CHELMSFORD

NEWS AND VIEWS

Marconi
Radar Systems

Issue 3 October, 1982

Financial report

Orders received so far this year now total £59m, whilst sales to the end of August were £31m.

The most important single order received this year was the NATO order for 4 Martellos worth over £20m.

Our Order Book is now £221m.

These Martello Orders are beginning to help alleviate the factory load problem.

Numbers employed at Chelmsford are now 2846.

SOME DEFINITIONS

Capital Employed covers the value of money tied up in financing our activities. In our business it is made up of 4 major elements:

Fixed Assets are our investment in Plant, Machinery, Test Equipment, Computers and Buildings.

Inventories are the costs tied up in Stock of Raw Materials and Finished goods, plus the value of Work in Progress on Contracts. Where a contract is financed by down payments or Stage payments this is used to reduce the money tied up in Inventory.

Debtors — Value of Sales made to customers which have not yet been paid for.

From this we deduct: **Creditors** the value of costs incurred which have not yet been re-imbursed to suppliers.

This is certainly an over simplified explanation of Capital Employed and I will go into further detail in future editions.

ROD CHALLIS,
Chief Accountant.

Its good news!

IT IS very pleasing to announce in this issue that we have won three new contracts.

The first, a major contract, is the sale of four Martello radars to NATO.

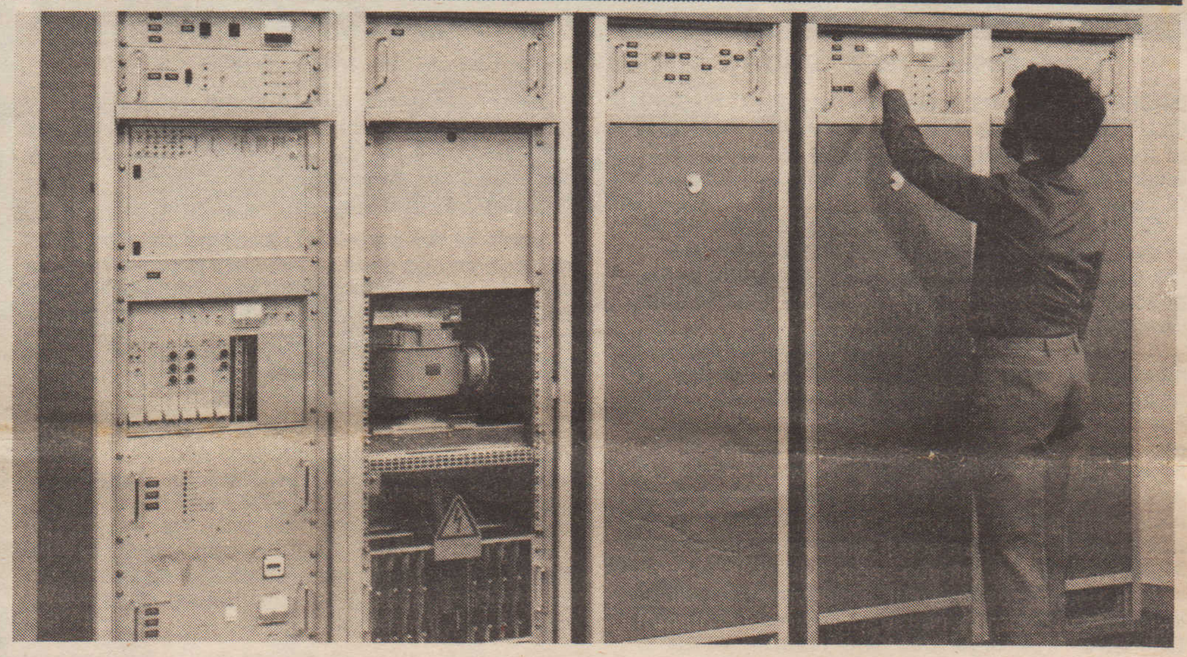
Secondly we have received an order from the Civil Aviation Authority for thirteen of our new S2022 air traffic control transmitters.

The third contract is for six sets of data handling equipment for the Royal Aircraft Establishment at Aberporth.

The last two contracts are comparatively small in comparison to the Martello sale, but are of no less importance, being the first sales of our new air traffic control radar equipment.

All have been obtained against the most bitter competition and are the results of much hard work by all concerned.

Congratulations — and keep up the good work!



MoD choose Martello again

The air defence of the United Kingdom and Denmark is to be strengthened by the supply of four of the advanced Martello radar systems. This new order increases Martello sales to seven systems, and should greatly assist the company's efforts to sell the radar world-wide.

The Ministry of Defence, using NATO Infrastructure Funds, has selected the Marconi Radar system after a rigororous and competive appraisal.

Two of the radars are for the Royal Air Force and two for use by the Royal Danish Air Force.

The company has been developing Martello for over six years, at a cost of over £15 million. The initial radar was recently sold to the RAF.

Probably the most powerful transportable radar system in the world, Martello incorporates numerous novel and innovative design features, and is intended for use with the minimum of personnel. One of the most significant features of the radar is its ability to remain operational in the worst of electronic counter measures jamming.

One of the features of any future conflict will be the use of electronic jamming. In the Falklands conflict, we used jamming to distract the Argentinian missiles.

Using ECM, an enemy will attempt to make ineffective the opposition radar sensors, thereby 'blinding' the defence system. Radars such as Martello are therefore essential, being designed to operate in such a hostile electronic environment.

Modern 3-D radars, using digital techniques, scan a three dimensional area of the sky and are able to supply the position of any target in azimuth (the angular position relative to the radar site), in distance and in height. Martello itself provides a very long range performance, together with accurate height information, making the system one of the most advanced in the world.

Another feature of a future war will be the attack on the opposition radars by radar seeking missiles and aircraft. The Royal Air Force used its long range bombers for this type of mission during the Falklands conflict.

