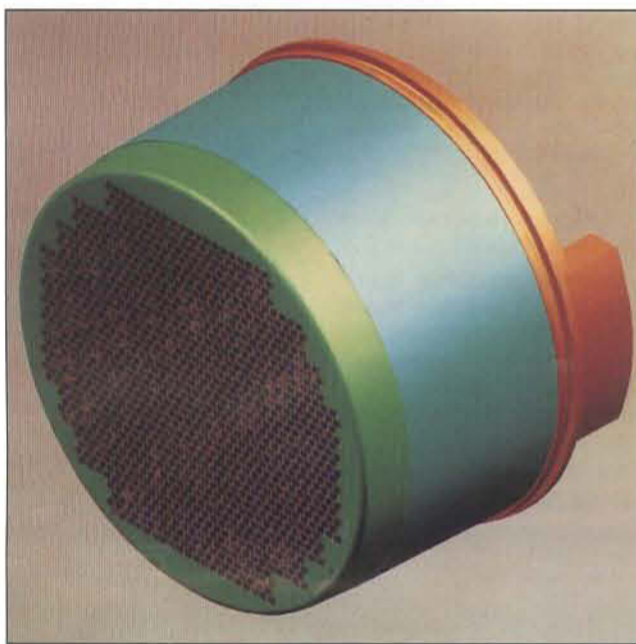


## GEC AND THOMSON LEAD FUTURE EUROPEAN AIRBORNE RADAR DEVELOPMENT

As announced in VISION Issue 3 a contract for an important research and development programme examining the next generation of solid state airborne radar technologies for fighter aircraft has been won by GEC Thomson Airborne Radar (GTAR). GTAR represents the combined strength of Europe's two leading airborne radar companies, Thomson CSF, the flagship of the French electronics industry and its UK counterpart, GEC-Marconi Avionics.

The contract was placed by the French Ministry of Defence - Direction Generale pour l'Armement (DGA), represented by the Service Technique des Telecommunications et des Equipements Aeronautiques (STTE), on behalf of the Republic of France and the United Kingdom, represented by the Defence Research Agency.

In a programme providing the groundwork for the development of an European 'active array' radar, the two companies will jointly develop an airborne radar technology demonstrator to evaluate potential technologies for future airborne radar. The programme will also explore crucial technologies such as Gallium Arsenide processes and devices, new mechanical and thermal engineering techniques, and essential developments in



A computer generated graphic of a solid state active array radar.

production and testing which are vital for future automated manufacture.

Mr Derek Dickinson, Managing Director of GEC-Marconi Avionics said:

"This is the first stage in a multi-phase programme which marks Europe's commitment to maintaining its strength in the highly skilled field of airborne radar. By starting with the harshest of environments - the fighter aircraft - the knowledge base gained from this programme will be relevant to the full range of radar applications."

For Thomson-CSF's Radars and Countermeasures Division Mr Bernard Rocquemont, Managing Director commented:

"The scope and dimension of the step forward implied in implementing "active array radar" technology is such that it warranted the setting up of a specific radar programme, unconnected, in the first instance, to any particular aircraft programme. It is also evident that the corresponding R&D effort could not be undertaken without a collaborative partnership at European level such as that so

effectively demonstrated by GTAR today."

The award of this contract to GTAR results from over three years joint discussion and planning between the two companies and parallel commercial negotiations with both governments. Work on the programme will be divided equally between the two companies' facilities in Paris and Edinburgh. To further this European collaboration, discussions are now taking place with the German Government and industry.

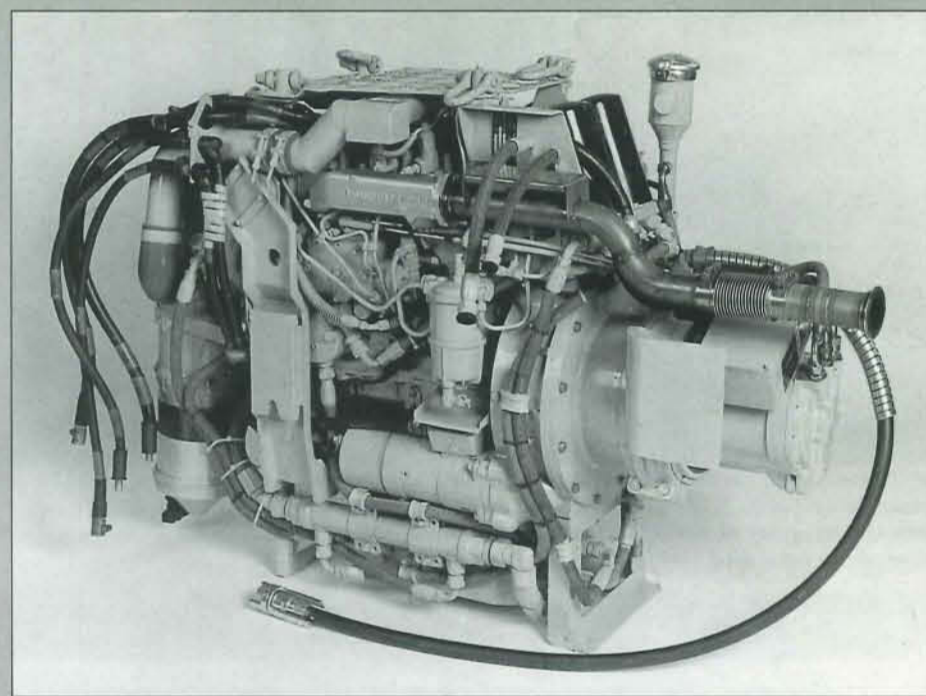
## CHALLENGER FOR OMAN

The first overseas sale of Challenger 2 to Oman has brought Power Systems Division a welcome addition to their order book. The deal is for 18 Challenger 2 Driving Training Tanks (DTTs) and 4 Challenger Armoured Repair and Recovery Vehicles (CRARRVs), with options of more for the future.

For GMAV's Power Systems Division, this means that they have received an order for 24 Auxiliary Power Units (APUs), 24 Generator Control Units (GCUs) and 44 Type 8002 Fuel Pumps, with a value of £0.9m. Deliveries will commence in July 1994.

Power Systems Division also supplies Generators and GCUs to Perkins Engines of Shrewsbury for assembly on the 12 cylinder diesel main engine which is then finally installed at Vickers Defence Systems. An order is due soon, valued at £180K.

The Challenger APU Generator.



## First F-22 Flight Control Test Equipment Delivered

GEC-Marconi Avionics has delivered the first of seven Engineering Test Stations (ETS) which will test the vehicle management system (VMS) for the United States Air Force's next generation air superiority fighter, the F-22 Advanced Tactical Fighter.

The equipment has been delivered to the Lockheed Fort Worth Company where it has been integrated with other elements of the VMS system test facility.

The ETS will be used to develop and test the hardware and software of the VMS flight control modules. It will provide complete real-

time simulation of data from the flight control sensors and actuators and other aircraft systems as well as simulating various fault conditions. Using this data, the flight control modules will be exhaustively tested under both normal and failure conditions.

