Topic

The GEC Newspaper April 1993

Major achievement celebrated by Prime Minister

GEC-Marconi Avionics (GMA), Rochester has celebrated unrivalled success with its pilots' head up displays. The 10,000th system, the 5,000th for Lockheed for a F-16 Fighting Falcon aircraft, was recently presented to the executive vice president of the Lockheed corporation, Dr Vance D. Coffman by the Prime Minister, John Major.

GEC-Marconi Avionics has supplied more head up displays (HUDs) than all of its competitors put together. Since the first system in the 1950s, the company has developed and supplied HUDs for more than 50 aircraft types and variants. For the future GMA holds contracts for both of the world's leading future fighter aircraft: the Eurofighter 2,000 and the US Advanced Tactical Fighter, the F-22. The company will also supply the HUDs for the RAF's Tornado mid-life update and is the exclusive supplier for every variant of the F-16 which flies in the air forces of over 20 countries.

Head up displays project flight data and weapon aiming information onto a glass screen in front of the pilot's eyes. This transparent display is used by the pilot to maintain awareness of the aircraft's status. Developments in the system include digital processing, the inclusion of video images from sensors such as thermal imagers, giving night vision and the use of holographic technology to enhance the field of view.

This technology is becoming increasingly popular in the civil market. HUDs are being trialed and flown by a number of airlines as a means of improving all-round awareness during take-off and landing.

To mark the company's achievement, the Prime Minister, John Major was invited to see some of the technology involved in producing HUDs. Before the formal presentation, Mr Major went on an impromptu walk-about and talked with some of the company's employees. He also sat in a helicopter cockpit and witnessed at first hand the benefits of a head up display during a simulated journey through daylight, darkness and fog.

Success

Before presenting the system to Lockheed, the Prime Minister commented on GMA's success and said that by any conceivable yardstick, its head up display was a world leader.

He praised the long term view taken by the company through its research and development in order to remain at the leading edge of technology and said that GEC could "justly be proud".

The Prime Minister, John Major presents the 10,000th head up display to Dr Vance Coffman of the Lockheed Corporation.

He continued, "...what we are seeing all around the world is that it is the best products that can be most effectively and efficiently produced, that are leading edge technology, that actually take the market and create jobs. That, it seems to me, is what the best of British industry is now doing, certainly that's true with GEC here. And it's very important that they do that.

"They have produced more of these head up display units than anyone else in the world, easily. And they've done it because of the quality of the

Continued on page 20.

Nelson Gold Medals

GEC has awarded four Nelson Gold Medals to members of its technical staff marking their personal contributions to the company's progress.

This year's awards bring to 45 the total number of medals presented since the scheme was set up in 1984 in honour of Lord Nelson, formerly a chairman of GEC and himself a distinguished engineer.

Lord Nelson headed the final selection panel which included: Dr David Grant, GEC's director of technology, Sir Eric Ash, rector of the Imperial College of Science and Technology, Dr Derek Roberts, provost of University College London and Sir Robert Clayton, former technical director of GEC. This year's winners are featured on page 7.

News In Brief

EASAMS

THE MoD has moved into phase 2 of its collision warning system technology programme with an order worth in excess of £1 million to EASAMS of Camberley to design, build and test a demonstration system for low-flying aircraft.

GEC-Marconi Oil & Gas group

GEC-Marconi's Oil & Gas group at Nailsea, Bristol is to supply Amerada Hess, on behalf of the Hudson field partners, with a subsea production control system for the second phase of the Hudson field development in the North Sea. The multiplexed electro-hydraulic control system will control production of hydrocarbons at the subsea manifold. The system will include nine subsea control modules together with platform based hydraulic power units and master control station computers.

GEC-Plessey Semiconductors

PETER Chadwick, senior principal engineer at GEC-Plessey Semiconductors, Swindon recently became the 59th president of the Radio Society of Great Britain, the national organisation for British radio amateurs. Peter is involved with the system design of the recently announced wireless LAN.

Matra Marconi Space

WE would like to point out that the ground systems division of Matra Marconi Space based at Borehamwood won the contract to supply military satellite ground communications systems to the Spanish government (which appeared in the February issue of *Topic*) and not Matra Marconi Space, Portsmouth.

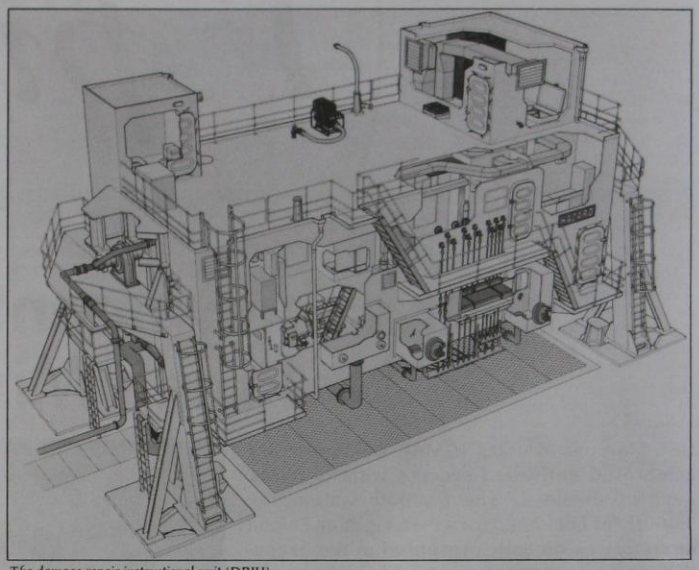
NNC

NNC, Knutsford has won an order to carry out development work in support of future decommissioning activities at Sellafield. The order, awarded by BNF, is for the development work associated with an Argon inerting scheme for use during removal of dry waste from a storage silo. The work will be carried out at NNC's engineering development centre (EDC) and will involve the design and manufacture of test rigs, the execution of experimental studies, risk assessment and leak sealing.

Emergency training without setting sail

GEC ALSTHOM Engineering Systems, Whetstone has won a £2 million order from the MoD for a damage repair instructional unit (DRIU).

DRIU is a full scale replica of a fully fitted section of a modern frigate. The unit covers three decks and provides a realistic environment for training crews in damage control and repair during an emergency. It is to be installed at the Naval training school at Whale Island, Portsmouth.



The damage repair instructional unit (DRIU).

Suspended

The unit will be suspended between two ground floor frames and will be able to be swung by a hydraulic controller as if at sea. It will also be able to be heeled over and held at any angle up to 20 degrees to represent a listing ship.

It will be possible to flood areas of the lower deck of the unit which will be fitted out to represent a ship's accommodation and machinery spaces with up to 135 tons of recycled water directed from any number of simulated damage areas including bulkheads, decks, hatches and pipe systems.

The damage scenarios are planned and controlled from the instructor's on-board control room. A background of battle sounds and smoke is available to give further realism to the training.

CHECKMATE at Marconi Marine

MARCONI Marine, part of GEC-Marconi Communications of Chelmsford is to supply 30 vessels in the Shell tankers (UK) fleet with CHECKMATE radio traffic logging and charging software.

Under the global maritime distress and safety system rationale, which Shell has fully embraced, the radio officer has moved mainly to engineering, electrical and electronics maintenance duties.

The software, which is used for logging, budgetary control and routing of communications, can operate on a pc network giving access for those operators who have terminal equipment, allowing them to benefit from what is the marine industry's first radio traffic expert system. CHECKMATE also enables secretarial work to be automated and carried out speedily and accurately.

Avery and Berkel unite

MICHAEL Steyaert, newly appointed managing director of GEC Avery has been given responsibility for combining the operations of Avery and Berkel into a single organisation. Mr Steyaert is already president of Berkel, which is now almost wholly owned by GEC.

The new company will be the second largest integrated weighing and food processing equipment business in the world, with annual sales of approximately £230 million and a 12 per cent. share in its principal markets.

The company's aim is to realise the full benefits of Berkel's strong presence in Europe and America and Avery's strong position in the UK, the Middle East, Africa, the Far East and Australasia.

Brighter Sunshine in Australia

GEC ALSTHOM Australia has completed the first commercial landfill gas (LFG) powered electricity generating project in Australia. The power station at Sunshine, Melbourne is fuelled by methane gas from the anaerobic decomposition of household waste in one of the country's largest landfill sites. Using LFG to generate power not only reduces its harmful effects on the global and local environments but also helps conserve fossil fuel reserves.

After treatment the gas is used to fuel 5 x 12RK Ruston gas engines which drive generators producing 7.7MW of electricity - enough to power thousands of homes.

GEC ALSTHOM considers that in the future there will be many similar projects throughout Australia and is working on proposals for a number of other LFG stations using either reciprocating engines or gas turbines.

News In Brief

GEC ALSTHOM

GEC ALSTHOM Transmission and Distribution Projects, Stafford has been selected by the Power Grid Corporation of India to supply a high-voltage direct current (HVDC) converter station linking the Western and Southern regions of the country's electricity network.

EGT

GEC ALSTHOM's European Gas Turbines UK subsidiary, EGT Ltd, has won orders worth over £50 million to supply 15 industrial and aeroderivative gas turbines to a total of six countries. These include two modular 25 MW RLM 5000 generating sets for the Arabian Gulf, five 13 MW RLM 1600 turbines for cogeneration installations in Spain and gas compression in the South China Sea and of orders for 4.5 MW Typhoon and 6.2 MW Tornado industrial gas turbines for the UK, Spain, Australia, Japan and France.

GPT Payphone Systems

HONG Kong Telecom, a long-standing customer, will be expanding its base of GPT payphones this month when coin and credit card phones worth £300,000 are delivered. This order will increase the number of payphones supplied by GPT Payphones Systems in Hong Kong to nearly 2,000 of which 600 will be the latest 5000 series.

MRCS

THE US Army Missile Command (MICOM) has awarded a fourth contract to Marconi Radar and Control Systems (MRCS) for a further 274 electronic unit modification kits for the fire control systems used within the multiple launch rocket system.

The improved electronics unit provides greater memory capacity and processing power for the fire control system. As the system's central computer, the unit controls all system activities as well as providing targeting information.

Marconi Udi

MARCONI Udi has been awarded an order by Rockwater for the provision of personnel and equipment to undertake the survey of the Tow Route for the pipeline bundles as part of the Chevron Alba Field development project.

The vessel North Sea surveyor, which is equipped with the Star-Track positional system, will service the Tow Route survey.

A first for MAN

BRITISH Telecom has awarded GPT a £3M order for metropolitan area network (MAN) equipment. This is the first contract of its kind signed in the UK.

A MAN is a computer network that quickly, efficiently and economically links local area networks (LANs). It encompasses private networks linking the LANs of large companies and universities. It also has the capability of linking the networks of different institutions or companies.

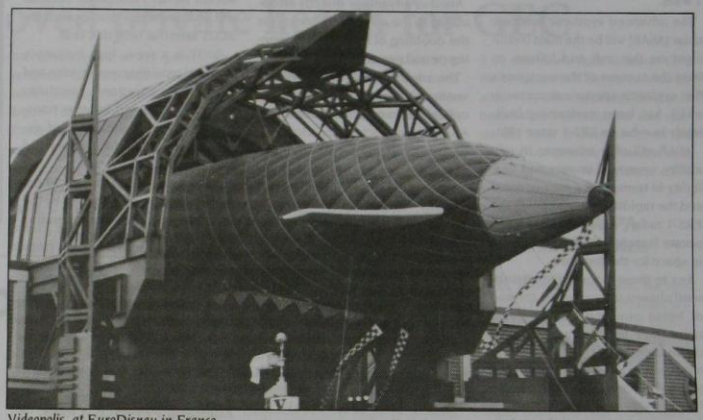
When installed, the MAN equipment will support BT's new high-speed data transmission network - switched multimegabit data services.

MAN technology has numerous applications. For example, the transfer of high quality medical images and distance learning. It will also enable BT to support SuperJANET - the joint academic network which will allow education and research establishments to utilise the advanced communications service to support learning and research activities.

MAN is one of the products of the GPT/Siemens Vision O.N.E. (optimised network evolution) programme.

Woods are worthy winners

Woods of Colchester has recently won orders worth more than £750,000. The ventilation systems the company is to supply include for an air traffic control centre, a multi-storey car park, a road tunnel and an exhibit at EuroDisney.



Videopolis, at EuroDisney in France.

Air traffic control

One order worth more than £220,000 is for the largest and newest air traffic control centre in the world. Woods is to supply 77 ventilation and 56 smoke extraction fans at the Civil Aviation Authority's (CAA) new En Route centre, which is due to open at Swanwick near Southampton in 1996. Built to handle the increasing air traffic over the UK, it will replace the CAA's existing centre at West Drayton and house 700 staff, at a cost of £530 million.

The operations room, which will co-ordinate nationwide air movements, will be the most sophisticated facility of its kind. The air traffic controllers' working environment will demand high levels of comfort with a minimum of noise and Woods fans will ensure staff enjoy the best and safest conditions possible.

Multi-storey success

Woods are also providing a breath of fresh air for visitors to the prestigious new Galleries shopping centre in Bristol having won a car park ventilation order worth more than £120,000.

A powerful new system was needed to supplement the existing system to prevent build-up of carbon monoxide at peak traffic times. To scoop the order, Woods had to meet all the performance requirements and noise level limitations, as well as reducing delivery time to four weeks. A total of 46 aerofoil axial flow fans now provide a complete fume extraction package for the car park.

Tunnel vents

A further order worth over £90,000 is for the supply of 24 ventilation fans for the A20 road tunnel at Round Hill near Folkestone. The tunnel will take the improved A20 under a well-known local landmark, Court Wood. The improvements to the road are in readiness for the increased traffic flows which are expected when the Channel Tunnel opens.

Again, the installation had to meet strict noise standards as well as having the capability to extract toxic carbon monoxide, nitrogen oxide and diesel smoke under heavy traffic congestion conditions.

EuroDisney

Woods has joined the showbiz world of EuroDisney, where the company's fans were selected as part of a futuristic feature in the French theme park's Videopolis Pavilion. A total of eight aerofoil fans have been supplied, worth over £15,000, as an innovative addition to the Pavilion's design. The fans, mounted on the outside wall of the Pavilion, reflect the building's fantasy theme.

They are equipped with special low-geared motors to revolve at around 10rpm, thereby providing an eye-catching detail for thousands of visitors every day. The building's other air movement design features include a life-sized model of a Victorian airship.

