

GEC AVIONICS NEWS

Issue No. 110

House Journal of GEC Avionics Limited

LATEST ANTI-SUBMARINE SYSTEMS FOR THE ROYAL NAVY MERLIN

GEC Avionics has been awarded a major contract by IBM-ASIC to supply the advanced acoustic processing system, AQS 903 for the Royal Navy's next generation of anti-submarine warfare helicopter, the Merlin.

The AQS 903 provides the Royal Navy with far more processing power to detect, locate, identify and track all classes of submarines, than any other airborne acoustic processing system currently in service.

Whilst dramatically improving processing power, GEC Avionics has reduced overall system size and weight to a fraction of previous equipments. This has been achieved by using sophisticated acoustic processing techniques and the very latest component technology. AQS 903 has eight times the processing power, yet is a quarter of the size of

its predecessor the AQS 901, in service with the RAF Nimrod Maritime Patrol Aircraft for well over ten years.

AQS 903 has the capability to process any combination of current and proposed future sonobuoys on the NATO inventory. Advanced system control and display facilities, coupled with comprehensive operator aids, ensure that the mass of information available to the operator is exploited fully and effectively to achieve complete mission success. Extensive self-test facilities ensure that the system is maintained easily and that its performance is sus-

tained at the highest possible level.

The supply of acoustic processing systems forms one of GAv's most successful business areas. The AQS 903 is the latest in a range developed by MASD and supplied to MoD UK and to many other countries worldwide. The AQS 901 equips the RAF Nimrod and is also installed in the Royal Australian Air Force P-3C Orion aircraft. The AQS 902 series of light-weight systems is in service in the Royal Navy Sea King Mk 5 and Mk 6 helicopters and with the Royal Swedish Navy, Italian Navy and Indian Navy. It has also been supplied to Grumman for the S-2T Turbo Tracker aircraft.

Development of the AQS 903 system to meet the RN

performance requirements is already largely complete. The contract awarded by IBM-ASIC will take the existing AQS 903 system, and provide modifications leading to manufacture of 44 systems. On delivery to IBM-ASIC the equipment will be integrated into the Merlin helicopter before entering service with the Royal Navy. This processor forms the basis for the AQS 930 series processor which it is anticipated will be taken up by many other nations.



MASD's team at the formal signing of the contract. Seated are Divisional Manager Sue Wood (l) and Joan Ritch, IBM Mission Avionics Major Subcontracts. Behind (l-r) are Kay Lein, IBM Subcontracts Programme Manager; with MASD's Adrian White, Programme Manager; Lenny Parker, Senior Contracts Officer; Kevin Middleton, Contracts Manager.

HELMET MOUNTED DISPLAY FOR THE GERMAN ATTACK HELICOPTER

GEC Avionics has now been selected for the development phase of Europe's most advanced aircrew Helmet Mounted Display (HMD) for the German attack helicopter fleet.

The new HMD, the latest in the GEC Avionics 'Knighthelm' range, will enable the aircraft to operate safely at low level, day and night and in poor visibility. A full display of flight critical information will be combined with

forward looking infra-red imagery (FLIR) or a light intensified display for night and poor weather operations.

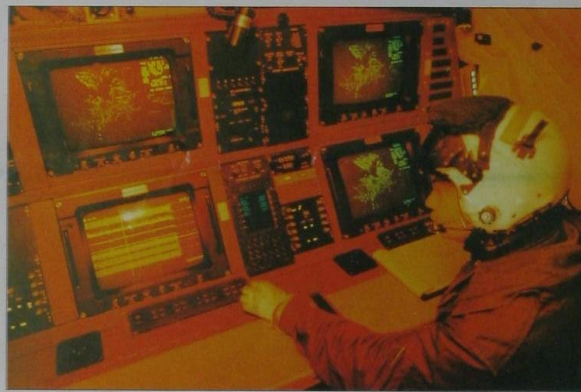
This important contract has been won in a German competition against solutions offered from France and the

USA. It follows exhaustive prototype evaluation carried out over a period of more than two years both by the German Army and by Eurocopter, Deutschland (ECD). These trials, previously reported in GAv News, included the most comprehensive flight trials ever carried out on a binocular integrated helmet display and have conclusively proved the viability of the 'Knighthelm' product.

The new system consists of a 40 degree binocular fully overlapped field of view display with quick release connector, drive electronics for the display and a DC magnetic head tracker.

The light weight basic helmet is 'form fitted' to the individual aircrew using a new liner which guarantees comfort and stability. All the display technology is housed in an 'opto-electronic module' which is produced in a single size to fit all helmets, thus minimising logistic support needs and reducing life-cycle costs.

The module contains 25mm cathode ray tubes and twin 3rd generation image intensifiers, together with precision



The AQS 903 system installed in the Merlin is seen as the screen at bottom left and the central control panel.

optics, the head tracker receiver and laser eye protection. The optical arrangement

allows either FLIR or image intensified video to be overlaid on full stroke-written mission symbology. The display is presented to the aircrew on eyepieces which have been designed to be

stowed out of the line-of-sight when not required.

GEC Avionics has been working on HMD design and development for nearly 2 decades. This activity has included extensive private venture development programmes, often working with

major subcontractors such as Helmet Ltd and Omitech.

This latest success for the 'Knighthelm' range complements the progress being made on projects recently described in GAv News, such as APHIDS, the AFTI F-16, and our bid with Helmet Ltd for the EFA Helmet.



11 Col Haidn, Commanding Officer of 910 Test Squadron of the German Army, wearing the latest Knighthelm HMD in the cockpit of a B0105 helicopter.