The equipments is a development of similar technology supplied by the Company for the YF-22 demonstrator/validation aircraft for the Advanced Tactical Fighter programme.

GMAV is already contracted to supply the pilot's side stick controller and the Head Up Display for the F-22 programme.



Shortly after the signing of the AMSAR the combined Thomson-CSF and GMAV GTAR team met in Edinburgh.

## Major Landmark In Eurofighter Radar Development

Installed in a BAC1-11 jet aircraft, the first prototype ECR 90 radar system designed for the Eurofighter 2000 has successfully completed its shakedown flying programme. Effectively a "flying laboratory", the trials aircraft is equipped with a comprehensive instrumentation and avionics suite and has been modified to GMAV's specification by the UK Defence Research Agency.

The flight test instrumentation and ground analysis facilities have been designed and produced by GMAV, whilst the radar system's components were designed by GMAV and its European partners, DASA-VR of Germany, Fiar of Italy and Inisel of Spain.

The radar is now undergoing an extensive flight trials programme, flying out of Edinburgh's Turnhouse Airport, and the data gathered is being analysed on a powerful ground-based computer



Bob Mason, Marketing and Business Development Manager, DSGE, shows the Minister the Integrated Helmet Demonstrator.

system at GMAV's Radar System Division in the locality.

### Ministerial Visit

Jonathan Aitken MP, Defence Procurement Minister, visited Edinburgh on Thursday 23 September to

help mark this major achievement in the Eurofighter 2000 programme which, as an important landmark in the radar development, is the culmination of three years intensive work by the Euroradar consortium.



ECR 90 Prototype on board aircraft: Flight Trials Manager Dave McAlpin explains the intricacies of the ECR 90 prototype radar to Defence Procurement Minister Jonathan Aitken. Looking on is Brian Tucker, GMAV's Director of Programmes, John Roulston, Technical Director and Terry Wedge, ECR 90 Project Director.

## SAFETY AWARD WON AGAIN

For 13 consecutive years Titchfield has won the British Safety Council's annual safety award and, as a result, flies its green flag with justifiable pride. In addition, the Business has also won the coveted "Oscar" of the safety world - "The Sword of Honour" - twice, in 1985 and 1987. These awards, achieved consistently over a long period of time, indicate a dedication to safety and health matters which is deeply rooted in the working philosophy.

However safety, in common with any other process, does not stand still so, in the early part of this year, it was decided that the Business would commission a British Safety Council '5-Star Safety Audit'. Completed in May, the audit took two days of

intensive investigations into all aspects of the Business safety structure.

The audit awards a star rating from 1 to 5. For Titchfield it was the first occasion on which an entirely independent safety audit had been carried out on site. The result was an impressive 77.5% giving a '4-Star Rating'. The British Safety Council commented on the high standard, as initial safety audits at this level do not usually achieve such a high rating.

This rating also gave the Business the opportunity to go on to compete for a 'Sword of Honour' which it won in October. In the words of the British Safety Council - "This has been a fiercely contested award and

only after the most careful scrutiny of your submission has

your Company been chosen as one of the safest in the world."



Lady Fisher of Rednal JP presenting the Four Star Award to Ted Quigley (left) and Paul Burton (right) of Power Systems Division.

## THE DIFFERENCE IS..... VERSATILITY



The Venom Attack Helicopter.

"Some potent poison is going aboard Bell's AH-1W Super Cobra as the UK's GEC-Marconi and Bell Helicopter transform the highly effective gunship into the lethal 'Venom' - candidate for the UK's Attack Helicopter Program."

Shawn Coyle, Rotor & Wing International September 1993.

The participating companies in the British Army Attack Helicopter competition have now presented their bids in response to the formal Invitation to Tender.

Upon arrival in Edinburgh Mr Aitken toured the BAC1-11 trials aircraft at the City's Turnhouse Airport and, at the short presentation ceremony which followed, officially handed over the aircraft to the Company for flight trials to commence.

Having visited the Trials Aircraft the Minister moved on to GMAV's South Gyle site for briefings on other important MoD programmes such as TIALD, Cobra Venom and the Company's involvement in Lancelot, the RAF's requirement for a Low Level Laser Guided Munition.

Mr Aitken was also given a demonstration of an Integrated Helmet System which is the basis for our current bid for the Eurofighter 2000 Integrated Helmet.

The GEC/Bell Venom will combine the highly capable Bell AH-1W airframe with a new integrated glass cockpit and improved flight controls, all designed to reduce crew workload and enhance the already impressive performance of this helicopter. GMAV and Bell believe the Venom will give the British Army the power, operational flexibility, reliability and weapons accuracy at an affordable price and that is required for future operations.

The new avionics fit will include the best of the UK's advanced electronics which are amongst the best in the world. A minimum of 50% of the helicopter will be UK designed, developed and manufactured, with additional UK involvement in assembly activities. The company

estimates at least 4000 jobs in the UK will be involved in the production of Venom for the AH programme alone.

In order to demonstrate extent of the development work which has gone into this bid and to illustrate the critical involvement of UK technology and UK industry in this bid, GEC-Marconi Avionics took its cockpit demonstrator to London's Queen Elizabeth II Conference Centre from 22nd to 26th November. Guests saw a brief simulated mission flown from the Venom's new glass cockpit using integrated helmet mounted displays which give full night vision to the crew allowing the helicopter to operate day and night.



The 'VENOM' stand at the Queen Elizabeth II Conference Centre.

## FIRST ECR 90 TEST EQUIPMENT DELIVERED

Support Division's Test Systems Department has delivered the first of three sets of test equipment which form an important part of GMAV's ECR 90 radar programme for Eurofighter 2000.

The equipment tests a part of the ECR 90 receiver known as the Converter IF Data - or CID. Project Manager Alan Lowes explained: "The test equipment provides very low-noise signal which acts as an input to the CID. The CID converts the data to digital and the test equipment produces an

output so we can verify performance.

"It is a state-of-the-art equipment. GEC-Marconi Avionics is ahead of the field in this area."

Alan said: "The design is a credit to all who worked on it and its quality is an indication of the teamwork that went into the product and its manufacture."

The first CID test equipment is undergoing installation at Crewe Toll in Edinburgh with the remaining two due for delivery in a few weeks.

## \$0.5m Order for TESAL Test Systems

GEC-Marconi Avionics has won an order worth in excess of \$0.5 million to supply an American company with TESAL test equipment.

The equipment will be manufactured by Support Division's Test Systems Department, based at Donibristle in Fife. TESAL test equipment, which stands for Transducer Evaluation via Simulated Acoustic Load, investigates the effectiveness of transducers in SONAR devices attached to ships.

Technical Project Leader Chris Bradley explained the importance of the order: "There has been a large

investment in time and resources over a number of years in the research and development of this technology. This is the first significant order and it presents a major breakthrough.

"Normally, you would have to test a ship's SONAR transducer in a water tank, but our equipment does it 'dry' and, more importantly, at full power.

"GEC-Marconi Avionics has a unique capability for the testing of SONAR transducers. Our equipment is suitable for use in factories, depots or laboratories and presents an obvious saving to the customer."