New managing director

DAVID Buckless has been appointed managing director of GEC ALSTHOM Protection & Control, Stafford.

Mr Buckless has worked for the company since completing an engineering apprentice programme with The English Electric Company, and has held several management positions. Most recently, he was sales director of GEC ALSTHOM's Protection & Control group. This involved an active involvement in all the group's commercial activities.

David Buckless.

Reviewing the forces

GPT Strategic Communication Systems, Luton is to carry out a far reaching fixed telecommunication study, which will recommend the shape of telecommunications in the British defence sector for the next ten years.

The study, commissioned by the Ministry of Defence (MoD), will review the requirements of the Royal Navy, Army, Royal Air Force and MoD. Its aim is to save costs without reducing service quality.

It will take approximately one year for GPT to carry out the study which includes reviewing the current systems, considering new developments and providing a solution for what will probably be the largest private network in the UK. This will enable a programme to be prepared for implementation.

GPT will be the prime contractor for the study and will lead a strong team which includes GEC Marconi Secure Systems, Liverpool.

Technology that is out of this world

MATRA Marconi Space engineers in Portsmouth are designing and building the world's most advanced civil space radar for the European Space Agency's ENVISAT spacecraft due for launch in 1998.

The advanced synthetic aperture radar (ASAR) will be the main instrument on the craft and follows on from the success of the company's first synthetic aperture space radar which has been performing faultlessly in orbit on ERS-1 since 1991.

ASAR will offer advances in reliability, improved images and flexibility in terms of the area covered and the rapidity of re-visits over the ERS-1 radar. ASAR will also incorporate features which will be flown in space for the first time.

Key to these is the active distributed phased array antenna. Instead of being powered from a single transmitter and receiver (as with conventional radar) the ASAR transmitters and receivers are distributed across the face of the antenna - some 320 modules in total. Controlling the power and phase of the signals in each of the modules makes the antenna beam steerable and enables the radar's beam width to be varied and extended to the horizon. This not only gives greater flexibility in choice of image targets but also the choice of covering either a narrow swath with high definition or a broader swath up to 500km wide with lower resolution. The radar's re-visit time for any location on the globe is thus improved.

Another advantage directly attributable to the antenna technology is the doubling of the radar's operating period per orbit.

The advantage of radar over conventional space-borne cameras and optical sensors is maintained with ASAR - unaffected by cloud or darkness, radars have the ability to obtain images at night and in all weather conditions. This is particularly important for obtaining images of equatorial regions, some of which are almost permanently shrouded in cloud.

Richard Wignall, deputy managing director of Matra Marconi Space, said: "The UK's expertise in space radar is a major strength for Europe and the success of the ERS programme has determined the development of an advanced version.

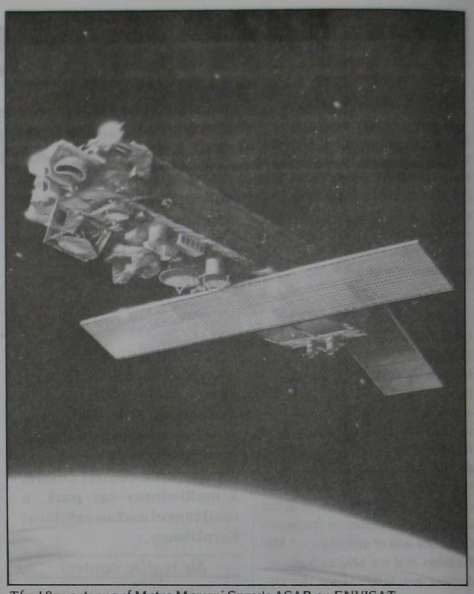
"With ASAR, industry can continue to exploit the latest advances in technology to meet the world's growing need to gather detailed and accurate information that is now crucial for the protection and management of the environment."

At sea

Matra Marconi Space is also supplying the Spanish Navy's flagship with the world's leading naval satellite communications system. The aircraft carrier Principe de Asturias will be fitted with a third generation SCOT terminal later this year.

SCOT is a super high frequency terminal providing secure voice and data communications, computer links, fascimile and imagery transmissions and is already used extensively by the British, German and Dutch navies.

This order brings to over 70 the number of systems supplied by the company to date with operating hours in excess of 2,000,000.



The 10m antenna of Matra Marconi Space's ASAR on ENVISAT.

CT2 points the way

GPT, Beeston is to provide a complete telepoint network for the city of Ningbo in Zhejiang Province, China.

The order worth approximately £2 million also includes the supply of the world's first small cordless office system, the GPT 2030. Initially the network will cover the city of Ningbo and the new Ningbo economic and technical development zone - a rapidly developing area with a total population of more than five million.

The contract was signed at a traditional Chinese ceremony immediately prior to the Chinese New Year. This was attended by senior officials of the local government and directors of Ningbo and neighbouring telecommunications administrations.

Graham Matthews, director of GPT Mobile Systems, said: "Our customer, the Ningbo Posts and Telecommunications Bureau (NPTB), has been quick to realise the potential of a telepoint service using the GPT system and looks set to continue the outstanding success of CT2 in the Asia Pacific region."

Australia

GPT has also supplied the system for Australia's first telepoint service, called Talkabout.

The recent launch of the Australia service in Brisbane, builds on the success of CT2 in the Asia Pacific region, with tens of thousands of telepoint users now enjoying affordable, high quality mobile communications following the introduction of telepoint services in several countries in the region. Other countries using the network include Singapore, Hong Kong and the UK.

Environmental success

FOLLOWING the success of NNC's recently held seminar 'Environmental improvement for business success', a second similar event is being held on 11 May at the company's training centre at Booths Hall.

Outline

The seminar will outline environmental legislation and explain the steps companies need to take to ensure that they comply with its demands. It will also show how a business could benefit through conducting environmental audits and developing an environmental management system. Particular attention will be paid to the practical difficulties and plenty of advice and assistance will be offered.

For further information contact the marketing and sales division at Booths Hall.

Managing competition

THE Ministry of Defence (MoD) are to negotiate an initial contract with Marconi Radar and Control Systems (MRCS) Frimley, to manage the competition to select a supplier for sonde tracking and data gathering systems for the BMETS battlefield meteorological system.

The contract will also cover the definition of an interface between BMETS and the Royal Artillery's battlefield artillery target engagement system (BATES), as well as proposals for the systems production.

Following this initial contract, the MoD intends to place a production order with MRCS for up to 18 BMETS systems. This will also cover the interfacing of the selected sonde tracking and data gathering systems with BATES, installation in vehicles and system trials.

AMETS

The Army selected it because the Marconi AMETS system is a completely self-contained, mobile, system that is designed to provide information suitable for use by computerised fire control systems.

Marconi is already the prime contractor for BATES and is currently under contract for the definition and implementation of its interface with the multiple launch rocket system.

Avery India

AVERY India has started manufacturing petroleum dispensing pumps, under technical collaboration with Gilbarco Inc of the USA.

William Korb, Gilbarco's president and chief executive officer, recently visited Avery India to inaugurate the project and join in handing over the first pump made at Ballabgar works to Mr R Narang, chairman and managing director of the Indo Burma Petroleum company.

Avery India's managing director Mr Nari Nath said, "This is a major product line that Avery India has undertaken to manufacture."

Avery India is the only company manufacturing petrol pumps to Gilbarco's designs throughout the whole of Asia.

News In Brief

GEC Meters

GEC Meters, Stone has launched a new domestic electricity meter - the radio telemeter.

Designed for multi-tariff applications such as Economy 7, it combines a technically advanced meter with radio teleswitching in a single box thereby providing a cost effective solution for the regional electricity companies.

GEC Plessey Semiconductors

GEC Plessey Semiconductors (GPS), Swindon has signed an agreement with Conner Peripherals Inc. projected to be worth approximately $100 million during the next two and a half years. The agreement calls for GPS to supply integrated circuits for the read channel portion of hard disk drives manufactured and marketed by Conner.

GEC-Marconi Avionics

THE electo-magnetic compatibility (EMC) test centre, recently opened by GEC-Marconi Avionics, at Donibristle in Fife, has been recognised with the national measurement accreditation service (NAMAS) award. This reflects the high standards operated by the centre.

Marconi Instruments

The 6970 RF power meter launched by Marconi Instruments, St Albans is the first combined RF and power meter to provide accurate measurement capability in a rugged, handheld portable unit. The cordless instrument provides similar functionality to currently available benchtop power meters at approximately half the cost.

The applications of the 6970 include vehicle collision avoidance systems, wireless LANs (local area networks) and road traffic monitoring systems.

GEC ALSTHOM

GEC ALSTHOM's Chantiers de l'Atlantique subsidiary has won an order to build up to three cruise ships for Royal Caribbean Cruises Ltd (RCCL). The ships will have diesel electric propulsion and accommodation for around 1,800 passengers. Delivery to RCCL is scheduled for Spring 1995, 1996 and 1997.

This order will bring the total number of cruise ships built by Chantiers de l'Atlantique for RCCL since 1985 to seven.

More flexibility from Marconi

MARCONI Speech and Information Systems, Portsmouth has extended its world leading voice-response equipment Flexicall to include a multi-language, speech recognition system.

Flexicall's many applications include giving out flight information, share information and live sports commentary and results.

The multi-lingual system is based on Marconi's own continuous word recognition technology and allows the speaker independent entry of either isolated or continuously spoken words or phrases and covers a number of major European languages.

An additional capability is 'talkover'. This allows a person to interrupt an announcement and unlike the technique 'voice stop', their interrupting words can be recognised by the system and transmitted, rather than having to be repeated.

The speech recognition facility is provided by Marconi's proprietary MR7 card which can support up to eight simultaneous channels.

The MR7 provides up to 30 vocabularies, each instantly available and containing up to 50 words drawn from a total of over 200 stored within the system.

This new speech recognition resource is easy to use and manage in a simple, efficient manner by selecting menus and standard library functions.

All 30 channels on Flexicall can operate simultaneously ensuring that callers do not experience delays, even during busy periods.

Improved private health for GEC

GOOD news for employees is that a review of GEC private health insurance schemes has been completed and a number of improvements have been made.

The GEC Working Party, consisting of representatives from various businesses, has agreed that cover will continue to be provided by BUPA, the UK's leading private health care organisation. GEC is pleased to have improved the cover for employees in its principal scheme - GEC BUPACare (co-insurance option). A new scheme has been introduced - GEC BUPA EssentialCare.

Costs

Medical advances mean that treatments, such as coronary by-pass surgery and knee replacement operations, which were once rare, are now common-place. Improved technology, such as laser treatment and non-invasive surgery, also benefits the patient by reducing recovery time but such treatments are often more costly.

As a result, costs of treatment in the NHS, the private sector and throughout the world are rising faster than the general rate of inflation.

BUPA has had to increase its subscription rates for the coming year. The Working Party is satisfied that BUPA's rates fairly reflect the costs of providing cover for employees and represent the best value available.

Innovations

1. A revised age-banding which makes the contribution rates more progressive and fairer to everyone. This is an extension of the process which was started two years ago.
2. The GEC Standard Scheme, now called GEC BUPA Care/Standard Option, is now open to new members. This scheme gives cover for the costs of hospital accommodation, specialists' fees, and diagnostic and other treatment within the benefit levels. In return for a higher level of contribution, BUPA provides full cover, within the benefit limits, without the 20 per cent. co-insurance element in GEC's principal scheme.
3. A new lower-cost scheme, GEC BUPA EssentialCare, is now available. This scheme covers the cost of hospital accommodation and specialists' fees. It does not cover the cost of out-patient consultations, overseas cover, repatriation costs or NHS cash benefit.

GEC BUPA Healthchoice

GEC BUPA Healthchoice, the lowest-cost choice, which provides private treatment if the NHS cannot treat you within six weeks of seeing a consultant, will also continue to be available.

In all, GEC employees can now select from four BUPA schemes - providing an unrivalled choice. Further information on all of these schemes will shortly be available from your unit's BUPA group secretary.

MoD study awarded to EASAMS

EASAMS, Camberley has been chosen to carry out a feasibility study by the Ministry of Defence (MoD), to study the British Army's requirement for an area weapons effect simulator (AWES).

The study is a vital part in the Army's latest initiative to make fuller use of simulation in training.

AWES is a field training system which will simulate the effects of field artillery, mortars, mines and air delivered weapons and will complement the direct fire weapons effect simulator (DFWES).

The AWES concept features instrumentation which records and updates the location of all player vehicles and weapon systems in the training area. Indirect fire will be simulated by transmitting fire mission data to players. AWES receivers will have an interface with the DFWES system, and will provide audio visual evidence of the attack to those in the area, implementing target effects such as casualties and disablement of weapon systems and vehicles. Further 'cues' may be provided to players not in the immediate vicinity of an attack.

EASAMS has teamed with Motorola Government Electronics Group to address the Army's requirements.

Creda saves its chips

A CREDA employee at Blythe Bridge has put forward a suggestion which could save thousands of pounds every year. Keith Snape, team leader of the hob section (above right) proposed to recycle polystyrene chips used in the packaging of hob glasses, so the chips could be utilised in the packing of spare part components. Following his suggestion, George Wainwright, development services manager (above left) and production engineer, Mark Lambert (above centre), found that the 30 cubic feet of chips discarded daily could be re-used.

It is estimated that recycling the chips from the hob assembly section could save 22 per cent. of Creda's annual expenditure on purchasing chips. In recognition of his idea, Keith has received an award of £640 and has become a member of the Creda suggestion scheme grand savers' club.

Scottish Power order for new network

GPT Communication Systems, Luton has won a major order from Scottish Power, the UK's second largest electricity company. The order is for the supply of a communications network to support its operations.

The new network will be based on 35 iSDX exchanges and will incorporate powerful new electricity control software, not used before in the UK. The order also includes project development, support and maintenance. Installation will be carried out in six phases and is due to be completed in April 1995. The network will completely replace the existing Scottish Power control telephony systems which have been operational since 1957.

"GPT Communication Systems won the tender because it offered cost-effective systems which met our specified requirements," said Bob Nicolson, telephony group engineer, Scottish Power.

"Our major requirement was for a totally 'future-proof' system which was capable of expansion and enhancement as and when we needed it. Now that supply companies are in competition, we must be able to manage our systems more effectively. We need high availability, secure and reliable voice communications between our grid control centre, distribution control centres, power stations and sub-station. Our new control telephony system will support the safe and effective operation of the Scottish Power transmission network, together with the secure and economic despatch of electricity supplies to our customers."

