Produced for employees in Chelmsford, Frimley, Leicester & Melbourne.

NEWS & views

Marconi Radar Systems

Issue No 58 April 1994

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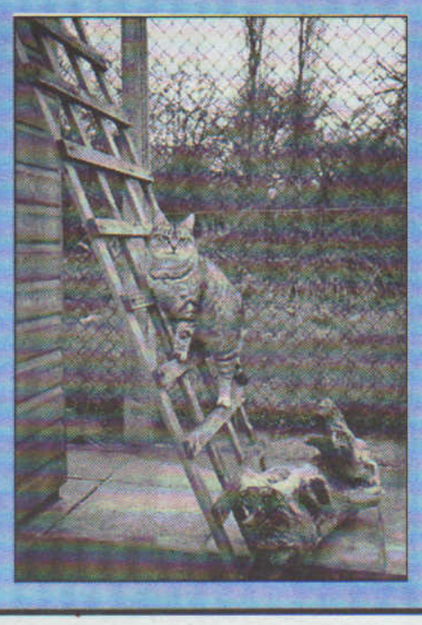


VIVA MARCONI!

£45m contract landed for the Spanish Air Force

Putting their signature to the contract are TJ Park and Mike Shadwell. In attendance are (from left): SH Cho, HS Choi and SS Shin.

THE Spanish Air Force has selected Marconi Radar to play a major role in its air defence re-equipment programme.

The division has been awarded a £45 million contract to supply antennas for a new air defence radar to be co-produced with the Spanish prime contractor, INDRA Sistemas SA (formerly Ceselsa-Insel).

Under the terms of this significant contract, Marconi Radar will design and produce planar array antennas, and solid state transmitters and receivers.

The antennas will be part of LANZA, or LANCE, radar, designed by Ceselsa, a company of the INDRA group, which will supply its own signal processing, radar management and simulation electronics.

Operating in L Band (NATO D Band), LANZA is a strategic range 3D air defence system, and uses the scanning pencil beam method for heightfinding. It will be used by the Spanish Air Force in both static and transportable configurations.

● *The contract and the division's involvement are explained more fully in the article on pages 6 and 7.*

Experience in planar arrays and a proven record in the RAF were major factors in Ceselsa's selection of Marconi radar.

Samsung visit seals £1.2m radar order

THE Customer Support Business Group were hosts to a senior delegation from Samsung, Korea, at the end of January. The occasion culminated in the signing of a contract for £1.2 million.

The visiting team, led by Mr TJ Park, managing director of Samsung Electronics Government Products Division, was welcomed by Roger Mathias.

Samsung, who built 1802/1810 radars for the Korean Navy under licence from Marconi, only place orders on us for support business provided we can meet their demanding delivery requirement.

The visitors stressed the importance of meeting cost, time and quality requirements, and Mike Shadwell, Customer Support general manager, responded by briefing Samsung on the strategies for improvement being introduced by his business group.

Mike cited the contract as an example of the advantage of understanding and meeting a customer's requirement, saying: "Customer satisfaction is not just about the feel-good factor, it also wins us business. Success in completing the last contract on time was undoubtedly a key factor in this latest decision."

So successful was the visit that another follow-on order is expected within the next few weeks. As Mike says: "Winning the order took teamwork and was due in no small measure to major individual efforts on the part of Dave Denny and Mike Scannel, and John Morgan and his team of Blackbird Road, Leicester. But all that was the easy bit. Now we have to perform as a team to meet or beat our customer's expectation!"

MESSENGER CONTRACT SIGNED

THE Company hosted a visit of senior members of the Iranian Civil Aviation for a week during the cold spell in February. Their objective was to satisfy themselves that if an order were placed, Marconi Radar could deliver a new MSSR system to Iran to assist in the control of airspace in the Tehran area.

After a week of technical meetings, commercial meetings and a visit to the division's development site at Bushy Hill, the delegation was convinced that we had the product and the ability to deliver it. A contract was therefore placed.

With the completion of the installation and commissioning of the system before the onset of the Iranian winter in October, a mandatory requirement, this should prove to be a challenge to the project team.

Present at contract signing were (seated, from left): Mr A Saemi, CAO Iran, Mr Rezaee Niarky, CAO Iran, Mike Shadwell, Mr Abbas Neiad, CAO Iran, Mr P Scanlon, Tacticom UK Ltd. (Standing): Mr R Emery, Tacticom UK Ltd, Richard Chard and Mike Steeds.

John has a golden touch

JOHN Bodonyi, consultant, HF Radar Department, has been awarded a Nelson Gold Medal for his contribution to engineering during his 36 years with Marconi.

Each year, a panel, chaired by Lord Nelson, selects for awards those whom it considers have demonstrated outstanding technical achievement of exceptional merit within GEC.

John graduated from the Technical University, Budapest, in 1952. He joined the Institute of Military Technology briefly, researching into microwave links, and, in 1953, moved to the BHG Company as senior development engineer. In this post, he was responsible for the design and development of a VHF TV transmitter, the first TV broadcast station in Hungary. The antenna design embodied many novel features and he received a medal for his achievements.

In 1956, John and his wife emigrated to the UK and John was recruited by PYE Ltd, Cambridge, as a senior development engineer on TV transmitters.

In 1958, he joined Marconi's Wireless Telegraph Company as a section leader in the Aerial Group, responsible for the design of antennas and high power combining units covering HF, VHF and UHF bands.

In 1968, John moved into the Microwave Components and Engineering Group under Ken Perry, working in the Microwave Group, and later in the New Projects Group of the Radar Research Laboratory for 15 years until 1983. During this period, much of his definitive work on HF radar was carried out, and the foundations were laid for our HF Business Group products.

John was the key innovator in the feasibility studies carried out at the Marconi Research Centre into shore-based and ship-based HF radars. These led to the Heartbreak radar demonstrator at Dengie and to over-the-horizon ship-borne demonstrators at the time of the Falklands conflict.

His talents were not restricted to HF radars: his research activities also included microwave and millimetre wave filters, combining units and couplers; dielectric resonators and filters; guided surface waves; low-loss communications systems for the Post Office (BT).

John's work on multichannel high-power combiners was particularly well received by the Post Office, providing a novel, compact, low-loss combiner for satellite earth stations, which overcame a difficult problem at that time.

In 1983, John transferred to Marconi Radar Systems as principal systems engineer in the HF Radar Department. He proposed the basic concepts for skywave OTHR, which later became the key component in the Jindalee Operational Radar Network (JORN), and, as consultant, continues his invaluable contribution to the HF radar business.

John Bodonyi with the letter from Lord Prior, Chairman of GEC, inviting him and his wife to the Garrick Club on 11 May, when he will be presented with the Nelson Gold Medal. Pictured with John are many of the colleagues with whom he has worked, and, on his left, Roger Mathias, who handed him the invitation.

A CLOSE CALL ON RAF DEAL

IT IS some five months since we heard that we had lost the RAF 918 contract to the Siemens Plessey AR 327 radar. This is the first opportunity to set out in detail the reasons given by the MoD (PE) for their choice.

The evaluation was carried out on a points scoring basis for both the technical and commercial parts of each proposal. The bid winning the most technical points and the fewest cost points — ie, the one offering the best value for money — was adjudged the winner. We know that Siemens Plessey's price and our own were within 0.5 per cent, so both companies scored virtually identical points on the commercial side. The winner was therefore decided on technical grounds.

