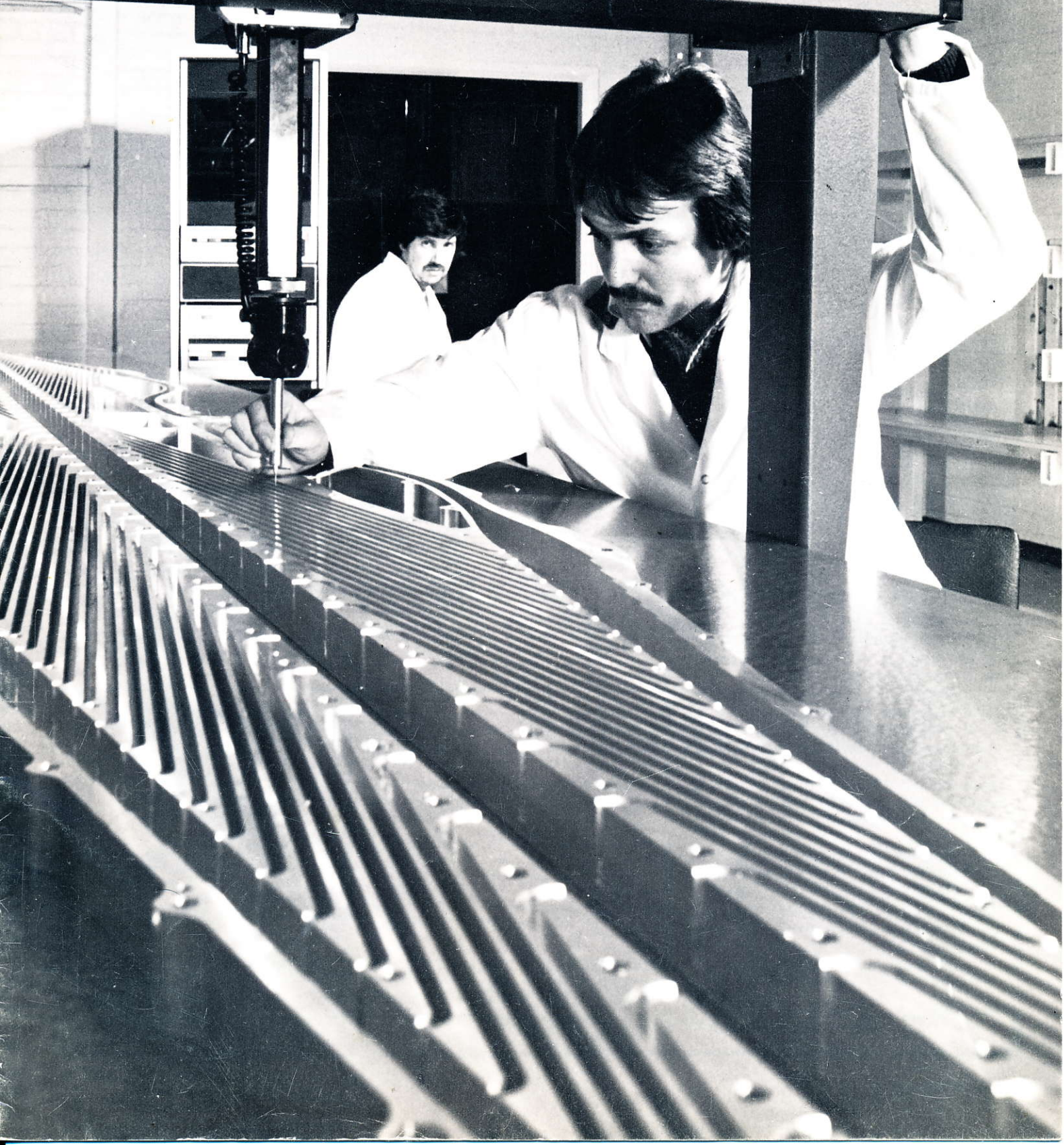


DECEMBER 1981

**Marconi
Radar**

ECHO

The internal newspaper of Marconi Radar Systems and its people



The time to fight

These are difficult times. The major changes in National defence policy which involve severe cuts in the future size and capability of the Royal Navy have already affected us through cancellation of important development contracts in Chelmsford and Leicester. Fortunately some of the worst impact of this action has been offset by our taking on work from other parts of the Marconi Group, and in particular development tasks associated with the heavyweight torpedo. Nevertheless, due to these cancellations there have had to be redundancies and there may be more to come if production quantities of existing manufacturing contracts are reduced, as seems fairly likely. We will do everything possible to minimise the effects.

On the other hand, everyone concerned is working very hard indeed to win new business in a number of promising areas which will go some way to fill the gap left by the Navy cancellations. We are lobbying the Government at every level to persuade them to award the Lightweight SEAWOLF to us rather than to the Dutch, and this would improve our situation.

As part of the build-up of capacity and resources to meet the Naval programme as it was put to us by the Minister of Defence a couple of years ago, we had by the middle of this year an unusually large number of apprentices and trainees on our books. I am happy to say that by reallocating work, continuing to pay training costs, by placing people in associated companies and by help from the Manpower Services Commission with a few people, we have managed to secure the future for every one of them.

But now is the time to fight: For new business, for timely and cost-effective completion of the business we have in hand, and for attractive and cost-effective new products and systems for the market place.