CUSTOMERS MEET GAv AT FARNBOROUGH INTERNATIONAL '92

At this year's Farnborough International Air Show, GEC Avionics formed a part of the GEC-Marconi exhibition stand and corporate hospitality.

An advanced fixed-wing ground attack cockpit Demonstrator, which brought together equipment from across GEC-Marconi, was integrated at Rochester and became one of the central features of the indoor stand.

Representing GEC-Marconi's important and growing civil business was a cabin mock up incorporating the new in-flight entertainment system, just selected by United Airlines.

Although the overall attendance at the show was less than in previous years, the company was well pleased with the interest aroused by the stand. GEC-Marconi was visited by many senior military and political figures.

See centre pages for an overview of the show.

INSIDE

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www.rochesteravionicarchives.co.uk

Enhanced Vision System is selected by Northwest Airlines

GEC Avionics has been selected by Northwest Airlines to compete for the 'Enhanced Vision System' retrofit to their fleet of Boeing 747 and McDonnell Douglas DC-10 aircraft.

Northwest's objective is to give the fleet Category III (700 ft runway visual range) operating capability by providing the pilot with a Head Up Display, showing full flight symbology, linked to a weather penetrating sensor such as forward looking infra-red or millimetre wave radar. This will allow the pilot to see through poor weather

and low light conditions during landing and take-off.

As part of the Extended Vision System programme Northwest have recently conducted over 70 simulated approaches in Cat II (1200 ft) and Cat III conditions using a GEC Avionics day/night HUD. This is installed in the advanced crew station simulator at McDonnell Douglas,

Long Beach and linked to full infra-red and millimetre wave radar simulated data.

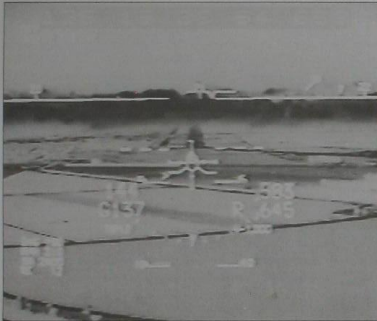
During the three days of testing Jim Magee, Northwest Director of Flight Operations, Glenn Conner, Director of Plans and Programs at the University of Maryland's Advanced Development Laboratory, and senior DC-10 and B747 pilots from Northwest used the simulator to demonstrate the concept of extended vision. The trial showed that dramatic improvements are achieved in maintaining the desired flightpath and touchdown points when flying a head-up/enhanced vision system, as compared to a head down display.

In another trials programme based at the Maryland Laboratory, a Cessna 402 testbed aircraft has been flying for some years equipped with a GAv wide-angle holographic HUD.

To date, this programme has logged over 350 flights using the HUD linked to an infra-red sensor for all approaches. Recent activities have included the incorporation of a Federal Aviation Administration flight symbology set. The aircraft is now flying under contract to GEC Avionics to gain Cat II operational approval and will continue to fly to simulated Cat III conditions for some time.

The HUD design will fit left and right in all potential airframes from long-haul to commuter aircraft and business jets. A common interface will ease transfer from type to type, whilst the design is sufficiently flexible that it can be tailored to meet specific customer requirements. GEC Avionics aims to certify a high integrity HUD suitable for use as a primary flight instrument.

A combined HUD and EVS system offers the operator many important cost and safety related advantages in addition to lowered take-off and landing minima. Among these are windshear alert and escape guidance, take-off performance monitoring, improved landing precision which reduces brake wear, runway incursion warning, and improved taxi capability and flight path guidance. The installation of a standard HUD/EVS also reduces cross fleet training and maintenance costs.



Sequential stills from a cockpit video of an EVS/ILS approach using the new system. The runway approach lighting is switched off.

ANOTHER BIG ORDER FOR 'CATS EYES'

Total Export Orders Pass US\$23m

GEC Avionics has been awarded a contract for a further 287 advanced Cats Eyes Night Vision Goggles (NVGs) for the United States Navy fast jet pilots. This takes the current total ordered by the US Navy to almost 500 sets.

Cats Eyes were the only NVGs used during the Gulf War by US fixed wing aircraft pilots. The goggles were proven in regular low level night operations by the US Navy and Marine Corps using F-18 and A-6 aircraft.

Currently Cats Eyes fly with seven military forces around the world. Export orders total in excess of US\$23m with further orders now being negotiated. The success of this programme, particularly in the highly competitive US market, shows GAv's dominant position in the supply of helmet mounted night vision systems.

Night vision goggles allow the pilot to operate at very low light levels by intensifying the smallest amount of



ambient light to give all round vision. The importance of this ability to operate at night was clearly demonstrated during the Gulf War. However, conventional 'straight through' NVGs degrade the quality of critical cockpit displays when they are surveyed through the lenses of the goggle. The unique design of Cats Eyes has the capability to overcome this problem. Because the light-intensified image is

projected onto two clear glass eyepieces in front of the pilots, Cats Eyes can automatically switch out the night vision image when the pilot surveys the cockpit, allowing the pilot to look at the range of displays with no reduction in display definition or quality.

This technique has also been exploited in developing the 'Knighthelm' range of integrated helmet mounted displays.