To combat such attacks, various defensive measures will be used. Among these will be movable radars, dummy radars, emitting only to distract the missile from its actual target, and various other methods of electronic counter measures.

It is for this reason that Martello has been designed to be easily transportable. It is quite possible that the day of the large 'fixed site' radar installation is over.

'Astrid' go-ahead for flight trials base

MARCONI Radar has received an order to supply data processing systems to the Royal Aircraft Establishment, Aberporth.

Based upon the Marconi 'Astrid' display and data processing system, the equipment will be used to up-date existing Plessey displays.

The order consists of six trolley mounted display modules and two Locus 16 display data processing systems, complete with software.

The equipment is to be installed at Aberporth, which is used for aircraft flight trials and is also a firing range.

The 'Astrid' display and data handling system (Astrid stands for Airfield Surveillance and Terminal Radar Integrated Display) is a 'state-of-the-art' display system that uses many new techniques, designed initially to complement the new S511 airfield surveillance radar, but also suitable for many other roles in air traffic control systems.

Based upon three basic modules, the Astrid system provides a mixed raw/processed picture.

The system is controlled by the Marconi Locus 16 data processor.

Fail-safe modes are built into the system to cover equipment problems, an essential feature in any air traffic control display system.

The Marconi Radar Locus 16 data processor has been supplied by the company for use in many types of applications, including controlling naval antennas and displays, and the large display complex at the Scottish Air Traffic Control Centre at Prestwick.

Locus 16 is also used in the 'Furnace' and 'Mace' display and data handling systems and is also an integral part of Martello.

A working Astrid system has been in use at the Marconi test site at Rivenhall for the last nine months, housed in the radar's transmitter-receiver container.

Astrid is designed for simple, fault-free operation and is suitable for numerous uses in air traffic control.

The company believes it has a great future.

It's Marconi for airports

The Civil Aviation Authority has ordered thirteen airfield surveillance radar transmitter-receivers and seven digital signal processors. The equipment to be supplied is based upon the type S2022 transmitter-receiver and the type S7113 signal processor, standard components in the new Marconi Radar S511 airfield surveillance radar system.

Five airports, Belfast, Cardiff, Edinburgh, Manchester and Prestwick, and the Civil Aviation Authority's training facility at Bletchley Park, will each receive a dual transmitter-receiver system and a signal processor, to be delivered by the end of 1983. The thirteen transmitter-receiver and the seventh signal processor will be used for logistic support purposes.

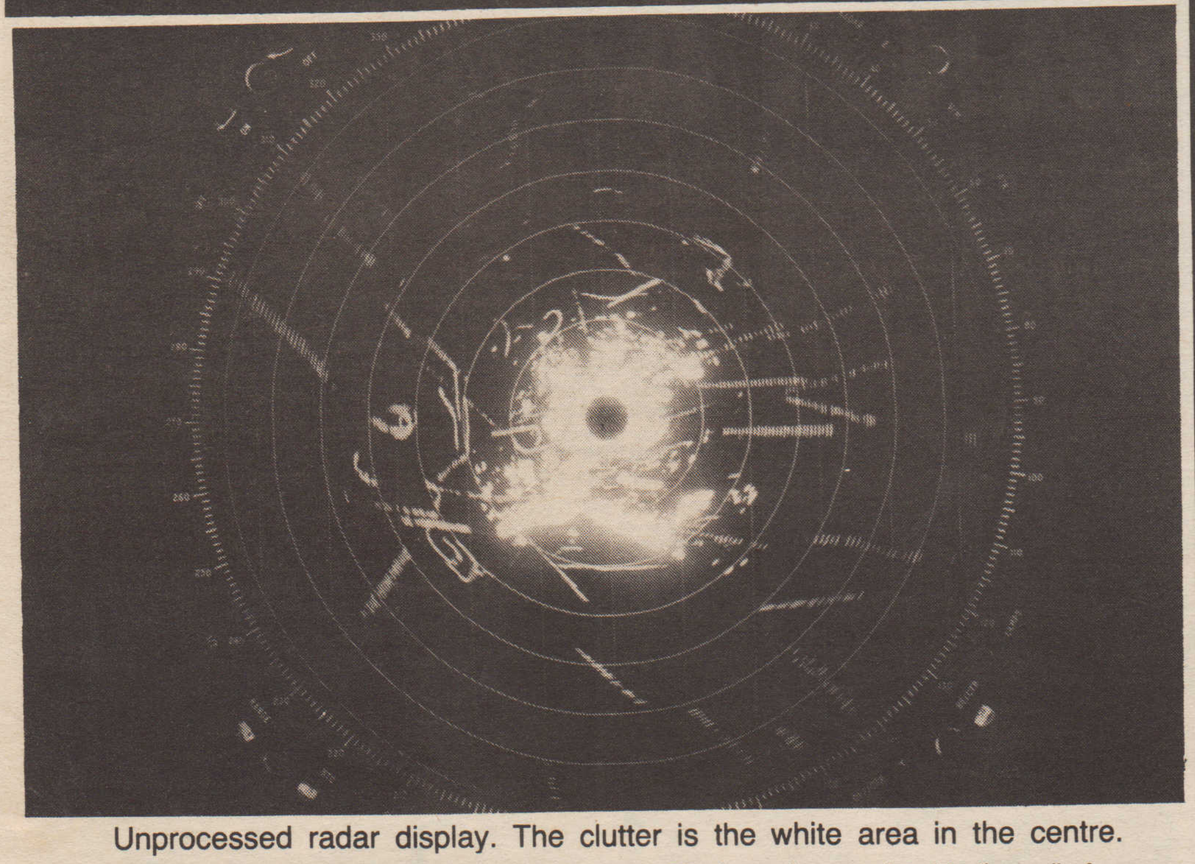
The radars that are to receive the new equipment are existing Plessey AR1's, used for marshalling air traffic to and from airways and in holding patterns adjacent to the airfields, and are also used for sequencing aircraft approaches to the runways.