JOHN SUTHERLAND
Managing Director



Air lift

Two o'clock in the morning at Stansted Airport ... and a Bristol freighter of Heavy Lift Cargo Airlines stands by to fly Marconi radar equipment to an overseas destination.

Waiting to be loaded is the S1061 mobile surveillance antenna, together with transmitter cabin and ancillary equipment. Marconi employees in the

picture include Trevor Clark (driver), Harry Jowers (mechanical engineering), Fred Kilburn (contracts) and Ted Wade (shipping dept., New Street).

Appointment

BRIAN LOADER has been appointed Divisional Manager of Naval Division, MRSL, Chelmsford, combining the former personnel of DDON and DDRN (C).

A new industrial joint venture for NATO

A major grouping of electronic companies from NATO countries is forming a new company to undertake work on the NATO Air Command and Control System (ACCS) forthcoming programme.

To be registered in Brussels under the name ACCSCO S.A., the company will be jointly owned by AEG-Telefunken (Germany), Hughes Aircraft (USA), Marconi (UK), MBL (Belgium), Plessey (UK), Selenia (Italy), Siemens (Germany), Hollandse Signaal — Apparaten (Netherlands) and Thomson-CRF (France).

The companies have already collaborated for more than a year on this task. They will aim to win contracts on a competitive basis for studies and implementation work for the up-date of the NATO Air Command and Control System in Europe.



COVER PHOTO

... shows Graham Cowell, an Inspector at Writtle Road Works, taking measurements on a radar module. Looking on in the background is Dave Lowe, Section Leader.

New lightweight radars on show

Marconi Radar was well represented on Stand No. 6 at this year's Royal Navy Equipment Exhibition at Whale Island, Portsmouth, and a great deal of interest was aroused by the Company's display. Good use was also made of our own Portakabin for private discussions and presentations.

The highlight of the display was the new 805SW lightweight dual-radar tracker. Designed for use with the British Aerospace Seawolf missile to complete an all-British point defence system for ships of less than 1,000 tonnes, the Marconi 805SW is spearheading the Company's world-wide sales drive for a whole new generation of lightweight naval fire control radars.

Also presented on the stand were details of the 805SD tracker/illuminator for use with the lightweight Sea Dart system, together with information on other variants in the 805 series for control of guns and missiles.

In model form the Company showed its 800 Series radars which have been fitted to fast patrol boats for both missile and gun control. To complete the radar display there was a graphical presentation of developments in surveillance radars for warships.

Instrumentation and Training Systems featured its expertise in computer generated imagery, describing its activities in the missile aimer trainer, ship handling and team training simulator fields.

Naval Control Systems on show included a graphical presentation of the degaussing system being provided for HMS Brecon and the other Hunt-class mine counter measure vessels. Mention was also made of the Type 2400 submarine's electric propulsion system, for which the Company is main contractor.



On show outside at Whale Island was the 105mm Naval Patrol Gun MK 1. The system design of the gun combines the expertise of the Royal Ordnance Factory, Nottingham, and Marconi Radar at Leicester, supported by specialist sub-contractors. The gun is fitted with equipment derived from the Marconi SFCS600 Fire Control System in conjunction with a periscopic sight with built-in laser rangefinder.



A view of the Marconi Radar stand.



Sir Eric Eastwood

Sir Eric Eastwood, who became GEC's Director of Research and Chief Scientist of the Marconi Company, has died at the age of 71.

Dr. Eastwood, who obtained his doctorate in 1935 at Christ's College, Cambridge University, eventually joined the Royal Air Force, became a Squadron Leader and worked throughout the war on technical problems associated with the use of radar by the Fighter Defences.

After the war Dr. Eastwood joined the Nelson Research Laboratory of the English Electric Company and was transferred to the Marconi Research Laboratory, Great Baddow, after English Electric acquired the Marconi Company. When he retired in 1973 he held the

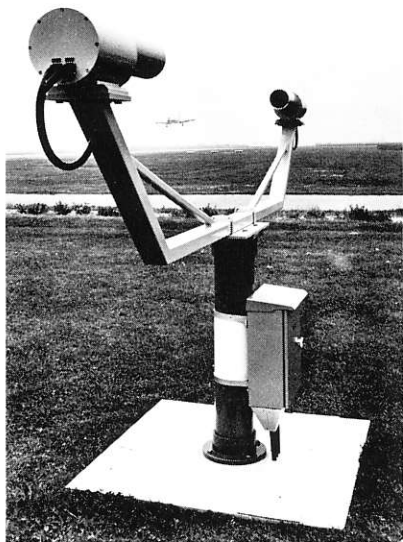
positions of Director of Research of the General Electric Company and Chief Scientist of the Marconi Company, since which time he acted as Consultant to the Company.

Dr. Eastwood's contribution to the military uses of radar was recognised by the award of the CBE in 1962 and his Knighthood in 1972. His work on radar for civil aviation gained him the Wakefield Gold Medal of the Royal Aeronautical Society in 1961. He was elected a Fellow of the Royal Society in March 1967, awarded the Glazebrook Medal by the Institute of Physics in 1970, and held office as President of the IEE in 1972-73.

He lived in Little Baddow, Chelmsford, and leaves a widow and two sons.



Another sale for tank control systems



IVR-Met for Liverpool

The Marconi IVR-Met system ordered by IAL, as main contractors, for Liverpool Airport, Speke, is the first such system to be installed at a civil airport.