HOW IT WORKS

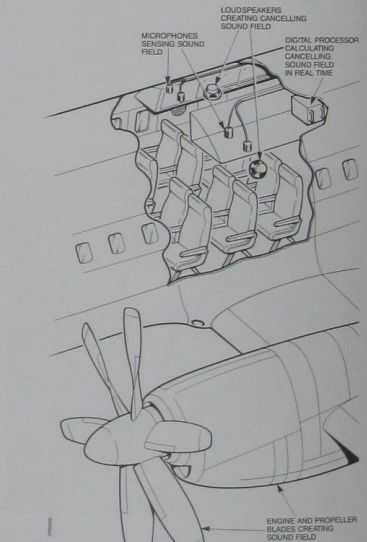
ACTIVE NOISE CONTROL

To every parent, the subject of Active Noise Control offers the prospect of achieving an impossible dream - a volume control on their child that can be used to turn down their noise!

Unfortunately, the Active Noise Control system being developed by GEC Avionics called LANCE (Lightweight Active Noise Control Equipment) cannot do that, but it can make travelling in noisy turboprop aircraft much more pleasant.

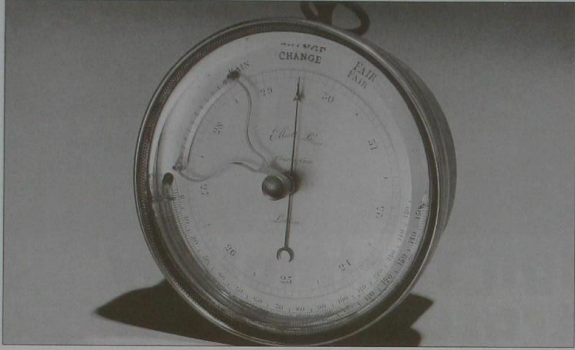
Twin turboprops have tended to be noisy because of the two propellers rotating close to the fuselage. This sets up vibrations and resonances inside the cabin that produce a low frequency 'rumble', that can be annoying on a long flight.

Since noise consists of pressure waves in the air, that is alternating pressure increases and reductions, it is possible in theory to cancel this noise by generating anti-phase sound. This anti-phase



sound generates pressure waves equal and opposite to the noise signal, by making pressure increases to match each pressure reduction and vice versa. The net result is an overall quietening of the cabin.

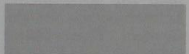
Scientific Instrument Society Visits Rochester



In June, the Company was host to the Scientific Instrument Society for their Annual Meeting. The Society is concerned with the history of science and scientific instruments; the interest at Rochester was in the history of Elliotts which was a very well-known 19th and 20th century instrument-making Company.

Visitors on that day included Professor G Turner of Imperial College, and representatives from the Science Museum, the Museum of History of Science at Oxford, and the Whipple Museum at Cambridge.

Dr Gloria Clifton of the National Maritime Museum gave a talk on the history of



To do this, the LANCE system consists of microphones, a computer and loudspeakers. The microphones 'listen' to the noise to find out the frequency of the noise in the cabin, and the computer works out what sound from the loudspeakers would cancel the noise. This cancelling sound is generated and the noise gradually reduced. The microphones continue to listen to the residual noise so that any changes can be fed back to the loudspeakers to maintain the quietening.

This system uses aspects of control theory and signal processing which are well established within GAV, taking a number of techniques developed for military applications, and applying them to a commercial aircraft. It is being developed by TSRL, and will be produced by FCD who have found a good deal of interest among aircraft manufacturers.

To save you asking, it will not cancel out the chatter from the bore that always sits next to you on transatlantic flights - you will have to use more traditional methods for that!

Elliotts drawn from independent records. The date of 1800, usually given as the start of William Elliott's business, has not been substantiated and 1804 is the more likely date. Thereafter there is reasonably complete knowledge of the Company's locations, together with indications of its size and activities.

Our Assistant General Manager Ron Bristow described Elliotts' instrument products and customers in the 19th and early 20th centuries, illustrated with ledger pages for the East India Company and the War Department contingent in the Crimean War.

There was an exhibition of early Elliott products and documents which remained open for a brief period for interested employees and it is intended to arrange a second exhibition later this year.

Anyone interested in any aspect of this subject is invited to contact Ron Bristow, Extension 3521.

One exhibit was this Elliott Bros Aneroid Barometer of about 1860.

Elliott Tangent Galvanometer of the 19th century.



Professor Brain-Drain's Computer Corner

Gone Forever? Dear Prof. I accidentally deleted a file on the computer last week - at least I think I did. All I can say is that one minute it was there, and then it wasn't. I didn't like to say what I'd done, so I typed the whole thing in again. It took all afternoon! Is there any way I could have saved myself having to do all that work again? 'Fed-Up', ISD.

There is nothing like a computer for destroying things when you're not looking, is there? The solution to your problem depends on how long the information had been around before you discovered it was missing, and whether you do your work on one of the big divisional computers, or on

your own little computer like a Decmate or an IBM PC.

All the files on the bigger computers are automatically copied every night and stored away in a safe place in case the building burns down. If your work had been around for at least 24 hours, then a copy was probably taken. In that case there was a chance that if you had talked to the Computer Services operators perhaps they could have recovered it for you. If however your work is stored on your own floppy disk, or on the disk inside your own computer, then things are a little bit trickier. Again there is still a chance that someone regularly takes a copy of all the files and stores them in a safe place. If

nobody else does that job, then perhaps you should do it for yourself at least once a week. Copying all of your important work and storing it somewhere else in case of emergencies is not only smart, but you'll be able to score Brownie Points when you brag that you 'backup' your files regularly.