Special features

The customised system has a number of features specially designed by GPT Communication Systems. A central requirement was that no single fault should affect more than one end user. This required one card for each circuit, as opposed to the more usual 16 circuits per card. For emergency situations special software features will allow important calls to succeed by intruding on and 'knocking down' less important calls.

Success in Hong Kong

GEC Meters at Stone has received a £1.75 million order for the supply of domestic electricity meters to China Light and Power, Hong Kong, over a two year period.

The company has been a supplier of meters to Hong Kong over many years but is now facing increasing competition. However, through its excellent performance on previous contracts and its willingness to accommodate special technical and delivery requirements, GEC Meters won the order.

The submission of the tender by GEC Meters to China Light and Power through its local representative GEC Hong Kong was followed by a visit by the company's new managing director David Scahill.

This contract is one of a number of opportunities being actively pursued in Hong Kong which include prepayment electricity meters and recently introduced, sophisticated electronic products for large industrial installations.

Some of the team responsible for winning the China Light and Power contract. (left to right) Terry O'Neill, Adrian Shringler, Bill Dean, Brian Bates, Anne Benbow, David Scahill, managing director, David Boughey and Malcolm Jeffery.

Woods takes centre stage

WOODS of Colchester has taken centre stage at the National Theatre with the award of two refurbishment contracts valued at more than £300,000. The contracts are for the installation of four Airpac 625 air conditioning units for the upper auditorium in the Olivier theatre and the lower auditorium in the Lyttleton theatre.

These new orders follow the successful installation of a £70,000 air conditioning unit for the upper auditorium of the Lyttleton - within nine weeks of the order being placed.

The National Theatre provides Woods' engineers with a challenging working environment as each item of equipment is craned to roof level and manhandled into the plant room. As the crane is on the roof of the underground car park, the roof structure requires extra support before equipment can be lifted.

Innovative partner award for GPS

GEC Plessey Semiconductors (GPS), Swindon has been presented with an award for "Most Innovative Partner 1992/3" by GPT at their recent annual suppliers' conference.

In making the award, Ian Wilson (pictured above left) general manager of System X at GPT, said, "In this particular case, GPS redesigned 15 integrated circuits for manufacture which gave an 80 per cent. saving in costs."

Stuart McIntosh, (pictured above right) director of operations for GPS received the award with Ernie Pusey, the company's director of marketing. Stuart commented, "Developing strategic partnerships is a key part of GPS' philosophy. This not only means working closely with customers to create innovative design solutions but also maintaining extremely high levels of quality control. This means that customers, such as GPT, can reduce their quality control checks on incoming goods, so showing significant cost savings with products being delivered straight into stock."

Employee insurance discounts

INSURERS allowing discounts on premiums to GEC employees are as follows:

General Accident Fire & Life Assurance
51, Bromham Road, Bedford, MK40 2AE, telephone: 0234 365199.
Contact: personnel department. Motor and household insurances - 25 per cent. discount available to employees and members of immediate family living at the same home.

Highway Direct
195/203 New Road, Chatham, Kent ME4 4QB, telephone: 0634 847858/848691/46666. 21 Lochrin Place, Edinburgh, EH3 9QT, telephone: 031 229 2121.
Hilton House, Lord Street, Stockport, Cheshire, SK1 3NA, telephone: 061 4762157.
Premier House, Union Street, Bristol, Avon, BS1 2DG, telephone: 0272 297984. Motor Insurance: 25 per cent. discount.

HGP Insurance Services
Library House, New Road, Brentwood, Essex, CM14 4GD, telephone: 0345 581592. Contact: department dealing with Sedgwick Fleets Scheme. Motor Insurance - variable preferential discounts.

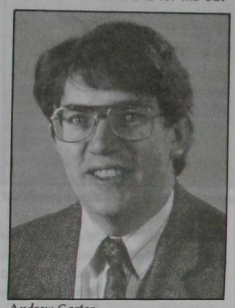
All the above transactions are direct between the employee and the insurer. Subject to acceptance of proposal form by insurer.

Nelson Gold Medals awarded to technical staff

continued from page 1

PRESENTATION of this year's Nelson awards will be made on Wednesday 19 May at the Garrick Club in London by GEC's chairman, Lord Prior. A profile of this year's winners and their work follows:

Andrew C Carter MA, D.Phil. is the manager of the optoelectronic design department at GEC Marconi Materials Technology (GMMT) Caswell. His award is for his outstanding contribution in the field of optoelectronic devices and systems.



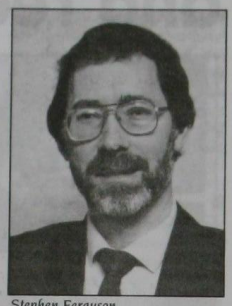
Andrew Carter.

Andrew joined (GMMT) at Caswell in 1977 to undertake research and development in optical communications. Since then, he has earned an international reputation for his innovative contributions to the research, application and exploitation of optoelectronic devices. This includes the first military qualified light emitting diodes, lasers for advanced telecommunications systems and optoelectronic integrated circuits, which combine all of the active functions necessary for complex optical terminals on single semiconductor chips. These activities have led to many opportunities for innovation within GEC and have helped establish a range of optoelectronic products, including lasers (tunable, high speed, high power and pump source), receivers, WDM (wavelength division multiplex) and RF optical subsystems.

His work in optoelectronics will open up many new systems opportunities in the future. He has published more than 100 journal and conference papers, filed 20 patents and has presented papers and lectures in optoelectronics throughout the world.

Stephen Patrick Ferguson, MA, MSc. Steve is responsible, in GPT's Network Systems Group, Coventry for defining the evolution strategy of the company's SDH and Broadband product range and has made a major contribution in GPT to the definition and architecture of digital transmission products for the new SDH (Synchronous Digital Hierarchy) standards.

Steve joined GEC Telecommunications (now part of GPT, the telecommunications joint venture between GEC and Siemens of Germany) as a student trainee in 1967. Since his first appointment in 1971, he has been involved in development projects at the forefront of digital transmission technology. He has increasingly concentrated on overall systems and network aspects of telecommunications and this culminated in his original and innovative work on GPT's SDH add-drop multiplexer (ADM), which accounts for about half of his dozen patents.



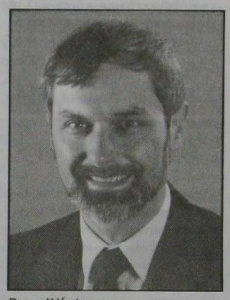
Stephen Ferguson.

Products based on that ADM architecture currently form a major part of GPT's transmission engineering activity and are a key part of GPT's international transmission product portfolio.

Dr Roger W Whatmore, BA, MA, Phd (Cantab). He joined GEC-Marconi Materials Technology at Caswell in 1976 and is presently manager of the Sensors divison.

Roger is a leading authority on the science, technology and application of ferro-electric materials and devices. His scientific and management contribution in the field of pyroelectric thermal imaging over a period of 16 years has placed GEC at the forefront of European capability in this area. His ability to translate research results into product opportunities has led directly to a new business venture which will see the application of military technology into the civil field.

Roger has also been involved in research in polar dielectrics for surface acoustic wave devices for which a patent has been granted and on piezo-electric materials for low frequency applications such as hydrophones. He has been granted 25 patents and has over 80 publications to his name.



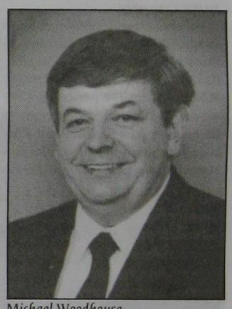
Roger Whatmore.

Michael L Woodhouse, BSc, AMIEE. Michael joined the company 27 years ago as a student apprentice. His current appointment is engineering manager, power electronics, GEC ALSTHOM Transmission & Distribution Projects, Stafford.

His award is for his contribution to the design of high voltage thryristors valves and their applications to electrical power transmission systems. This is a most exacting multi-disciplinary task demanding a fundamental understanding of component performance and the system applications primarily high voltage direct current (HVDC) transmission and reactive power compensation.

His design for HV convertors using water/glycol-cooled thyristors has placed the company at the forefront of this technology leading to considerable commercial success, in both export and home markets, and The Queen's Award for Technological Achievement in 1991.

He is the author of many technical papers and, as a world recognised authority, is a member of CIGRE working groups on thyristor valve and associated technology.



Michael Woodhouse.

Your chance to cut out red tape

MALCOLM Bates, GEC's deputy managing director, has been asked by the President of the Board of Trade, the Rt. Hon. Michael Heseltine to chair one of seven Task Forces to advise him and ministers on ways of reducing the excessive costs on business brought about by red tape.

The seven Task Forces cover communications and transport, construction, chemicals and pharmaceuticals, engineering, financial services, food, drinks and agriculture and other services.

Mr Heseltine said: "Under the leadership of their chairmen the task forces will bring a fresh perspective and impetus to the deregulation debate. They are people who know at first hand the burdens, which regulation places on the economy and are best placed to advise on reducing them. I am very pleased that the business community has reacted enthusiastically to this initiative..."

Malcolm, who will be assisted by six representatives from different sectors of the engineering industry will spearhead the attack on red tape over all aspects of the engineering industry. He would find it helpful if anyone in a UK unit who is concerned about burdensome and bureaucratic regulation were to drop him a line giving details. In this way, he may be able to help reduce your unit's overheads.

Contact Malcolm Bates at:
1 Stanhope Gate, London W1A 1EH,
Telephone: 071 493 8484.
Fax: 071 491 1788.

Malcolm Bates, chairman of the Engineering Industry Deregulation Task Force.

GEC ALSTHOM transforms procedures and reduces waste

This issue looks at the extensive efforts of GEC ALSTHOM Transformers, Stafford to reduce waste throughout the company and how the consequent savings have benefited others.

Save a copy - save a life

In 1989, GEC ALSTHOM Transformers started an awareness campaign aimed at reducing the volume of photocopying.

An initial analysis showed that wastage resulted from operator error and unnecessary duplication. In an attempt to reduce this, regular photocopying performance statements were placed around the machines drawing people's attention to the campaign.

To encourage more economical usage, the company decided to donate 1p per copy saved to charity. During a 12-month period, 285,000 copies (30 per cent.) were saved. This enabled donations to be made to: the new Stafford Hospice, the Birmingham Children's Hospital, the Staffordshire Forum for Voluntary Organisations and the Stafford District Hospital Scanner Appeal.

Due to its success, the scheme was extended for a further year, and the company increased its contribution to 3p for each copy saved. Children In Need, Great Ormond Street Children's Hospital and Stafford District Hospital enjoyed the cash resulting from 76,000 copies saved in that year. Nine months into the third year of this scheme, a further 13,100 copies have been saved.

Such a campaign has not only helped charities, it has also reduced charges for photocopier materials, maintenance and, of course, waste!

Steel scrap reduction

The company produces a range of transformers at its Stafford site. A survey carried out two years ago revealed that approximately 6.25 per cent. scrap was being produced during the core cutting and assembly process. The following steps were taken to reduce this.

1. Traditional core designs produce up to 4.5 per cent. scrap during the plate cutting process. Redesign of the core reduced this.
2. Stricter inspection of steel rolls means that defective rolls are identified before use and suppliers are asked to replace them.
3. Improved maintenance has reduced the frequency of machine breakdowns giving greater machine availability and also made the machines more efficient thus reducing scrap.

The ideas and suggestions from the core cutting machine operators and core builders have played a large part in reducing the scrap level by some 45 per cent. of the original figure. The estimated saving is £93,000 per annum.

Staff from Stafford District General Hospital demonstrating to secretaries the Dinamap Monitor which had been purchased using a company's donation.

Secretaries from the company presenting a cheque to Stafford District General Hospital's Tom Storrow.

Waste reduction by design

In the manufacture of electrical equipment, one of the key materials is insulation for which GEC ALSTHOM uses cellulose-based materials. The cost of these materials last year was approximately £1 million.

Some of the materials are purchased ready-made whilst others are manufactured in-house. The many variations in sizes and types of transformers produced would have required a large range of standard forms.

It was therefore decided to manage the base materials for maximum usage and minimum scrap.

Consideration was given to design and manufacture of the components. Questions were asked such as whether the components were necessary and if so, could they be made from cheaper material? Design was optimised to reduce waste which has included simplifying shapes and standardising the most frequently recurring shapes.

The company has made savings by reducing the choice of widths and thicknesses of components whilst a continuous review of the standards is carried out to find areas for increased efficiency and further cost reduction.

The way components such as sticks and washers are cut or made, has been altered to reduce scrap and wasted money. Off-cut racks for sticks and sheet materials have been installed and operators instructed to use them before withdrawing new materials.

Graphs showing monthly trends of the percentage of scrap produced against the quantity of materials purchased are plotted to monitor improvements and a target level has been fixed to encourage employees to continue to reduce scrap.

Further information on environmental issues can be obtained from: GEC Energy & Environmental Advisory Unit, Dial Lane, West Bromwich, West Midlands, B70 0EB. Tel: 021 520 9020, G-Net: access + 669 307, Fax: 021 520 0888.

Electronics Recycling

IN the electronics industry the quest for continual updating leads to many products, such as visual display units (VDUs) and computers, becoming obsolete very quickly. Currently, many of these are sent to landfill.

Rather than destroying or dumping obsolete equipment, 95 per cent. of products can be reused by reducing them down to their component materials and reusing these for other purposes. For example, plastics on VDUs can be reused and metals can be recovered by smelting.

Semi-conductors incorporate materials which are costly and becoming scarce. It is therefore particularly important to deal with redundant or reject components correctly.

In Germany, manufacturers of electrical and electronic equipment are recovering used appliances and finding sub-contractors to recycle them. In 1991, their manufactured output represented 80,000 tonnes in weight - increasing by 10 per cent. per annum.

The steps taken by the German government will make the recycling of electronic waste obligatory.

Maintaining a leading edge in technology

THE GEC ALSTHOM Engineering Research Centre (ERC) at Stafford is an independent business unit with some 120 staff. It operates within the GEC ALSTHOM group, for which two thirds of its workload is presently carried out and as a contract R&D organisation for GEC, government agencies and other private companies across the world. The Centre is often used as a specialist resource to undertake work requiring particular skills or to import technology originally developed for different product applications.