The system, which automatically measures and displays visual range, will employ the new MET-1 transmissometers at three field-sites along the runway, one installed at the middle and one at each end.

The IVR-Met system is capable of collecting and processing data from other meteorological sensors besides visibility. These sensors can monitor background luminance, wind speed, wind direction, air humidity, air temperature, atmospheric pressure and cloud base.

Following close upon the heels of the £6 million contract announced in the last edition of ECHO comes the news of a further major order for tank control systems, this time to be fitted to the Vickers MK 3 main battle tanks ordered by Nigeria.

The Marconi Gun Control and Stabilisation System GCE620 is supplied with the Vickers MBT as standard equipment to control the turret and gun, but the tanks for Nigeria will also be fitted with the Marconi Fire Control System SFCS600.

Military Systems Division has been concerned with the design and manufacture of gun stabilisers for tanks since the introduction of the Centurion in 1945. The latest fully-transistorised GCE620 system produces an excellent stabilisation accuracy when the tank is moving cross-country and allows moving targets to be tracked smoothly. The equipment is notable for its ruggedness and reliability.

The SFCS600 Fire Control System provides the tank gunner with a computerised system which calculates the parameters affecting the true aiming point to achieve a first-time hit in the shortest time. The system is based on a computer linked to a laser rangefinder and optical sight. Further inputs include meteorological data to determine wind speeds and atmospheric, tilt sensors and other data sources. A control panel situated by the tank commander selects the type of ammunition which is to be fired and can be used to set in certain parameters manually if required.

Testing and evaluation of different nations' vehicles against Nigeria's requirements has been in progress for several years, and the order for Vickers tanks means that an important and influential African country, listed as currently possessing Soviet T55 tanks, has now decided to go British.



Assembling Gun Control Cubicles at Gateshead Works.

Seawolf in service

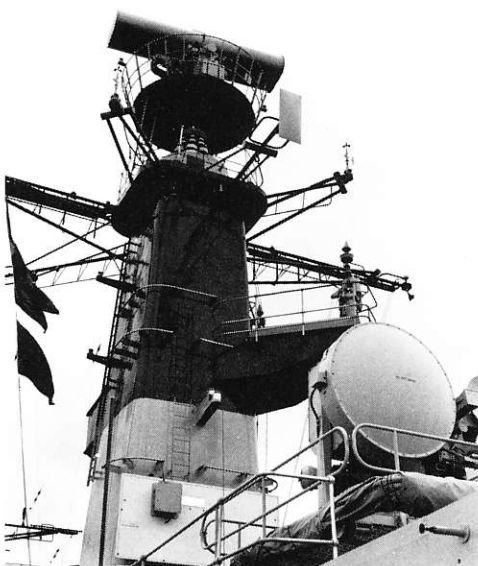


HMS Broadsword, pictured left, is the first of the Royal Navy's Type 22 frigates to be fitted with the Seawolf/GWS25 guided weapon system — considered to be the most effective defence available anywhere against air and ship-launched missiles.

Marconi Radar, as prime contractor for this advanced weapon system, was responsible for the total electronic package.

Broadsword successfully completed firing trials of the British Aerospace Seawolf missile on the Aberporth range. In the first trial a Seawolf scored a direct hit on a shell fired from RAE Aberporth, the shell being intercepted at the top of its trajectory some 2000 feet above the sea. In the second test, a drone flying at extremely low level was damaged by a Seawolf carrying telemetry equipment but no warhead.

Broadsword's acceptance trials continued in the Caribbean, where trials took place against drones and surface targets.



● The GWS25 surveillance system (on masthead) employs two high power Marconi radars operating in different bands for detection of surface and air targets, combining a conventional 'S' band radar, Type 968, with a special self-adaptive 'L' band pulse doppler radar, Type 967. The two antennae are mounted back-to-back on a roll and pitch stabilised masthead platform, and give complete cover from low level to very high angles of sight.

● The tracking radar, Type 910 (below, right) uses mono-pulse techniques and gives the GWS25 system an all-weather performance against the smallest attacking missile in the most exacting radar clutter conditions. It provides remarkable tracking accuracy and a guidance capability for the simultaneous control of two Seawolf missiles. The operation of this differential tracker is fully automatic under the control of a system computer.



Enhancing the performance

The Company has been working under MOD contract to enhance the performance of the GWS25 system against low-level targets while maintaining the system's already superb all-round performance. Recent 'live' firing trials demonstrated the modified GWS25 system's capability to engage successfully these 'difficult' targets.

Using a derivative of the DN181 Blindfire radar, on the same mount as the Seawolf Type 910 tracker radar, the trials showed that the tracking of such targets as sea-skimming anti-ship missiles flying a few feet above the surface is considerably enhanced, ensuring a very high probability of successful engagement by the Seawolf missile.



● Before he retired as Manager, Defence Division R.N. (Chelmsford), Bill Melville, pictured left, went on board HMS Broadsword to present Captain Norman with a small memento from the Company in the form of a silver cigarette box.

SPERRY SIGNS TEP

Marconi Radar

Under an agreement signed with the Sperry Corporation of America, Sperry will be able to incorporate the Marconi Tepigen Visual System in simulators offered to the North American market.