The S511 radar itself has been on test and demonstration at the Marconi Rivenhall site for the last nine months or so. During this time the system has been demonstrated to numerous interested customers.

The picture shows a dual transmitter-receiver system. The signal processor is housed within the central cabinet.

The language of radar

Part 3: By Colin Latham



Unprocessed radar display. The clutter is the white area in the centre.

IN CHOOSING a radar word for the letter C I picked CLUTTER because it has probably been the cause of more hard work and heartache amongst radar engineers than most other problems in the history of radar.

Clutter in radar has much the same meaning as in everyday life — something unwanted that gets in the way of the job in hand — and is applied to the effects caused on a radar picture by returns from unwanted targets.

A surveillance radar is employed to detect and monitor the changing positions of aircraft but its ability to do so is often hampered by responses from fixed objects (towers, buildings, mountains etc). This is "ground clutter" but clutter also arises from reflections from moving objects such as birds and clouds. Also, in wartime, man-made clutter may be produced by the intentional dropping of metal foil known as "chaff" (or "window" in the 1939/45 war).

During the war tremendous advances took place in radar so that by the end the defence chain was extensive, well organised and reliable. Airborne and Naval radar too was well established. Probably the greatest outstanding radar problem experienced by all three Services was clutter rejection and little real progress was made until the early 50's, notably with Marconi experimental equipment set up at Bushy Hill.

MTI (Moving Target Indicator) systems were developed which, by employing frequency-stable transmitters and receivers, examined the very small frequency changes contained within returning signals to assess target velocity (another application of the well-known "doppler" effect). Fixed targets were then separable from moving targets and could be eliminated from the radar picture. However, there were limitations in that aircraft flying on a course around a radar at constant range would also be rejected and the first MTI systems suffered from "blind speeds", so that moving targets at certain discrete values were eliminated as if they were ground clutter.

Blind speeds are related to the radio frequency itself and to the interval between pulses. Blindness was overcome by changing the interval rapidly by the use of "staggered PRF" (PRF — Pulse Recurrence Frequency).

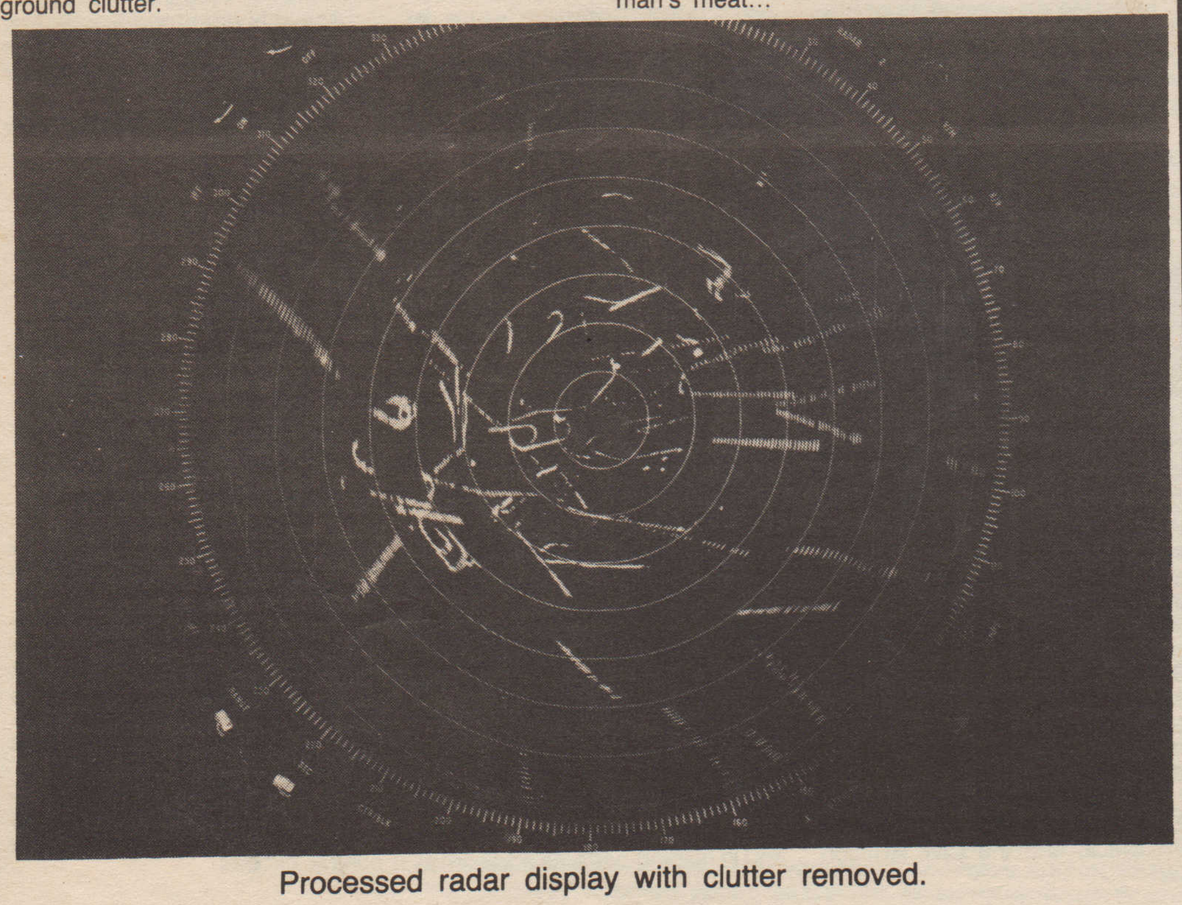
Some of the earlier MTI systems installed 20 or more years ago gave an excellent improvement but had the disadvantage that they required frequent re-adjustment to keep at peak performance, not always an easy matter on radars at remote sites where specialist engineers are not always at hand.