Within ERC's laboratories are facilities ranging from large-scale test rigs, involving megawatts of electrical power and tens of tonnes of mechanical force right down to analytical systems for the study of material microstructures.

Collaboration

The Centre has worked on collaborative projects with Hirst Research Centre, GEC-Marconi Research Centre and Alcatel Alsthom Recherche bringing together complementary skills to inter-disciplinary projects. It also participates in a number of European Commission funded programmes: BRITE/EURAM (basic research in industrial technology for Europe/European research in advanced materials) which focuses on research into materials; JOULE which investigates matters concerned with energy and ESPRIT (European strategic programme for research and development in information technology) which focuses on developments in information technology.

ERC's extensive facilities and highly experienced staff have also undertaken numerous diverse R&D projects for GEC ALSTHOM.

Power electronic systems

Power electronic systems development has improved converter performance by the use of energy recovery schemes that both increase conversion efficiency and reduce the present heavy cooling requirements. A prototype 1MW inverter using this technology has provided the basis for modern rail traction designs. Equally important for high-voltage systems have been fibre-optic based telemetry and control systems for thyristor switching.

Ceramics

In materials research, ERC has carried out research into ceramic matrix composites (CMCs). These tough materials have a very high temperature tolerance and may be used for wear components such as brakes and seals or incorporated into the next generation of gas turbines and diesel engines. The efficiencies of such equipment will be increased by the higher running temperatures made possible through the use of ceramics.

As part of the European Commission's BRITE/EURAM programme, ERC is leading the six-nation consortium to develop improved methods of brazing ceramic materials to metals to enable these advanced materials to be effectively integrated into engineering structures, particularly for use in high temperature and wear applications.

Complex shapes can be made by the technique of tape casting, where ceramic precursors are combined with a binder to produce a pliable sheet. This is easily formed into the required shape, then converted to ceramic by a heat treatment which also chemically bonds adjacent layers. This technique is being used to develop electrolyte structures for solid oxide fuel cells (SOFCs) which are presently under development at ERC as part of the EC funded JOULE project. Phase 1 of this project has already been completed and phase 2 has just begun.

SOFCs offer the advantage of generating electricity directly from a fuel, in this case methane, at high efficiency and with low environmental impact.

As fuel cells have no moving parts and therefore low vibration and a very low noise emission, they are acceptable to a wide range of applications.

ERC's modern facility at Stafford.

Trains

ERC carried out extensive research on the novel drive system for the class 91 locomotive developed by GEC ALSTHOM for British Rail's IC225 trains. This was submitted to extensive laboratory tests involving a rig capable of simulating all operating conditions up to the full power of 4.5 MW. The success of the programme has been fully proven by the successful operation of the train in service for over two years.

Structural dynamics

In the field of structural dynamics analysis, ERC has developed computer software. Some recent applications for this are the development of the suspension system for the class 91 locomotive and the reduction of noise generated in commuter rail vehicles arising from vibrations transmitted through the suspension.

Laborame

Active control of vehicle suspensions was first successfully realised with the magnetically-levitated people mover, Maglev, installed at Birmingham Airport. ERC staff were closely involved in the development of the control system and have since developed an improved position sensing for the vehicle.

The new Trans-Manche Super Train (TMST), which will link London, Brussels and Paris via the Channel Tunnel, will incorporate a network of programmable controllers for all train functions which are not critical to safety. To test system operation prior to service, ERC has constructed a laboratory test bed, known as Laborame. Laborame consists of a complete train network linked to real-time computers which simulate the mechanical and electrical response of the train to the commands produced by the controllers. Tests are being conducted on the performance of the system under normal and fault conditions in conjunction with a team from GEC ALSTHOM's Transport Division at Trafford Park and software engineers from the GEC-Marconi Research Centre at Great Baddow.

Importance of people

Like all successful businesses, ERC could not function as well as it does without careful project management and control and a strong emphasis on customer partnership. The wide range of technologies addressed, are a positive advantage because of the increasingly interdisciplinary nature of R & D. The growth in collaborative work is expected to continue to be important and although the types of activities in which ERC are engaged are continually changing, this offers a stimulating and intellectually challenging environment. For example, new legislation concerning electromagnetic compatibility and chemical pollution are bringing fresh challenges and opportunities, while economic pressures to optimise the use of expensive capital plant are leading to new methods of estimating its life expectancy. It is also, however, the great enthusiasm and professionalism of the way in which ERC staff continually adjust to change which is a major strength of the organisation.

The way ahead

Services, products and systems for the road transport infrastructure

GEC-Marconi is one of the UK's leading suppliers of road-side and in-vehicle traffic and telematic (information technology based) systems.

Service

Through a commitment to service, application of organisational skills and comprehensive staff training it is winning a steadily increasing share of the UK market. One of GEC-Marconi's largest markets in transport technology is in installation and maintenance of traffic management systems. It is currently managing over 60 major long-term maintenance contracts.

Systems

Consequently, it has become the leading supplier of traffic management systems in the UK and is now extending this business worldwide. For example, the GEC SCOOT system is able to transform a city's vehicle flows with a reduction in journey times of up to 25 per cent. for the price of less than a mile of new road or a flyover. The system presently being installed for Birmingham City Council will become the largest SCOOT-based traffic management system in the world.

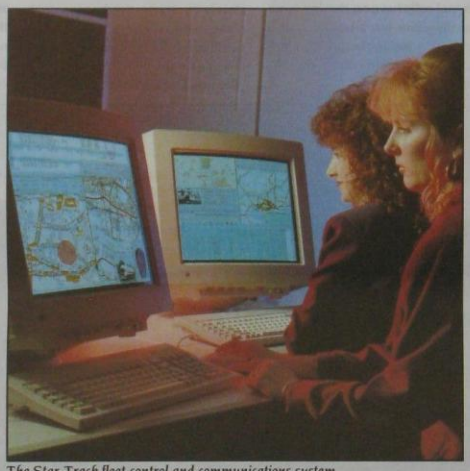
GEC SCOOT manages the timing of traffic lights sequences by means of a network of loop sensors. By continuously receiving and analysing information from the sensors, it can vary the operation of the lights in order to ease the flow of traffic. Other facilities include: remote monitoring, fault management, tunnel and car park control and variable message signing.

Signalled junction control

Setting new standards in product reliability and flexibility of use GEC's CX Controller is taking an increasing share of its market. It can control up to eight simple cross roads or a complex motorway-to-motorway roundabout.

It is used to sequence signalled junctions and is capable of organising the way the junction operates - either on a fixed time basis, with each approach having a defined green period, or using variable timing with vehicle detection. Junctions can also be time linked with adjacent junctions to improve the flow on main routes or can operate under area traffic control such as with GEC SCOOT.

Plans can also be programmed into the controller to vary the green maximum time given to any approach, for example to cater for rush hour. Facilities such as 'Green Wave' can also be implemented for fire engines or ambulances to reduce journey times by maximising the green time along regular routes. Even the CX's grey box on the street corner is itself a revolutionary new product and in the coming months will be an increasingly familiar sight.



The Star-Track fleet control and communications system.

Vehicle detection

The recently introduced MD10 microwave based vehicle detector is technically more advanced than any competitive product. It uses pulsed doppler techniques to detect vehicles within a specified zone and can be programmed to ignore vehicles moving away from or across its path. It even incorporates an automatic self-test circuit. When a vehicle is detected a signal is sent to the appropriate traffic signal or pedestrian crossing controller to either demand that the relevant approach is set to green or to extend the green period. Together with an advanced aerial array design, surface mount technology for signal processing and a casing which differentiates it from its competitors, the detector provides the highest standards of function and reliability. And as the MD10 is signal pole mounted it is less liable to wear and tear than road surface mounted detectors.

Signals and associated equipment

GEC-Marconi's range of traffic signals and associated equipment is continually expanding. For example, a new product specifically designed for light railway signalling is completing its development stage.

GEC-Marconi's traffic activities are assessed to BS5750 and draw on technical resources across the GEC-Marconi group to meet the changing needs of the traffic management market.

Variable message signing

One solution to reducing traffic congestion is to provide the motorist with information regarding traffic flow in good time via variable message displays. These are produced, in conjunction with the EEV of Chelmsford and Yarrow Shipbuilders of Glasgow, and are used for signing systems for city centres or motorway information systems.

Data collected at a control centre from sensors, cameras or other means is used to inform motorists of the conditions ahead. Normally, each sign has two rows of 12 characters, each character being made up from a 7 x 5 dot matrix. The latest design uses fibre optics to illuminate the display, liquid crystal shutters to form the letters and numbers and a reflective surface within the shutter to enable full sunlight readability.

Integrated tunnel control

GEC-Marconi helped to develop integrated tunnel control system technology as part of the European Commission's DRIVE 2 programme.

The system is multi-functional incorporating traffic management, safety systems, environmental management - such as lighting and pollution control, communications and driver information systems and emergency situation handling.

The system enables costs to be reduced and resources to be used more efficiently. It also enables a greater volume of traffic to be handled more safely and at higher speeds with emergency situations being dealt with more quickly.

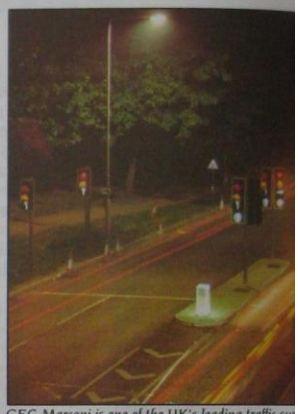
Toll collection and road pricing

The infrastructure costs involved in meeting the needs of the motorist are increasing steadily and governments around the world are searching for methods to reduce their costs. Although a few years away, road pricing offers a solution and GEC-Marconi has a range of technologies to address this need.

Drivers face the widespread introduction of tolls on Europe's trunk roads and motorways and possibly even to enter cities. Telepass is already in widespread use in France and Italy. The system offers a range of solutions to toll problems.

In the UK, GEC Card Technology's GIMCard is providing speedy and effective revenue collection with the Shrewsbury (Kingsland) Bridge Company which has installed the system for secure, efficient, round-the-clock collection of bridge tolls.

The GIMCard is a stored value magnetic card for the prepayment of tolls or parking fees which minimises the delays and queues associated with cash payments as motorists search for coins. It also avoids the build-up of too much cash in coin boxes - a target for vandalism and theft. The GIMCard itself is designed to combat fraud. Unlike conventional magnetic strip cards, once the credit balance on the GIMCard has been exhausted all key data is erased to prevent fraudulent recharging.



GEC-Marconi is one of the UK's leading traffic sys

Traffic system

Travel by road is part of our everyday way of l
or getting raw materials or goods from thei
we depend on roads and the systems which

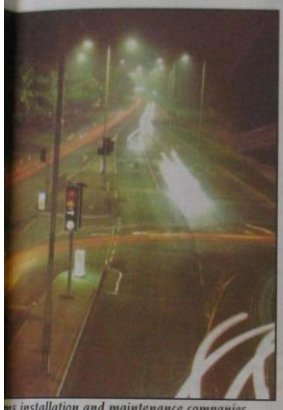
Ever improving vehicle specifications and
road transport for granted. We expect to trav
develop in the future? Will we be able to d
to a destination?

The growth in traffic in the world's major c
has led to an increasing demand for both on
application of telematics (information tech
systems being developed by GEC companie
place by GEC-Marconi.

Bus Tracker improves services with passenger infor

GEC-Marconi has supplied head up displays for

in traffic control



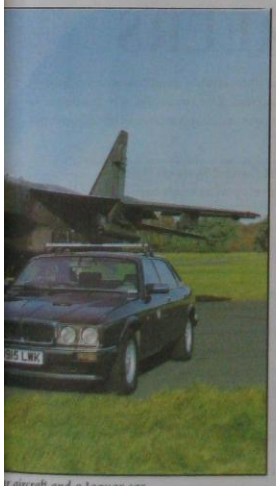
ns installation and maintenance companies.

of the future

Whether it be going to work, a social visit, urce to the markets where they are sold, ep traffic flowing smoothly and safely. d networks have encouraged us to take oth safely and quickly. But how will things through fog, or be guided automatically

s together with our greater expectations ard and road side traffic systems and the ogy). This article examines the various hich are being promoted in the market

ion shown at bus stops.



r aircraft and a Jaguar car.

Vehicle fleet management systems

To minimise costs, transport systems that optimise schedules and give information on vehicle position are now even more necessary.

Bus information systems: Bus Tracker

The bus tracker system was developed to reduce public transport operating costs whilst providing better passenger services and increasing revenue. The system uses automatic location units fitted to each bus which relay positional information to a central control. Information can also be sent to bus stops to indicate vehicle arrival times. In towns and cities, the on-board computer provides information to roadside beacons which monitor the vehicle movement. This is continuously updated as a bus passes another beacon.

Other benefits include the ability to compare actual progress with schedules and greater driver safety. An emergency button allows the central control unit to be alerted in the event of a problem.

Bus Tracker has already been selected for the ROMANSE project in Southampton, part of the DRIVE initiative.

Fleet management systems

Star-Track is a control and mobile data communications system which enables fleet management costs to be minimised by knowing the position of the vehicles in the fleet. The system allows the real time monitoring of the location and performance of vehicles and comprises an in-vehicle unit, a communications link and a fleet control station. The in-vehicle unit collects data from a wide range of sensors, for example a global positioning system, (GPS), tachograph and bar code reader, and processes the data before onward transmission to the fleet control station.

Data received by the fleet control station is presented on high definition, colour displays, whilst a sophisticated mapping package linked to automatic data analysing routines, gives both operations information and management information on fleet efficiency, utilisation and profitability.

Star-Track can use a variety of both public and private radio communications networks; customers can choose which best suits their particular application. Systems are currently in operation using cellular telephone networks, mobile data networks and National Band3.

Emergency service provision

ALERT, a system developed at Milton Keynes, combines satellite global positioning (GPS) with a private mobile radio system and enables drivers to transmit their position to a control centre, should they breakdown for example. The system can also be activated automatically to help find stolen vehicles. When linked to software from the GEC-Marconi's MAPCASE location system, a full emergency call system is provided.

The Pyro 2000 thermal imaging camera.