The agreement covers the highest technology product in the Tepigen range (known as H2) which is particularly suited, though not exclusively, to the military flight simulator market — a market which is confidently expected to expand dramatically over the next few years. The Secor Operation of Sperry in Fairfax, Virginia, as a major supplier of military flight simulators, is well placed to meet this massive market expansion and is expected to benefit considerably by having an 'in-house' capability in visual systems.

Until such time as development and manufacture are established in the USA, the two



The carbon fibre aerial complete with mounting arrangement being prepared for transit to the test site.



Cliff Crane and Jeremy White, Production Engineering, with the aerial mould fixture.

Carbon Fibre sets new trend

Drawing upon its wide experience of air traffic control radar systems, the Company has designed a new airfield surveillance radar, Type S511. The radar is based on a modular and cost-effective format and provides surveillance cover from 0.5 nautical mile to a minimum of 50 nautical miles, at heights up to 30,000 feet. It has been designed for completely unattended 24 hour-a-day operation.

An unusual feature of the radar is that it employs the first 'S' band aerial to be manufactured in carbon fibre at Writtle

Road Works. Recently completed by Mick Healey's Development team and Charles Rand's Production Engineering team under Cliff Crane, it measures 5 x 2.75 metres and weighs only 280lbs.

For the technically minded, the reflector consists of epoxy resin/carbon and glass reinforced plastic skins fixed on each side of 1½-inch thick honeycomb core. These materials are shaped over a male mould fixture while the resins are curing. Supporting and strengthening ribs are

later bonded to the back skin of the reflector itself.

The system of construction gives vast improvements to design and manufacturing costs, weight reduction and geometric stability, as well as improved electrical characteristics. An aerial can be manufactured in some two weeks.

The A.S.R. project is now under final test and commissioning at the Rivenhall site and will then be subject to customer evaluation.

TEPIGEN AGREEMENT

companies will support sales with customer demonstrations in the UK, and Marconi will manufacture equipment to meet orders. Outside of North America, Marconi retains the initiative for world-wide sales though the two firms may decide to team to bid for specific projects.

The agreement also covers other applications of Tepigen which may arise in North America such as trainers for armoured vehicles, naval vessels and some categories of merchant vessels.

Tepigen, which has been developed over the past five years at our Leicester laboratories, is capable of generating realistic visual scenes for use in simulators wholly by computer — no models, television cameras or film are necessary. It incorporates a unique system of land and sea 'texturing' to maximise realism of the computer-generated pictures.



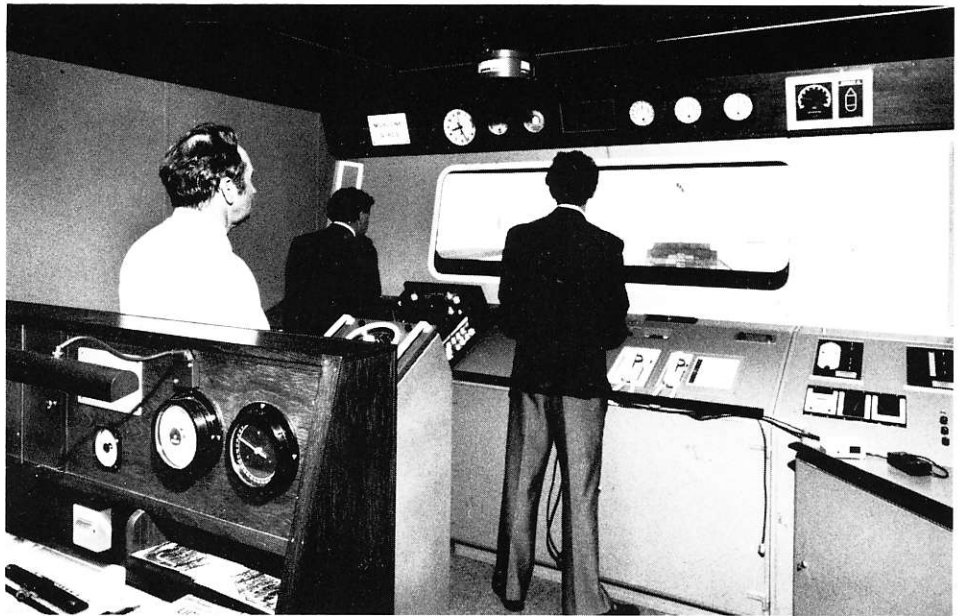
Maritime Simulator launched

The official unveiling of the Company's maritime simulator took place at Leicester recently, when a series of 'live' demonstrations was held for potential customers and representatives of press, television and radio.

The simulator combines Marconi Radar's revolutionary computer-generated imagery system TEPIGEN with a full scale model of a ship's bridge, complete with control and instruments, developed by Racal-Decca. The result is the world's first ship handling simulator to incorporate full computer-generated simulation of 'dusk-night-day' visual scenes for the training of deck officers.

The complete system is to be installed at the University of Wales Institute of Science and Technology, Cardiff, who will use it as a research tool. It will also be used by the South Glamorgan Institute of Higher Education for the training of ships' officers.

TEPIGEN has already been employed in the gunnery aimer training field and is currently being developed for flight simulation. The development of this latest trainer was jointly funded by the Company and the Department of Industry. In addition the National Maritime Institute provided valuable information on maritime affairs to the design engineers concerned.



In command of the ship's bridge simulator at Leicester is Captain Tony Rawson (right) with two of his colleagues from the Llandaff Nautical College.