More recently, numerous technical advances in signal processing have enabled both fixed and moving clutter to be suppressed and blind speeds virtually eliminated, but probably the biggest improvement is in circuit reliability and freedom from the need for adjustment by the user. This is the result of solid-state digital circuits using suitable computer-like techniques which are vastly superior in stability to the older generations of analogue valve circuits.

In addition to complex circuit techniques for sorting wanted from unwanted signals, antenna design — previously mentioned in this series — can assist in clutter reduction by providing beams with a "sharp bottom cut off" to minimise radar illumination of the ground.

Although technically the battle for clutter rejection is largely won, operational radar performance specifications continue to call for better visibility of small targets against large clutter backgrounds. So the work goes on, with emphasis on designs that compete commercially and which, despite their complexity, are reliable and easy to maintain.

Finally, because the purpose of most surveillance radars is to see aircraft for Air Traffic Control or Defence they are designed to reject raincloud as clutter. Designers of storm warning meteorolgical radars would have a different objective! One man's meat...



Processed radar display with clutter removed.

Advice to visitors to Moscow

"Do not attempt to unscrew the suspicious looking brass plate underneath the carpet in Room 1572 at the Metropole Hotel, Moscow, in search of microphones — it supports the main chandelier in the ballroom downstairs."

Something to keep in mind

SECURITY BREACHES

IN SPITE of the rather humorous connotation that can be applied to the above title, it is still essential that we keep security matters well in mind at all times.

In a business such as ours, it is an unfortunate fact of life that security is of great importance, allocation of defence contracts often, in the final instance, depending upon the security classification of the firm involved.

This applies particularly to contracts from Her Majesty's Government.

This is the particular reason why security matters are of so importance to Marconi Radar, and why we are so careful concerning the entry of all visitors to the site.

We are all aware of the dangers of 'shooting off our mouths' in the presence of outsiders.

Generally, however, the most embarrassing security 'breaches' are caused by quite simple errors, such as mislaying classified documents or by leaving a brief case in a taxi or similar vehicle.

Of course, the security standards within Marconi Radar concerning classified documents and drawings are very strict, as those of us who inadvertently forget to lock a security cupboard or filing cabinet are very soon reminded!

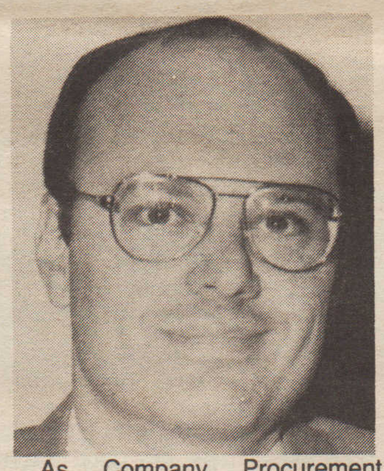
It is, however, the silly security errors that must be watched at all times — and it is not just the boss's or the security people's responsiblity, it is that of us all. Our livelihood may well depend upon it!

Then and now

The subject of this issue's Then and Now is the area immediately adjacent to the site main entrance. The old photograph, taken we believe in the early 1920's, shows the area in the days when the prime means of moving equipment about the site was either by steam locomotive or by horse. A horse cart can be seen in the covered entrance in the left foreground. The old stables, by the way, were in the long, low building adjacent to 'B' Building. The bollard immediately in the left foreground was probably a means of moving wagons without the necessity of calling up a steam loco.

In the midground, a gang of men can be seen unloading coal into the coal sheds by the side of the large chimney. This chimney was demolished, we think, in 1947, presumably when the site went away from using coal as a means of site heating. Jon Ellis tells me that during the war, the chimney was used as an aircraft spotter's post, and that the 'imminent attack' warning was given from there. It must have been very sooty up there when the chimney smoked!

A NEW PERSONALITY



Mr. M. R. Armitage — Company Procurement Manager, Marconi Radar Systems Limited.

Mr. Armitage has been appointed to take responsibility for procurement policy and procedures within the various Radar Company sites.

With a degree in Mechanical Engineering, Russ Armitage was apprenticed at British Aerospace, Military Aircraft Division, becoming a Development Engineer in 1969 at Warton Aerodrome in Lancashire.

Moving into the procurement field in 1975 he was responsible for the purchase of Tornado and Jaguar major equipment, using sources from European countries, as well as the USA.

In 1979 he joined Marconi Space and Defence Systems, Portsmouth as Procurement Manager to form an integrated engineering and commercial team for high value, sub-contract management. The total site purchasing responsibility was added to his duties in 1981.