If there is no chance that the file had been copied, then we'll have to get even trickier. When a file gets deleted the computer doesn't really destroy the work. Instead the computer just makes a note to itself that the place where it stored your work is now free to be used to store something else. If you realise you have deleted something by accident it is sometimes

possible to tell the computer that you've changed your mind. That's provided you haven't already stored something else on top of it. (I'm afraid you'll have to check with the clever clogs in the Computer Room whether your computer has this option). Remember also that some computers keep deleted files in a special place called the 'Wastebasket' and there are commands which allow you to get files back out if you didn't mean to do it.

Your last chance depends on whether you have a printout of your work. Some divisions now have a piece of equipment called an Optical Character Reader (or Scanner). This clever box of tricks looks like a xerox machine and does a trick that is really amazing. You can put your paper



copy into the machine and it reads it back into a computer. It's a bit like a computer printer working backwards. Instead of printing out, it reads the paper in. Pretty smart eh? Check if your Tech Pubs or computer Room has one.

And don't do it again!!



Kent Trust FOR NATURE CONSERVATION

GEC Avionics, as one of the largest private employers in Kent and taking a serious interest in environmental issues, has joined the Kent Trust for Nature Conservation as a corporate member. Quality Director Ray Reese was presented with a membership certificate by the Trust's Director Pete Raine.

The Trust's many activities throughout Kent are centred at the newly opened and beautifully restored Tyland Barn, at the bottom of Bluebell Hill via the Sandling slip road by the garage. This focal point for visitors is a 'signpost centre' for information and displays on the wildlife and habitats of our county.

With something for casual visitors and families as well as more serious students, the Barn is open with free admission from

10am to 5pm or dusk if earlier, every day except Monday. GEC Avionics people will find a warm welcome and much to learn and enjoy at Tyland Barn, and can also join the Trust as individual members. Moreover, they can join the team of volunteers helping to maintain the Trust's activities and our Kent environment.

Did you know that we have a Local Nature Reserve right on our doorstep? The 35 acres of the Darland Banks Reserve were given that status in 1989 and are now managed by the KTNC on behalf of Gillingham Borough Council. Visitors can enjoy a huge variety of natural wildlife.

FORTY YEARS' SERVICE

The company has recently started recognising 40 years' continuous service, although not always completed here at Rochester. Service with any company now within GEC is counted.

Congratulations to the following:

Ron Smith, Senior Design Engineer GDD (GSD)

Don Searle, Planner GDD (ADD)

Arthur Holme, Chief Methods Engineer GDD (ADD)

'Ren' Ridley, Internal Truck Driver Main Goods In

Ken Shaw, Production Project Controller PSD

Fred Tucker, Fitter / Engraver CMS

Jim Shrubbsall, Maintenance Foreman CMS

Sid Hissett, Production Technician CMS

John Miller, Production Technician CMS

Ray Beevis, Plant Procurement & Maintenance CMS

and, just for the record, Yours Truly **Francis Latter**, Editor, GEC Avionics News PSD.

LEGAL SERVICES

Discounts for GAV employees.

A local firm of Solicitors is offering discounts exclusive to employees, particularly in respect of property conveyancing and of interest to first time buyers.

Information has been circulated, but if you need to know more, contact Di Bower in Personnel, Ex 3417.



GEC-Marconi's High Technology Cockpit Demonstrator on show.

A demonstrator of a fully integrated and functional single-seat cockpit, designed to be fitted both as original equipment and as retrofit to existing aircraft, was a central feature of the GEC-Marconi display at Farnborough Airshow this year.

Within the Demonstrator, which is 'based' at Rochester, GEC-Marconi brought together the latest control, display, sensor and weapon systems to form a complete, integrated cockpit and avionic system. This approach dramatically reduces the pilot's workload by automating routine tasks

and ensuring he has the information he needs, when he needs it, using simple, integrated cockpit controls. As a result he can concentrate on the management of his mission, increasing the likelihood of its success.

The cockpit technology illustrated at Farnborough included –

- New technology displays with touch sensitive overlays
- Wide-angle night vision head up displays
- Fly-by-wire flight controls with a pilot's side stick control
- Direct voice output
- Integrated display formats

and attack. The air-to-air self defence mode was demonstrated, combining the use of ECM with weapon aiming using both the Head Up and Helmet Mounted Displays.

GEC-Marconi is developing a series of these new technology demonstrators for both fixed-wing and helicopter operations. They are being used in assessing new systems integration concepts and evaluating critical human factors issues in cockpit design.

Jerry Fisher, Marketing Director, commented: "These Demonstrators have proved particularly valuable as we break new

ground in avionic systems integration. By creating a complete, functioning cockpit, we prove the viability of our ideas to ourselves and to our customers. We also illustrate the capabilities of our engineers to turn ideas into practical, demonstrable reality".

Other GEC Avionics products shown at Farnborough included the C-17 Head Up Display, the 'Knighthelm' helmet system for the German Tiger attack helicopter (see Page 1), also the Digital Map for the Tomado GR.7, and the AWACS Engine Monitoring Unit.

The Taylor Family Wins The 4-wheel Drive Truck

First Prize in the Grand Summer Draw in aid of the Scanner Appeal was won by Ron Taylor,

a member of the Reapers Club for retired personnel. Ron, who was previously in TACD

and AS&RD, brought his wife Thora to the Presentation with their son Kevin, a Test Technician in GDD (ADD), and his wife Clare (née Mullett), formerly in ADD and CACD. Baby Kerri - who plans to drive the car when she is a little older - took an important part in the proceedings, as seen here.

The miniature 4-wheel drive pick-up was handed over to Ron and the family by GAV Production Director John Clover. Peter Martin representing Medway Toyota who donated the car is at the back in the picture.

The sum raised in the Summer Draw was over £3,100, bringing the overall Appeal total on the day to £89,203.