High and dry

One of the Egyptian Navy's 'Ramadan'-class fast patrol boats being fitted with weapons and electronic equipment by Vosper Thornycroft (UK). An 'October'-class boat can be seen afloat in the background.

CHELMSFORD RETIREMENTS



● **Bill Claydon** joined the Marconi Company in 1934 and after passing through all the Machine Shop sections finally became an Instrument Maker. In 1939 he transferred to R & D Workshop Writtle and during the war worked on the development of communication equipment used by the RAF, installing the prototypes at Hendon Aerodrome. In 1949 he moved to Planning and Workshop admin work for the Aeronautical Division and in 1954 went to Baddow as Planning Supervisor. He became Assistant to the Workshop Superintendent in 1966 and transferred to Writtle Road to work on GWS25 in 1975.

Our picture shows Bill (centre) receiving a presentation from Bob Scott, Production Director. Also in the picture (left to right) are Norman Rome, Programme Planning Manager, Mrs. Joyce Claydon and Alan Shelley, Works Manager.

● **Ted Bull**, Security Patrolman at Writtle Road, has retired after 43 years' service with the Company. He joined the Marconi Company at New Street and was first employed in Section J1A as an Instrument Maker. After a while he transferred to the Electricians Shop for five years.

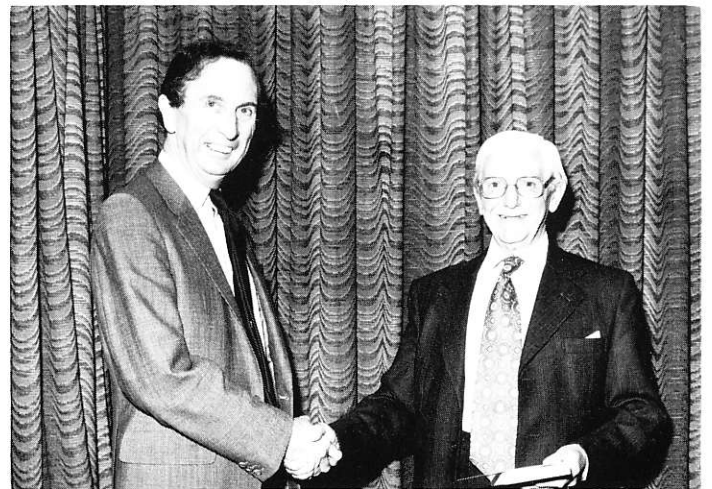
Ted then decided to become part of the Mobile Patrol team at New Street, and during this period was seconded to EEV for two years. He moved to Writtle Road at the time when Marconi Radar first took on the site, working for the late Mr. Mayhew.

Picture shows (seated, left to right) Mrs. Violet Bull, John Sutherland, Ted Bull; (Back row) Ron Sherwin, Establishments Manager, Mary Mackin, Personnel Officer, Bob Stock, Supervisor Security Patrolmen.



● **Tom Smith** joined GEC in 1933 as a special trainee. He was employed at Trafford Park in the Outside Erection Department until 1946, during which time he was involved in the early development stages of radar and helped to install and commission the radars at 22 stations throughout the UK. After serving as a Development Engineer for a couple of years he returned to the Outside Erection Department as an Electronics Engineer, installing and commissioning radars, and was eventually promoted to Assistant Manager.

In 1968 Tom transferred to AEI as Assistant Manager of the I & M Department, and in April 1970 joined Marconi Radar as a Senior Project Engineer in charge of the GWS25 installation and commissioning project at Woomera, Australia. He was appointed to Controller Admin (Field Services) in 1974 and held this position until retirement. Tom is pictured here being congratulated by John Sutherland.



● **'Hank' Graham**, who entered the electronics industry in 1932 with Rediffusion at Lancaster, was involved in Radar from 1940 when he became a civilian technician on the Chain Home system. He then joined the RAF and served until 1949, the whole of his service being concerned with Radar.

He joined the Company at Rivenhall in 1949, then moved to New Street on the Vast/Rotor programme. In 1956-57 he worked in Germany as Company representative on the 'Booklet' Sites, returning to Contracts in 1957 and eventually becoming Assistant Contracts Manager. He joined Technical Services in 1972 as Chief of Administration. Hank (right) is shown receiving a farewell presentation from Director Ian Butler.

CHELMSFORD RETIREMENTS



• **Albert Crozier**, a Chargehand in W.I.P., joined the Marconi Company in 1955 and spent the majority of his time in Works Stores at New Street, Dobies, Waterhouse Lane and Writtle Road.

Albert, whose wife died some three years ago, has three married daughters — one in Ipswich, one in Leicester and one in South Africa — and spends some time with each, including the one in South Africa. He has eight grandchildren. Albert is shown (centre) receiving a presentation from Bob Scott. Also in the picture is H.E. Fewell, Assembly Manager.



• When **Bert Whitworth** gave up his post as Secretary to the Marconi Employees Charities Committee shortly before he retired, he was presented with a certificate of service and a personal gift by his colleagues on the committee. He had served the committee for over 12 years, first as Publications Officer and then as Secretary.

Our picture shows Bert with his certificate after receiving it from Ron Ransom, Chairman of the Committee.

CHELMSFORD LONG SERVICE



• *Back row:* D. Candy, F.H. Reynolds, John Sutherland (Managing Director), I.D. Thorn, R. Tonkin. *Front row:* K.A. Knight, B.C. Webb, C.A. Poulton (41 years), G.J. Murray, M.P. Kelly. All 25 years' service except where stated.