In-vehicle systems

EDDIT (Elderly and Disabled Drivers Information Telematics) is a collaborative project being undertaken with vehicle manufacturers, government research establishments and academic institutions across Europe. It is part of the DRIVE 2 initiative and addresses the suitability, acceptability and affordability of telematic systems for the ever increasing number of elderly drivers on European roads.

The Short Range Obstacle Detection SHORTROD project, is being undertaken with Jaguar Cars as part of the European PROMETHEUS initiative. It includes the design, development and supply of prototype electro-optic reversing aid and blind spot sensing systems.

Various other study activities are also being undertaken such as intelligent cruise control and collision avoidance where GEC-Marconi's radar and sensor experience is a great advantage.

GEC-Marconi, which is more used to supplying equipment for Jaguar aircraft has now fitted a head up display and thermal imaging camera to a Jaguar Sovereign car, as part of the PROMETHEUS initiative.

This latest military aerospace technology turns night into day and uses a Pyro 2000 thermal imaging camera. This compact, self-contained, battery operated unit is designed to operate day and night even seeing through smoke or fog. Apart from its in-vehicle use, it has numerous industrial applications.

The head-up display shows a clear image of the road ahead. As the system relies on the temperature of objects to create a TV-like image, it works in all weather conditions including rain or fog.

The potential for increased road safety is obvious but there is an added benefit for emergency vehicles with clearer vision meaning they reach accidents more quickly. In parallel with the Jaguar trials, the system is being developed to meet an expected demand for other types of road vehicles in the late 1990s.

The GEC-Marconi in-car map navigation and display system has also been developed from fighter aircraft technology.

A trace on a colour map display shows the driver exactly where he is and indicates progress towards a predefined destination. This is useful in unfamiliar areas and can be used almost anywhere in the world.

The display is controlled by a small computer which uses information from two main sources: a GPS system and a magnetic compass which works in conjunction with the car's milometer. The system also provides information such as required direction, distance remaining and estimated time of arrival.

It can even show the location of petrol stations, motorway services areas, hotels, restaurants and places of special interest. When used in conjunction with traffic jam and road works data, provided through national and local infrastructure, the system can help to avoid hold-ups.

Route guidance

GEC-Marconi has been researching route guidance systems that combine both 'in-vehicle' and navigational aids. In conjunction with the AA, RAC, British Telecom and Ford, a system design has been developed which optimises the route for minimum journey time or even suggests a more appropriate mode of transport.

In situations where an integrated system is not the answer, products that access the new travel information service RDS-TMC can be made available.

Other automotive products

A steadily increasing range of products is available to improve vehicle safety or performance features. These include: microwave based speed sensors, solid state gyros, car alarms, sensors and immobilisers, seat occupancy detectors, ultrasonic based parking aids, backlight antennae, collision avoidance aids, intelligent cruise control products, head up displays and diesel emission meters.

Taken together, GEC-Marconi now has the widest range of the latest systems and products to address the needs of road transport for the start of the twenty-first century.

Education matters to GEC Avery

GEC Avery's involvement with schools and colleges has been recognised with a Midlands Quality Award for Industry.

The award, presented by the Industry Matters committee in GEC Avery's local borough of Sandwell, is for companies who have developed strong links with education.

Industry Matters encourages companies to demonstrate their links in practical ways. Activities undertaken by GEC Avery on company premises include work experience programmes devised by the training department to enable young people to earn credits as part of their national curriculum courses and benefit from the valuable opportunities this provides.

Also, by going out to schools and colleges, the company personnel provide a valuable input at careers events and during secondments to assist young people working on technology units within the national curriculum.

During the award period, the company employed more than 70 young trainees including 35 engineering apprentices and overseas students from China, India, Germany and France.

Throughout the company, GEC Avery's training department currently provides nearly 9,500 training days per annum - the equivalent of other world class manufacturing companies.

The Quality Award for Industry was presented to GEC Avery's personnel director Steve Hayes by councillor John Sullivan, mayor of Sandwell. Steve said, "We are proud that our involvement in the local community in this way has helped promote the image of industry to young people today, helping them to understand the world of work and to consider engineering as a career."

Training adviser Alan Derbyshire, who put the company forward for the award, added "We have a massive programme of ongoing work experience with schools and an important part of this is experience for special needs students.

"A major achievement has been the success of a young Asian student, Azim Udin. Following a summer placement on work experience with us, we have now taken him on as an apprentice electrician."

Azim Udin has lived in three different continents and experienced three widely differing academic systems. Since leaving school in 1990, Azim has excelled under the Startrite programme, being offered a permanent job with one firm who was impressed by his outstanding skills. Azim, however, wanted to pursue electrical installation work and his fourth placement at GEC Avery in the plant engineering department more than matched his expectations. His manager Richard Lane said, "Azim enjoys fault finding and problem solving and he's an asset in this job where no two problems are the same! We were really impressed when he gained his City & Guilds Electronic Servicing part I certificate at night school."

Azim's enthusiasm has taken a further boost with an offer of a four-year craft apprenticeship from the company.

"It's important to keep happy at work and be friendly with everybody around the site", says this troubleshooter who is fast earning a reputation for fixing anything electrical - from tools to domestic appliances!

Azim Udin (right), pictured above with electrician Gerry Carter, has been awarded a four year craft apprenticeship with GEC Avery.

Marconi Instruments goes back to school

OVER the years it has been felt that to attract young people with potential, industry must develop stronger links with education.

Marconi Instruments, Stevenage recognises this need and one of its initiatives has been to place trainees in local schools for one day a week to give industry-based support in the science and technology curriculum.

Julia Evans, a second year trainee with the company has worked closely with Nobel School, Stevenage. "I have been supporting Nobel School since September 1992, by designing and supplying electronic projects, and supporting the technology staff in the teaching of this material." Julia worked with year eight pupils to develop their interest in electronics and technology, with the hope of forming a young engineers club in the near future.

The first project to be completed was to build an AM radio, complete with case and headphones. All the materials were provided by Marconi Instruments so that each child could keep the radio that they had made.

Julia is now working on a new project with a different group of pupils and said," I find this very enjoyable and rewarding to myself and the pupils and feel I have gained management development experience at an early stage in my training scheme, with recognition from senior management within the company."

Phil Drury, personnel director with the company, visited Nobel School on completion of the radio project to present certificates to the pupils involved.

He was pleased with the partnership and said,"This is an example of the wide range of support activities we can provide for local schools. Our future plans will focus on developing broader based partnerships with selected schools in North Herts, and following very encouraging talks, we expect Nobel School will be at the forefront of this plan."

Nobel School pupils with their certificates (l. to r.) Aysha Wilson (12), Mr. Stewart (technology teacher, Nobel School), Tina Freeman (12), Phil Drury (Marconi Instruments), James King (13), Julia Evans (trainee, Marconi Instruments), Alex Robinson (12), Don Scott (senior training officer, Marconi Instruments.)

Dunchurch trains for the future

Hundreds of GEC employees participate annually in a wide range of training programmes run by the development training unit at the GEC Management College, Dunchurch. In the past, Topic has reported on the Tall Ship Programme, the National Employees Competition and young employee expeditions abroad. In this article, Barry Roberts, the development training co-ordinator discusses the work of the unit.

Nepal '90 team - their base camp at the foot of Everest.

Dunchurch has had a youth training team since 1980, when the post of national development training adviser was created. At that time, development training involved the use of outdoor pursuits as a medium for personal and group development.

Platform for learning

Today, development training involves the use of many diverse challenges which provide a platform for learning such skills as self-confidence, leadership and how to work effectively in a team. The development training unit's purpose is to make such specialised opportunities available on a company-wide basis.

The mechanics of a development training programme are simple: offer people challenging and worthwhile projects to tackle, guide them in analysing performance and results and from this they discover how to be more effective as individuals and as part of a group.

The children's camp programme is a powerful example of the unit's work. For ten years the college has assembled groups of young trainees and graduates and charged them with the task of operating a week-long summer camp for deprived children. The objective is to return the children home safely but having learned effective planning, leadership and delegation, problem solving and team work. The situation is a rich opportunity to develop real management skills. At the end of 12 exhausting days participants testify, "This is not a management game."

Further examples include the expeditions for young employees which have been undertaken in Morocco, Pakistan, Nepal, Kenya and Belize. From selection to travelling overseas, about an eight month period, each team takes responsibility for funding the expedition, training for the specific project and learning how to manage itself - deciding roles, responsibilities and leadership within the group. This is never simple given the geographic distribution of the team members and the varied experience and ability of the group. Much of the learning and development happens in the preparation phase when plans and decisions are made that will determine the practical operations. The period overseas, about five weeks, tests the team's cohesiveness and leadership. Whether the project is to build an orphanage or to conduct underwater research, team members cannot fail to learn about themselves, working effectively in a team and project management while contributing to a worthwhile cause.

Tall ship schooner

Perhaps the ultimate in group experience is the spartan life aboard a tall ship schooner which the college has chartered for a week each year since 1990. More than a hundred employees of all ages have taken part. At sea, in tough and potentially dangerous conditions, concern for the welfare of others is a pervasive factor. Few opportunities so enable and teach a large group to work well together in such a short period of time.

A long standing part of the annual programme is the National Employees Competition. For teams of any ages, the competition is the chance to work together to solve a series of combined mental and physical challenges. About 5000 employees have participated since the first such event. The challenges are fun and diverse involving land, water and aerial elements. Prior preparation is essential and only those teams who train together will do well.

Custom design

Much of the development unit's work is in bespoke training - the custom design and delivery of training programmes. Adventurous tasks are undertaken including the necessary theoretical sessions and analysis of performance. This service meets the needs of new or established groups and teams within companies including apprentices, recent graduate recruits, engineering, sales and management teams.

Increasingly, the unit is involved in team training with intercultural groups from joint venture companies. This approach is tailored to specific needs and helps to achieve results when resources and time are limited. It is an added bonus that learning can be exciting and so personally rewarding.

Development training programme dates:
Romania Orphanage Expedition 1994
Selection weekend: 18-20 *June*
Children's Camp: 28 *June*-9 *July*
National Employees Competition: 10-12 *September*
Tall Ship voyage: 25 *October* - 1 *November*
For full details contact: *Barry Roberts, development training co-ordinator, GEC Management College, Dunchurch, Rugby, Warks.*
Tel: 0788 8106565.
GNET *Access Code* +784 +2078.

Chris Pook from the Kenya '92 team with a group of children from Kipkeino Children's Home.

Topic

Topic is the newspaper for all GEC employees. It aims to be a link between all the company's operations, keeping them informed and aware of each others' interests and employees' activities.

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GEC - a world class concern

In this and future issues of Topic, we will look at training and development throughout GEC: the techniques involved, the challenges faced and the outcomes. This issue focuses on the trend towards flexible working methods which have been linked to world class manufacturing (WCM) standards. Several GEC businesses have already developed their own style of WCM and are now using this to great success.

World class manufacturing

Many businesses within GEC are changing their methods and systems of working to achieve or sustain positions that are amongst the best in the world. This dedication to excellence is accompanied by a customer focus and greater independence of employees.

Customer driven manufacturing

Unlike traditional manufacturing techniques, the process is driven by customer demand. Products are pulled through the manufacturing process to meet customer requirements, rather than pushed through by the availability of components. If an item is not needed it is simply not produced and when it is needed it is produced just in time.

Each stage or cell of the production process acts as an internal customer for the previous stage. Within manufacturing cells each unit is autonomous, containing all the necessary skills to carry out that stage of production and to solve problems which arise. In such a manufacturing system, the number of levels of management is normally reduced and people are given much more authority to implement improvements in working methods which lead to better quality products at reduced cost.

Often arrangements with suppliers result in components being produced or delivered as and when required and not before, thus minimising or even eliminating stock holding.

Total quality management

For a business to be world class, its products must be fit for purpose and the philosophy of total quality management (TQM), is an essential factor in achieving this. Everybody seeks to achieve excellence first time, every time, without the need for inspection or rework.

In a just in time factory, planned maintenance is vital as machine breakdowns can be disastrous and simple maintenance tasks are often carried out by the machine operators who will be more familiar with their own machinery than people who do not use it on a daily basis.

Team working

Team working is another vital aspect of WCM and occurs both in the natural working group and in multi-disciplinary teams formed to provide solutions to specific problems. Such teams involve individuals with different skills and at different levels of the business who can combine their knowledge effectively to provide solutions to problems or improvements sought in the work place.

Concurrent engineering

As technology changes become increasingly rapid, product life is becoming shorter. Developing and getting new products to market before the competition is a major advantage and concurrent engineering is a tool often used to do this. Again, this draws on multi-disciplinary teams which are not only responsible for producing the product design and that it meets identified customer needs but also to ensure that it is suitable for manufacture.

Once again, multi-disciplinary teams ensure the exchange of ideas and knowledge from people of different disciplines to bring about a holistic approach to product development.

Nearly all of these techniques require greatly increased employee flexibility and a significant investment in training if they are to work. Success is also dependent on the communication of a clear vision and the total and long-term commitment of all involved but the benefits of success are great and include: improved responsiveness to customers in terms of product specification and lead times, better quality and lower overall cost and above all greatly improved competitiveness.

Looking ahead

A determination to embrace and implement change has already enabled GEC companies to compete in the world class arena. By improving manufacturing systems and becoming more competitive in quality, cost and delivery, other GEC companies are also aspiring to world class procedures.

In the next issue of *Topic* we will look at networking to facilitate companies learning about WCM techniques from each other.

A nitrogen purged soldering facility used at Broad Oak on high volume commercial production to flow solder printed circuit boards. This machine eliminates the cleaning stage (no flux is used) and improves the quality of solder joints. The use of CFCs and other contaminants is also eliminated.

Picker

At Picker International concurrent engineering dramatically shortened the time-to-market for a new scanner developed using multi-disciplinary teams. The goal was to reduce the time taken by 40-50 per cent.

The teams included design engineers, manufacturing engineers, purchasing, quality engineers, service engineers and market product planners. As the teams moved into the pilot stage supplier champions were formed to ensure womb-to-tomb responsibility for supplier selection and the co-ordination of building pilot assemblies. While concurrent teams were building and testing pilot scanners, the design quality was continually revised to take advantage of manufacturing and service improvements.

As a result of the change to a concurrent approach, a 40 per cent. reduction in the overall introduction cycle was achieved. It was the scanner's early availability that ensured a high marketshare with increased profits.

Now Picker believes its scanner operations have a definite cost advantage over all competitors, including the Japanese.

