night vision, including thermal imaging systems for diverse applications.
  - Naval and marine television systems and equipment.
  - Complete television studios for developing countries.

**At Rochester** and satellites at Chatham and Gillingham, and at the US Associate plants, about 4,500 people are engaged in every aspect of the design, development, production and after sales support of:

- Automatic flight control systems, for example auto-pilots, flight directors, automatic landing control systems and complete 'fly-by-wire' systems, such as:
  - Concorde AFCS and blind landing system
  - Boeing YC-14 flight control electronics
  - Tornado auto-pilot and fly-by-wire systems
  - Boeing 747 auto-throttle systems
  - Harrier auto-stabilizer and auto-pilot systems, including Sea Harrier and United States AV8A and the YAV8B prototype.

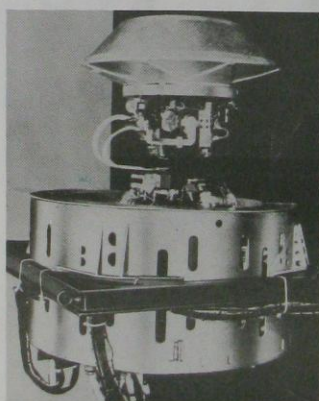
- Inertial Navigation systems, such as:
  - Jaguar Navigation and Weapon-Aiming Sub-System (NAVWASS) for which the Company won the Queen's Award for technological innovation in 1975.
  - Naval Compass Stabilizer for the Royal Navy and other navies.
- Airborne Display systems, including:
  - Head up displays for General Dynamics F-16 multirole fighter, Vought A-7D and A-7E Corsairs, McDonnell Douglas A-4M Skyhawk, RAF Buccaneers and Swedish AJ37 Viggen interceptors
  - Head down displays for Tornado and other aircraft.
- Maritime Aircraft Systems, including:
  - acoustic processing and display systems for RAF Nimrod MR Mk2 and RAAF Orion fleets
  - lightweight anti-submarine systems for Sea Kings of the Royal Navy and the New Westland WG34 project.
- Instrument, power-plant and gyro systems, such as:
  - air data equipment for Tornado
  - low airspeed and direction sensors for US Army 'Huey' Cobra helicopters
  - Tornado Stores Management Systems
  - digital controls for jet engines
  - automatic test systems for gas turbines
  - precision gyroscope equipment and systems for aircraft and missiles.
- Computerized automatic test equipment for:
  - British Airways at Heathrow
  - the European Tornado programme
  - A-7 Corsairs, Nimrod and P-3C Orion aircraft.
- Avionics research of all kinds.
- Product support world-wide.



The Company's Automatic Test Equipment is in operation in all of the Company's principal production centres and is used by aircraft operators world-wide.



Quality Assurance experts safeguard the customers' requirement for quality and reliability throughout every project.



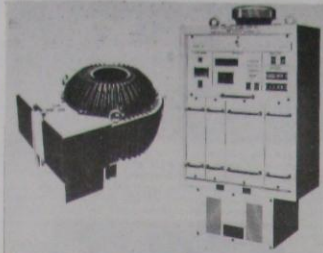
Shown in a laboratory commissioning rig is the second prototype of the advanced new AT radar currently being developed for the Ministry of Defence, to meet the Royal Air Force requirement for its next generation of interceptor aircraft. First prototype has already been successfully flight-tested.



The Navigation and Weapon Aiming Sub-System, NAVWASS, fitted to the Jaguar strike aircraft, won for us the Queen's Award for Technological Achievement in 1975.



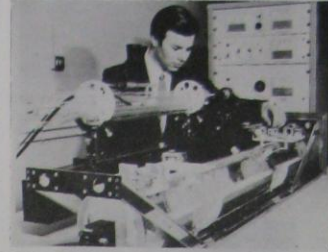
# The Company's Business



In the naval and marine fields our television and navigation systems make important contributions. The NCS-1 naval compass stabilizer is in production for the Royal Navy and several other navies.



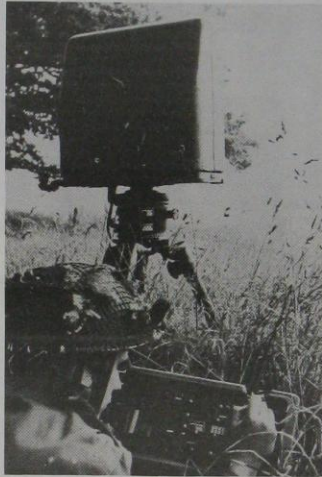
Attention to detail in the manufacture of digital electronics for head up displays. The company is the world's leading producer of such systems.