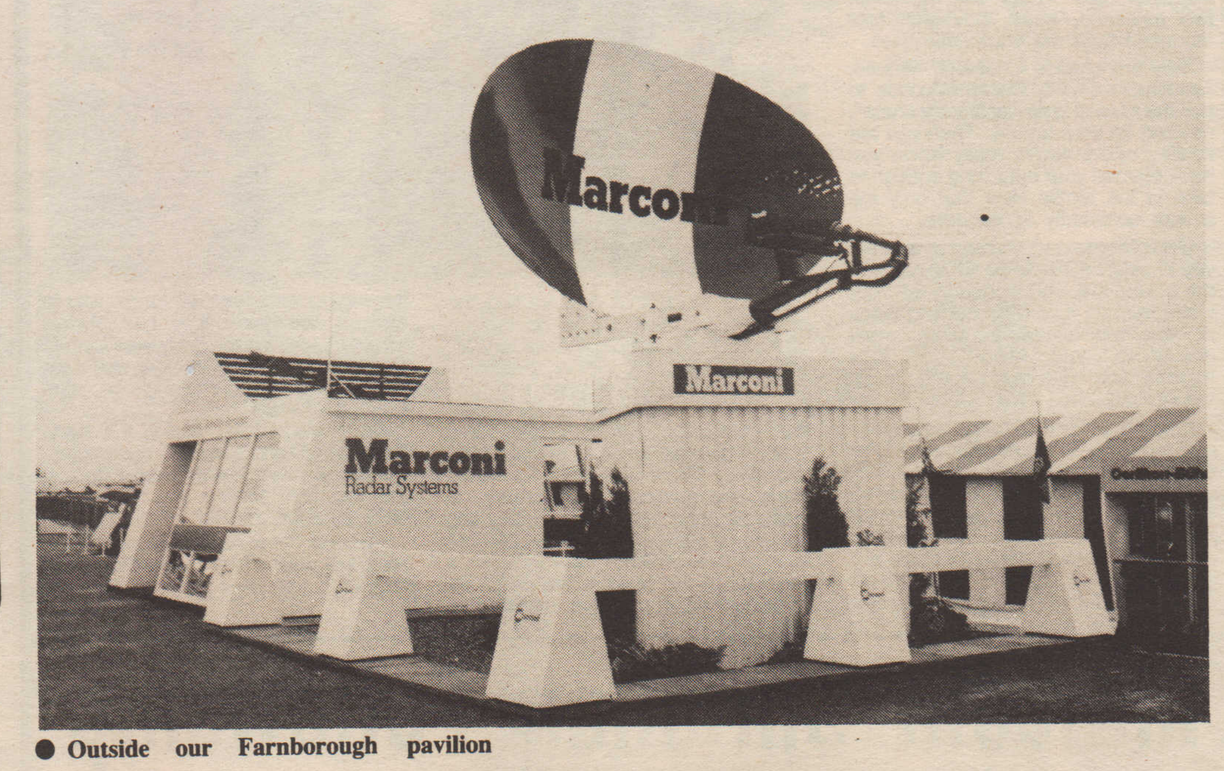
Aged 36, a Yorkshireman, with two young daughters he enjoys sailing, music and history.

As Company Procurement Manager, Russ considers that his first task is to make all personnel aware of the part they can play in improving deliveries and sources, for items manufactured outside Marconi, as well as reducing costs. This allows us to improve our competitiveness in todays tough world environment.

This process not only involves the Purchasing staff but starts with the Design Engineer and follows through to all parts of the Company.

MARCONI RADAR AT FARNBOROUGH

FARNBOROUGH this year was an even greater success than ever before, beating all previous records for the number of exhibitors and visitors. The weather was kind and flying conditions were good throughout the show. About one hundred Marconi Radar employees visited the show as guests of the company during the public days.



● Outside our Farnborough pavilion

. . . and inside the exhibition hall.

This year's Marconi Radar exhibits were smaller than usual, due to the fact that when the air show was planned, as far ago as last Autumn, the company was suffering under the results of the defence cuts.

For a while, even our attendance was in doubt, but a nominal presence was eventually agreed.

Subsequently, the company's outlook (and order book), has improved, but too late, unfortunately, to affect the size of our participation at Farnborough.

■■

In the New North Hall, erected on what was previously the radar terrace, we had a small stand incorporating mainly light-box type displays, together with a model of our new S511 airfield surveillance radar.

■■

Outside, on the new radar terrace, we showed the first production S511. As usual, we entertained our customers in a chalet overlooking the flying display area.

■■

From the point of view of the S511 installation, we had rather more problems than usual, due to the unmade nature of the new radar terrace. Eventually, a large concrete foundation had to be provided, to stop the antenna gradually sinking out of sight!

■■

A rather unusual occurance happened in the pavilion, part of the outside site. During the exhibition, a group of Arabs asked permission to use the small conference room as a devotional room for their midday prayers.

This being granted, our salesman Michael Smith was from then on referred to as 'Mullah Smith'. Unfortunately we had made no provision for the muezzin to be called from the apex of the S511 antenna.

■■

On Wednesday, our stand manning personnel were embarrassed to find that overnight the S511 antenna had acquired a small Plessey label, at the very top. We believe that this was perhaps a little 'sour grapes', coming, as it did, closely after we had won the contract to update the CAA's Plessey AR1 radars!

Letter to the Editor

Old chestnuts and reorganisation!

The article 'communication' by Ron Challis in the August issue of News and Views, rather ominously surrounded by black edging (I hope it isn't dead before it starts!), appears to offer the opportunity for shy, retiring mortals like myself to express (hopefully without prejudice), honest opinions about our company. Equally hopefully, to achieve collective solutions to many of the problems with which people seen to be preoccupied these days.

I find it astonishing and would respectfully suggest that the removal of such trivial irritations as vending machines, car parks, cleaning standards and (possibly at the risk of decapitation, dare I mention telephones with outside lines?), would concentrate people's minds wonderfully upon the 'matters of greater concern' which affect us all. It is the trivial problems which affect and erode morale and their removal can only inspire confidence in our ability to solve far greater problems.

We are currently undergoing the greatest reorganisation that Marconi Radar has probably ever seen. How about a series of articles on the reorganisation, why it was necessary, what was wrong with existing organisation, what benifits will it achieve, what penalties will it create and will the new project oriented divisions create parochialism and make our communications problems even worse? What happens to the project team when the new project finishes? All these and many similar questions are being voiced around Marconi Radar; it would be a splendid exercise in communication if the paper could promote dialogue on these topics — and then, perhaps, the competition for 'rumour of the month' would be superflous.

Of course people will still grumble about something else, after all, it's only human nature! As W. S. Gilbert says:

> "Oh don't the days seem lank and long,
> when all goes right and nothing goes wrong,
> and wouldn't your life be extremely flat,
> with nothing whatever to grumble at!"