The MoD weighted the technical points very heavily towards the transportability of the systems offered. The S753 scored highest of all the proposals for radar performance, but finished second overall (by a very small margin) because it was awarded low marks for helicopter transportation. The 'showstopper' was that the S753 antenna weighs 12 tons; the maximum lift of the *Chinook* helicopter is 10 tons.

We had to break the antenna into two parts and carry them separately. The problem arose when they came to be reunited. The pilot of the helicopter carrying the spine had to position it to fairly close tolerances on the antenna pedestal. The RAF felt that this would be an unacceptably difficult and dangerous operation in windy conditions, and might prevent deployments taking place. They had no criticism of our arrangements for moving S753 by road or in C130 aircraft.

The other major factor in the MoD's decision was that S753 was seen to have greater technical and programme risk attaching to it than did the AR 327. We had claimed 80 per cent commonality with the 743-D; Siemens Plessey claimed 100 per cent between the AR 327 and the in-service AR 325. Our antenna needed more development work than theirs and our transputers were regarded as "new-fangled and unproven".

Impressive

There were a few other minor criticisms of no particular significance. Overall, our proposal was described as impressive, and the MoD singled out for congratulation our inputs on Integrated Logistic Support, training, Life Cycle Costs, Reliability Maintainability and Availability and software. Project management was satisfactory, although a little weak on configuration control.

We were told that the evaluation points were so close that an independent consultant was brought in to assess the MoD findings. (This explains why the announcement was delayed). Against the RAF specification, and using the same points weighting system, he found narrowly in favour of Siemens Plessey. He was also asked to test the MoD points awarded to the two proposals to confirm that there was a "statistically significant" difference between them. There was — just.

So, where does this leave S753? While there are no points for coming second in the sort of competitions we enter, the 918 decision was not a total disaster. Had the weighting of the points been slightly less heavily biased — as they are likely to be with many other customers, especially those who do not have *Chinooks* — Marconi would probably have won. The closeness of the competition has been stressed to us by many MoD sources, and some of them have said that they would have preferred the Marconi equipment. The message is that S753, with a couple of qualifications, is regarded as an excellent tactical radar.

Until recently, it would not have been considered possible to combine the undisputed superior long range performance of D Band with the level of mobility that is usually associated with E/F Band systems. S753 achieves this in terms of its physical dimensions but at the cost of an antenna, which is about 50 per cent heavier and considerably more bulky than its competitors. Many users would not see that as a disadvantage, but some will. The opportunity is therefore being taken to examine ways of eliminating S753's handicap without compromising the many benefits that have been gained. The radar is on offer to a South American customer and is being promoted in several other countries.

SURREY CENTRE PROGRAMME
INSTITUTION OF ELECTRICAL ENGINEERS

Wed 27 April 6.30 for 7.00	Remote Control Bomb Disposal (Joint with IEEIE)	Mr W. Pattinson, MBE	Guildford College of Further and Higher Education, Stoke Road Guildford
Wed 11 May	Human Factors (✣ See note below)	Dr I Nicholson Thorn EMI	Marconi Radar and Control Ltd Cobham Road, Frimley
Wed 18 May	The Early History of Thermionic Valves (Preceded by Centre AGM)	Mr K Thrower Racal Radio	Lecture Theatre D University of Surrey
Tues 24 May	Just in Time, from Design to Manufacture (Preceded by Young Members AGM)	Speaker from Black and Decker	Lecturer Theatre Block University of Surrey
Wed 25 May	Turning Risk into Opportunity (Joint with BCS, preceded by Centre Computer Section AGM)	Mr B Harmsworth Data Sciences UK Ltd	The Stoke (PH) Stoke Road, Guildford

Times are 7.00 for 7.30pm unless otherwise stated.
✣ Will those planning to attend this meeting, please contact DC Evans on Frimley ext 3392 beforehand.

Blindfire 2000 provides the all-weather, low-level target-tracking and missile guidance capability of the *Rapier 2000* system, which is shortly to enter service as the main low-level, surface-to-air missile defence for the British Forces well into the next century.

Blindfire 2000 is on target

SINCE the last *News and Views* article on Frimley's *Blindfire 2000*, enormous headway has been made: the content of the Certificate of Design has been accepted and final signature is expected shortly; deliveries of equipment are in full swing and the financial year-end target has been met.

Early equipments are now in Service hands for training purposes, while the latest radars are being integrated into the complete *Rapier* system by British Aerospace.

Although it is the main equipment that provides the glamour factor, the support-front equipment can also claim some of the limelight.

British Aerospace is now taking delivery of automatic test equipment packages that have been in use at the factory for some time. And base workshops equipment has been accepted and is being installed in the Army Central Workshop in Old Dalby, Leicestershire.

The behind-scenes work that has gone into achieving these successes has been prodigious.

Busy

While the Blackbird Road factory has been busy on production, the Frimley design team has been busy preparing the way for acceptance of the design.

Completing the Certificate of Design for a modern radar is a massive task. Every paragraph in the specification has to be addressed and proof given to the customer that all provisions have been met. The resultant document is a large, detailed statement on every facet of the equipment performance, and tells the customer that this is indeed the system that he asked for.

There are still problems to be solved, but the Development and Production teams have reason to be well-pleased with the fruits of their labour, and are to be warmly congratulated on their success in getting another major Marconi product into service.

WISE up to science and engineering career

EVERY year, GEC-Marconi companies in the Chelmsford area run an event for WISE (Women into Science and Engineering), which is designed to encourage 15- and 16-year-old female students to experience three days in an engineering environment — with the hope that they will be fired to take up engineering as a career. This year, the event was held on 15, 16, and 17 February, during the half-term holidays.

In the past, we have been able to supply Marconi Radar trainees to help facilitate the various exercises and simulations that form part of the event. This time, however, we were unable to do so and the baton was passed instead to M.Eng graduates Kate Green and Carolyn Watson and Miranda Finch, software engineer.

Marconi Radar's four visiting students spent the first day at an engineering workshop session in the Research Labs, the second day at Writtle Road, where they toured the site and looked on as various engineering tasks were being carried out, the third day saw them back at the Research Labs, where they exercised their ingenuity constructing an executive toy in the form of a three-minute egg-timer, which they later demonstrated and 'sold' at a 'trade fair'.

Marconi Radar is well known for its involvement in the local community and for arranging events that perform the dual purpose of presenting school leavers with the challenges and opportunities that exist in industry and developing leadership qualities in those who host and facilitate the events.

A WISE crowd. On the left is Gavin Leathem, personnel manager. Also in the back row are Kate Green and Miranda Finch, seventh and eighth from the left.

Purr-fect hobby for a cat lover

I'VE enjoyed writing ever since I learnt how to write, and I became interested in photography after playing 'model' for photographer friends.

by Sarah Smith

Recently, I decided to make my hobbies pay, either to raise funds for cat charities or to highlight aspects of cat welfare.