• *Pictured above with their equipment are (left to right) David Shaw, Nigel Johnson and Joe Bailey.*

Jubilee cup winners for fourth year

For the fourth year in succession, Marconi Radar technician apprentices have taken first prize in the Chelmsford Engineering Society's Jubilee Cup Competition. The victorious apprentices were Electronic Technicians David Shaw and Joe Bailey and Mechanical Technician Nigel Johnson.

This year the project entered was a Logarithmic Detector Test Set. A logarithmic detector is basically a many-stage amplifier for extracting target information from the incoming radar signal. A typical log detector has eight stages which need to be set up carefully — adjusting until the correct output curve is achieved.

The parent department wanted a piece of equipment that would automatically test the logarithmic detector and plot its response curve. The project is designed to achieve this and so reduce the cost of testing and aligning logarithmic detectors.

Aiding a remarkable boy

During the summer vacation period two undergraduates sponsored by Marconi Radar at Leicester have made a major contribution to the Year of Disabled People. They have been using their electronics expertise to help an almost totally paralysed eight-year-old boy.

Mark Somervail and Tony Murray have just started their final year of a B.A. degree in Engineering at Cambridge University. Eight-year-old Jonathan Dailey is the son of the Production Engineering Manager at Redring Electric Limited, a GEC company, in Peterborough.

Although extremely intelligent, Jonathan's physical control is limited to head and eye movements. His father, Brian, had skilfully designed a communication system using a micro-computer and video screen triggered by head movements. This original design utilised a leather bellows via a coupling connected to a head set containing two microswitches.

The objective for the two undergraduates was to enhance the system, which only allowed Jonathan to select five letters



At home with Jonathan and his communication system are (left to right) Steve Perry, Tony Murray and Mark Somervail.

per minute from a matrix board that he had memorised.

Using skills so far acquired under the Company's scheme for the training of professional engineers and under the guidance of Steve Perry, Senior Instructor, who had overall responsibility for project management, Tony and Mark have been able to improve the speed of character selection by 1200 per cent by using computer software programmes.

A significant advance has been achieved by the use of seven optical switches in the head set. The main concern at this stage was whether Jonathan could exercise the degree of skill using head movements to select each switch and hold the selected position. Jonathan's answer was to master the switching system completely within 20 minutes!

This major development gives Jonathan the facility to communicate either on to the video screen or to print out using a teletype machine.

At Leicester the work to date is seen as the first phase in a series of developments which will continue to enhance the communication system for the benefit of this remarkable boy.



A helping hand

The Marconi (Leicester) Charities Fund, which is supported by voluntary contributions from Marconi Radar employees, has presented the Leicester branch of the Muscular Dystrophy Group with a portable television. The gift will be used as the prize in a fund-raising draw the branch is making in December.

Receiving the set is Mrs. Margaret Clarke, vice-chairman of the branch, with her husband. Making the presentation are (left to right) George Skipp, treasurer of the Marconi Employees Charities Committee, Cliff Shuttlewood, chairman, John Barnes and Paul Hudson, members of the committee.

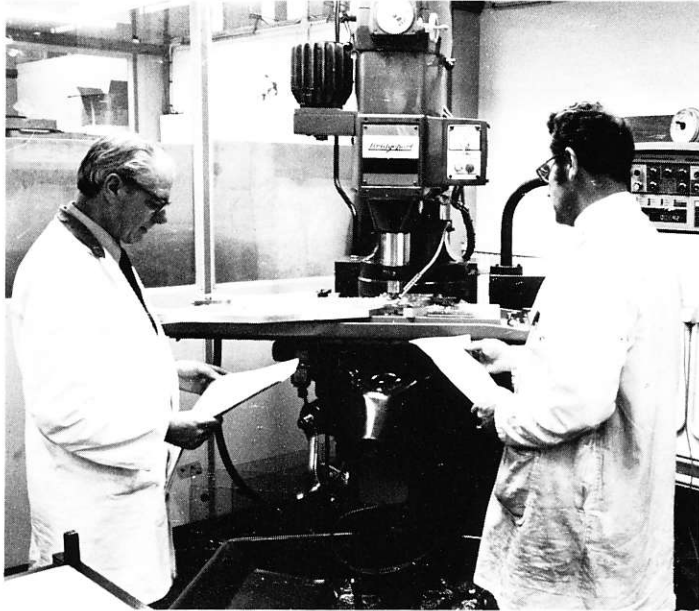
Christian fellowship

Recently a letter was received from Ghana, addressed to MRS.L, asking if it were possible for a Bible to be supplied. Our resourceful postal department, noting the unusual contents, passed the letter on to us to deal with. Without delay a letter was sent in reply to obtain further information, so that arrangements could be made through the agency of an inter-denominational Bible society to have a Bible delivered without charge, in the appropriate language.

We understand the local postmaster in Ghana has died, causing the post office to be temporarily closed and creating long delays in their postal service. However, it is hoped that eventually we might be able to obtain further news on the outcome of our endeavours, assuring us that we have another satisfied 'customer'!

Programmes of our regular Monday lunch-time meetings held at 12.35 in 'D' Bldg. Reception at Writtle Road are obtainable from Doug Jones (Ext. 2447). A welcome to all.