Setting up a high stability CW CO<sub>2</sub> laser at Borehamwood. The many important applications for lasers of this kind include meteorological research.



Developments in advanced 'fly by wire' systems at Rochester have already found application in flight control systems for the Tornado, YC-14 and an advanced version of the Jaguar aircraft.



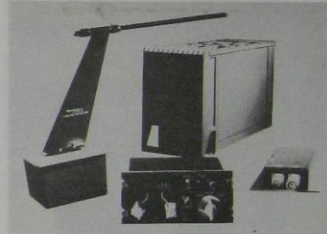
On land, too, our products are used world-wide. The ZB298 two-man portable battlefield surveillance radar is in service with the British Army and those of several NATO and other overseas countries.



Production of our unique 'helitele' helicopter television surveillance system. Many home and export orders have been won for advanced electro-optical systems for use on land, at sea and on aircraft.



The Bell Helicopter Textron "Huey" Cobra is fitted with our unique Air Data System, which measures airspeed and direction accurately right down to the hover.



The ARC 340 VHF/FM communications and homing system is in production for helicopters of the British Army and the Royal Brunei Malay Regiment.



The company's product support activities serve civil and military customers all over the world. The Aviation Spares and Service Unit, Stanmore and the Aviation Service and Repair Division, Rochester, make important contributions to company business, including exports.



Teams of specialists work closely with aircraft manufacturers, world-wide. This AEW radar flight trials team is at Woodford near Manchester.



Among many new airborne applications for our established electro-optical capabilities, is the SUPERVISOR remotely-piloted helicopter surveillance system. As the systems contractor, we supply the advanced payload, data link and ground station vehicle.



# Panto & Parties



*Cheese!*



*The smile.*



*Snow White and the Seven Smurfs panto.*



*"Real good — ok."*



*Another panto shot.*



*Let's get on with it.*



*Stars of the future?*



*"I'm being serious."*



*"This looks good."*



*What a surprise.*



*Now for the surprise.*



*yum yum*



*Don't speak with your mouth full.*



*Concentration.*



# RETIREMENTS

IN Production Dept. has lost another of its 'elder statesmen', by the retirement on 11 November of Peter Sparkes, after 20 years. Peter started work with the East Kent Road Car Company, then joined Shorts in 1934, later employed by Blaw Knox, before coming to Elliotts, covering 50 years in the industry. He was a chargehand in the Fitting Dept. of IN and one of those working with him claims he is one of 'the best persons one could ever wish to work with'.

With interests of rose growing, and Industrial Archeology (specializing in railways) he looks forward to a full and interesting retirement, and as he is now moving into a bungalow at Sittingbourne, time should not hang on his hands.

In wishing Peter a long and happy retirement, Mr. D. Harries recalled the early days, when there was a family type of atmosphere and ME (E) was forming. This later separated into several sections, Peter keeping in the IN section, providing aircraft equipment. Though no-one is indispensable, folk like Peter are bound to be missed, for they brought skills and knowledge which is not being generated today.

His farewell gifts of a portable drill and sander, will enable him to keep himself fit and in harness for many years, getting happiness from a sense of achievement.



Peter Sparkes and D.H. Harries enjoying a joke at the presentation ceremony. (C)



Mr. Clayton handing over the silver, cheque and well wishing cards. (C)

# 25 YEARS' SERVICE



E. Farbrace, 2nd left, with Mr. H. Eagles and friends after receiving his 25 years' service award. (B)

An early employee who made the grade, and progressed through the Company, is E. Farbrace (Ted), being the Repair Manager of AS & R. He has been honoured with his 25 years' service award, with a canteen of cutlery.

A native of Birchington, Ted began his engineering life as a Model Engineer, then joined the RAF as an Instrument Fitter. He joined the Company in 1953 in the original Aviation Division and 15 years ago entered service with AS & R. He came to Elliotts almost by accident as he came originally as a temporary, while waiting to commence work with the Fawley Oil Refinery—but he was so attracted by the work and possibilities that he settled for a permanent place, and progressed from fitter to foreman and now Repair Manager.