## Danes select GMAV's Equipment for Lynx Radar

GEC-Marconi Avionics has been awarded a contract worth £0.5M to supply Digital Scan Converters (DSC) for the Royal Danish Air Force Lynx. The DSC will replace the current analogue converter in the GMAV Sea Spray Mk I radar which equips the Lynx.

The improved performance of the new digital equipment will greatly reduce the life-cycle costs of the radar by enhancing reliability and easing maintenance. These improvements will also extend the potential in-service life of the radar. In addition, the new raster-type display supplied by the DSC will

allow the radar display to be used for sonar and infra-red images if required.

Similar operational improvements to the radar were successfully proven during the Gulf conflict and extensive ground and air testing of this equipment has been completed by the Royal Danish Air Force. Deliveries will commence in September 1994 and further orders from other Lynx operators are expected.

The equipment design and development, sponsored by the Royal Danish Air Force and another European nation, took place at the Support Division in Edinburgh.

# PHOENIX ACCEPTED



The British Army Phoenix Battlefield Surveillance and Target Acquisition System.

Phoenix, the unmanned air vehicle system developed by GMAV for the British Army, has now passed formal design certification. Delivery of ground equipment to the British Army will commence shortly, with the Air Vehicles due in late 1994.

With the introduction of Phoenix, the British Army will be fielding the latest and most capable of a new generation of unmanned aircraft systems. Phoenix promises low risk real-time, high quality battlefield surveillance and target acquisition data from an independent, easily deployed and recovered system and is ideal for the broad range of potential scenarios including regional conflicts and border surveillance.

Design Certification has followed a series of System Demonstration Trials con-

ducted by a joint team of army and company personnel. During these trials all aspects of the system deployment, operation and performance were demonstrated to the Ministry of Defence. The British Army is now preparing for a series of User Familiarisation Trials with the system prior to its entry into full operational service.

The Phoenix system uses a small unmanned aircraft to carry a thermal imaging sensor coupled with a zoom telescope which sends real time day or night imagery from the battlefield to the control station.

Sophisticated flight controls and software driven workstations simplify the aircraft operation and control the imagery. As a result the air vehicle does not require conventional piloting skills. The

automatic launch and parachute recovery eliminates the need for highly trained pilots during the two most critical states of flight. Once in flight the air vehicle is simply instructed where to fly from the ground control station. This capability substantially

reduces both operator workload and training requirements when compared with current competitive systems and provides a fully integrated package, including comprehensive built in test of all electronics and total logistic support.

## DRA CONTRACT FOR SURVEILLANCE RADAR

Milton Keynes' Radar System Division (South) has won a substantial contract from the Defence Research Agency (DRA) at Malvern for an Airborne Experimental Surveillance Radar Facility.

Won in strong competition and valued in excess of £4 million, this contract is for the supply and fit of an experimental

radar to DRA's BAC 1-11 aircraft to support research programmes for both MoD's maritime and battlefield customers.

Other GEC facilities involved include GMAV's Radar Support Division (North) and the Research Unit at Great Baddow, Essex. It is hoped that other contracts will follow.

# RNBAAE, 1993

## The New Land & Sea Systems Exhibition

RNBAAE '93 was a new concept in Ministry of Defence sponsored exhibitions. Organised by the Defence Export Services Organisation (DESO) it built on the best traditions of the highly successful and prestigious Royal Navy and British Army Equipment Exhibitions, the first of which was held in 1971.

DESO has been organising Single Service Defence Exhibitions for over 20 years and, as a result of consultations with the British Defence Industry, a combined exhibition featuring both land and sea systems was held at Aldershot during the week 5 - 10 September.

Along with other GEC-Marconi Companies, GMAV's presence at RNBAAE gave the opportunity to promote a wide variety of products which have land and sea applications. Amongst these are the Venom Attack Helicopter; Airborne Radar - Blue Vixen, Seaspray, Blue Kestrel, ASTOR and Experimental Surveillance Radar; Helmet Mounted Displays - Viper and Crusader; Digital Mapping, Power Controls; Mine Clearance; Fuel Pumps; Laser Rangefinders; Navigation Systems and Test Equipment.

The Show attracted decision makers from over 70 countries to view companies' products, including Overseas Government officials, serving officers, and senior industrialists. A large number of trade visitors and MoD specialists also attended.



The GEC-Marconi Stand at RNBAAE

# GEC's Chairman Seals Sensors' Success

SUCCESS was the theme when The Rt Hon Lord Prior PC, Chairman of GEC, visited GMAV's Sensors Division in Basildon on 12th October. In fact there were two reasons for celebrating. Jim MacKenzie, Director of Lloyds Register Quality Assurance (LRQA) was present to hand over the ISO 9001 Accreditation Certificate to the Company. A commemorative certificate was also presented by Lord Prior in recognition of the Division's Prince of Wales Award for Innovation. Derek Dickinson, GMAV's Managing Director said the awards were "two particular successes which recognise milestones in the business."

Before presenting the ISO 9001 Quality Certificate to Lord Prior Mr MacKenzie emphasised, in a message relayed around the site to the employees that, "Quality is everyone's business". He also stressed how important the approval to international standards is in order for the Company to

advance in the wider world and that it had had to be "diligently earned" by the Division's employees.

Lord Prior congratulated the employees on their Quality Assurance achievement and spoke of GEC-Marconi's remarkable record in a tough market. He acknowledged that the

Company has "a tough job to do, but these awards are indications that they can do it". Lord Prior presented the commemorative certificate to Iain Matthews who accepted it on behalf of the Uncooled Infra-Red Design Team in recognition of the Prince of Wales Award won earlier this year for their hand-held infra-red camera.



Jim MacKenzie presents Lord Prior with the ISO 9001 Certificate.



Stephen Evans, Prototype Assembler, describes the suggestion that won him £1000.

Eileen Bowers, a Masker, won £500 for her idea.



Derrick Fisher (cr) completed 40 years service exactly to the day of Lord Prior's visit.



Meeting the Division's top three longest serving ladies (l-r) Lorna Buse (30 years), Molly Capp (36 years) and Yvonne Crotch (38 years).

At the other end of the scale, with Apprentice of the Year Stuart Gwilliams and apprentice David Tungate. Denice Moss, Training Officer looks on.



## Quality Improvement Recognition at Radar Systems

On Tuesday 2nd November the Radar Systems Division in Edinburgh held its first Recognition Event where employees were formally recognized for their contributions to the Quality Improvement Programme.

Approximately 350 people gathered in the Canteen at Crewe Toll for a buffet with drinks and to hear Bill Morgan, Managing Director of RSD, congratulate the attendees on their achievements. Certificates were awarded to seventeen Quality Improvement Meeting Units, totalling some 140 people, and 4 Corrective Action Teams involving a further 30 people.



Total Quality line-up at Crewe Toll.

## ROCK ON WITH GMAV LASERS

GMAV's technology is now being used at big-venue rock concerts and in producing daily papers. Rotary mirror scanner technology, for which NESD is a market leader, is being sold to Europe, Japan and the USA.

This expertise can be traced to work on gas bearings for gyroscopes.