Marconi Defence Systems

Employees at Broad Oak Works are also succeeding with the implementation of WCM techniques.

Without these new work methods, several obstacles had hampered efficient production.

Excessive paper-work and bureaucracy slowed decision-making. Large amounts of work-in-progress and poor floor layouts impeded efficiency. One third of employees' efforts concentrated on rework.

WCM's effect has been dramatic. By introducing manufacturing cells, a team approach has cultivated personal ownership of the product and improved performance.

The company used concurrent engineering techniques in preparation for and during production. Yield improvement has been achieved by relentless engineering changes to match the design requirement and the engineering process. A vital tool for this has been the on-line automated test and information analysis system, nicknamed MATIS, which handles two million test results each month.

The higher importance placed on quality management and team-building training has resulted in a reduction of failure rates to 20 to 30 parts per million.

Hotpoint

At Peterborough, Hotpoint has effectively removed a number of layers of management and teams are tackling various improvement projects. Employees are now much more part of the decision-making processes rather than merely spectators.

One benefit of this is the reduced time taken to complete a tool change in injection moulding. The operators, with a production engineer and tool setters were asked to reduce the tool change time in order to improve factory responsiveness and were given a budget with which to work. By using the team work approach to solve the problem, the time was reduced from over two hours to 35 minutes. One member of the team, Kevin Edwin said," It's been great doing it and now we're all keen to reduce the changeover time of the other tools too."

£5,000 raised for hospice

GEC ALSTHOM Protection and Control employees handed over a cheque for £5,000 to representatives of the Stafford Hospice at a dance held at St Leonards Works recently.

Nearly 300 members and friends of the social club were present as Derek Glover, chairman of the club management committee, made the presentation to Margaret Thornton, chairman of the fund raising committee for the hospice.

Val Moore, the hospice administrator said she was delighted with such an amount, which had been raised by raffles, various marathons and other events including the company Fun Day.

The club makes a donation to a worthy cause each year. Derek Glover said, "Thanks are due to everyone who took part in the fund raising and particularly to those who gave so generously."

GPT Spartans on the run

GPT, Coventry Spartans running club has four members taking part in this year's NutraSweet London Marathon.

The London Marathon, which attracts the largest number of competitors for any marathon (27,000) is a major event for charity fundraising, with literally millions of pounds being raised each year. Since 1986 GPT Spartans runners have raised over £13,000 running the marathon.

This year two will be running for Muscular Dystrophy, one for Cancer Research and one for Coventry Sports Association for the Disabled.

Charity

The Spartan's secretary wrote to Terry Ward, GPT communications director, to suggest that GPT might be able to sponsor employees taking part in the event. It has been agreed that GPT will donate £20 per employee to a charity nominated by the club.

They have decided to give GPT's sponsorship to Coventry Sports Association for the Disabled. This is an organisation that is continually working to provide good sporting facilities for the disabled in particular, but also for able bodied people.

Members of the GPT, Coventry Spartans running club preparing for a 20 mile Sunday training run. l. to r: Mark Baker, Amrik Sembi, Rob Barry, Doreen Earl, Bob Simpson, Roger Jones and Roy Pye.

Topic Competition

Friendly HOTELS

MAERSK AIR
THE DANISH AIRLINE

Premier 3 star Friendly Hotels and Maersk Air, Denmark's leading independent airline, have joined forces to offer one of our lucky readers the perfect weekend break. Simply answer the three simple questions and you and your partner could be jetting off to sample the delights of Copenhagen, Denmark's capital city.

Your weekend starts when you fly direct from London Gatwick to Copenhagen on one of Maersk Air's 24 weekly services from the UK. Next, it's off to Friendly Hotel's Osterport where on both nights during your stay you and your partner can enjoy the seasonal delights at the hotel restaurant.

Three runners up also have the chance of winning weekend breaks to any of the 20 premier 3 star Friendly Hotels in the UK. Each prize includes two nights for two people (bed & breakfast) at a Friendly Hotel of your choice.

Furthermore we have arranged for all our readers to enjoy a special weekend bargain - simply stay Friday, Saturday and Sunday night and receive 50 per cent. off normal published room rates, which normally start from as little as £29.50 per person per night in a double room.

If you require somewhere to stay during the week (Monday to Thursday) spend three consecutive nights and get the third night for £1.00 when you produce the attached voucher at the booking desk.

To take advantage of any of these great offers or to make a booking call Felicity James quoting your preferred hotel (see map) on 081 951 5656. For further information on Maersk Air's 24 weekly services to Denmark and their special £145 super-apex return fair please call Else Marie on 071 333 0066. All offers are subject to availability and are open to 30th June 1993.

Fill in the correct answers to the following questions on the entry form below.

1. What star rating are Friendly Hotels?

2. How many Friendly Hotels are there in the UK?

3. How many weekly services do Maersk Air Fly from the UK?

Friendly HOTELS

RECEIVE 50% OFF NORMAL PUBLISHED ROOM RATES
when you stay Friday, Saturday and Sunday night.

SPEND 3 CONSECUTIVE NIGHTS AND GET THE THIRD NIGHT FOR £1.00
Monday - Thursday only.

The offer only applies to normal published tariffs and cannot be used in conjunction with any other special offer or discount.

ENTRY FORM

1. ..... 2. ..... 3. .....

Name .....

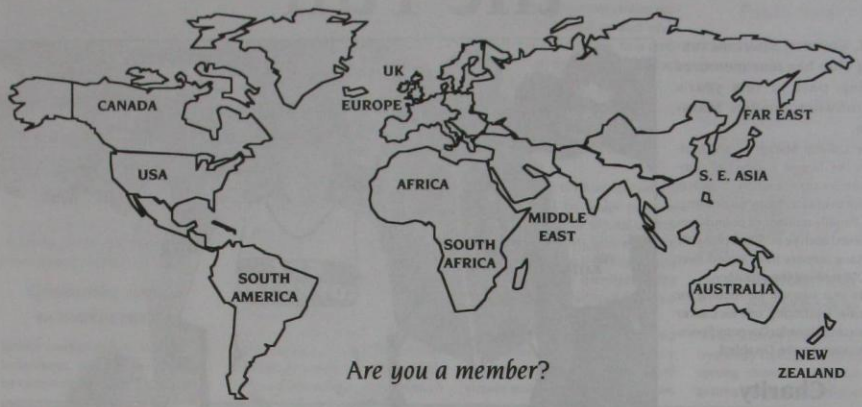
Address .....

.....

Company .....

DEADLINE: 7 JUNE 1993
Return to : Topic, GEC, 1 Stanhope Gate, W1A 1EH and please mark the envelope Topic competition.

GEC Overseas Club



THE GEC Overseas Club has 11 centres and a membership that stretches from the UK to the USA, the Middle East and New Zealand.

The club has 2561 members in the UK centres and 1109 overseas.

As the last issue of *Topic* explained, the club's aim is to help its members keep in touch with one another and with the company's activities.

If you have been employed by the company for a minimum period of 12 months and have served overseas for the company or have made periodic visits overseas on company business, you can become a member of the Overseas Club. A list of all the Overseas Club centres and countries where there are members is given below.

For further information contact Peter Watson, the Club secretary at Stanhope Gate.

UK 2561

Chelmsford 250, Coventry 286, Lincoln 172, London 571, Manchester 523, Portsmouth 170, Rugby 393, Stafford 189.

OVERSEAS 1109

Australia 603, Canada 481, Hong Kong 35.

AMERICAS 177

West Indies, Mexico, Argentina, Bolivia, Brazil, Chile, Colombia, Guyana, Peru, USA (144), Venezuela.

EUROPE 154

Austria, Belgium, Cyprus, Denmark, Eire, Finland, France, Germany, Gibralter, Greece, Hungary, Italy, Malta, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland.

MIDDLE EAST 19

Iran, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia UAE.

AFRICA 525

Botswana, Cameroons, Egypt, Gambia, Ghana, Ivory Coast, Kenya, Libya, Malawi, Mauritius, Nigeria, Sierra Leone, South Africa (346), Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.

SOUTH EAST ASIA 156

Bangladesh, Burma, India, Indonesia, Malaysia, Pakistan, Sri Lanka, Singapore, Thailand.

FAR EAST 13

China, Japan, Phillipines, Taiwan.

NEW ZEALAND 140

News from around the centres

AUSTRALIA

Don Bartho has been elected Hon. Secretary of the Australia centre. Don is a long term employee of GEC who started work with BTH, Rugby. He has always been an active supporter of the club and will carry on the good work of his predecessor Graham McLean.

The GEC ALSTHOM Australia teams at Brisbane and Sydney worked round the clock to help a customer in need recently.

A major fire in the cable basement of BHP's Port Kembla plant destroyed the electrical control system and all cabling had to be replaced. GEC ALSTHOM was called upon to design, build and supply new equipment within two weeks.

In order to meet the deadline GEC ALSTHOM mobilised teams in its Brisbane and Sydney workshops.

LONDON

The North London branch of the London centre held a dinner at Claudius restaurant in St Albans recently. Thirty-four members and guests enjoyed an Italian meal, with a highly individual style of entertainment provided by the restaurant proprietor who performed conjuring and card tricks and then proceeded to serenade the guests on his saxophone.

MANCHESTER

The secretary would like to hear from any members of the centre who do not yet appear on the records and who wish to play in the forthcoming golf fixtures.

The response to the bridge evening has been encouraging and the theatre visit has been rescheduled for later in the year.

PORTSMOUTH

The annual Burns Supper attracted 70 members and guests, including visitors from Canada, France and America.

A supper evening at the Lord Romsey restaurant, Highbury College allowed the centre to experience the catering and service skills being taught in the hotel and catering industry.

RUGBY

There was a best ever attendance at the centre's annual dinner held recently at the Benn Hall. The guest speaker was Sir John Moberly. Tony Fletcher proposed the toast to the Overseas Club and its members.

We sadly report the death of two Club stalwarts Henry Davenport and Neil Neville.

SOUTH AFRICA

Club activity is very encouraging thanks to the enthusiasm of Jake Johnson, assisted by Therese, Mike Finch in Capetown and Wally Eastman in Durban. Perhaps we can look forward to a move towards an autonomous centre for the 346 club members in the territory.

CLUB DIARY

Club Annual Dinner
The 1993 Club annual dinner will be held on Tuesday 14 October at the Benn Hall, Rugby. The principal guest is Rupert Pennant-Rae, Editor of the Economist and Designate Deputy Governor of the Bank of England. Members and guests from overseas will be most welcome.

Coventry
23 September — Inter-centre golf tournament with Manchester centre at Maxstoke Park.

Manchester
11 May — Club Council AGM
13 May — Golf day at Ashton in Mersey

CLUB SECRETARIES

Council: P R Watson, GEC, 1 Stanhope Gate, London, W1A 1EH Tel: 0203 563 487

Chelmsford: AD Christelow, EEV, Chelmsford, CM1 2QU Tel: 0245 493 493

Coventry: Alec Ahmed, Telephone Cables, Chequers Lane, Dagenham, Essex, RM9 6QA Tel: 081 592 6611

Lincoln: Mrs C Weston, GEC Semiconductors, Carholme Road, Lincoln, LN1 1SG, Tel: 0522 565 538

London: P Norman, Marconi Defence Systems, The Grove, Warren Lane, Stanmore, HA7 4LY Tel: 081 954 2311

Manchester: NC Phipps, GEC ALSTHOM Transportation Projects, PO Box 134, Trafford Park, Manchester, M60 1AH Tel: 061 875 2358

Portsmouth: Ms PM Clarke-Jervoise, Marconi Underwater Systems, Waterlooville, Tel: 0705 260 024

Rugby: E Wilson, CEGELEC Projects, Boughton Road, Rugby, CV21 1BU, Tel: 0788 563 563

Stafford: CC Riley, GEC ALSTHOM Turbine Generators, Lichfield Road, Stafford, ST17 4LN, Tel: 0785 223 211

Hong Kong: KM Steele GEC of Hong Kong Ltd Tel: 5-8938282

Canada: PS Tambe GEC Canada Ltd Tel: 416 624 8300

N Holmes (UK rep) 2 Heathwood High Street Tadworth Surrey KT20 5RB

Australia: AD Bartho GEC Marconi Systems Meadowbank NSW Tel: 02-809 9700

Marconi helps MEDICS

CHARLES Rand, chairman of the Marconi Employees Charity Fund recently presented a cheque for £500 to the Essex organisation MEDICS.

The donation will help pay for the flying doctor service, a group of Essex GP's who attend emergencies such as road accidents to provide immediate medical attention.

The Marconi Fund is over 30 years old and involves the GEC-Marconi establishments in the Chelmsford area. These include GEC-Marconi Communications, Marconi Radar and Control Systems, the Marconi College and GEC-Marconi Research Laboratories, Great Baddow. Employees contribute via deductions from their salaries which are then matched pound for pound by their companies. The majority of organisations which benefit from the fund are local to the Marconi community but donations have also been given to Dr Barnado's and Cancer Research in the past.

Creda gives to high flyers

THE Creda charity committee has donated specialist medical equipment to the Staffordshire air ambulance service.

Employees bought the equipment with money raised by regular contributions deducted from wages and paid into a charity fund. The two pieces of equipment, called pressure infusion cuffs, are vital to patients attached to a drip whilst being transferred by air.

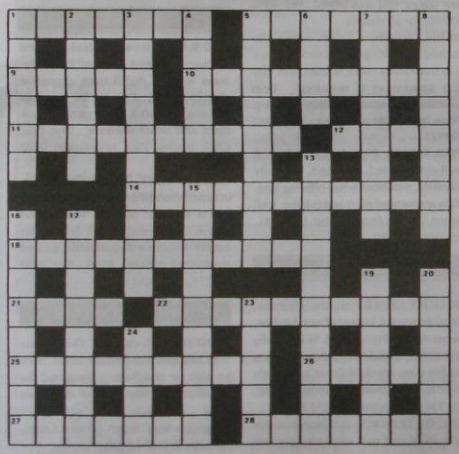
In normal circumstances gravity is used to introduce essential fluids into the bloodstream but, while the patient is in flight, the pump action of the pressure cuffs is relied on. Two fluorescent jackets for the additional protection of air crews at the scene of an incident have also been donated by Creda.

The air ambulance is supported solely by donations from the public and has been in operation since May 1992. The service has flown over 900 missions and has been credited with saving 17 lives to date.