Princess Ida, Mill Hall, Rayleigh, October 25th to 30th, directed by the undersigned. Oops! I've given myself a plug. Ah well, that's communication!

Ted Francis, 'G' Building.

Safety

Freedom to risk

The difficulty of getting people to do things which are for their own good but cause them inconvenience, or require a change of habit, are a part of the everyday experiences of the safety man. The list of controversial safety matter could include seat belts, smoking, protective clothing, safety helmets, machine guards and safety glasses. These, along with many more, cause some people to put up a strong argument against. However, when the law becomes a factor in support of the 'for' view then the argument becomes academic and one sided.

The Control of Lead at Work Regulations 1980 have within them a requirement that, "So far as is reasonably practicable, employers must ensure that smoking, eating and drinking do not take place at those workplaces at which there is, or is liable to be, contamination by lead." It also requires employees to, "Not eat, drink or smoke" at those places. No argument, just straightforward instruction with the weight of the law. The Company cannot say that it is "unreasonable" to provide for this and dedicated smokers, and the eating and drinking populace, have to co-operate with their employers and obey the rules which are made in compliance with the law. Work benches at which hand soldering takes place are liable to be contaminated with lead. Not enough to necessarily do any harm but the law does not quantify the contamination.

If you do not like the particular law, or the parts which affect your "freedom", a chat with your M.P. is probably the best course to take. I don't hold out much hope though — the "No Smoking" and "No lead" lobbies have a considerable following and infuence.

What's in the bottle?

There are a lot of tales about people unknowingly drinking liquids which appear to be something they are not — unhappily too many of them are true. Children are particularly at risk. If dad uses a "Coke" bottle to store the reamins of the creosote the outcome is fairly predictable if there are little kids about.

I have come across some very odd uses for vending machine cups and know of one instance of a chap quaffing a good mouthful of "Genclene" from a cup he mistook to be his own which had a more likely beverage in it.

It is a matter of common sense really, one doesn't have to be good at reading tea leaves to know that it is going to be unpleasant for someone at some time if we use food containers and drink bottles to contain chemicals and such like. At work there is a supply of cans and jars in the stores. Make certain they are prominently and properly labelled, with the contents screw-capped against spillage. At home — well you don't need me to nag about that do you?

By Ken Gamblin

FOR SALE

RENAULT 4TL, 'S' Reg (1978), slate blue, low mileage (under 37,000), taxed until March, MOT until April, one owner. A very reliable and economical car, £1,200 ono. — Contact Trevor Hargrave E272 (Ext. 2090) or Nina Hargrave E557 (Ext.2549).

BOY'S BICYCLE, Halfords Pathfinder, 24" wheels, for age 10-14 years, 3-speed, new tyre and mudguards, v.g.c., £30. — Tel. J. Bentley 2071 or Chelmsford 51322.

FOR SALE. 16 ft, Milton fishing boat, g.r.p. simulated clinker, one year old, 9.9 Yamaha engine, Snipe galvanised trailer with winch, oars, anchor, etc, price £975. — Tel. Chelmsford 83093 Int. Joan Thomas Ext. 2385.

SILVER CROSS pram, navy, immaculate condition, mattress, pillow, matching fancy cover, toddler seat, sun canopy, terry sheets; Boot bouncing cradle; Mothercare food blender; Mothercare sterilisation kit, Mothercare changing mat; Pifco bottle warmer, £60. — Tel. 60 Dorset Road, Maldon 56285.

FOR SALE. Marmet Cavalier pram with shopping tray and supplementary mattress £30; Bébé comfort folding bath/changing table £7.50; Wooden playpen with floor £10; Mothercare bed rail £5; Mothercare bouncing chair £2.50. All items v.g.c. — G. F. Robinson E22 Ext 2363.

VW 412LE VARIANT, L reg., low mileage, new tyres, fuel pump, underbody rust, no MOT, spares or repairable, £125. — G. F. Robinson E22 Ext 2363.

GAS FIRE, "New World", grey and black metal, £10, in working order. — Ext. 2013 Mrs. A. Barr, Evenings Chelmsford 355059 Mrs. Smith.

1974 HILLMAN HUNTER 1725GL, MOT March 1983, 47,000 miles, sunroof, very good condition, £450 o.n.o. — Ext. 2013 Mrs. A. Barr, Great Leighs 491 (after 6 p.m.) Mr. P. French.

THE FLEXITIME BLUES

All of us on the flexitime system have at one time or the other been at cross purposes with that fabled beast, the flexitime computer. This malevolent device, hiding away in an obscure corner in Personnel, quite obviously harbours a longlasting hatred towards human beings.

My pet mistake is to 'buzz' in too early in the morning. (By early, I mean 7.45 a.m. — I'm a chronic get-up-early-in-the-morning-type!). This clocking in too early (figuratively) enables the computer to completely miss me off the early 'clock-in' slot, as it fiendishly does not switch itself on at the same time as the clock, and often a 7.45 'buzz' does not get recorded.

This being missed off the early slot involves a very complicated correction on the 'naughties' sheet. And to rub it in, the clock itself continues to show the correct time record!

Other funnies are caused quite often by faults in the clocks or computer, and sometimes, of course, by incorrect entries on the naughties sheet. One of these days, perhaps, a mouse will get in. Then we'll have some fun! All in all, an interesting time is had by all (and particularly by those lucky folks who have to correct the whole thing), but I for one would not like to go back to the old 'fixed-time' system, even accepting the fact that we now have to go to the doctor and dentist in our own time. Just think back to those good old days when most of us left off at the same time. Remember how hectic it was at leaving off time, with the glorious traffic jams, and the 'leave-off-on-the-dot' types flying off the moment the clock sounded (and sometimes before). If you choose your time now, life can be a lot less hectic, thank goodness!