Colin Gordon, Chief Engineer said "Our knowledge of high-precision gas bearings gave us the ability to move into thermal imaging work and the next logical step was laser scanning technology. "Rotary mirror

scanners, using lasers, work in a similar way to thermal imager scanners. A rotary mirror scanner sweeps a laser beam across a surface very rapidly and repeatedly. On a printed page where the reflected light is bright on white paper and dull on the black ink. This signal is then digitised and can be stored, sent elsewhere and reconstructed by a similar machine. The resolution is hundreds of times better than an ordinary fax."

This technology has revolutionised the newspaper business. Publications, such as the Financial Times, use these machines to send editions to be printed in the USA and Japan.

The same technology is also used in the large screen projectors seen at big rock concerts. The picture can either be live action or pre-recorded footage. It is then projected by lasers on to a large screen. At Seville's Expo 92, a recording of a dancer was projected on to a fountain which formed a 'water screen'. As the picture was being transmitted by laser, there was no problems with focus and the entire performance stayed sharp. the quality of image is such that screens as wide as 60 feet can be used.

## ROYAL NAVY PRESENTATION TEAM IN EDINBURGH

The PR Department's Tim Orr welcomes Captain Rob Stevens and Sub-Lieutenant Rebekah Shaw of the Royal Navy Presentation Team to Crewe Toll.

The Team gave a fascinating presentation on the current and future role of the Royal Navy.



# Maintenance Approval for Sensors Division

The Civil Aviation Authority (CAA), acting for the Joint Aviation Authority (JAA), recently granted an Approval Certificate to the Airadio Spares and Service Unit (ASSU) of Sensors Division to operate as a maintenance organisation in line with the new JAR-145 maintenance regulations.

JAR-145 is one in a series of new requirements determined by the JAA, an organisation of European aviation authorities. JAR-145 covers repair, overhaul and modification activities.

New regulations, planned for introduction in January

1994, mean that no civil aircraft registered in the JAA region will be able to operate unless powerplant and equipment is maintained by a certified organisation. Approval is therefore essential, and to gain this, the Division organised a Maintenance Exposition, which demonstrated an effective Quality System and passed an indepth audit of the Spares and Service Unit by the CAA Inspectorate.

The certificate was presented by Mr John Saull, Head of CAA Operating Standards, accompanied by Mr Mark Davy the Regional CAA Avionics Surveyor.



Mr John Saull (r) presents the JAR-145 Certificate to Divisional MD Mike Thornton.

## MPs Briefed on Lancelot

A number of MPs local to Edinburgh visited the Navigation and Electro-Optic Systems Division in the City recently to be briefed on Lancelot, the UK's submission for the next laser guided weapon for the Royal Air Force.

Developed for an overseas customer by GEC-Marconi Dynamics and the GMAV Division, Lancelot's weapon meets the

requirement for the UK Ministry of Defence. The Navigation and Electro-Optic Systems Division supplies the seeker head and laser receiver.

The MPs in attendance were: Nigel Griffiths (Edinburgh South), Malcolm Chisholm (Edinburgh Leith), John Home-Robertson (East Lothian) and Alistair Darling, who did not make the photocall.



(Back row, i-r) John McPhee, Eric MacDonald, John McLeod, Peter McLelland, Alan Watson and Gordon Thomson.  
(Front row, l-r) John Home-Robertson MP, Les Butler, Malcolm Chisholm MP, Greville Kirk, Nigel Griffiths MP and Bob Kemp.

## SEA HARRIERS VISIT EDINBURGH



Eddie Prior receiving his bottle of whisky by Lt Cdr Simon Hargreaves, CO 899 Sqdn.

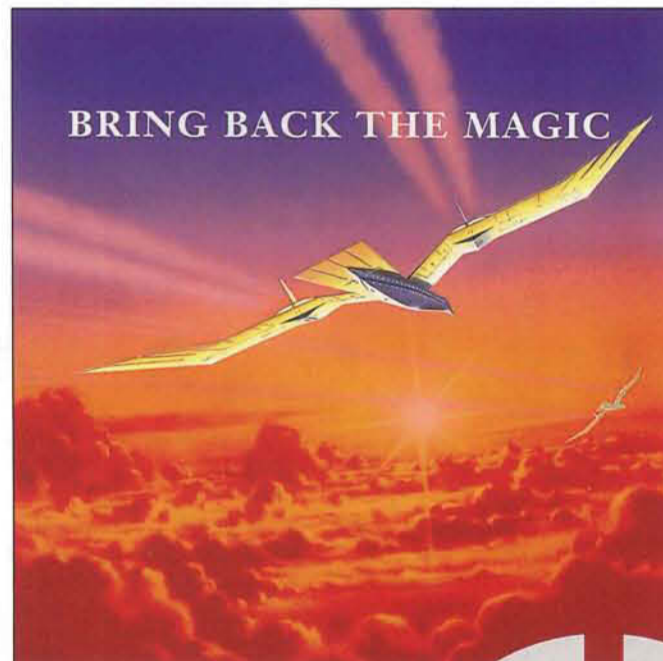


Two FRS2 Sea Harriers of 899 Squadron's Operational Evaluation Unit made their first visit to RAF Turnhouse on 5th October. This gave employees at Crewe Toll - Edinburgh - who manufacture the aircraft's Blue Vixen radar the opportunity to admire their handiwork.

These aircraft are the first to be handed over to the Royal Navy following Mid Life Update. The radar provides the aircraft with its main sensor capable of supporting the Advanced Medium Range Air to Air Missile (AMRAAM) missile. This capability has helped make the Sea Harrier one of the world's most advanced fighter aircraft.

During the visit Eddie Prior, from the Support Division's Marketing Services Department, was presented with a bottle of whisky by Lt Cdr Simon Hargreaves, CO of 899 Squadron, for his winning entry in the Blue Vixen Cloth Badge Competition - shown above.

## Advert Wins Gold Award



For both passengers and airline operators, flying should be effortless. Economical. Natural. Like a bird. One avionics company has spent the last three decades working towards that ideal. With fly-by-wire flight controls and power management systems for maximum efficiency and performance in all phases of flight. With built-in monitoring so that all maintenance is contained within regular scheduled slots. With navigation, sensor and display systems that give the pilot greater navigational accuracy, better all-round situation awareness, collision avoidance warning and visibility in the worst conditions during take-off and landing. With fail-safe cabin water misting systems to improve survivability during emergencies, and advanced passenger telephone systems allowing passengers to keep in touch with business and home. GEC-Marconi Avionics. The most advanced civil aircraft systems company in Europe.

**GEC-Marconi**  
AVIONICS

ONE TEAM · ONE VISION · ONE NAME

GEC-Marconi Avionics, Airport Works, Rochester, Kent, England. UK Tel: (0634) 844400. USA Tel: (703) 769 0123.

The 1993 judging has been completed in The Air Transport World Advertising Awards Scheme and GEC-Marconi Avionics has won the Gold award in the Avionics and Instruments category.

Air Transport World is arguably the most respected trade magazine in the civil aviation market. GMAV uses the magazine to reach this market, particularly in America, but also worldwide.