I didn't expect to get anywhere when I entered the Cat Protection League's photographic competition last year, since I'd only just worked out how to operate my camera. My entry, Nipper, won a rosette and was blown up to life-size and used as CPL promotional material at 1993's two main cat shows — The Supreme at Birmingham NEC and The National at London Olympia. I was also invited to submit other photos of rescued cats for the CPL photographic library, and I'm busy working on my entries for this year's competition.

Over the last 12 months, I've been making a name for myself writing for cat magazines around the world, mainly as 'Sarah Hartwell' (my partner's surname, which I've adopted). So far, my articles and photos have appeared in the UK, Australia and America. The novelty of seeing may name in print hasn't worn off yet and I'm still excited when something is considered good enough to appear in a magazine; it makes up for the rejection letters for pieces that didn't make the grade.

Humorous

I'm currently one of the few people outside Australia to be writing about a new breed of cat developed there: not bad, considering my very first printed articles were humorous pieces in a Model Aeroplane Club newsletter with a circulation of about 50, and I only submitted my first 'real' article after much encouragement from my other half.

I soon found out that there's more to this writing game than sitting at a keyboard with a bright idea. It takes time to get an article exactly right to fit the target magazine's house style. The printed article can look very different after the editor has adjusted it to fit the available space. I've lost count of the photos I've taken in the quest for the purr-fect illustration — and the number rejected by editors because they weren't quite right.

At present, all proceeds from by writing and photography go to either the Cats Protection League or the Feline Advisory Bureau, although John is still encouraging me to write a Jackie Collins-style blockbuster so that he can be a kept man!

Amusing

If you have a hobby — and a PC, typewriter or camera — search out the specialist publication associated with it and have a look to see if they accept freelance contributions (some don't). If they produce contributor's guidelines, send for a copy as they save a lot of wasted time. After that, it's a case of perseverance until you find the right formula. Whether it's an amusing photo with a clever caption or a learned article on your specialist subject, as long as it fits the magazine's theme, it stands a chance.

The financial rewards may be moderate rather than huge, but it's still great to see a magazine in the shops and realise that people are actually paying to read your work.

ABOVE: Some of the magazines in the UK, US and Australia that use Sarah's articles.

BELOW: Split-second timing! Someone has to be Top Cat.

BELOW LEFT: Sarah's picture of Nipper, now used in Cats Protection League publicity.

NEAT FINDS AT NEATISHEAD WILL MAKE TOP MUSEUM

IN A small corner of a not very big field, with one radar and a couple of huts, RAF Neatishead was created in 1941. It has operated continuously as an air defence control site ever since, thereby establishing a world record.

Today, it is the Sector Operations Centre for the southern half of the UK Air Defence Region, it has a staff of 500 and most of the 'business end' is buried deep underground.

For a few more months the enormous bulk of the 70-ton Type 84 radar antenna will continue to dominate the skyline and give a clue as to the role of the station. But when that is gone, only a few very modern radio masts will project above the scattered 'NATO-green', single-storey buildings, and RAF Neatishead will be practically invisible among the Norfolk Broads.

With its distinguished history, it is fitting that the station should become the home of a unique museum of radar, display and fighter control memorabilia, spanning not only its own 50+ years but going back to the 1920s when 'radar' was acoustic and the operators used stethoscopes rather than oscilloscopes.

Exhibits

The RAF does not hang on to its old equipment for sentimental reasons so Flt Lt Andy Fitzmaurice, the museum creator/curator, has had a difficult task assembling exhibits. Where better to look than Marconi Radar which has supplied 11 of the 14 types of radar operated by Neatishead since the end of the Second World War? For several months now, Kevin Andrews and Paul Lundman of Radar Support Group have been scouring the Writtle Road site for historical radar artifacts — bits of hardware, drawings, photos, models, operating manuals — and several carloads have made their way to Norfolk.

The impending move the Eastwood House should produce a lot more. When you come to clear your work area for the move, please think twice before binning anything that could be of historical importance. Unlike the RAF, we do tend to keep things, and there is probably stuff tucked away in drawers and cabinets that would make Neatishead green with envy. If in doubt, call Kevin on Ext 3200 or Paul on Ext 3234.

Don't throw away our heritage. We may not have the space to display it but the RAF has, and will do it well. The Neatishead museum will be open to the public later in the year and will make an excellent day out — two hours in the car and just a couple of miles from Wroxham and Horning in the heart of Broads country.

LEFT: Kevin and Paul have unearthed some historical treasures in the storeroom in J Building and are seen here with models of the CH radars that ringed the UK during the Second World War.

SPANISH CONTRA

THE NEW PROJECT

A message from Roger Mathias, Managing Director

The LANZA contract is a major success for Marconi Radar and provides a much needed boost for our morale after the disappointment of the SR(A) 918 decision. I offer my congratulations to all those involved in securing this very important order.

As with any new contract, the real work is only just beginning and we now have a lot to do to fulfil our commitment. At the same time it is essential that we build on this success by converting our other sales prospects into firm orders during the coming months. We have a number of very good opportunities in the pipeline.

1993 was a difficult year for Marconi Radar in an extremely tough market. 1994 has started in the best possible manner. Our new partnership with Ceselsa offers an outstanding opportunity to achieve our goal of becoming a dominant European force in the international radar market place.

Enjoy this success and let's see if we can start getting used to the feeling by making it a regular occurrence.

THE CONTRACT

THE PROJECT began several years ago when the Spanish Air Force, having identified their operational requirement, commissioned the Spanish electronics company Ceselsa to design and develop a long-range 3D radar for installation at fixed sites. Named LANZA, or Lance, it is a planar array radar operating in L Band (NATO D Band) and used the scanning beam method of heightfinding. The radar has many similarities with the FPS117 radar made by General Electric (now Martin Marietta) of the US, the principal competitor to our own *Martello*.

With the prototype successfully completed, Ceselsa naturally expected to receive a production order. Unfortunately for them — though fortunately for us — the Spanish Air Force decided that circumstances had changed and that it now needed some of the radars to be transportable. A redesign of the LANZA antenna for use on a wheeled trailer was ruled out on cost grounds, so it was decided to buy the antenna from a company with an existing, proven product.

Choice

The choice was between GE and Marconi. GE started as firm favourite because the FPS117 more closely resembles LANZA than does *Martello.*

Nevertheless, we convinced Ceselsa of the suitability of our equipment and, a little more than two years ago, we were invited to tender for the supply of 12 antenna systems complete with all the usual spine electronics.

Having made our offer, the struggle began to make sure we were tractor. There were m number of parties to co ish Air Force, the Spar istry of Industry and, o

Not surprisingly, th visits to Madrid and, there ourselves, our team were working behalf.

In the early part of were given very little c

Rever

A lot of people put in to reverse that situat whom we have develop tionship, saw the adva modern antenna desi record with the RAF. W establishment of indu beyond the LANZA together with the ben pean solution, carried the Spanish MOD. Th was finally made in ou quently approved by th ment.