His chief interest outside work is clay pigeon shooting, at which he is no mean performer. During the past three years he has amassed about 40 trophies, won in various competitions, local and national. He is a married man with one daughter.

When Mr. Eagles, Divisional Manager, presented his gift, Ted replied that he had always enjoyed his years with the Company, chiefly because of the people with whom he had the privilege of working with. He commented that he had a fine bunch of people at Elliotts.



Harry Rastall being congratulated by Mr. P. Burrows, Production Manager CMS. (B)

Harry Rastall, the Deputy QA Manager of CMS, has qualified for his 25 years' award, for which he selected a canteen of cutlery. He has had a varied career with the Company, since coming to us from HM dockyard where he served his apprenticeship. He had a period with Coffers, of London on Radar and Electronics. Within the Company he began in Guided Weapons, and AS & R, and was in at the beginning of the Wiring School. He joined CMS, as Inspector on Printed Circuits until the closure of that activity when he moved back into CMS. During the war years, he served in the Artillery.

He is married, with a wife (who works in MASD) and two sons, one of which lives in South Africa whom he has visited twice.



Jack Tranter receiving the congratulations of A.J. Colwell on his 25 years. (C)

From the RN Dock yard, 25 years ago a young man decided to try his luck with the new firm starting up at the airport site. Jack Tranter came to apply his skill as a Capstan Operator, and has remained. Starting as most did in those days in the emerging Aviation Division, he moved on to IND before going into TAC as a Wireman. From TAC he went into Fuse Division and became Chief Storekeeper. After Fuse Division moved away, Jack joined ACD, then IN and later ADD, where he is now a Storekeeper in the Engineers' stores.

Mr. A.J. Colwell presented the selected gift of binoculars on Tuesday 31 October, at a gathering in the reception area of Corsair Building.

When Jack is not at the City & Suburban Club, he fills his time making up models from kits, of which he has quite a collection.



Charlie Kettle in a happy mood with Mr. P. Burrows who presented the clock to mark his 25 years' service. (C)

Charley Kettle has been married for 36 years and has now also earned his 25 years' service award. He is also in Sheet Metal section of CMS. Previously with Short Bros, he volunteered for the RAF and became a rear air gunner in Halifax aircraft. He says he was young and single and the adventure appealed to him, but he would not be drawn to disclose his experiences, except to confirm that he was never shot down.

His working life began with Wm. Robinsan of Maidstone as a tinsmith. Keeping to his trade, though the name changed, he has served in the various divisions of the company, starting on Ball resolvers.

He describes himself as a young keep fit man, and enjoys all types of sport. His personal activities being the garden and greenhouse. He has a family of one daughter and one grandson.

Christopher Morris who retired recently from his job as Storekeeper in Reprographic Dept will be remembered for his genial and helpful disposition.

His work brought him in contact with all sections of the company, and it is a tribute to his personality and efficiency, that on the occasion of his retirement, contributions to parting gifts came from every category of employees.

Chris joined the company in 1956 as a Trainee Wireman; but in January 1967 he was appointed as a Storeman in the then MACD, and at the merger in 1970 was promoted Storekeeper in FCD. In April 1973 he took over the duties of Storekeeper in Reprographic Dept, being responsible for the bonded store, and the efficient distribution to the users of the bonded wares.

As a recognition of his service, and to wish him well in retirement, Mr. S. Clayton, on behalf of members of the department and all contributors, presented him with a silver salver, a cheque and an orchid for Mrs Morris, Chris suitably responded.



Wally Ellen receiving the gift of a clock to mark his 25 years with the company. (C)

Wally Ellen (Walter Thomas to the fastidious) who works in the Sheet Metal production facility of CMS, qualified for his service award on 29 September 1978.

He joined the company in the Aviation Division under Alf Cox, continuing with Sheet Metal in MAC, later in FID, before joining CMS.

A family man, he has five daughters and one son (the youngest) with 23 grandchildren and four great grandchildren. He says he can name them all, and as his mother is still alive at 87 years, he can boast of five generations of the family. His interests out of work cover gardening and snooker and billiards.



Doris Russell and friends on the occasion of her 25 years' award presentation (see November 1978 issue).