Bill Raistrick

Girls jump to it

Have you ever looked up at the sound of an aircraft and experienced that queazy feeling in the stomach while you imagine what it must feel like to jump out of a flying machine, into space! Those anxious moments when you wait for your despatcher to tap you on the shoulder and say GO!

Those awful moments when you are falling through the air at several thousand feet up, waiting for the chute to open. You remember what your instructor said "count one thousand, two thousand, three thousand, four thousand then the chute will open.

If by any chance it doesn't" he said, "you have exactly fifteen seconds to pull the cord of your secondary chute", nestling on your tummy. Then you are floating and if you're really brave you have opened your eyes long enough to take in the terrific view that only the aviator constantly appreciates.

Soon the ground comes up to meet you at what seems a fair old speed and there you are, remembering all your instructor has said, "do nothing fancy or you will almost certainly break something, just keep your legs together and roll forward as you touch the ground".

It so happens that on a misty summer morning in early August, John Gleave, pictured with the girls, Chief Instructor of the famous Pheonix Free Fall Parachute Team, based at Ipswich Aerodrome, declared the weather absolutely perfect for dropping and gave the signal for the Cherokee 6, to commence flying.

Among those that had trained the previous day from 09.30 hours until 19.30 hours, for the big chance to drop, were four Marconi Radar girls from T.I.D., who had never been into anything like this before. Rosemary Bolton, Kathy Machin, Karon Bayley and Tracey Hewlett are the intrepid four, joined by Rosemary's sister Anne Marie and Karon's sister Lesley, to make a party of ladies doing something not just for satisfying their own ego but for a really worthwhile cause. Karon, a sergeant in the Maldon branch of St. John Ambulance Brigade, agreed that the way to increase their funds, was to attempt something they had always wanted to do. So the party was formed and the very handy sum of well over £200 has been collected for St. John through sponsorship.

But that's not the end of the story. Yes they are going to carry on jumping. Seems once you have been bitten by the 'Big Drop' feeling, you have to go back for more.

Picture: The four Marconi parachutists with Chief Instructor John Gleave.

Phil Champion

Marconi Christian Fellowship

Earlier this year, on two separate occasions, we heard how the Good News is shared with visitors to the Essex Show and with listeners to Essex Radio. At another Monday lunchtime meeting, we heard how the same Good News has changed the lives of some of those present.

Throughout the last few months, we have seen the different acceptance of, and response to the Good News, by an individual facing the problem of racial prejudice, a disabled member of the group, a single parent family, a doctor facing decisions involving abortion or euthanasia and an individual thinking through the question 'can nuclear weapons be justified?'.

The Good News, God's love for men revealed in the person of Jesus Christ, will be central to a varied programme planned for the next year. A welcome is extended to all who would like to join us at any of the arranged sessions.

Ann Harrison, Marconi Christian Fellowship

PROGRAMME

October
4 Prayer and Fellowship.
11 The Problem of Fever, Selwyn Hughes, T.
18 Moses — The Law Giver, Steve Chesney, G.
25 Gideon — The Mighty Man of Valour, John Lancaster, M.

November
1 Prayer and Fellowship.
8 Points from Sunday's Sermon, Melvyn Sach M
15 Dealing with Depression, Selwyn Hughes, T.
22 Out of a Salt Shaker, Ann Harrison, M.
29 Foundations of a Family, Rev. Ron Messenger, G.

December
6 Prayer and Fellowship.
13 Coping with Disappointment, Selwyn Hughes, T.
20 Christmas Special — Musical, Ian Blake, G.
Carol Service, A

January
3 Prayer and Fellowship.
10 Managing your Time, Selwyn Hughes, T.
17 Where the Waters Run, F.
24 David — The Man after God's Heart, David Woodruff, M.
31 Mission England, Ann Harrison, M.

February
7 Prayer and Fellowship.
14 What I think about sermons, Melvin Sach, M.
21 Isiah — The Prophet who saw the Lord, M.
28 Cecil Hunnable, G.

March
7 Prayer and Fellowship.
14 Why a Workers Christian Fellowship, Rod Badhams (Gen. Sec. W.C.F).
21 Why a Workers Christian Fellowship, Discussion.
28 Did He really rise, Reg Richardson, G.

April
5 (Tues) Prayer and Fellowship.
11 Mary — The Handmaid of the Lord, M.
18 Writing in Old Testament Times, FS.
25 Making Melody, Andrew Price.

May
2 Prayer and Fellowship.
9 A.G.M.
16 Interpretation of Prophecy, Dr. Michael Bennet.
23 Peter — The Fisherman called by Jesus, Fred Robertson, M.
30 Ian Blake.

June
6 Prayer and Fellowship.
13 Good News at the Essex Show, John Lancaster.
20 Paul — Persecutor turned preacher, M.
27

July
5 (Tues) Prayer and Fellowship.
11 Mary — The Handmaiden of the Lord, M.
18 Writing in Old Testament Times, FS.
25 Making Melody, Andrew Price.

August
1-9 Informal Meetings.

Legend: T Tape, M Member of Fellowship, G Guest Speaker, F Film.

Committees: Jon Ellis, Doug Jones, Melvin Sach, Steve Hall, Ann Harrison, John Lancaster, Julie Taylor.

What's on at MASC

Friday, 1st October, in the Lounges. Free entertainment with 'Enterprise'.

Saturday, 2nd October, 8 p.m. Cabaret Evening and Dancing. Introducing the Sensational Singer Entertainer 'Tony Arnold' plus a comedian and Dancing to the popular sound of 'The Russ Pinder Sound'. Admission includes Basket Meal. Members £3.00. Guests £3.50. Tickets available from reception.