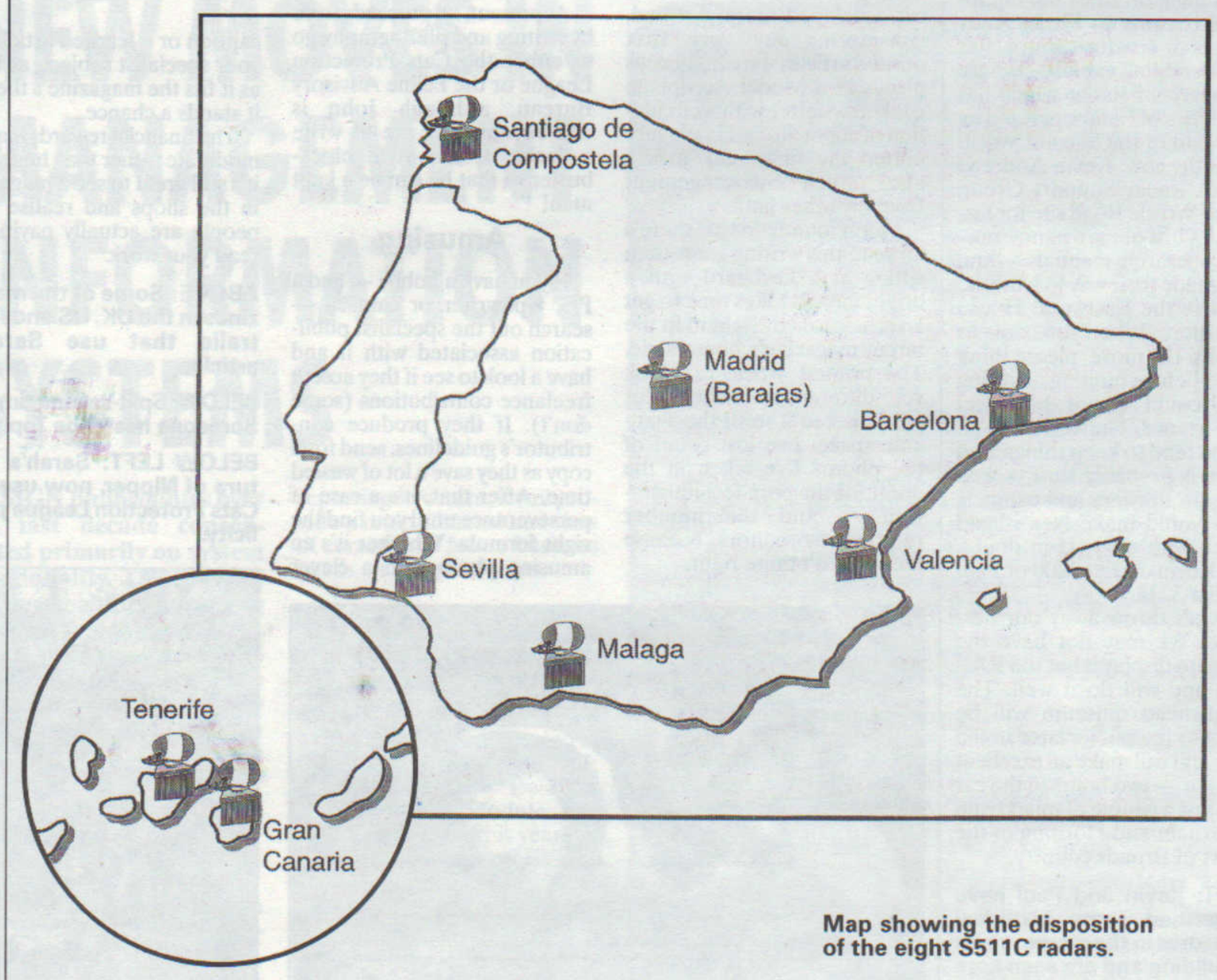
The contract we have mits us to supplying antennas over approxi

They will be teame cessing, radar manager electronics, together w handling equipment, Ceselsa.

Credit for winning this does not lie with any with the large number out the division and at consultants, who hav magnificently to make

A HISTORY OF C

LANZA continues a successful histor Ceselsa, with both of whom we had tainly had a favourable influence on t



Map showing the disposition of the eight S511C radars.

INISEL

OUR association with Inisel began in 1984 with the placing of a contract that was to prove very advantageous to both ourselves and our customer.

The project was code-named MATADOR, apt not only for its Spanish connotation but also because it was an acronym based on our contractual undertaking to provide MATerial And Development Of Radar. Spelt out, this involved providing kits of equipment for Inisel to assemble and test, and the provision of weather processors and turning gear.

Inisel engineers spent six months in our midst learning about Spanish processors and plot extractors, and our experts spent eight weeks in Madrid, teaching them to make carbon fibre antennas.

MATADOR proved very successful for both companies: Inisel learnt about our Approach ATC Radar, S511C, its design, manufacture, assembly and test techniques; we benefited by learning about what was then the uncharted world of licensed manufacture and also by developing a new transmitter and weather processor.

All in all, we provided equipment and material for eight radars, the installation being carried out by Inisel, with a little help from ourselves.

Seven radars were installed around the country, mostly to control the holiday traffic, the eighth was installed in Madrid for training purposes, though in the event, because of its high performance, it has also doubled up as a control radar Madrid Airport.

ACTS & CONTACTS

THE PARTNERS

HAVE you ever tried describing the GEC organisation to someone outside the company? Or, as salesmen often have to do, explain to a customer that the John Smith of Marconi who has just gone out of the office has absolutely nothing to do with our part of the business? Well, it is nice to know that other people have equally complex organisations.

A glance at the Ceselsa Group wiring diagram shows a remarkable similarity to our own. Like us, they have Radar and Command and Control as separate divisions within a company. However, they link simulation with avionics and they put comms together with EW. Ceselsa and Inisel are now merged to form INDRA Sistemas SA which in turn comes under the control of the INI Group which has a very wide variety of industrial and business interests. With more than 100,000 employees, INI can be regarded as the equivalent of GEC.

The Ceselsa Group was formed in 1979 and can be likened to the merging in the UK some 10 years earlier of Marconi, English Electric, Elliott and AEI (Metrovick and BTH). In just 15 years Ceselsa has gained customers in more than 40 countries (the same as Marconi Radar) including:

Russia	an ATC system for Moscow Airport.
French Guyana	a satellite tracking station.
Portugal	flight simulators for the Air Force.
Jordan	flight simulators for the Air Force, and flight plan processing system.
Norway	flight plan processing system.
Netherlands	flight plan processing system.
USA	tactical fire control simulators on armoured cars and helicopters.
Indonesia	tactical fire control simulators on armoured cars and helicopters.
Spain	monopulse SSRs to the Spanish CAA.

The Soljet team (seated, from left): Ana Numoz, Leo Salazar and Luisa Cano. (Standing): Ramon Prieto, Jose Rocha and Eduardo Salazar.

The Ceselsa Group is also involved in major European collaborative ventures such as EFA, Airbus and the European Space Agency.

The original LANZA radar bears more than a passing resemblance to our own 743-D, as one might expect.

The planar array is of similar construction but is square in shape, measuring 9 x 9m as compared with 743-D's 12 x 7m. The most obvious physical difference, however, is that LANZA's 48 solid state transmitter modules are located under the turning gear in a rotating shelter.

This eliminates the need for an enclosed spine but makes it virtually impossible for the system to be transported.

Hence the opportunity, which we have seized, for Marconi to supply an alternative antenna which can be put on wheels.

With the new LANZA radar to be jointly marketed worldwide by both companies, we look forward to a long and prosperous relationship with our new partners.