# Sports and social club round up



Our picture shows the Inter-Divisional Sports Trophy, which ADD won in 1979. Mr. A.J. Colwell and the team captain show their pleasure on receiving the cup which, for some reason or other, was not available on Sports Day. (A)

## NCS NOMADS IN BURHAM

One Tuesday of last November  
At euchre, crib and darts,  
The 'Nomads' dared to challenge us  
But they left with broken hearts.

That was a night to remember,  
The 'Albert' was packed to the door,  
By the time we'd all assembled,  
The pub couldn't hold any more.

Poor Allan, Mickey and Smerfy  
Les, Ted and Old Tom as well  
All vowed, mid-way through the evening  
They'd welcome the 'last orders' bell.

Allan and Old Tom sat down  
Against Bionic and Super Slim  
Old Tom started dishing out aggro  
But Bionic soon settled him.

The darts team claimed the board  
Was too d...d far from the floor,  
I won't embarrass them too much  
By quoting the final score.

The crib partners sat in the alcove,  
Prepared for the ensuing battle  
But all that was heard from the 'Nomads'  
Was the ultimate, final 'death rattle'.

And now having penned these verses,  
In a land, where speech is free  
I simply can't understand  
Why the 'Nomads' won't speak to me.

Super Slim

## ATHLETICS

Elliott Athletic Club winter fixture list

Date	Fixture	Venue
Jan 27	South of Thames Senior	
27	Herne Hill Harriers (C.B.Y.)	Herne Hill
27	Club Run, Dartford, 10 miles, (All Ages)	Dartford
Feb 10	Southern CC	
17*	3rd Kent League (Y.J.S.)	Leybourne Grange
24	Herne Hill Final Round (All Ages)	Herne Hill
24	Metropolitan Police	
24	Woking 10	Woking
Mar 3	National (Y.J.S.)	Luton
10	Tonbridge 10	Tonbridge
17*	Cambridge Road Relay (Y.J.S.)	

\* Events for Club Championship Best eight out of ten events.

## BADMINTON

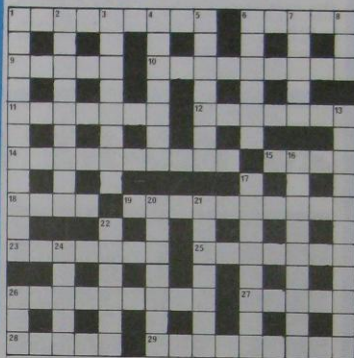
The Elliott Badminton Club is now in need of playing members, as well as members generally. The Secretary would be pleased to give any information; he can be reached in AS & R Tech. Pubs, New Road, or on Medway 44433 (Ext 26)

## ELLIOTT PHOTOGRAPHIC SOCIETY Programme 1979

- Jan 31 **SOUND/SYNC evening.** Progress report and complete Club project.
- Feb 7 **LECTURE/DEMONSTRATION.** Print finishing and mounting.
- 14 **SLIDE VIEWING.** Selection of entry for competition.
- 21 **LECTURE.** To be announced.
- 28 **PRACTICAL.** Glamour evening.
- Mar 7 **COMPETITION.** Elliotts v Reads Club
- 14 **SOUND/SYNC.** Showing of Club project.
- 21 **PRACTICAL.** Visit Piccadilly Circus, London (night photography).

Meetings—8.00 pm Wednesday in Conference Room, Marconi Avionics, Tower 1, unless otherwise notified.

## CROSSWORD No. 13



### ACROSS

- Rises and falls without hot air (9)
- Fixed up a tree, maybe (5)
- Search for or follow (5)
- Flower graded on in season (6, 3)
- The ozone rouser (7)
- Not on time (7)
- New Post Office machine not man (4, 6)
- For nailing the colours to (4)
- Part ready for lock (4)
- Man obeyed Hitler's instruction (5, 5)
- A Scot county in one (7)
- Rented the Pump rooms out (3, 1, 3)
- For the cat before the fire (6, 3)
- To fasten with squeeze (5)
- Someone has removed it (5)
- Extra attire to see (9)