During the week, a BBC film crew were recording the visit of Helen Sbarman, first British astronaut who flew in the Soyuz spacecraft.

GEC AVIONICS NEWS ADVERTISER

...SPORTS AND LEISURE....SALES AND SERVICES....PROPERTY....BUSINESS....VEHICLES....TRAVEL....ACCOMMODATION...

CLASSIFIED SECTION

BOAT

Mirror Dinghy. Boom up cover and launching trolley. Recently repainted and varnished. Ideal boat for a beginner. Sail number 56392. Garage stored, sails well. £350 ONO. Contact Dave Jibb, 3907.

BICYCLES

BMX - Raleigh. Would suit a 7 - 10 year old. Excellent condition. £45 ONO. Contact Med 405272.

Foldable - Philips (Raleigh). 20" wheels as new. 3 speed Sturmey Archer gears. £55 ONO. Contact Dave Miller, 4240 or Med 373112.

Raleigh Mustang. 5 Gear, boy's mountain bike. 20" wheels, centre pull brakes. £60 ONO. Contact Mark Chapman, 3498.

Miami Miss. Single gear girl's bike. 16" wheels, stand, mudguards, colour pink and white. £35 ONO. Contact Mark Chapman, 3498.

CARS

Triumph TR7. X Reg. (1982), colour champagne beige. 73,000 miles, 1 year MoT, full sun roof. £850. Contact Mrs Lawrence evenings only on Med 682792.

Opel Manta, 1.8 Berlinetta Coupe, black. 73,000 miles, 1 year MoT. Taxed. Good condition. £1595 ONO. Contact Steve Crowe, 3085 or Med 200284.

Volvo 360 GLE. 2 litre fuel injection, 4 door saloon, metallic silver. 5 speed gearbox, electric windows, radio cassette. B Reg. (1984). 55,000 miles, good condition. £2000. Contact Mark Chapman, Med 251656.

CAR PARTS

Pair Q.D. car towing mirrors. £10. Contact Mark Chapman, 3498.

Roof rack for Rover Montego. Cross rail type with side guards suitable for variety of loads especially luggage. £30. Contact Alan Cuthbertson, 4391.

Tyre, steel radial 165 x 13. excellent tread, as new. Price on agreement. Contact Debbie, 3808.

GAMES

Sega game gear, boxed with adapter. £65. Various other games for sale as well, prices negotiable. Contact Joanne, 4284.

GOLF

Golf clubs, DUNLOP, unused full set. Three metal woods, graphite driver, eight irons, putter and carry bag. £225 ONO. Contact Roger, 3344 or Med 867833.

Golf clubs, Tiger Shark (Great White), three woods, nine irons. Cost new £600, will accept £300 for quick sale. Contact John France, 3542.

HOLIDAYS

Chalet, South West Wales. Self catering, sleeps up to six. Swimming pool, bar, restaurant nearby. From £115 pw. Contact Frances on 0233 840368 for brochure.

MISCELLANEOUS

Pair of car children's booster seats for £10. Contact Mark Chapman, 3498.

Rowing machine, hydraulic. Doubles as a vertical exerciser. Complete with operating

manual. VGC, £50 ONO. Contact Malcolm, 3202.

MOTORCYCLE

BSA Bantam. 1966, D7, 175cc. Used daily, MoT and taxed until December '92. £425. Contact Simon, 3498.

Trials Bike, Yamaha, TY80, Twinshock. 1976. Ideal for boy 7 - 10 years old. Good condition. £260. Contact Med 686270.

Trials Bike, Yamaha, TY250. Twinshock. 1978. Un-registered, only used for fun. Good condition, ready to trial. Ideal for Twinshock clubman rider. £375 ONO. Contact Med 686270.

MUSIC

Piano, upright Spencer, dark wood, requires tuning. £200 ONO. Contact Priti on 4284.

Technics Stereo tuner £50. JVC stereo cassette £50. Contact Keith, 4557.

PHOTOGRAPHY

Equipment - Rollei 35mm projector with remote controls £50. Canon 35-70mm zoom lens £40. Tamron 28mm lens, Canon fit, £30. Contact Keith, 4557.

PROPERTY FOR SALE

House, semi-detached. Walderslade. Three bedrooms, gas fired central heating. Garage and room to park three cars. Rear garden with lawn and patio. Pleasant view across the valley. £55,000. Contact Alex, 3648 or Angela, 4259.

House, Rainham. Four bedroom, includes carpets and curtains. Integral garage. £72,000. Contact Med 231803.

House, terraced, 1930s. Three bedrooms. Needs modernising. Structurally sound and rewired. Gillingham area. £51,000 ONO. Contact Med 863320.

WANTED

Girl's bike with 20" wheels, to suit 10 year old. Contact Mark Chapman, 3498.

SOCIAL EVENTS

GEC "HAPPY WANDERERS"

16 November. Visit to see Miss Saigon. £19 + coach.

1 December. Visit to see Carmen Jones. £13 + coach.

18 January '93. Visit to see Joseph. £17.50 + coach.

15 February '93. Visit to see Les Miserables. £27.50 + coach.

Coaches are subject to sufficient numbers booking.

5 December. Day trip to France, Belgium and Holland. Calling at Calais, Bruges and Sluis. Cost £25.

For all events contact Rod Cole, 3502 (12-1pm), or Med 848282 outside working hours.

Do You Live in....

Herne Bay Whitstable Sturry?



Then why not travel to GEC Avionics by coach?