The awards scheme is well respected and established, and culminates in the prestigious Annual Airline Industry Awards presentation ceremony which will be held in Singapore, during Asian Aerospace in February next year.

The advertising awards are judged by a panel of industrialists who examine a wide variety of advertisements in each category and rank them according to how effective they feel each would be in influencing the reader's perceptions, how attractive and how informative.

The picture shows the specific advertisement which gained the Gold Award, and which is aimed at the commercial market.

## DUNCHURCH AND COVENTRY UNIVERSITIES JOIN FORCES

History was made on 1 September when Lord Prior, Chairman of GEC, presented postgraduate Diplomas and Certificates to employees who had successfully completed Coventry University accredited courses at the GEC Management College, Dunchurch. The presentation ceremony was the culmination of a unique arrangement between the University and the College.

A number of courses run by the College are accredited by the University under the Credit Accumulation and Transfer (CAT) scheme. These include the Management Development Programme (Postgraduate Certificate), the Senior Programme (Postgraduate Diploma in Management) and Postgraduate Diplomas in Management of Design and Manufacturing Management.

The accreditation process by the University ensures an element of quality

control in the work of the College through external scrutiny of course content and teaching methods. Work related projects by the students are a key learning element and these are jointly assessed by both the College and the University. This helps to ensure that learning is relevant and applied in the workplace.

The College takes students from all levels of management and the courses are an opportunity for cross fertilisation of ideas and practices across the operating companies within GEC. The ability to gain an award from Coventry University, which can be used as a foundation for further study, is a strong incentive to participate in the College's programmes.

Further information can be obtained from local Personnel Departments or from the GEC Management College, Dunchurch.

## Foreign Language Presentation



Mike Tench reviewing the Paper with French Teacher Renée Johnson.

Periodically the Institution of Electrical Engineers organises a 'Colloquium' designed to encourage and stimulate the development of foreign language skills in French and German amongst people studying and practising engineering and engineering management. Delegates give short presentations or listen to others.

These presentations have a general engineering bias but are not heavily specialised or technical and should be understood by anyone. All speakers are asked to provide notes on their presentation and explain the meanings of any specialised terms or words they may use.

The most recent Colloquium was staged at the IEE's London headquarters in Savoy Place by the Engineering Institution's Foreign Language Group (Professional Group S10) on 12 October, and was attended

by GMAV's Mike Tench and Jeremy Richards from the Business Development Group at Milton Keynes.

As non-native French speakers, both have been attending an internal weekly lunch-time French Course for just over a year. Mike and Jeremy wrote and presented their paper with the guidance of their French tutor Renée Johnson.

The programme for the Colloquium was a full one with the day being divided into two sessions; French in the morning, German in the afternoon. The French session contained twelve papers: These included two delivered by representatives from the French Embassy. Mike and Jeremy's presentation was entitled 'Co-operation and Diversification'.

The substance of their paper is now being used in Radar Systems Division's presentations to French customers.

current GEC-Marconi Company efforts at risk management, and the event ended with a lively discussion.

## RISK MANAGEMENT SEMINAR A SUCCESS

Sensors Division recently hosted a seminar on risk management organised by MSET, the Marconi Software Engineering Taskforce which serves the software community in GEC. It attracted the largest ever audience for a MSET seminar with 120 attendees from many disciplines, not just software engineers.

An inspiring keynote address from by John Roulston, Technical Director, emphasised the importance of software engineering to the prosperity of the Company. He said that software should constitute a profit making component of the business, not an 'evil' one which always causes project over-spends. He also commented that technical risk becomes a commercial risk and more attention to risk management is essential to enable better commercial bid decisions.

The main talk on Risk Management was given by Professor Chris Chapman of Southampton University, a leading UK expert and

consultant in the subject. He gave examples of managing risks in the oil industry.

The afternoon was devoted to a series of presentations on



Prof. John Roulston, Technical Director, addresses the Seminar.

## T H E G R A D U A T E S

GEC-Marconi Avionics' first group of trainee engineers in Edinburgh have graduated from the City's Napier University.

A total of 33 young men and women were awarded Degrees in Electronics and Electrical Engineering, Software and Engineering Systems at their Graduation Ceremony in the Usher Hall.

This part-time degree course takes four years to complete.

Bob Morrison, of the Training Department at West Shore Road, said: "Many traditional graduates, from full-time courses, took

several years to gain the industrial experience necessary to enable them to use their talents to the full.

"With integrated courses, training and experience are gained whilst trainees are studying for Degrees by a part-time method, involving several days attendance each week at university. Our 33 graduates are now taking up careers in Development, Test and Production Departments within the Divisions of GEC-Marconi Avionics."

Scott Robertson is one in this first group of graduates. He said: "It was certainly hard work to have a full-time job and study for a Degree,

but the staff at the Training Department were very supportive."

Out of the 33 graduates, Napier University awarded ten Degrees 'with distinction' as well as three university prizes and two university medals. Ian McCorquodale managed a distinction, medal and prize hat-trick en-route to his BSc while Lisa Spencer was the other medal winner. Jillian Hogg and Derrick Hastie also won prizes.

GEC-Marconi Avionics graduates in Edinburgh's Festival Square.



# GMAv Exhibits at HELITECH.....



The fifth HELITECH Exhibition at Redhill, 28 September - 1 October, attracted some 10,000 trade registrants.

The fifth HELITECH Exhibition was held at Redhill, Surrey from 28 September - 1 October and made a firm and positive impression on rotor craft manufacturers, operators and suppliers both civil and military.

Susan Crouch, Joint Managing Director of Spearhead Exhibitions Limited - the organisers of the biennial four-day event, - said, "The mood of the Show was very buoyant and business was done, and the quality of audience in terms of senior management/key buyers was exceptional. Many countries sent high ranking diplomatic delegations, keen to purchase for both civil and defence use."

GEC-Marconi Avionics attended with Bell Helicopter Textron, exhibiting their Venom bid for the UK Attack Helicopter competition.

[Adapted from Spearhead Exhibitions Ltd News Release material]

**The British Ambassador to Switzerland was one interested visitor to GEC-Marconi Avionics' stand at a recent Exhibition in Montreux.**

The Company was present at the 18th International TV Symposium and Technical Exhibition to pro-

mote a number of products, including broadcast monitoring systems manufactured by Support Division's Test System Department.

Senior Systems Executive Steve Jeynes said: "Our product offers broadcast companies an automated facility which monitors sig-

nal quality. Our equipment is involved with the quality standards of the transmission, and we can look after transmitter networks and check signal continuity.

*Meeting at Montreux: (l-r) Clive Holden and Steve Jeynes of Test Systems with the British Ambassador to Switzerland, David Beattie.*



# Sponsored Cycle in Malta

An opportunity of a lifetime presented itself recently when Bob Thomson, Sub-Contracts Manager at Milton Keynes, was selected to represent the Milton Keynes Cycling Association in the 'stage' race, The Tour of Malta, from 7th - 10th October.

Having enjoyed cycling since the age of 15 Bob has experienced a measure of success in the sport. At home in 1992 he was the Divisional Veteran Road Race Champion [Herts, Beds, Bucks, Northants, Leies, Oxon and Cambs] and 6th in the National Championships - Veterans Class (Over 40s). This year he retained the Divisional title and was 21st in the National Championships. He also has six wins and numerous placings to his credit.