It has proved particularly valuable in both urban and rural areas in support of normal land based ambulance vehicles. It operates as an integral part of the Staffordshire ambulance service's response to the trauma system initiative, based around the North Staffs Hospital Centre trauma unit in Stoke. A Staffordshire ambulance spokesman said: "This equipment is vital to the care of patients travelling by air and we are very grateful to Creda for their support. We hope that the community, which has been so generous in its support, will continue to provide funds to keep the air ambulance flying."

Creda charity committee representatives Eric Barratt (r.) and Tracy Whelan pictured with air ambulance paramedic Stuart Alves (l.) and Paul Lomas marketing manager, Staffordshire ambulance service.

April Crossword



The crossword winner will receive a sensair automatic tumble dryer from Creda's Ecodry series. The dryer has two drying programmes and automatically switches off when clothes are dry, saving electricity.

ACROSS

1. Frenchman goes to law about face-lift (7)
5. Resolute sleuths caught in the act (7)
9. Consisting of two divided by a hundred, but referring to 3 (5)
10. Something sweet and fancy, a little French number (5, 4)
11. Still requiring writing materials we hear (10)
12. A quarter ring before noon, or at another time (4)
14. Unusually pure setting in which to find a street urchin (6-5)
18. and 21. Copper upsets cook in the home - an unwelcome intruder (6, 2, 3, 4)
21. See 18
22. Artisan, not one to be in a tizzy, begins afresh (6, 4)
25. He praises strangely hypocritical people (9)
26. Club providing extremely tasty nuts (5)
27. Action taken about exercises in Russia's grassy areas (7)
28. Attacked, as an egg usually is (7)

DOWN

1. Edible root has just over 500 spots on the outside (6)
2. Beverage of the gods found by excited Cretan (6)
3. Duke is still Duke, even when beheaded (10)
4. In the end student at university makes a bloomer (5)
5. Fellow gets put off when first using washing-up liquid for instance (9)
6. Name the location mentioned (4)
7. Big-headed boss, reputedly dead? (8)
8. Disheartened duke phoned editor and got mad (8)
13. Apparent bites on Les needing treatment (10)
15. Having no scent, it isn't commonly given to minor (9)
16. Speaks crossly, according to drunkard having too much of this? (8)
17. Tracey is upset, giving a cold look (3, 5)
19. Drop in to see business centre when it's mostly quiet (6)
20. Influenced by soft leather you could say (6)
23. Pay increases gained by heading off emergencies (6)
24. Proceed with difficulty, being soft and weak (4)

ENTRY FORM

Name.....

Adddress.....

.....

.....

Company.....

DEADLINE: 7 June 1993

A copy of your crossword together with this entry form should be sent to: Topic, GEC, 1 Stanhope Gate, London W1A 1EH. **Please mark your envelope April crossword.**

FEBRUARY SOLUTIONS

ACROSS

1. Lack-lustre; 6. Jocose; 9. Roulette; 10. Medicine; 11. Hippos; 12. Pageants; 14. The Beast; 16. Pear-tree; 19. Workaday; 21. Yeoman; 22. Pensions; 23. Sinecure; 24. Ingest; 25. Well-heeled.

DOWN

1. Lesion; 2. Cure; 3. Laughter; 4. Steeple-chasing; 5. Rations; 7. One-way; 8. Oliver Cromwell; 13. Strew; 15. Iron Duke; 17. Eremite; 18. Daunts; 20. Rancid; 22. Peel.

COMPETITION WINNERS

February crossword

The first all-correct entry drawn at random from the February crossword entries came from: M. A. Sparks of Easams who will receive a sensair automatic tumble dryer from Creda.

Pontin's competition

The winner of the Pontin's competition was Mrs H. Smith of GEC Avery. Congratulations!

Mrs Smith won a self-catering holiday for a family of four at a Pontin's holiday camp by answering the following questions correctly:

What country has the Kronor as its currency?
Answer: c - Sweden

Where was the Battle of Hastings fought?
Answer: c - Battle

What town is the most southern town?
Answer: c - Penzance

Don't forget that Topic readers can get away with Holiday Club Pontin's for less than expected.

CLASSIFIED COLLECTION

HOLIDAYS

FLORIDA, Gulf Coast, privately owned, luxury 3 bedroomed villa. Sleeps six. Two bathrooms, laundry room, private screened swimming pool. Ideally situated between Orlando and Tampa. Only £300 per week. For details contact Margaret Bennett on 0252 333632 after 6pm.

SOUTH DEVON COAST. Two bedroom, six berth caravan, situated on Haven Holiday's Challaborough Bay site. Only 18 miles from Plymouth. Prices well below Haven's list price. Contact Mr/Mrs Igoe 0522 685178.

FRANCE, La Palmyre, modern villa accommodates six people. Village style complex with swimming pool, paddling pool, tennis courts, volleyball area etc. Sandy beach 2.5 miles, shop 800m. Zoo and other local activities. Ferry bookings available. Tel: 0276 28792 after 5.30 pm.

BUDE, Cornwall chalets, lovely park with leisure centre. Heated indoor/outdoor pools, entertainment. Tennis, squash, badminton courts. TV, microwave. Pets welcome. Tel: Lloyd 0494 778088 for brochure.

YORKSHIRE DALES, Eileen and Allan Thompson invite you to share their idyllic 17th century riverside cottage for bed, breakfast and evening meal. Large gardens, ample parking, home cooking and private fishing. Friendly welcome. For brochure call: 0756 752463.

YORKSHIRE DALES, Grassington Chapel Fold Guest House. Converted chapel offers en-suite accommodation, comfortable surroundings, arched windows, Victorian cooking range, oak beams and good home cooking. Superb surrounding countryside and easily accessible to Heriot country. Tel: 0756 752075.

CARIBBEAN Unspoilt Monserrat, British colony with friendly people, lush vegetation, year round temperature 70F - 85F. Luxury three bedroom villa with 40 ft pool and jacuzzi overlooking golf course and beach. Tel: 081 4415433.

EYAM, Derbyshire. Old stone cottage in the peak district, fully equipped (gas c/h, microwave, dishwasher, etc). £110 to £190 per week depending on season. Send sae for details. P A Harrop, 36 Hertford Close, Woolston, Warrington, WA1 4EZ. Tel: 0925 818893.

SPAIN La Manga Club - beautiful complex, world class golf, tennis, pools, beach club with all water sports, shops, restaurants. Two bedroom apartment to let, £200 per week or for sale £42,000 ono. Bathroom, fitted kitchen, living room, balcony. Immaculate condition, fully furnished. Tel: 0634 362788.

CYPRUS, Protaras (Figtree Bay) villa and apartment, close to sandy beaches, Use of super pool/complex. Near town, lovely restaurants and bars. All amenities. Assistance with flight booking. Tel: 0245 322583.

LANZAROTE, unusual Canary Island, 12 month season. Apartments in La Penita Puerto Del Carmen set amongst gardens . Pool, top quality beautiful promenade, fine beaches, clean sea. Excellent food and friendly people. Very interesting island for all ages. £100 per week approx. Tel: 0633 400359.

DEVON cliffs, Sandy Bay, Exmouth. Six/eight berth caravans on Haven site. Prices well below site prices. Weekly cost includes admission to pools and clubs, gas and electricity. Privately owned and maintained by us. For further details tel: 0963 62101 (home) or 0935 442790 (office).

SA RIERA, beautiful Costa Brava fishing village featured on Cliff Mitchelmore's first holiday programme. Large apartment to rent. Sleeps seven, close to beach. Rooftop B.B.Q, ideal self drive destination. Help given with flights, ferries etc. Discount for *Topic* readers. For details tel: 0392 881363.

DEVON CLIFFS, Sandy Bay, Exmouth. Three bedroom, nine berth caravan situated on one of Haven Holidays best sites, free pools and entertainment. Prices approx 25% below Haven's list. Plus extra discount for Topic readers. Contact: Mrs Duxbury, Hele, Exeter, EX5 4PZ, 0392 881363.

TURKEY, £49 per person per week, B&B including airport transfers to small hotel overlooking Med. at Calis Beach, Fethiye unbelievable but true. Flights arranged if required, discount insurance, car hire etc. Highly recommended for cheap gold, leather, spices. Further details 0392 881363.

FLORIDA, five minutes from Disney World. Privately owned three bedroom villa on friendly estate with swimming pool and sports complex. Near all major attractions. Sleeps 6/8 persons, cot available. From £300 per week. Tel: 04243 2885.

SKI IN 93 with Snow and Co. Montgenevre, France, great ski-ing, good snow conditions. Low cost après ski and milky way pass. Some rooms left in out chalet, bargain rates for details ring 0329 853000 (work) 0703 263188 (home) Mike Liddicoat.

PORTUGAL near Estoril. Private, detached, tastefully furnished luxury villa with beautiful gardens and built-in barbeque. Sleeps four in two en-suite bedrooms opening onto terraces and pool. Ten minutes to beach. Sunday bookings. Villa from £350/400 per week. Tel: 0788 571395.

PORTUGAL, Algarve near Vilamoura. Detached private villa with patios, barbeque and large pool in 2.5 acres. Sleeps four, possibly six. Two en-suite twin-bedded rooms. Daily maid service. Thursday bookings. Villa from £275 per week. For further details ring 0788 571395.

COTE D'AZUR between Antibes and Nice. Luxury apartment sleeps four, large garden backing onto parkland. Swimming pool and tennis. Available August 16th for two weeks. For further details telephone 0788 812633.

FRANCE To let in the Auvergne at St. Eloy. Fully furnished detached cottage with large garden, sleeps 6, near lakes for swimming/fishing. £200 per week. Tel: 0275 562960.

MENORCA. Detached villa with private swimming pool. Three bedrooms, sleeps maximum eight people. Fitted kitchen. Lounge/diner. Two bathrooms, private gardens. Two sun terraces, close to Ciuadela. Ten minutes walk to beach/coves. For brochure tel: 0634 867183.

PERTHSHIRE, Scotland. Large two-bedroomed 19th century apartment, self-catering, located in Comrie (near Crieff). Registered with Perthshire Tourist Board. Excellent walking/fishing/touring country. Prices from £125 per week. For brochure tel: 0275 472385.

FRANCE: Cottage near Hesdin. Well equipped. Sleeps 6/7. Located in unspoilt, attractive countryside. Calais, Boulogne and Le Touquet about one hour. For further details, tel: 027237 2126.

BIARRITZ Cap Breton area of SW France. Family chalet style holiday home at Labenne sleeps four to six people. Patio/garage and many brand new features. Only 400yds from sandy beach and provides good access to Pyrenees, N Spain, and Atlantic Coast. Available from glorious June to sunny September. Tel: 0344 424632 for brochure.

SUFFOLK Small coastal village of Walberswick. Holiday home, sleeps four. Secluded spot overlooking water meadows. Five minutes from good beach. Ideal walking and birdwatching country. Details: 0245 223689.

FLORIDA Twenty minutes from attractions, two bedroom, fully air conditioned villa, sleeps four/six people. Situated on quiet residential estate with free golf, swimming and tennis. £300 per week. Tel: 0745 833426.

SNOWDONIA Trawsfynydd village. Comfortable, well equipped, two bedroomed stone cottage. Sleeps 4/6. Cot provided. Pets welcome. Good walking and fishing locally. Convenient for exploring rest of North Wales. Available throughout year, £80 - £155 per week. Winter mini-breaks £40. Tel: 0489 574626 for details.

CYPRUS, Protaras (Fig Tree Bay) villa and apartment. Close to sandy beaches. Use of super pool/complex. Near town, lovely restaurants and all amenities. Assistance with flight. Bookings: 0245 322583.

NORTH DEVON Westward Ho! Self-catering chalet sleeps six. Two bedrooms, bathroom, colour tv, fridge, cooker. Fully equipped (excepting linens). No pets allowed. Private access to promenade and beach. Contact Hinsley, 9 Tichborne Close, Blackwater, Camberley, GU17 0JQ. Tel: 0276 33684 (evenings/weekends).

TORREVIEJA Costa Blanca. Ground floor one bedroom apartment, sleeps four, quiet area, 100 yards from sea. Beaches, bars, restaurants all close by. Prices from £70 per week. Tel: 0772 685789 after 5pm.

BRITTANY, France. Self-catering stone-built cottage at St. Jacut-de-la-Mer. Ten minutes walk from beaches. Kitchen/diner area, lounge, two bedrooms, shower-room. Initial enquiries, tel: 0275 472385.

SCULPTURE in South France (Vals). Practising artists, students, beginners, sculpture in stone/metal etc. (tuition if required). Studio 13th century chateau, picturesque Pyrenean village. Full board, basic accommodation £180 per week (inc. wine). Nearby activities riding, swimming, walking. Tel Andy 081 549 0151 ext. 289, 081 891 4213.

CANAL BOAT for hire. See our wonderful waterways heritage. Grand Union Canal. Sleeps six. Equipped with shower, fridge, cooker, central heating, etc. Comfortable boat, newly decorated. £150-£300 per week. Please call for details. Tel: Rickmansworth 0923 779052.

TORQUAY Daylesford hotel, 60 Bampfield Road, Torquay, TQ2 5AY. Small and friendly with all facilities. Short, level stroll to the beach, promenade and abbey gardens. Reduced rates for OAP's and children. Tel: 0803 294435.

ST TROPEZ (Provence) Private mobile home. Excellent beach site. All amenities including courier service. A few dates still available. Tel: 0952 550782 for all details.

NERJA, Southern Spain. New detached villa with gardens and terraces, two bedrooms (sleeps four) plus studio apartment if required. Best beaches and tennis facilities nearby. Price from £100 per week. Tel: 0892 528517.

PIER HOTEL, Rhyl, North Wales. A well-established, licensed, centrally situated, sea-front hotel offering first-class accommodation and cuisine. RAC listed. 23 East Parade, Rhyl, LL18 3AL, tel: 0745 320280.

PROPERTY

HOLIDAY CHALET on site, Hemsby. Two bedrooms, lounge/diner, kitchen, separate bathroom and W.C. Fully furnished. Close to beach and shops. Within easy reach of Great Yarmouth, the Broads, Norwich, wildlife park etc. £5, 350 call Martin 0442 251252.