OLLABORATION

y of collaboration with the Spanish radar industry. The merging of Inisel and worked in the past, gave us a powerful Anglo-Spanish radar link that cer- he LANZA decision.

Fully-automatic cabinets on final inspection.

CESELSA

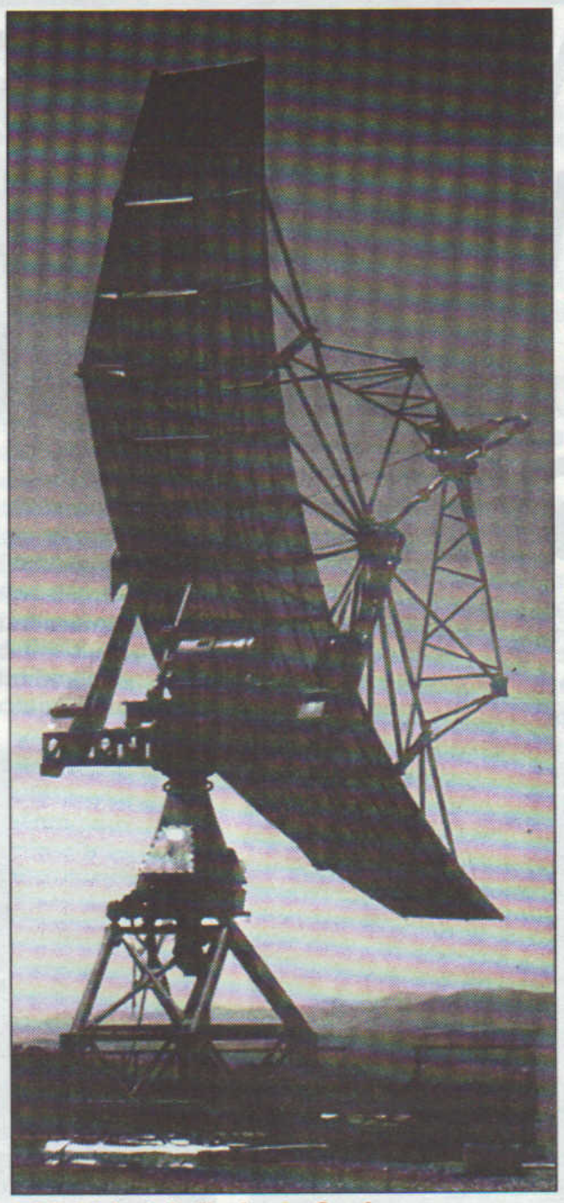
IN THE summer of 1991, we forged further links with Spain and established the foundation of our association with Ceselsa.

Against keen competition, we won a £2 million order from Ceselsa to update the 12 primary heightfinding radars used by the Spanish Air Force.

The radars were the AN/FPS-90s supplied by General Electric (America), and central to the modernisation programme was the application of S511 and S711 technology in a single, fully automatic cabinet to replace the five electronics cabinets associated with each of the radars.

At the time, Tony Manson, Sales and Marketing, said: "Our technical solutions, simple installation and interface, combined with our price and delivery pledge — not forgetting that we responded so quickly — clinched the contract for us."

It was further said, by Matt Taiyeb who was then NATO marketing executive: "This is a very important sale that has been made possible only by the first-class co-operation we received from all areas of the company. This enabled a quotation and technical proposal to be delivered to the customer in under three weeks, and the contract to be signed just six weeks after the initial enquiry."



FPS 90 heightfinder in Spain

Information Technology dots the is and crosses the ts

FULL MARKS FOR IDEF

In an interview with Nigel Cope of Information Technology, Cliff Nicholson of the JORN Engineering Management Team talks on the key issues.

Cliff was given the task to produce definitive documentation on the WHAT and the HOW of the Marconi Radar JORN project, concentrating on engineering processes and their interfaces. I asked him:

Why process modelling instead of the usual narrative approach?

"In my view, process modelling offers the following advantages:

- Provides quick focus on process elements and relationships.
- Fosters interactive definition and review of process.
- Highlights redundancy and inadequacy and the need for improvement.
- Provides basis for subsequent review and audit and hence improvement, eg: ISO 9000, customer audit.
- Ensures whole job is considered and puts job in context.
- Provides for communication with team members and people in other related processes and teams.
- Provides context for procedures and ensures their relevance.
- Provides a better basis for planning and resourcing — better transition to the project plan, and better mapping to organisation.
- Ensures interfaces with related process are explored."

Why did you choose the IDEF methodology?

"After attempting the task using TEAMWORK, which uses the Yourdon methodology, and speaking with yourself on a viable alternative, I decided that the job would be best done using IDEF because of the following advantages:

- IDEF was available. The Design/IDEF tool needs only a 386 PC and MS-WINDOWS.
- Design/IDEF is very similar to TEAMWORK but has better presentation and easier use. IDEF encourages a higher level of comprehension to the reader through its simple diagraming conventions.
- IDEF forces a top-down decomposition of any process into not more than six subprocesses. From our own first-hand experience I consider this to be a particularly good practice. When you attempt a decomposition of more than six processes you are not thinking clearly in functional terms.
- IDEF helps you to forget the implementation arguments and concentrate on what is being done and allows you to include the how and who later.
- IDEF encourages team interaction, which I consider to be the best approach for sound model-building. In some cases, particularly with difficult and new processes, brainstorming sessions are necessary where free-form diagrams may be quickly penned on white board and formalised later.
- IDEF allows for resource overlays to be added to the logical model to show where tools and roles are used."

Have you encountered any limitations or serious problems using the IDEF technique and tool?

"Yes — two:

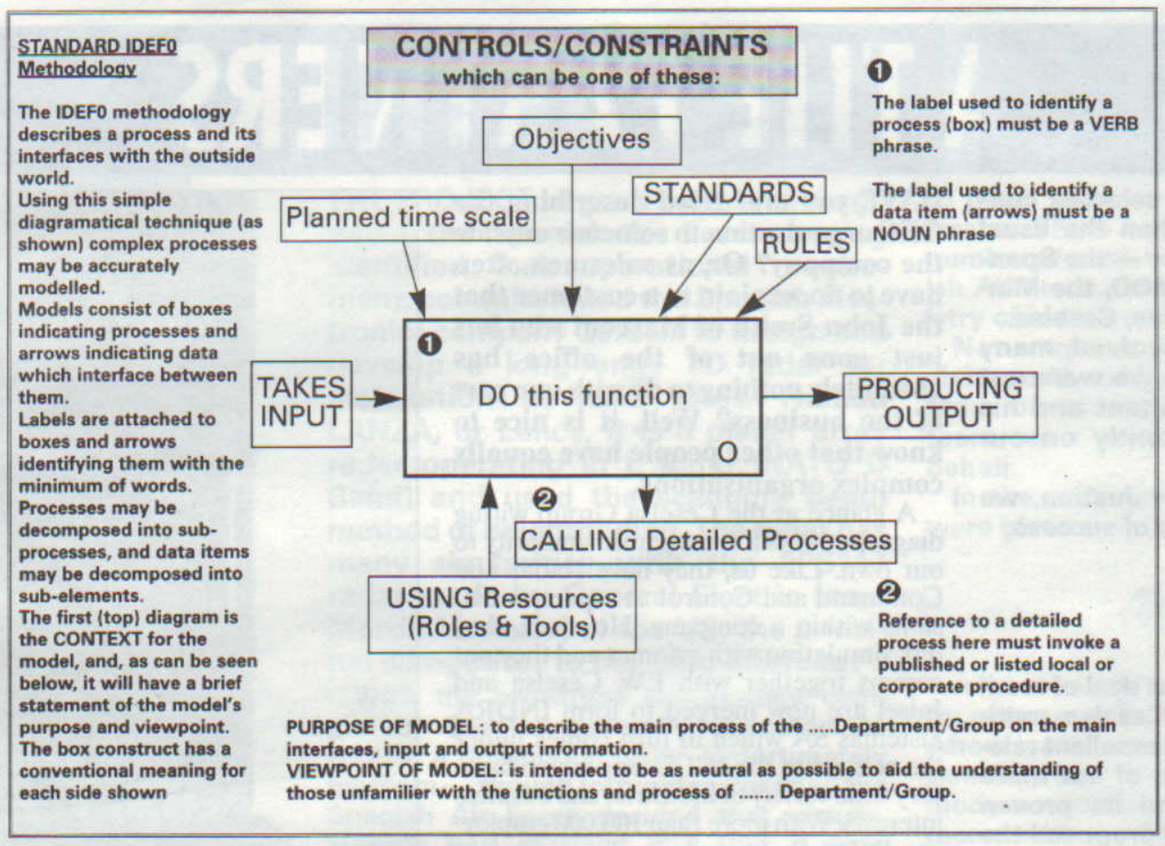
- Technical experts assigned the building of process models may not readily think in process (function) form. The full and proper training of staff assigned to authorship is a must for most efficient use.
- The Design/IDEF package lacks a full data dictionary and has on this point limited its use as a complete process documentation tool. We have chosen to stop decomposition at a level purists may think incorrect, and continued in narrative form with process descriptions and interface items."

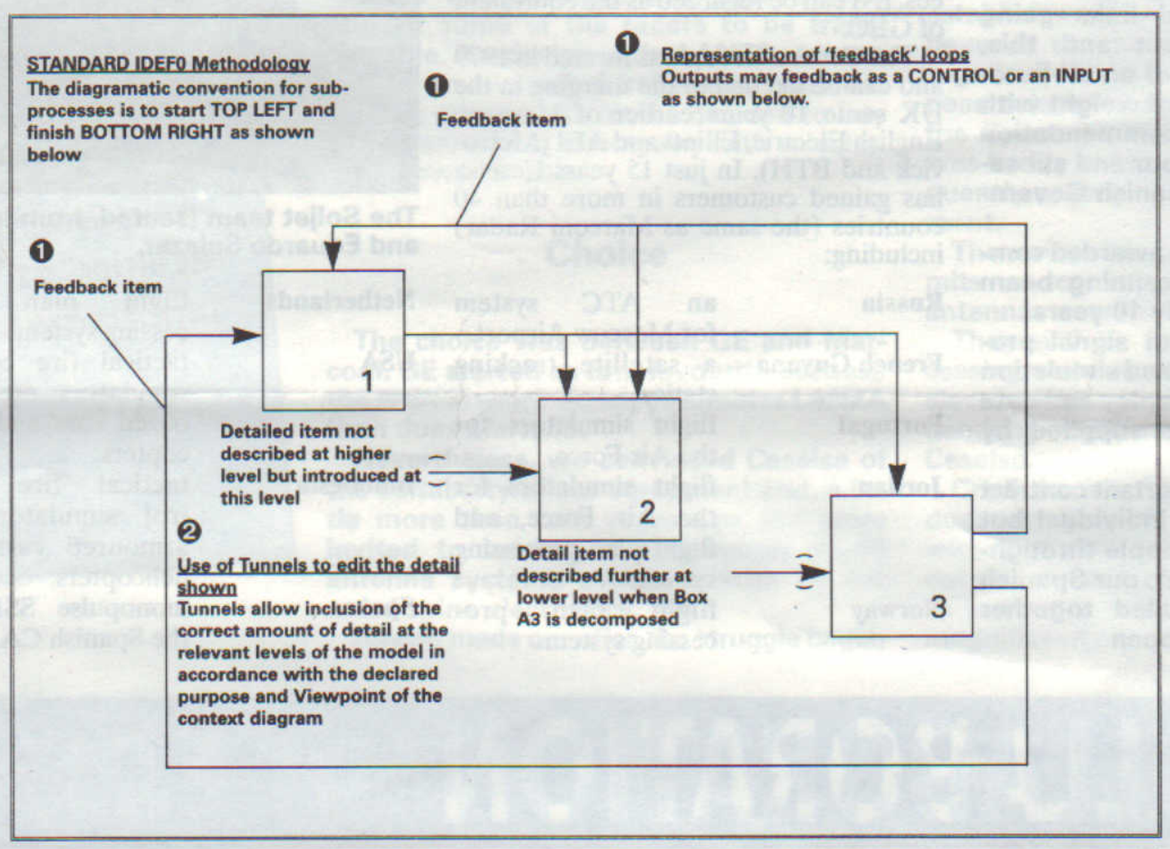
Would you use the IDEF technique and Design/IDEF tool again?

"Yes."

After the interview with Cliff, I was able to confirm that the Design/IDEF Release 3.0, which Marconi Radar is due to receive next week under a maintenance contract, will support a full data dictionary, and will be used to complete the task Cliff has undertaken.

As some readers may already know, Nigel Cope has offered training and consultancy on process modelling, re-engineering, IDEF methodology and related matters over the past two years.





NEW MOVES IN MANAGEMENT INFORMATION SYSTEMS

DESIGN philosophies over the last decade concentrated primarily on system functionality. This has led to the useability becoming less and less intuitive.

In the past year, the culture of EIS has exploded onto the commercial market with many companies exploring the intuitive and drill down techniques associated with this design philosophy.

Structure

Currently within MRCS, a high level Management Information System is being built, targeted for the MRCS executives. When fully incorporated within the management reporting structure, it will provide a multi-dimensional view of current and future business needs and requirements.

Planned

As some may be aware, version 1 of the Financial Review and Business Opportunity Modules were implemented at the Chelmsford site in 1993; version 2 of the Business Opportunity Module is planned for early this year.

As the techniques of EIS are developed, this method of data collection and interrogation could be utilised at all levels within the company, possibly a hierarchy of differing system, so . . . Watch This Space!

SOFTWARE COPYING IS THEFT — BEWARE

Eastwood House networking will help solve the potential problem

"LAST night I copied your copy of Lotus 123 and guess what? It worked first time on my PC. I can now update your spreadsheets for you. Oh yes, I know someone from IT might tell me off: don't worry, there is a batch file on my PC that contains 'DEL *.*' that will get rid of any files, you can run it if I'm out."

Sounds familiar? The home truths about software piracy (theft) are:

1. **There are unlimited fines for copying software without approval.**
2. **Not only is the division fined, but also the person who copied the software; the user and the manager are also liable to be fined.**
3. **The Police and FAST (Federation Against Software Theft) can make dawn raids.**
4. **Deleting files on PCs does not delete the information, only the directory pointer to that file. In other words the disks can be scanned to find out what was on them.**
5. **Marconi Radar does not want you to save money in this way. It could cost the company a lot more!**

A better way of really saving money is to get networked, because users who are networked can share programs as well as data, which means if you or your colleagues donate programs to the network, the network will manage the sharing of licences so that the total number of users does not exceed the licences Marconi Radar holds.