Friday, 8th October, in the Lounges. Free entertainment with 'Freeway'.

Saturday, 9th October, 8 p.m.-Midnight. Modern Dance Section present Dancing to records of the Big Bands Era plus Demonstration by Robert & Barbara Grover. Members £1.50. Guests £2.00. Tickets available from reception.

Friday, 15th October, in the Lounges. Free entertainment with 'Barry & Paul'

Saturday, 16th October, 8 p.m.-Midnight. Club Party Dance. The all-round sound for dancing of 'Carlton Continentals'. Members £1.50. Guests £1.75. Tickets from reception.

Friday, 22nd October, in the Lounges. Dance or listen to the popular sound of 'Shiloh'.

Saturday 23rd/Sunday, 24th October, 11 a.m.-4 p.m. County Darts Division One Championship. Essex v Cambridgeshire. Admission on door.

Friday, 29th October, in the Lounges. Free entertainment with the 'Don Peters Sound'.

Saturday, 30th October, 7 for 7.30 p.m. Grand Halloween dinner and dance. 'Jack Hawkins Showband and Singers'. Cabaret and four-course meal. All tables reserved. Late bar till 12.30 a.m. Further details from MASC reception or Tony Clifford. Members £8.50. Carriages 1 a.m. Guests £9.50.

MASC 1983 Ski Holidays

The Club will be running two trips this year, both with 6 days excellent skiing: January 17th to CERVINIA, ITALY, March 10th to MONTCHAVIN, FRANCE. Only a small deposit will secure you a place on either. For full details contact reception and watch for posters.

Chess Section

This fascinating pastime is thriving at Marconi. Out of over thirty serious players, the odd thing is that only one woman seems interested enough to play Chess for the section. It is not certain what this tells us but it would be nice to see more ladies take up this absorbing game.

Currently, there are three teams playing for Marconi. One Radar man who is addicted, is Eammon Power of Data Systems. That seems logical! Its a game that certainly calls for concentration and logic. Eammon plays in the 'A' team and is fast coming up to County standard.

The teams play in the respective 1st, 2nd and 3rd Divisions of the North East Essex League. The next League season commences in October and will play through to April 1983. Of course there are also section matches played at intervals throughout the year. The hard working Secretary Gerrard Langosq of MRC Baddow, tells me the section has at present three regular County players and last season the Marconi 'A' team, finished second in Division 1 of the North East Essex League. More players would be welcomed however and he would be pleased if anyone interested would contact him on Baddow Internal 883 or External Ext. 1.

Hockey Section

Hockey is one of the sports sections which enjoys the excellent M.A.S.C. facilities for ball games. An excellent pitch is nearly always available, subject to weather, throughout the season and of course the dressing rooms are always welcome with hot showers for tired and weary limbs.

Steve Morris is the busy Secretary at Room B265, MRC, Baddow, on Ext. 148, Int. 393. He would be pleased to hear from anyone in the Radar Company who is interested and would either like to take up the game or join a playing team.

Presently, the section plays in the Norwich Union League, Division 2 South and in the Reserve Division. These matches are played throughout Essex and Herts. The standard being quite good.

The section also enters the Essex Knock-Out Cup which commences in October/November each year. So if you can play a bit and would like to be among the medals, now is the time to give Steve a ring.

There are currently two men's teams, a ladies' team and a mixed XI. Sounds great fun. so 'jolly hockey sticks' and all that stuff.

Auto Section

The Marconi Auto Section is one of those that people seem to pass over, especially it seems if you have a car. Pictures of high speed rallies and cross country trials are usually conjured up. You could be forgiven for thinking so, indeed the section, when first formed 30 years ago, did encourage such competition and actually held rallies and trials. Of course O.P.E.C. spoiled all that. As we go to press the price of petrol hovers dangerously near the £2 mark. It's doubtful if any unsponsored motor sport could survive today's horrific prices.

The Marconi Auto Section is not deterred however from helping its members and what help the beleagured motorist can obtain if he joins the section!

There is a 'Tool Pool', for those awkward jobs that need just the right aids. There are good discounts for all types of spares and fittings, not to mention tyres and batteries. There is also a social side to the section, so why not think seriously about joining! Contact the Secretary, Mr. N. G. Riley (such a splendid name for an Auto section), on Baddow Int. 434 or Ext. 98 or simply drop him a line for further details at Room A 30, Baddow.

Soccer

The Representative match between the Marconi Inter-Departmental team and Southend United Youth Team was played on Sunday, 22nd August at the M.A.S.C. and resulted in a win for Marconi 6-2, The scorers were Danny McKinley 4 and Terry Elton 2. The match was a complete success for what was virtually a scratch Marconi team who nevertheless turned in an excellent performance against a strong youth team.

Phil Champion
Sports Editor

Norwich news

It may not be generally known that at Norwich there is a strong programming group of over 65 engineers involved in all aspects of test programming and Automatic Test Equipment 'support' activities. They have also diversified into training engineers from the Royal Air Force, German Air Force and Italian Air Force in the maintenance, operation and program updating for the ATE's when in service.

With all these activities, as well as publications work, it is not surprising that, as mentioned in the last News, they have many visitors, and their own people dashing around Europe!

Recently the programming group achieved a major milestone in their test programming activities when two completed test programs were successfully demonstrated to the customer. These programs will be used on the Tornado Automatic Test Equipment being supplied by Marconi Avionics to the three Air Forces, mentioned above.

The work originated from Marconi Avionics ATE Division who after the event commented in a letter to MRSL:- 'Both Compatibility Demonstrations were highly successful and our customer (Panavia) and the user (MOD PE) and the Royal Air Force have complimented us on the high standard achieved at the demonstrations.

These compliments reflect the excellent work done by the engineers. They also underline in general the highly professional standard and team work of all the engineers working on our contracts.

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