### DOWN

- To make up the gang or form society (3, 8)
- They roll with white tops (3, 6)
- Mickey is a special (3, 5)
- A Welsh one is seen to be used (7)
- Refurbish as new (7)
- In the square in Moscow (3, 3)
- Turn turtle or handstand (6)
- Not Real ale to the addict (3)
- Bramley may be delicious opposed to doctor (6, 5)
- The dictator causes it, when tel speaks (4, 5)
- The first alder may call it a foreign body (8)
- The Queen begins a fighting place (7)
- Not guilty at this leg point (7)
- The playful young cart (6)
- It could mean shanty town (5)
- If you want to get ahead, get one (3)

## SOLUTION TO CROSSWORD No. 11

### PRIZE CROSSWORD

#### ACROSS

1 Razorbill, 6 Occur, 9 Frost, 10 In between, 11 Riot act, 12 Lampoon, 14 Aristocrat, 15 Snap, 18 Dath, 19 Jump the gun, 23 Yorkist, 25 Scratch, 26 Made a pile, 27 Aloha, 28 Glory, 29 Dlamember.

#### DOWN

1 Reformatory, 2 Zoologist, 3 Retracts, 4 Idiomatic, 5 Lobelia, 6 On time, 7 Credo, 8 Run, 13 Nip in the air, 16 Night club, 17 Shortage, 20 Untried, 21 Posters, 22 Bigamy, 24 Rodeo, 26 Thug.

The winner is Miss Vivien Claydon of IN Engineering, Hut 11 who lives at 26, Wallace Road, Rochester

## SOLUTION TO CROSSWORD No. 12

#### ACROSS

1. Stethoscope, 9. Drove, 10. Moustache, 11. Elms, 12. Four, 13. Earle, 15. Tin-tack, 16. Sponsor, 17. Secrets, 20. Arsenal, 22. Meats, 23. Last, 24. Ling, 26. No Smoking (Nonsmoking), 27. Ashes, 28. Caterpillar.

#### DOWN

1. Showman, 2. Even, 3. Hammock, 4. Squares, 5. On the House, 6. Escort, 7. Advertisement, 8. Meteorologist, 14. Waterspout, 18. Classic, 19. Soldier, 20. Assagai, 21. Neither, 25. Ball.

Photographs taken by the Staff Photographers will be acknowledged in the following way: (A) Alan Kneiss, (B) Susan Ruddleford (C) Linda Jones (D) Tim Murray.

The views and opinions expressed by contributors are not necessarily those of the Editor or Company. Any such opinions are those of the contributor alone, and are printed solely as a matter of interest.  
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**For your Diary**  
IN DIV  
**Annual Dinner & Dance**  
16 February 1979  
Royal Star Hotel, Maidstone  
Dave Wilson Band - Cabaret  
Tickets £5 7-30 pm to 8 until 1 am

## Special

### Insurance for Members of The Elliott Social Club

Specially arranged for members of Elliott Social Club by Graeme Blair Limited with Lloyds of London.

**Motor Insurance**—up to 25% special discount offered. Other usual deductions for limited drivers, voluntary excesses and no claims discount are available (minimum premium £20).

**Household Insurance**—a first class policy offering very extensive benefits including replacement of damaged or lost items on a 'new for old basis' cost £2.50 for every £1000 covered (minimum premium £10).

\* All other personal insurances arranged, such as life assurance, boats, horses, travel and holiday. All risks personal accident.

Members should contact the Graeme Blair representative who is in the canteen snack bar every Thursday after work at 3.30 pm

## CAN YOU HELP?

69th ENTRY - HALTON APPRENTICES RAF (1951 - 1954)

It is proposed to hold a SILVER JUBILEE REUNION at Halton on 14 June 1979. Efforts are being made separately to contact BURMESE, CEYLONESE and PAKISTAN members of the Entry.

Will all members of 69 Entry, who are interested in the reunion, please write to  
Wg. Cdr. G.D. Rork, or phone  
OC Projects Wing, F.S. Sandford  
Swanton Morley, Swanton Morley 291 (Ext 365)

## CARTOON COMPETITION



This cartoon, specially drawn for MAV News, was uncaptioned.

We invite readers to send in their suggestions for a suitable caption for the cartoon, in not more than 25 words.

Entries please to:  
Editor MAV News  
Mazzanine Floor, Tower 1  
marked 'CARTOON' to arrive not later than 12 March 1979.

A prize of £5 offered for sender of most apt caption, as selected by the Judges.

Editor's decision is final, and no correspondence can be entered into.