END OF TERRACE, one bedroom flat with front and rear gardens near bus stops and shops, Hemel Hempstead, Herts. Price £41,000. Tel: 0438 356916 after 4.30 pm.

HOUSE TO LET furnished, 3 bedrooms, 2 bathrooms, big living room, washing machine, colour tv. 3 minutes from Fulham Broadway tube, quiet surroundings, near shops, restaurants and street market. £1200 per calendar month, ono. Contact: Nicole England, 7 Rue le Goff, Paris 75005 Tel: 43548997 evenings and early mornings.

BLABY, LEICS. Detached house, 3 bedrooms all with built in wardrobes, overlooking a park. Gas-fired central heating. Garage with tarmac driveway. Through-lounge with stone fireplace and double patio with doors to rear. £62,000. Tel: J. Hicks 0533 772215.

ODIHAM, N. Hants. Luxurious first floor (with lift) two bedroom retirement apartment in exclusive development and yet within 100 yards of shops and amenities in Odiham's historic high street. £85,000. Call Tudor on 0256 701583 or Hill on 0256 702892.

THREE BEDROOM detached house, garage in quiet cul-de-sac, gas central heating, fitted wardrobes in all bedrooms. Bedroom one en-suite, secluded rear garden, good size plot, in very good decorative order, Epping, fifty minutes from London, Central line. Price £140,000 ono. Tel: 0992 573976.

BASILDON, Essex. One bedroomed first-floor flat. Double bedroom, large lounge, newly fitted bathroom, gas central heating. All curtains and carpets to remain. Five minutes from railway station - 30 minutes London Fenchurch Street. Price £25,000 ono. Tel: 0268 413093.

FOR SALE

BBC B Microcomputer ISS7 (as used in many schools) with solidisk sideways RAM & 40/80 track discdrive (Watford DFS). Pair of BBC joysticks and single joystick. Many games, blank discs and other software. Disc box £135, phone Paul (evenings) 0268 763731.

TRAILOR TENT, Conway Carmargue. In superb condition, only used 6 times. Extras include: storage wheels and frame, porta-potti, gas bottle for cooker. Heater with gas bottle, ground sheet and others. £900. Tel: 0203 616251 after 5pm.

MISCELLANEOUS

WANTED: VHS video of 'This Is Your Life', Skipper Woodhouse, 28 Jan. 1991, to hire or purchase. Required for private use, reasonable expenses paid. Contact: R.K. Craske, 227 Laughton Way, North Ermine Estate, Lincoln, Tel: 0522 529523.

WIRELESS ENTHUSIAST seeks unwanted valve receivers, domestic and military for restoration and display. BC342/4/8, HRO, RCA, Hammarlunds, Marconi, Collins especially sought. Details please to A.C. Stubbings, 7 Church Road, Saxilby, Lincoln, LN1 2HH. Tel: 0522 702601 eves. & w/e.

Send your classified advertisement written clearly in block capitals (a maximum of 40 words) to : *Viveka Thomas, Topic, The General Electric Company plc, 1 Stanhope Gate, London* W1A 1EH by **14 June** giving your name, address, telephone number and, where appropriate, your GEC site. Only one insertion per ad is permitted. Insertion is not guaranteed but every effort will be made to include your advertisement as soon as possible. GEC employees, their families and people who have retired from the company may advertise free of charge. For others, the cost is 50p per word. Please make all cheques payable to The General Electric Company plc.

Topic takes no responsibility for any misrepresentations or inaccuracies in classified advertisement or for any breaches of obligations by classified advisers. Readers are recommended to take appropriate professional advice before entering into obligations.

A pension plan for all

PENSION plans are boring to most people when they are young, but as you grow older need to be taken seriously!

If you are one of the 53,000 GEC employees who are covered by The GEC Plan read no further. Those who are not in the Plan might find it beneficial to continue.

The GEC Plan provides a range of benefits from a fund of assets now worth over £3 million. This fund is owned by a trustee company - SPT - and is separate from the assets of GEC. The fund is for the benefit of employees and those former employees who are Plan members: in all 184,000 people.

Benefits available from the Plan include:-

- a lump sum for your dependants if you die in service before retirement
- a disability pension if you have to retire because of permanent ill-health
- a pension for life when you retire
- the choice of taking part of your pension as tax-free cash
- a pension for your spouse or other dependant on death after retirement
- a lump sum payment if you die within five years after retiring.

Members contribute 3 per cent. of pay and the employers meet the balance of cost on advice from the actuary. Members are provided with yearly statements to review what has accumulated and estimated future benefits. The Selected Benefit Scheme can be used to provide additional benefits to meet individual requirements and advice can be given as to the appropriate level of contribution perhaps to facilitate retirement before State pension age or to increase death benefits.

The point of the GEC Plan is:

- to be available to all GEC group employees in the UK
- to provide retirement income and cover for dependants
- to maintain real value of the benefits
- to fully preserve benefits (or provide transfer arrangements) on change of employment
- to make it possible for individuals to match benefits to their needs through additional voluntary contributions
- to promote good communications with members eg. members nominate half the trustee board through their elected regional pension consultative committees.

Can you afford not to join?

And, if you think a Personal Pension would be better you would be well advised to check the facts! Further information about The GEC Plan and Selected Benefit Scheme, including leaflets, booklets, annual accounts, personal quotations and application forms can be obtained from your personnel department. Your local pension consultative Committee member will also be able to give you advice.

Wealth from science and engineering

THE Department of Trade and Industry along with leading UK organisations, has established a joint initiative called "Innovation - Wealth From Science and Engineering" of which GEC is a major participant.

Its aims are to make school students aware of the rewards of working in scientific and engineering fields and to introduce young people to some of the most prominent names in British industry.

Eight videos have been produced and made available to 5,000 schools throughout the country. These give introductions to all aspects of science, engineering and technology. In addition, an events campaign is being run at five locations around the country until June 1993 visiting London, Edinburgh, Birmingham, Manchester and Cardiff.

A different GEC company has been chosen to represent the group at each location and GEC Avery, Warley is hosting the Birmingham event during April. The GEC project they are presenting is entitled 'Investigating microwaves using the GEC-Marconi radar beacon RACON' and demonstrates the properties of microwaves. The Avery project team of ten graduates and undergraduates, from both engineering and business disciplines, started their preparation back in January.

GEC Avery sees this event not only as a chance to exhibit GEC's work in a positive manner, but also an opportunity to develop the skills of its young employees. The team has already worked with local schools to identify and resolve potential problems that could hamper the smooth running of the event which is being held at the University of Central England.

A key element of the preparation has been to attend a three-day team building course at the GEC conference facility at Retford, near Nottingham, aimed at developing the personal skills crucial to organising and running this type of event. As well as working as part of a team and improving communication within the group, team members sharpened up their explanation and presentation skills and developed the patience and willpower needed to retain the enthusiasm of the 750 14 to 16 year olds who will be attending the roadshow over a three day period!

Roadshow team members from GEC Avery are (left to right) Craig Weedon, Kevin Connah, Gary Hawkins, Robert Lowe, Simon Adam, Wayne Brownhill and Stephanie Loach.

Topic looks back

PATENT ADJUSTABLE AUTOMATIC

FIRE ALARM AND HEAT-INDICATOR.

No. M 993.

Of great value for Hospitals, Sick Rooms, &c., where an equable temperature is necessary, as, from its sensitiveness, directly the room or building becomes overheated the alarm is set going.

In construction it consists of sensitive diaphragms for electrically giving an alarm at any distance when the temperature of a room or building in which it is placed rises to the heat indicated by the adjustable index finger, which has a range of from freezing point to upwards of 200 degrees Fahrenheit, if required. Also, an Indicator can be affixed to the Alarm Bell showing the seat of outbreak of fire.

No. M 993.

No. M 980.

Its utility has been recognised for detecting outbreaks of fire in its initial stage, thereby enabling assistance to be obtained before the fire attains any serious proportions.

List No. M 993. Price **12/6** each.

MERCURIAL FIRE ALARMS.

No. M 980 for same purposes as No. M 993. From **6**/- each. By Rail at purchaser's risk.

An early fire alarm manufactured by GEC in1893. Today, 100 years on, GEC-Marconi manufactures some of the most advanced security systems available.

HERE'S a chance to test your memory again. The following articles all appeared in an April issue from the past, but do you know from which year?

A GEC company, Osram, was taking part in the first ever cross-Channel balloon race. Osram sponsored a balloon and its pilot. Ladbrokes were offering odds of 7/2 on them winning.

Another article with an airborne theme was 'A Lady With A Head For Heights'. Laurel Kinbrum, secretary to the managing director of GEC Semiconductors, Wembley revealed to Topic that she had voluntarily thrown herself out of an aeroplane 57 times - all in pursuit of her hobby, parachuting!

The Ideal Home exhibition was taking place at Olympia in London and GEC companies Cannon Industries, Bilston and Satchwell Sunvic, Motherwell were both awarded blue ribbon awards for new products. Products that were thought to be among the top five created in Britain during the previous year.

Topic's centre spread focused on Marconi Avionics and the Duke of Edinburgh visited GEC factories in Stafford. Ruston Diesels of Lincoln had won a £15 million order to supply three gas turbine compressor sets to the Dubai Natural Gas company.

The Hill family of Trafford Park, Manchester were featured as between them they had accumulated 334 years of service with GEC. Nine Hill children and six grandchildren had all worked for the company.

The articles featured in the last issue were all from February 1971, 21 years ago.

COMIC RELIEF 1993

THE recent Red Nose Day 4 was an event which was hard not to notice!

On the day £8.5 million was raised, but the organisers expect that figure to have doubled once the final total is announced in September.

Red Nose money in Africa has helped build wells, sow seeds, perform operations, immunise children, clothe refugees and transport food and blankets. Here in the UK it has helped house homeless people, provide emergency beds, teach young people about the dangers of drugs and alcohol and make buildings and transport available for disabled people.

As in previous years GEC companies around the country took up the challenge, the results of which were some truly original fundraising events. *Topic* takes a look at what some of you got up to.

Team Effort

Comic Relief day prompted a number of staff at the company's Scottish sites to go out and about raising money.

The information services team at GEC-Marconi Avionics, near Dunfermline decided to ask people for money if they needed help from the information services department. They also pledged to double any amount raised from within the department.

On the morning of Red Nose Day Carol Kennedy, Donald Wilson and Richard Johnston collected donations in front of the building as people came into work. Carol said: "I was throwing myself in front of cars and bicycles, but it worked! It was fun, but a bit difficult to breathe with a tomato on you nose! Collecting outside the building lets you find out how generous people are."

As if their efforts were not enough the team put together a computer-based random number prize draw, sold tickets and raised over £80.

Carol and her colleagues were helped in their fundraising efforts by personnel staff who sold out of date GEC Ferranti promotional items, raising £105 in the process.

The total, once information services had doubled what they had raised, was £700.

Red Nose Fashion

Planning department staff at GEC-Marconi Avionics, Crewe Toll decided Comic Relief could allow them to make a fashion statement of sorts.

Planning engineer Grant Fairley said: "We had a competition to see who could dress in the most outrageous manner. The categories were loudest tie, widest tie and worst dress sense."

In their most outrageous clothes, some of which had been hidden in cupboards for years, the unfashionable few went round the Crewe Toll factory rattling cans for the charity. The grand total raised was £262.

Red noses and questionable clothes at Crewe Toll.

The Great Tomato Push

GPT, Liverpool gained fundraising inspiration from this year's Comic Relief symbol of a squashed tomato.

Technologist Alan Hill came up with the idea of a Great Tomato Push, which is why 23 people each spent 15 minutes pushing a tomato around the Edge Lane site. In keeping with the Red Nose concept of Comic Relief, they did it with their noses!

Between 9am and 3pm they pushed one of 36 tomatoes donated by catering contractors Gardner Merchant on 100 yard laps.

A total of 49 laps were completed - just under three miles of nasal navigation. Technologist Alistair McIvor pushed his tomato over 400 yards in the allocated 15 minutes.

"Everybody got a Cadbury's creme egg and a cup of coffee when they'd finished, and some of them wanted to do it all over again when they saw their reward!" said organiser Alan.

They expect to raise £1750 for the charity. Included in this is £95 from a raffle run by Gardner Merchant.

Alan claims to "come out of hibernation" every two years to organise an event for Comic Relief and he loves the fact that it's a "silly event'. He and some colleagues shaved off half their beards for the last event, and the time before Alan came to work in a red dress!

Comic Collection

Students who work on the site also contributed to Comic Relief. Dressed up in Red Nose T-shirts and red noses they made a collection around the site, which raised £761.80 and miscellaneous foreign coins.

Ruth Griffiths, dressed as Andy Pandy, takes a rest outside Stanhope Gate after her journey to work .

Andy Pandy

Ruth Griffiths spent the last Red Nose Day dressed in odd socks and shoes, topped off with a cerise wig which clashed with her red nose!

This year she went one better and dressed up as Andy Pandy for Comic Relief.

Ruth, a secretary at GEC's head office, travelled to work in the costume. Her journey included train, tube, bus and a walk, in the course of which she got some very strange looks from her fellow passengers. She was tooted at by passing cars and people in the streets actually came up to her and gave her money.

In total Ruth raised £160 for Comic Relief. She said "It's worth looking silly if its's for a good cause."

Red Recipe Day

A lunch-time fund raiser was held at GEC Avery's Pavilions Restaurant in aid of Comic Relief.

Employees visiting the restaurant at Avery's Smethwick site helped raise money by opting to add 10p to the price of their meal.

The idea came from the company's catering team, headed by Chris Thomas of Compass Services. Chris said, "We laid on a true Splat menu consisting of lots of tomato-based recipes, plus some of the usual favourites that fitted with the Comic Relief bill of fare." In the spirit of Comic Relief, the restaurant was decked out in tomato red and green - and so were the catering staff!

A collection box located in the staff shop raised further donations from kind hearted employees of GEC Avery and Compass Services.

Major achievement celebrated by Prime Minister

continued from page 1.

product."

After the presentation, Dr Coffman said of GMA, "For over 20 years, GEC has provided the F-16 with ever-improving products including a diffractive optics display for use with the low altitude night time infrared navigation system, another display compatible with a night vision imaging system and innovative software algorithms that provide advanced, all-aspect air-to-air weapon aiming. These achievements, combined with outstanding customer support, have established GEC as an exceptional supplier and a most valuable member of the Lockheed F-16 team."

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