For further details contact Dick Amos ext 3758

If you would like to advertise in the GEC Avionics News Advertiser, write your Advertisement in block letters in the grid below and send to Peter Royall, PSD (Publications) Ext. 4166. Advertising up to 25 words is free to GEC Employees, their families and people who have retired from the Company (additional words 50p per word). Non GEC Avionics employees 50p per word, cheques payable to GEC Avionics Limited.

GEC Avionics News takes no responsibility for any misrepresentations or inaccuracies in the classified advertisements or for any breaches of obligations by classified advertisers. Readers are recommended to take appropriate professional advice before entering into obligations. Insertion is not guaranteed, but every effort will be made to include your advertisement as soon as possible.

GEC AVIONICS NEWS ADVERTISER

...SPORTS AND LEISURE...SALES AND SERVICES...PROPERTY...BUSINESS...VEHICLES...TRAVEL...ACCOMMODATION...

DISPLAY SECTION

THE ULTIMATE BRIEFCASE

ZERO



Available in 2 sizes
Standard 331 x 458 x 115mm
Deep 331 x 458 x 152mm

The skill and technical expertise gained from years of providing protection for expensive equipment has enabled Zero Cases to produce the 'Ultimate Briefcase'. Aerospace materials are used to give the optimum combination of strength, lightness and good looks, each shell being hand-anodised for complete protection. The interior of each case is sumptuously lined in leather and suede complete with a suede padded base. Two lid stays are fitted as standard. For security each case is fitted with a 3 digit central combination lock that can be set with the number of your choice. Each case is fitted with a contoured padded handle to make carrying a joy. To customise your case for laptop computers, photographic equipment or any other delicate items we can supply top quality polyethylene foam to provide a custom fit.

* SPECIAL OFFER *

The 'Ultimate Briefcase' will not generally be available until later this year when it will be sold in the national press at over £200. As a special trial offer the 'Ultimate Briefcase' is now available only to GEC employees at the discounted price of £178 including carriage and VAT - don't miss out just ring our hotline with your credit card details and we will do the rest!

Order 'HOTLINE' now open
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The last Briefcase you'll ever need!!!

Advertising Supplement

The advertising supplement was launched with the proviso that two important criteria should be met to ensure that it was a required and self financed item.

The first criterion, and probably the most obvious, was that income derived from advertisements in the display section should fully support the total cost of production. At present this condition is not being fully met; a last effort will be made to try and ensure that advertising in this section is increased.

The other criterion was that the classified section offered free to employees for promotion of their own requirements, was seen to be a useful facility. This would be gauged by the overall use made of this section; the use to date has been encouraging but not outstanding and sufficient to meet the objective.

Following the publication of the next GAv News the situation will be reviewed. Whilst the achievement of cost control may be such that no alternative will exist except to discontinue publication of the Supplement, to do the same for lack of employee support would surely be inconceivable. The closing dates for each issue should be clearly advertised throughout all divisions and notice boards, the circulation covered by the paper is also far larger than relying on notice boards. Therefore hopefully more employees will support the next issue. Remember, whatever service is required, send it in, we will give it a category.

Peter Royall 4166.

Amethyst Framing

PICTURE FRAMES - TRADE & RETAIL POSTERS -
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10% Discount to GEC employees
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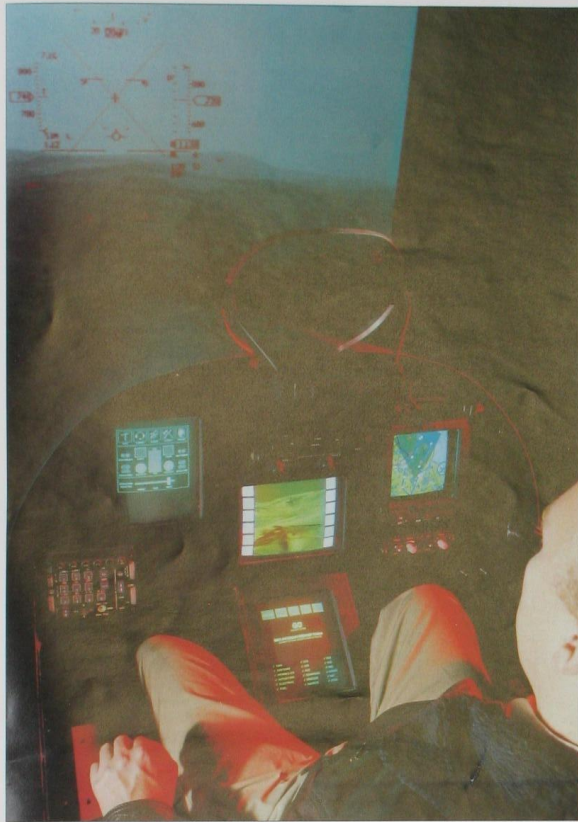


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Main feature on the stand was the Cockpit Demonstrator, with a range of working pilot's displays and an outside scene generated from an overhead TV projector.



The Advanced Side Stick Controller for the American YF-22A Advanced Tactical Fighter is used in the cockpit Demonstrator, out of view in the picture above.

At the top of the panel is the glass combiner of the Head Up Display, of the type destined for the EFA. The pilot sees the flight, navigation, and targeting symbology generated by the HUD as if at infinity, as simulated in the picture.

The TV-like screens show (top left) the master system control panel for navigation, identification, and weapon control, and (top right) the digital navigation and map display system, as used in "Real

Night" performance trials in the US A-6 aircraft. At centre is the Ferranti TIALD (Thermal and TV Imaging Airborne Laser Designator) display, well proven in the Gulf War.