JON ELLIS
Chairman



Ron Rocket, Foreman (left) and John Bednarek during the initial machining of the component.

Trial engineering project

The success of the Computer Aided Design facility at New Parks has led to further developments in Computer Aided Manufacture.

It was decided to commission a trial project which required the co-operation of the Leicester C.A.D. facility, the Baddow Technical Computer Laboratories for provision of the software, and the Leicester Development Workshop for the hardware in the form of a Bridgeport C.N.C. milling machine.

The component design was undertaken at Leicester using a C.A.D. terminal, with staff from the Development Workshop and the Blackbird Road N.C. programming departments advising on production engineering aspects.

A software package specific to the Bridgeport machine was used

by Baddow to convert the C.A.D. data contained on magnetic tape into a machine control tape via the computer. This control tape was loaded to the Bridgeport machine, and the first MRSL component generated by the C.A.D./C.A.M. system was produced.

The component selected for this initial trial, though relatively straightforward in itself, is part of a new product which will involve far more complex machining, demanding three-dimensional control. Production of such programmes by conventional means would be extremely difficult and costly, but the use of C.A.D./C.A.M. for components with complex geometrical shapes should reduce the costs of control tape preparation by at least 30 per cent when fully developed.

Green fingers at Leicester

The Silver Jubilee year of the annual show of flowers, fruit, vegetables and wine, presented by the Leicester Ex-Service Association and Social Club at Blackbird Road, attracted a total of 439 entries — 47 more than last year.

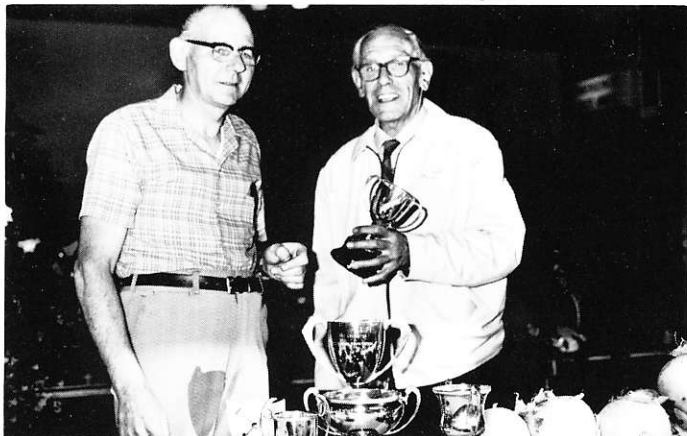
The show is open to all GEC, Marconi and Fisher Controls employees at Leicester, and to their families and associate members of the Social Club.

This year's winner of the Open Challenge Cup was Alan Dobbs, who gained most points in the show. The Gilling Challenge Cup, an inter-departmental trophy for the department gaining most points, was won for the third year in succession by Mechanical Assembly of Blackbird Road.

Other winners were: Section 1 (Vegetables and Fruit) Alan Dobbs; Section 2 (Flowers) Alan Dobbs; Section 3 (Cookery, Home Crafts and Floral Art) Mrs. B. R. Orton. In Section 4 (Wines), the W.O.P. Jones Trophy for the best wine in the show was won by Alan Dobbs, who also won the J. Burns Trophy for the most points in the section.

The Foreman's Association Challenge Trophy was won by Alan Dobbs, the Ethel Purdy Challenge Cup (best fruit cake and sandwich cake) by Mrs. M. Heath, the C. F. Pink Challenge Trophy (sideboard arrangement and floral centrepiece) by Mrs. K. Mawby, and the A. E. Dobbs Trophy (Children's class) by Miss Joanne Wright.

To mark the occasion a dance and buffet was held in the Blackbird Road Canteen during the evening when the trophies were presented by Owen Jones, who recently retired as Works Manager.



Meet the champs... Alan Dobbs (left), who won all the major trophies at this year's show, compares notes with last year's champion, George Smith.



Gateshead apprentice awards

• Pictured with Works Manager Bill Henderson (centre) after receiving their awards are (left to right) Stephen Lowdon, Apprentice of the Year; Gary White, Second Year Apprentice; Eric Foster, Third Year Apprentice; and Michael Sabbatinelli, First Year Apprentice. Each apprentice received a cheque and an engraved tankard.



Gift for body scanner

The lady operators in the Electronic Section at Gateshead presenting a cheque for £106 to Miss Daisy Clerk who has organised a local appeal for a body scanner — target £1 million. About £748,000 has been collected to date.

Lots of leeks . . .

A very successful Gardening and Leek Show was held at Gateshead, with far more leeks in evidence than in previous years.

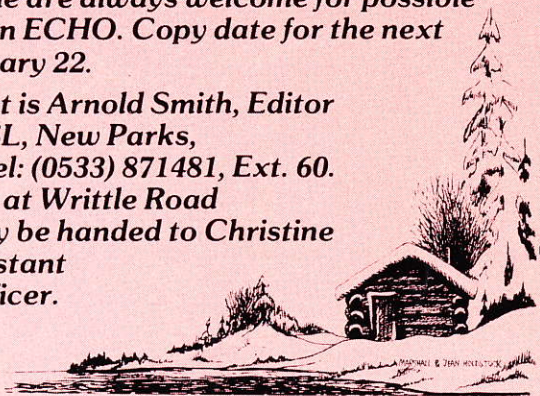
The 1st prize for leeks was won by G. Pygall (Section 012), 2nd was K. Morland (012), and 3rd R. Whitfield (012). In the Flower and Vegetable Section, the principal winners in order of merit were D. Durber (Section 014), J. Lowery (014), T. Gustafson (014), G. Pygall (012), D. Keith (014), N. Wood (015), J. Johnson (Retired Hon. Member), J. Howstan (012), R. Whitfield (012) and B. Hall (Test).