For the Maltese venture the British team members had to raise their own fare money, the remainder of the expedition's costs and their programme was organised for them. In this, Bob was given financial sponsorship

from the GEC Milton Keynes Sports and Social Club whilst GMAv met half the number of days required for the race. Bob elected to wear GMAv's logo on his racing jersey in recognition of this sponsorship and, as the race rules clearly state that where one opts to wear a logo the other team members must wear the same, the remainder of the team - all non-GMAv employees - sported our colours!

Amid a carnival atmosphere, in high temperatures and with the final event covering a 10 lap circuit of the town up and down a 1:7 hill, Bob said that the event was a "fabulous experience, with good hard racing". Bob's overall placing was 11th and he was the third Briton to finish, beating six out of the eight international competitors.

The Team has been invited by the Maltese Cycling Federation to return and compete again in 1994. However, Bob wishes to thank GMAv, GEC MKSSC and everyone who supported him this year.

*Well done Bob!*



The MK Cycling Association Team: (l-r) Martin Boakes, Simon Rinaldo, John Miles (Team Manager), Bob Thomas and Ian Marshall.

## Editorial Note

As Editor I welcome contributions for VISION (and corporate GEC's magazine TOPIC) from all employees throughout GEC-Marconi Avionics.

All contributions should be addressed to the Site Coordinators/Correspondents - or

in the case of Basildon, direct to the Editor - as should any comments, relating to the Magazine's content etc.

I can of course, be contacted direct:

Tel: GNET Access code + 344 + 3110. Fax: GNET Access code + 344 + 3140.

I take this opportunity to wish all readers a joyful Christmas and a Happy New Year, and to thank all those in GMAv who have helped in the news gathering and production of VISION during 1993.

Colin Langlands, Marketing Services Officer, B450 Business Development Group, Sensors Division, Basildon.



### Solution to Crossword No.3

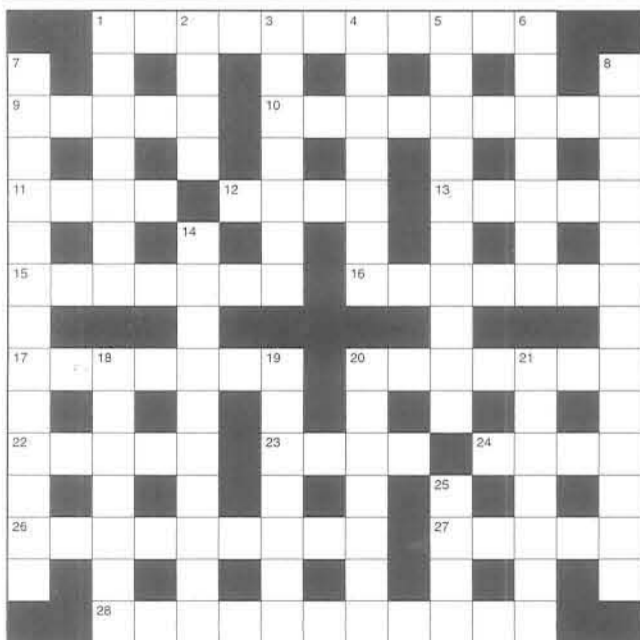
#### Across

1. Middle of the road; 8. Hostages; 9. Ferret; 11. Imam; 12. Water Music; 13. Straw; 15. Barnacle; 19. Overture; 20. Nyasa; 23. Switched on; 25. Sago; 27. Talbot; 28. Live wire; 29. In the first place.

#### Down

1. Mohair; 2. Dismantle; 3. Liar; 4. One way; 5. Even money; 6. Ogres; 7. Detached; 10. Cedar; 14. Artichoke; 16. Costa Rica; 17. Rossetti; 18. Creel; 21. Tonics; 22. Popeye; 24. Islet; 26. Help.

## Crossword No. 4 (For amusement only)



### Across

1. Some old harbours in Kent (6,5)
9. Sticky tree sap (5)
10. William beat the lot (9)
11. Shipmate's call (4)
12. A metal - often in an ointment (4)
13. Disposed of a pint (5)
15. The missing link ? (7)
16. White of an egg (7)
17. Crying with pain (7)
20. A town in Somerset (7)
22. Striped African chewer of cud (5)
23. Keeps a train on track (4)
24. Breakfast (4)

26. A head rolling - in the Tower (9)

27. White settlers at the Cape (5)

28. Little Bo Peep (11)

### Down

1. The Vicar's frock (7)
2. One over the eight (4)
3. Anointing with oil in the extreme (7)
4. A cure for all ills (7)
5. Not the straight way at the crossroads (10)
6. Bitter or wounding remark (7)
7. Crinkly money (8,5)
8. Speaking 'Pidgin' (6,7)
14. Anxiety or concern (10)

18. They are always up front (7)

19. Sauce for the goose (7)

20. Used for paint in a small space (7)

21. Athenian hero, slew the Minotaur (7)

25. A seaman who can sail (4)

# Derek Dickinson Reviews the Year



clear message over to our customers about our identity. This will continue in 1994.

There have been many important successes for us this year across all our business areas. First flight of the EFA radar; first Blue Vixen controlled AMRAAM missile firing; the winning of the Prince of Wales Award; the first deliveries of fly-by-wire computers for the Boeing 777; the first flight of the upgraded Tornado equipped with many of our systems; the signing of the GTAR agreement with Thomson CSF; the acceptance of the Phoenix battlefield surveillance system for the British Army.

To achieve these results many of you have put in tremendous extra effort, as you have in continuing work on all our programmes. Thanks to you all for this and to your families for their patience.

Two of our divisions have now achieved ISO 9000 quality standard acceptance and in the coming year it is vital to our future business success that more of our divisions follow suit.

We have won a number of important contracts during the year; for our thermal imaging and night vision equipment; for yet more head-up displays for F-16 fighters; for our air data systems; for actuators, fuel pumps and thrust reversers; for firefighters' helmets and passenger cabin telephones; for acoustic processors; and for fuel flow systems for the oil and gas industry. This year our order book has grown substantially and you will be interested to know that we are currently pursuing £10bn worth of business across our divisions.

On November 2nd our bid was submitted for the UK Attack Helicopter competition. This major programme heralds our move to become the third force in aerospace alongside the airframe and engine suppliers; as supplier of integrated suites of avionic systems.

Despite all this activity we regrettably have had to reduce our numbers during the year although a smaller reduction than previous years. The improved prospects our new organisation brings us have already enabled us to begin recruiting modestly in some areas, this will continue in 1994 as will our commitment to train and develop our staff to fill new roles. We are coming to the end of the year in a healthy and positive condition and we are well prepared to progress and grow our business in the remainder of this decade.

As future business looks set increasingly to cross product boundaries, our established position as one company will become even more important, helping to give us the edge over our competitors and allowing us to exploit the full variety of our skills and capabilities.

I thank you all for your perseverance and commitment this year as we have put our new organisation into place. I wish you and your families the compliments of the season and my best wishes for a prosperous 1994.