After we move to *Eastwood House*, it will be easier to network new users. Until then please wait and don't find illegal ways to share software.

When you are ready to be networked, contact the IT Department. You will then be advised which network card to buy. The IT Department will do the rest. You in turn, if possible, will donate some of your software, so others can benefit.

HOT SHOTS

CAMERA CLUB PHOTO SPECIAL

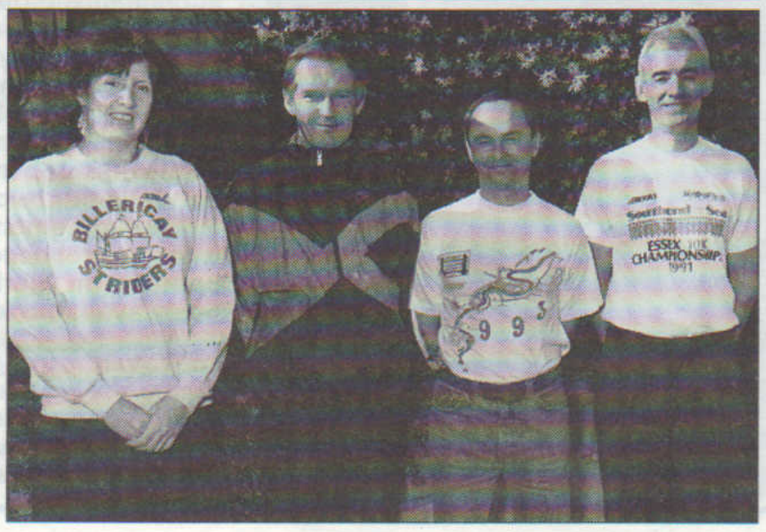
PAUL Harden's photographs must be as familiar to readers of *News and Views* as they are to the Camera Club, of which he is chairman. Here he presents us with two brilliant studies in which he captures both joy and despair.

Calling all sporting folk — we want to hear from YOU

NEWS AND VIEWS is distributed in Writtle Road, Baddow, Bushy Hill, Frimley, Leicester and overseas in Melbourne, yet most of the sport and leisure information on this page is sent in by Writtle Road personnel. Does this mean that all you others are armchair sports people? Have you no sports clubs or site teams? Or is it that you don't like to boast of your athletic prowess?

Take the 1994 London Marathon, for example; four Writtle Roaders told the editor that they were taking part this year — is there no one from elsewhere in our far-flung empire who took part? (Oz-folk, ignore this question).

Do please let the editor know of any sport or leisure activity that's going on in your neck of the woods — photos welcome. The address is Publicity Department, Writtle Road.



RIGHT: Sue Hampshire ran for the first time in the London Marathon, Ken Launden entered for the fourth time, Steve Taylor notched up his fifth, and Bill Wilsher, his eighth annual run around the City. They all finished. Congratulations!.

WORD POSER

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

HAVE a go at winning £15 by solving our latest Word Poser — first out of the hat wins.

All you have to do is match each letter of the alphabet to a number on the grid to complete the puzzle. We've already given you three letters, so fill them in on the grid and take it from there.

Send in your entries (to arrive by post on 27 May 1994) to the Editor, *News and Views*, Publicity.

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

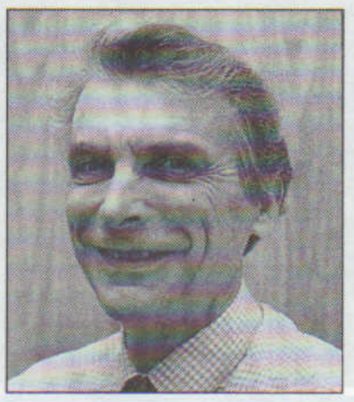
APRIL WORD POSER COMPETITION

Name.....

Department.....

Phone.....

Winners



ERNIE Kench, pictured right, is one of the three winners of the Christmas Word Poser competition. Paul Holt of the Melbourne Team and Alan Beard were the other two recipients of £15 prizes.

Space-saving move to *Elettra House*

SPACE limitations set by *Eastwood House* have long been acknowledged. The problem was only partly solved by the decision to transfer some of our personnel to Baddow.

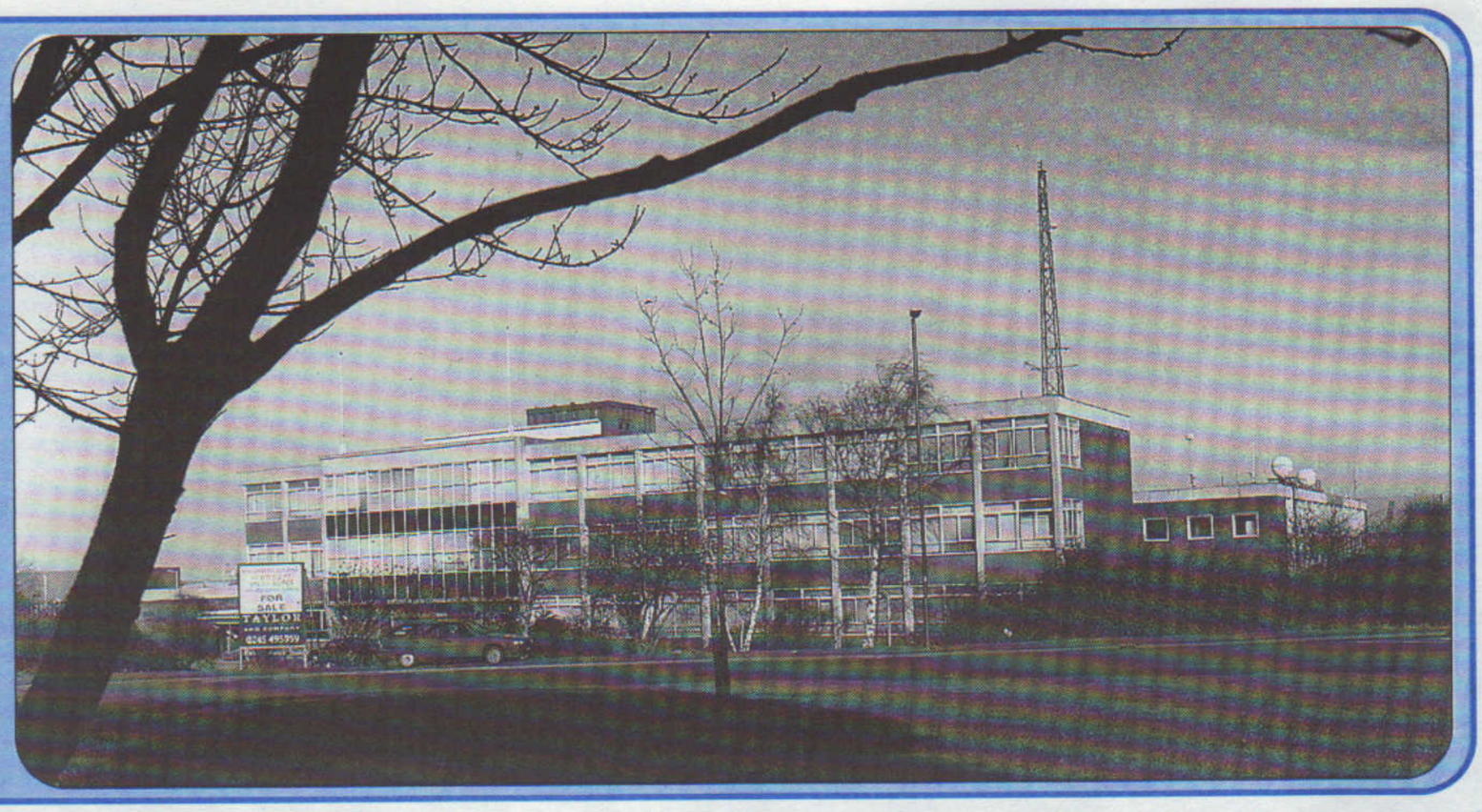
The final solution has now been agreed: to take on *Elettra House*, former Marconi Marine HQ, West Way.