Below that is the aircraft systems status screen, and at the left is the manual back-up panel against system failure. The solo pilot's workload is dramatically reduced - the conventional rows of switches and dials are superseded by the touch-sensitive

screens which accept the pilot's finger-pointed commands, and other displays appropriate to a situation can be called up.

GAv's development of this innovative computer-based simulation technique for the new generation of cockpits, has been greatly helped by the expertise of the Computer Systems technologists of Silicon Graphics Ltd, in 3-dimensional graphics and video projection techniques.



In the civil aviation field, a cabin mock up showed the interactive video system which has been selected by United Airlines to equip their new fleet of Boeing 777 aircraft, as well as their current international fleet of Boeing 747s. The system will provide a new standard of entertainment, merchandise ordering facilities, and communications. GAv will undertake some sub-contract work for the suppliers GEC-Marconi InFlight Systems (GMSIS).

Here, the Rt. Hon. William Waldegrave MP learns about the system from a GMSIS engineer; visible at the back (with glasses) is Sir Barry Duxbury, SBAC Chairman.



Among the important visitors to the display was the Rt. Hon. Malcolm Rifkind QC MP, Secretary of State for Defence, seen here with Dave Puleston (TSRL) explaining the demonstration. Immediately behind are Jerry Fisher, GAv Marketing Director, and Dick Evans, SBAC President and Chief Executive of British Aerospace.

At the back centre is Sir Donald Hall, Deputy Chairman of GEC-Marconi.

VIP visitors to the GEC-Marconi display stand, but not pictured here, included the French Ambassador, and senior MoD people such as the Chief of Procurement Dr M McIntosh, and the Controller (Air) Donald Spiers. Several delegations from overseas diplomatic and military missions also attended.

DID THEY JUMP OR WERE THEY PUSHED?

On May 10th a group of fearless young (well almost) people took part in a sponsored Bungee Jump, in aid of the Cystic Fibrosis ward of the Royal Brompton Hospital, London.

This Lemming style leap took place in Bridgwater, Somerset from a height of 180 feet. The jump required each volunteer to be tied at the ankles and attached to 3 long lengths of bungee elastic. They were then lifted up to the necessary 180 feet and told to throw themselves over the side of the cradle, towards the water below.

For the more slyph-like members of the group, a few bounces at the end of

the elastic was their reward for their courage, but for the more heavily built (greater than 13.5 stones) a very wet surprise was in store as they plunged head first in the murky water of the wharf.

The GEC representatives consisted of Grant Wakeman and Christopher Payne (GSD, London) and Brian Trubshaw and Steve Emmett (Boeing software group). The remainder of the group was made up of North Kent Ju Jitsu club members and friends.

The 14 courageous volunteers managed to raise a total of £1300 for the Hospital and wish to thank everyone who helped by supporting the event.

ERNIE FREE'S 40 YEARS OF SERVICE - and now he's retired.

Ernie Free, Training Officer, celebrated his 40th year of service when he was presented with gifts from the Company by Personnel Director John Bradley on 21st July. Ernie first joined Elliotts for specialist production work, spending his first 13 years in the divisions that became GSD, now GDD. He 'production engineered' oil pumps to power early computers at RAE Farnborough and fire-directors for the Admiralty.

A career change in 1965 took Ernie to the Training Dept., where he established the Wiring School and relocated the Training Centre to Hopewell Drive. Then and since, he has become known to apprentices and trainees of many ages, and he will be remembered for the calm and

reasoned career advice given to many cohorts of young people while still at school and subsequently in training with the company.

We wish Ernie and his wife Betty, now both in retirement, much happiness in the future.



Ernie and Betty Free with John Bradley.



Glen Herridge, Senior Production Engineer in CACD, has followed the various moves of the old Airspace Control Division where he joined as Planner, through its changes to Airborne Computing Division, MASD where he became Production Engineer, and most lately to CACD when the Production Departments of those two divisions were combined.



Elaine Lee-Frost, once a Banda operator and clerk typist in AEID, transferred into

Purchasing when ISD was formed. After a spell in the typing pool she was promoted in 1974 to become the Production Manager's Secretary - the post she still holds, but recently with added responsibilities for production admin.

Some of us will also remember Elaine's election in 1971 as "Miss Elliott".



Bruce Readhead, Project Leader in CACD, worked at first on the computer for the C-5A Galaxy transport aircraft, and soon became established as the project's 'Mr BITE' (Built-in Test Equipment). Later he moved on to the Tornado contract with that same expertise, and soon he became the focus for Project Control activities, leading to the formation of the present Project Admin Group. Bruce also captains CACD's Bat and Trap team and is a stalwart of their Bowls team.



Derek Blackman was first involved with avionics in the Fleet Air Arm and after some months in Chatham Dockyard joined TACD as a night-shift Inspector. After 3 years he transferred to Quality Assurance where he has been responsible for a number of civil and military projects, now as Senior QA Engineer in FCD. Derek's daughter trained here as a Commercial Assistant, as did his son Ian who is now a Company Purchasing Co-ordinator.

Peter Luckhurst, now Production Superintendent at Naisea, was at Rochester for fifteen years before he moved to the West Country. He started in FID as Instrument Fitter, and it was 1981 when he was promoted to Foreman in ISD. Shortly after he moved to Naisea in early 1982 Peter was promoted to Superintendent.