*Derek Dickinson*

Derek Dickinson  
Managing Director  
GEC-Marconi Avionics Limited  
December 1993



Phoenix is accepted by the British Army.



The press gather for the official announcement of the formation of the new Company.

This year we have established the name of GEC-Marconi Avionics with our customers and friends across the industry. In another hard year for the aerospace industry world-wide, we have made the difficult transition from four separate companies to form Europe's single largest avionics company. With our seven large divisions now established, the main supporting pillars of our new organisation are in place and we have begun operating as the integrated whole that is so critical for our future success.

As I have visited our sites around the country during this year I have been constantly impressed with the dedication and motivation of everyone. Throughout the process of implementing many far reaching changes in our organisation, your commitment has been vital in ensuring our customers' confidence in the new company.

One of our critical tasks this year has been to establish our new name and identity in the mind of current and potential customers, and with all those who can influence our business. As the UK's largest avionics supplier we now also bear a responsibility as an important element forming the image of the UK electronics and aerospace industries at home and abroad.

In March our press conference to launch the new company was attended by all our trade press and attracted much coverage. Since then we have been visited by many VIPs including the Prime Minister, John Major, who visited Rochester in March; Jonathan Aitken, who visited Edinburgh in October to examine progress on the development of the ECR 90 radar for Eurofighter 2000; and GEC Chairman, Lord Prior who recently visited Basildon to congratulate them on their dual successes - in winning a Prince of Wales Award for their fire-fighter's helmet and in gaining their ISO 9000 quality standard.

Exhibitions world-wide, notably in Paris, Dubai and America, UK events such as RNBAEE and the Lasham Gliding Championships, and a strong corporate advertising campaign are all helping our new marketing organisation to get a



Rt Hon John Major, PM meets staff during his visit on March 26th.



The new 'Venom' cockpit takes shape for the British Army Attack Helicopter Competition.



Firefighter helmet wins order for US manufacturer.



Boeing Director visits Titchfield to review 777 products.



The Prince of Wales congratulates the Award's Winning Team.



**CHRISTMAS GREETINGS ...** 

The Company's Christmas always seems to begin with the Children's Party and Pantomime, held on the first two weekends in December. This year the panto "Hansel and Gretel" was joyfully seen by 450 children of employees, and the party tea and Father Christmas also "went down a treat".

The host of people who helped prepare and run the two parties are thanked by us all.



In Father Christmas's Grotto.



... say Karl Dann and the Fairy.



Panto in full swing.

The Dame helped out at teatime.



**Little Hannah's donations given to charity.**

Back in June, many generous employees gave to a fund for six-year-old Hannah Barnes to go to Disney World - just over £950 was raised. Sadly the trip had to be cancelled two days before departure as Hannah's failing health suddenly worsened. Nevertheless we kept in touch and took a toy Mickey Mouse to her on her birthday and, after carefully checking that Hannah had no needs which the fund could support, decided to give the money to charity.

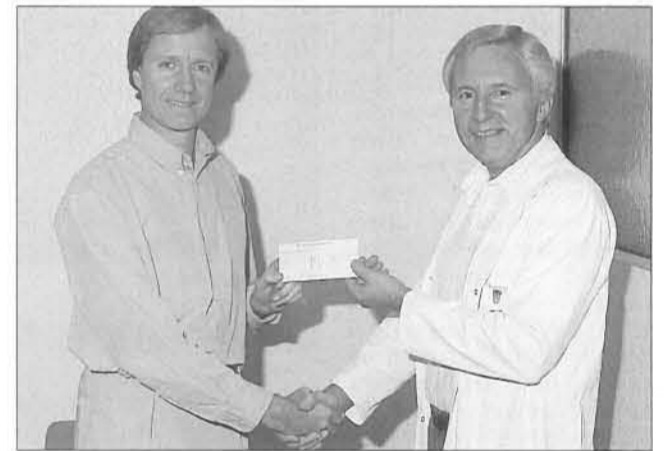
Vice-Chairman of the CLIC Branch Committee.

This was in late September, and the next day we heard that Hannah had finally lost her battle for life.

**Neil Meets Mickey**

Neil Wallace, Nigel's young son who had the special

showing of "The Jungle Book" film reported earlier this year, (see Vision Issue 2) has himself just returned from a visit to Disney World with his sister and parents. They went to Florida in October, aided by benefactors including Richard Branson and Virgin Airlines.



The recently formed North Kent Branch of CLIC - the Cancer and Leukaemia in Childhood Trust, was chosen. The picture shows Chairman of Shop Stewards Tony Mason, handing the cheque to Nigel Wallace,

**Hansel & Gretel**  
Produced by: Eileen Wade

Characters:

- |                                   |                     |
|-----------------------------------|---------------------|
| Hansel                            | - Mark Newman       |
| Gretel                            | - Fiona Newman      |
| Dame Smiley                       | - Ray Newman        |
| Charming                          | - Susan Parr        |
| Cinders                           | - Kay Snelling      |
| Baldrick                          | - Roger Jenner      |
| Gertrude Toutooboo                | - Sarah Jeffries    |
| Munchkins - (Att & Choo Blessyou) | - Linda Potter      |
| Fairy: Goody Two Shoes            | - Suzanne Marshall  |
| Stepmother (Witch)                | - Tracey Ward       |
| Daisy                             | - Eileen Wade       |
| Bouncer the Dog                   | - Elaine Horton     |
| Tree                              | - Kevin Saxton      |
|                                   | - Joyce Newman      |
| Father Christmas                  | - Keith Jones       |
| Piano                             | - Matthew Whitworth |
| Lighting/pyrotechnics             | - Paul Barrett      |
| Backstage Help                    | - Roy Wade          |

**REMINDER**  
GEC AVIONICS CLUB  
ANNUAL GENERAL MEETING

The date of the AGM in mid-February will be posted on notice boards.

Nominations for three vacancies on the Management Committee (for GMAV members) must reach the Secretary by 31st December. Nomination forms are available from the Social Club Office. Contact Elaine Beard, Ext. 4058.

*Ghost Writer from GSD!*

Anyone remember Barrie Cooke? He retired 3 years ago after 22 years in IND/GSD where he was a Technical Author. Keeping up the good work, Barrie has now written a "masterly tale of the supernatural, a bloodchiller". His ghost story Help Us to Die, published by Janus, can be ordered from bookshops at £4.99.

**An Airport Reunion Spanning the Years.**

A buffet lunch was held in the terrace room of the Bridgewood Manor Hotel, hosted by Jock and Dorothy Butterworth on 8th September. It was arranged as a get-together for the retired personnel of Airport Services. All had previously worked for Short Bros and Harland Ltd Flying Division at Rochester and West Malling, from the late 1940s and early 1950s into the late 1970s when they joined Marconi Avionics, working on aircraft maintenance in the hangar.

Apart from Jock and his wife, those present were George Button, John

Thompson, Les Still, Len Jury, Don Neve and their wives.

After lunch, while the ladies remained at the hotel and with the permission of GMAV, the men visited the airfield where they viewed the aircraft and spoke to their former work mates.