Personnel will be housed as follows:

***Elettra House*: Customer Support Business Group (including ATC but excepting Bids and Proposals, TID and ILS); Field Services; the PCTA, G-MATS, Spares & Repairs and the GLO.**

***Eastwood House*: Air Surveillance, Weapon Control and HF Business Groups (with the exception of their Engineering Departments); Bids and Proposals, TID and ILS from Customer Support; central services, i.e. Marketing, Accounts, Site Services, IT, Commercial and Quality.**

***Baddow*: All the Business Groups' engineers; Mechanical engineers (now part of GEC-Marconi Research); Production Engineering; the Test Equipment Centre and Drawing Office (including Standards Department).**



Radar experience paves way for state-of-the-art deal with CAA

£1m CONTRACT FOR MARCONI

THE CIVIL Aviation Authority (CAA) has awarded Marconi Radar a contract worth in excess of £1 million for the provision of the heart of UK RADNET, a state-of-the-art radar data distribution system.

RADNET will enable data produced by the CAA's radar network to be sent to the ATC Centre at West Drayton and, eventually, to the air traffic controllers at the New En Route Centre (NERC). It will replace the system currently in use in the UK and will enable even tighter control to be exercised over the airways.

RADNET comprises a number of sub-systems, the principal ones being: the telephone network and its associated maintenance system, (sending radar data over telephone links obviates then need to use expensive, broadband microwave links); the remote control monitoring system; the radar data time and conversion units (RDTCUs).

The provision of the RDTCUs is Marconi Radar's responsibility, and involves the development of special software, the procurement of computer hardware and proving the design.

The order covers the supply of seven RDTCUs, with options for at least another 30 sets.

It was awarded as a result of Marconi's proven experience of radar systems and associated signal processing and other extraction techniques — the CAA already uses Marconi assignors in a similar role in its airports radar network.

Another significant factor that contributed to the winning of the contract, in the face of keen competition, was Marconi's reputation for keeping to schedule. The NERC is due to come on line in 1996, so it is vitally important that radar data is available for it from existing and new CAA radars.

The timely completion of the Marconi contract is an important link in the chain.

RADNET is designed to allow all radar data to be shared not only between centres but also between countries, using the system. Its potential for overseas sales is therefore considerable.

OBITUARY

KEN STOKER

IT IS with great regret that we have to report the death of Ken Stoker.

For many years, Ken was manager of TID and well known to many people in Marconi Radar. He was instrumental in the introduction into the division of electronic word processing and graphics at a time when many major companies were still wedded to manual typewriters.

Professionalism

A founder member of The Institute of Technical Authors and Illustrators, later The Institute of Scientific and Technical Communications, he was strongly committed to professionalism in technical publications and set high standards for all the work of TID.

He was a kind man, approachable at all times and considerate of the needs of his staff.

His passing will be regretted by all of us who knew him.

Our deepest sympathy goes to Ken's family for their sad loss.

Navy man in new role

MARTYN ALLEN joined us recently to take up the appointment of group sales and marketing manager, Naval Weapons.

Martyn has a strong naval background, having attended the Royal Naval College, Dartmouth, subsequently serving at sea in several classes of ship. In 1981 he specialised as a mine warfare and clearance diving officer, becoming in 1984 base diving officer in charge of the Clyde Submarine Clearance Diving Team.

In 1986, Martyn channelled his expertise into industry and joined a firm of consulting engineers, YARD Ltd, where he was employed as a senior design engineer on numerous maritime-orientated contracts for the MoD and DTI. He later transferred to the operational analysis group as a project manager for mine warfare type projects.

Martyn joined GEC-Marconi Combat Systems (formerly Plessey Naval Systems) in 1989 as bid manager for the NAUTIS Product Group and was promoted to the position of divisional bid manager.

In 1990 he became sales and marketing manager, a function he fulfilled until he joined Marconi Radar.

Martyn, who is married and has two children, aged six and four; is a Lieutenant Commander in the Royal Naval Reserve and is active in rugby, squash and the support of his daughter in her growing interest in riding.

Brian bows out after 42 years

BRIAN PIERCY, who retired on 11 March, joined Marconi in 1952, serving a special traineeship at Marconi College and with Marine Development.

Fourteen months later, he was appointed to the staff of the Marine Development Group and in 1968 became chief of Radar Development Marine Division, with responsibilities that included Quality.

In 1981, Brian transferred to *Elettra House*, headquarters of the Marconi Marine Company, as chief of the Marine Radar Development Group, and was promoted 18 months later to Development Group manager (radar and echosounding).

In 1985 he transferred to Marconi Radar as a principal systems engineer, and became group chief (performance assessment and modelling) in 1988.

Brian was seconded to G-MS HF Division, Australia, in 1991 and it is from there that he has embarked on his new, unaccustomed life of leisure, in which we wish him every happiness.

Romania links boosted with training

FOUR members of Elprof SA, Bucharest, recently arrived in Chelmsford for a series of courses in radar engineering and manufacturing techniques.

The training is part of the contract awarded to Marconi Radar for the supply of sub-systems to be incorporated in Elprof air surveillance radars.

Also included in the contract is the transfer of technology to enable manufacture to be undertaken in Romania.

Steve Bousfield said: "It is a pleasure doing business in Romania, and we see this as the first step in a long-term collaboration between our two companies.

"Our agreement has been framed so that it can be broadened to keep pace with developments in markets that were not previously available to either of us."

LEFT: Visiting engineers from Elprof S.A., of Bucharest are (from left): Tudor Lidian; Corneliu Vladareanu; Steve Brewster, commercial controller Air Surveillance business group; Ion Slivneanu and Sergius Ghinda.

NEWS & views

Next issue:
Copy date for inclusion of material in issue number 59 of *News and Views* will be 26 May 1994 and the newspaper will be distributed on 23 June 1994

Published by Marconi Radar Systems, Writtle Road, Chelmsford.
Edited and produced by the Publicity Department.
Tel: Chelmsford 267111 ext 2761

Designed, typeset and produced by:
AB Consultants Ltd,
120 Wootton Street,
London SE1 8LY
Tel: 071-928 1424