Season's Greetings to all our readers

As this will be the last edition of ECHO before the festive season, may we take the opportunity of wishing all our readers a Merry Christmas and a Happy New Year.

We shall be with you again early in 1982. Please remember that news stories, photographs or other items of interest concerning the Company and its people are always welcome for possible publication in ECHO. Copy date for the next issue is January 22.

Your contact is Arnold Smith, Editor ECHO, MRSL, New Parks, Leicester. Tel: (0533) 871481, Ext. 60. Int. 2532. Or at Writtle Road material may be handed to Christine Merrill, Assistant Publicity Officer.



FOOTBALL

The first half of our League Competition at Chelmsford finished with Division 1 leaders Marconi Marine 'A', who are on seven points, just topping Central Training Area, New Street, by one point, both teams having played four matches. The best MRSL team is Radar Software 'A' who have three points from three games, which puts them in third place.

In Division 2, the Chelmsford Computer Centre, Baddow, were setting the pace with eight points from four matches played and certainly look like Championship favourites for promotion. They are followed by Radar Workshops with five points from three games played.

Division 3 leaders are Baddow Workshops, also with eight points from four matches played. They look a good bet for promotion to Division 2.

In the Jubilee Cup the quarter finals stage is nearly complete, with just one tie, Radar Commercial v. Mat. Lab. (Baddow), to be decided. Radar Workshops v. Marine 'A', and Radar Software 'A' v. Central Training Area are the remaining teams from MRSL involved in the Cup.

The second half of the League and Cup for 1981/82 will resume on Monday, 29 March, 1982. If the weather is favourable, we look like having a splendid finish to our first season with three divisions.

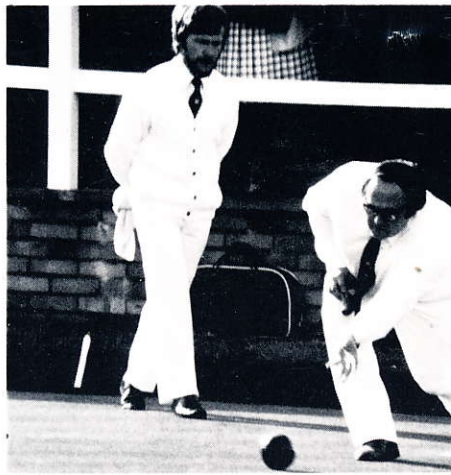
Phil Champion.

Marconi Bowls Club

Finals day for the Marconi Bowls Club at Chelmsford started with wet conditions in the morning but saw a keenly contested pairs final with Stan Slater and Henry Flack ending up winners against Henry Rickwood and Ken Tillbrook by a 27-23 shot margin. After a slow start in the Inter-departmental Knock-out the Fellowship 'A' team of Nobby Stannard, George Judd, Jack Lines and Jack Bruce fought back to within two shots of the Writtle 'A' rink of Bill Yardley, Ray Allen, Bill Richardson and Reg Wilkinson with the final score 16-14.

By 3.30 the sun was shining for the four singles finals, and in his second final of the day Henry Rickwood became Club Champion by defeating Roger Farrow 21-11. Vic Banes finally gained his first club singles title with a 21-17 victory over Tom Harper in the Handicap Singles, and for the second year running Mick Shipp won the Two-Wood Singles, this year beating Gordon Richards 21-11. The remaining title was the Junior Singles in which Roy Sheppard had a 21-15 victory over Competition Secretary John Morris.

This season the winners of the Inter-departmental Leagues were: A League — TMU, B League — Fellowship 'A', and C League — Fellowship 'B'.



Gordon Richards in action in the Two-wood Final, watched by Mick Shipp, the eventual winner.



"There's something weird about the coffee today"

GOLF

This season's Sutherland Shield match, played on the Chelmsford Golf Club course, was won for MRSL by Steve Stevenson and Sid Woodhall of Writtle Road.

The first of the 1981 Autumn Events was held on September 21 when two competitions took place on the Purdis Heath, Ipswich, course. In the morning the Ferguson Cup was won by Steve Stevenson of Writtle Road.

The Mercury Cup for the pairs Knock-Out competition, played for annually, was presented to the winners Steve Stevenson and Bernie Wassell, both of MRSL.

This season's Singles Knock-Out competition has yet to be resolved between Norman Martin, Baddow, and Gareth Williams, EEV.

The last Marconi Society event of the season was played at Colchester Golf Club on October 16. The winners of the three trophies were: 18-24 Handicap — R. Dickson, New Street, Nett 77; 0-17 Autumn Trophy — Malcolm Daniels, Nett 69; Mimco Cup, Stapleford Singles — R. Crompton, 33 pts.

The match between the Chelmsford and Leicester Societies should have been played on the St. Neots course on September 11, but fell through due to double booking. As the rearranged date coincided with the August Bank Holiday weekend, Chelmsford were then unable to field a team. It is hoped to play this fixture early next season.