On returning to the hotel for tea, many memories were recalled of past experiences. Absent friends were remembered and the party came to an end with everyone agreeing that it had been a great success.

**National Philatelic Award for Geoff Barling.**

Earlier in the year, we reported that Geoff Barling, now in the Venom team, was awarded a large medal by the French Post Office for a display of Postal History.

Geoff has since written and published a book called "The Postal History of Sremska Mitrovica", the latter being a town in Yugoslavia.

The book was exhibited in the annual British philatelic exhibition, STAMPEX, held in London in October and was awarded a silver medal.

# LONG SERVICE ASSOCIATION DINNER DANCE MARKS TENTH YEAR

This year's Dinner Dance in October was the tenth occasion following the LSA's reconstitution in our (then) Company's name, and was enjoyed by 650 members and guests. Many of them enjoyed the dancing or reminiscing until a late hour in the Main Canteen. Guests of Honour were MD Derek Dickinson and his wife, and our retired MD Jack Pateman was also there with his wife. LSA President Harry Staff proposed the toast to GMAV, and a vote of thanks for the Company's continued generous support and to the Canteen staff for their excellent dinner, by LSA Chairman John Goodhand, brought the formal part of the evening to a close.



MD Derek Dickinson gave an address, proposing a toast to the Association.



A crowded Lounge Bar.



The 'light fantastic'.

## Reapers Club have had a Busy Year.

Secretary Lorna Hosmer's latest report is of a most enjoyable 1993 season. "Many members enjoyed outings to Portsmouth and Southsea, also Bognor and Eastbourne. Next year our members will have the chance to choose where they would like to go, and the programme of events is already finalised for the club meetings.

"In recent months, we have been entertained by singer Brian Higbee, and a most professional 'amateur' group Laverock Lea. An unusual name, but all the singers hail from Larkfield; evidently Laverock is an old name for a lark, and Lea is of course a field. The Medway Caledonian Dancers made a most welcome return and we made a brave showing at a reel!

"The year ended with the final visit of the GEC Avionics Band, and the climax of the Christmas Dinner Dance, with MD Derek Dickinson and his wife as guests of honour."

**To Let -  
2 Bedroom House  
In Gravesend Area!  
Contact Kevin on  
Ext. 4447.**

## Obituary

The sudden death of **Frank Oates** in hospital on 20th October came as a great shock, for he was at work the previous day when taken ill. Still in his forties, Frank was a highly popular and much respected engineer who joined the Company as a graduate. In ATE Division he rose to Chief Systems Engineer before moving to FARL/TSRL about ten years ago. He became a Company expert and Senior Consultant on Intelligent Knowledge Based Systems - one of his projects was Active Noise Control for noise reduction in aircraft cabins. When TSRL closed a few months ago Frank moved to Mission Systems Group as Consultant Engineer.

All our sympathy goes out to Frank's wife Ruth (of Training Dept) and their family Jonathan and Rachel, both at university. Many of Frank's colleagues attended a crowded service at Medway Crematorium and were able to pay their respects.

'Ben' Hogben, who was with the Company from 1956 to 1991, died recently. Ben served for many years in IND and also in AS&RD, but since the formation of MASD in 1974 he was in that Division, lately as Project Controller.

We have also heard of the death of **Jack Harle**, who served in Security until his retirement over ten years ago.

## 25 Years Service



Much of **Mike Ryder's** 25 years has been spent away from the Rochester site; he first joined Airborne Computing Division at Borehamwood and when MASD was formed at Rochester in the early 70s he was appointed Systems Engineering Manager, with periods at MoD and BAe. When the AQS901 Acoustic Processor was supplied to the RAAF, Mike led a team of engineers in Sydney on the project.

Mike was appointed Project Manager on the next-generation system, and then from 1984 managed the Indian Sea King programme with time spent in India and with Westlands at Yeovil. In 1989 he became Programme Manager, in charge of the UK Royal Navy and Indian Sea King projects. Since 1989 Mike has been Marketing Manager in MASD/MSG.



**John Curtis** was for 10 years in IND as Test Engineer, then moved to FCD as Commissioning Engineer on test equipment for both civil and military aircraft. Since the formation of CACD John has stayed on the military side, and for the last few years has been involved with test equipment maintenance, responsible for keeping all the test sets up and running and in calibration.



**Keith Harvey**, ex Technician Apprentice and now Senior Development Engineer in DSG(R), is responsible for the mechanical design of a number of demonstrator Helmet Mounted Displays. He has spent the majority of his time in the Design Department of FARL/TSRL, on the closure of which he moved to his present post. His experience as a key member of helmet display programme teams from the early days of narrow field-of-view projected sights has led Keith

into the present developments in colour binocular wide angle systems. It was the Company's first binocular Helmet Mounted Display that brought his team the Haskett Trophy joint award some years ago.



After starting as a Tester in Flight Instrument Division, **Trevor Springett** moved to IND in 1970 and has remained in that Division through the various renamings. As Foreman for 12 years, Trevor has been very involved with a number of major projects and is now responsible for all aspects of testing of the former GSD's systems in DSG(R).



**Tony McArthur**, Technical Representative in Support Division, first moved into the then AS&RD in 1975 after a spell in AEID/ISD as a Tester. He became a Leading Hand Quality Technician before promotion to QA Engineer in the early 80s, and subsequently became an Instructor on F-16 HUD equipment, with time abroad in places such as Norway and China - where he met his wife. Tony has been in his present post for 3 years.



**Terry Hearne**, now a Project Controller in ISG, was employed in Powerplant Systems Division (later MCD) since its formation in 1974, but for the first six years of his 25 he was in IND as DO Section Leader. In fact Terry was also in IND for four years from

1960, before going to Australia working for Elliott Automation, so his links with the Company cover 33 years.



**Derrick Thorndick** was a QA Assistant in CQD on completing his apprenticeship, and became an expert on random vibration testing, working his way upwards to achieve the position of Assistant Laboratory Manager of the recently combined Environmental Test and Electromagnetic Compatibility Laboratories earlier this year.



**Martin Price**, Senior QA Engineer in DSG, has been a gyro expert for many years, particularly for the Stingray torpedo project. In Gyro Division days, he became Foreman in the Clean Rooms in 1975, and in 1980 responsible for the testing of all the Division's products. Following a couple of years during the early 80s in charge of a team offsite in Cheshire, carrying out a modification programme, Martin took on his present post in 1984 through IND and GSD.



**George Ford**, originally a Technician Apprentice, was until six years ago in ATED Drawing Office where he reached the position of Project Leader. Since 1991 George has been in Computing Services, where he maintains his contact with DO people across the site in his role as Senior Systems Analyst, responsible for the Bill of Materials Input System.

## 40 Years Service

**Bryan Kemp**, once an Elliott Bros apprentice, has moved around considerably since then. The tally includes Aviation Division, MACD, (early) FCD, ATED, (new) FCD, CACD, and now CACG where he is Project Leader, Administration.

**Hughie Oxford**, who clocked up 40 years a year ago, has now retired. Hughie worked as Fitter's Mate and Plumber in Works Engineering, under six successive Foremen, and was himself made up to Leading Hand in 1978.