Dave Powell joined Airspace Control Division but quickly moved into Inertial Navigation Division on the development of the Jaguar Nav Attack System. In 1970 he moved to Watton with the delivery of the first system, to conduct the flight development and clearance. Dave became trials team leader in 1972 and returned to Rochester in 1976 as Project Manager Future Systems. With the formation of GSD in 1984 through the amalgamation of Gyro and IND, he became Manager of Aircraft and Missile Systems and subsequently moved into his present position of Technical Manager.



Bill McCutcheon, now Design Services Manager in ISD, was originally a Draughtsman and later Design Engineer, but for many years he has been deeply involved in Computer Aided Engineering. From his early work on printed circuit design standards in the period

when PCBs were being introduced into many major projects, Bill led the initial evaluation of CAD for the company. Following the selection of APPLICON, he set up and chaired the UK Applicon Users Group, and was in charge of the introduction of the system into ISD. He has been the company representative for the SBAC committee on Computer Aided Engineering and most recently has been establishing the principles for Computer Aided Technical Data Management for the company.



Roy Hickin-Botham, Test Technician in ISD now on Inspection, earlier spent some time as chargehand on the fuel flow rig, but after the old AEID and FID combined into ISD he transferred to Test. Roy has been a Shop Steward for 24 years, the last 7 for the EETPU.



Bernie Austin, Leading Hand Test Technician, has worked through the various reorganisations of the 'control' divisions TACD, FCD, and CACD. Technology has progressed from BAC 111 and Concorde systems through Harrier and Tornado, also Bernie has covered Hydraulic systems and the equipment which was brought across from MASD.

Retirements

Bob Ruggles came to Elliotts in 1959 with other engineers from Dowty, as Aerodynamicist Mathematician at Borehamwood. The division's move to Rochester in 1961 found him as Project Leader in MACD, where he rose to Chief Engineer. Soon after MACD and TACD merged to form FCD he became Technical Manager, and next Bob spent a year as Venture Manager on secondment to the Department of Energy.

His next step was to Deputy DM of ATED, then Divisional Manager, and he later moved to IND/GSD as Divisional Manager, spending his last few months before retirement as Management Executive on the 'top floor'.

Roy Saxby, 42 years with this company, can in fact say 'over 50 years' as he first came to the site as an apprentice with Short Brothers. He has now retired after many years in Hydraulics Lab (now CACD), working on a great variety of projects including maintenance and calibration and demonstrations to customers and management, and more recently on mechanical preparation work on Phoenix.

John Jameson has retired after 31 years as wireman and repair Technician, in MACD, Fuz, TACD, FCD, IND, MCD, and ISD's Production Department.

John Balderston, now retired after nearly 33 years, has always been involved with the site's internal transport services and the car fleet.

Laurie Vinten

Colleagues and friends of Laurie Vinten express their deepest sympathy to his wife Patricia and sons, following his tragic death whilst on holiday in North Wales. Laurie died from a heart attack whilst rescuing two teenage girls who had got into difficulties swimming at Porthmadog.

Laurie joined Inertial Navigation Division in 1974 and worked on such programmes as the Central Tactical System for the Nimrod ASW aircraft, and more recently played a very significant role in the design and development of the successful digital map system in Guidance Systems Division. He transferred into FCD in 1991 to work on the Boeing 777 flight control system, where his significant contribution will be sadly missed.

GEC Avionics News

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Inter-Divisional Cricket

PSD WIN THE COMPETITION

... Fisher Controls win the Plate

On rain-affected evenings the final of the main Inter-Divisional Cricket Competition was contested between PSD and FCD. The Plate trophy for 'best of the first round losers' was competed for by Fisher Controls and Accounts.

On Monday 24th August Product Support Division carried off the trophy for the 1992 Interdivisional cricket tournament against a strong FCD opposition. Having won the toss and elected to bat, PSD had totalled 122 runs for 6 wickets at the end of their allotted 20 overs. Neil Trigg had scored 32 and Chris Dockray 30 not out. For FCD, top wicket taker was Peter Scrivens with 2 for 31 runs.

In reply FCD had totalled 85 runs with 2 balls of their 20 overs left when the match was closed in favour of PSD. Stewart Gray scored 28 not out, with Neil Trigg taking 4 for 23 and Bob Mercer taking 2 for 13.

The Plate Trophy

On the evening of Thursday 3rd September having been put in by Accounts, Fishers reached 119 for the loss of 3 wickets at the close of the innings, with rain having caused a 10 minutes stoppage between the 8th and 9th overs. Rodney Finch made 56 (including 9 fours) and Dave Walker 37 not out. For Accounts, Don Smith took 2 wickets for 27 and Robin Tyler took 1 wicket for 13.

Accounts scored 38 and were all out in the 15th over having been 0 for 2 in the first over. Robin Tyler top scored with 12. For Fishers, the bowling honours were shared between Terry Priestland 3 wickets for 12 runs, Steve Byrne 3 wickets for 18 runs and Neville Martin 2 for 4 in 2.2 overs.

Competition scores:
PSD 122-6 (innings closed) and FCD 85-8.
PSD won by 37 runs.

Other teams in the tournament were: First Round Winners ISD, GAV, MCD, CACD (Engineering), and byes MASD and ADD. Second round winners were MASD and MCD, plus the finalists who beat them in the third round. First round losers from whom the Plate winners emerged were Fishers, GSD (Production), CACD (Production), GSD (Engineering), TSRL, and Accounts.

On behalf of all of the players from the 14 teams taking part in this year's competition, thanks are due to the GEC Avionics Club Management Committee members and especially Brian Rogers, Peter Bird and the Ground Staff without whom the Competition would not run.

Plate scores: Fisher 119-3 (innings closed); Accounts 38 All Out. Fisher Controls won by 81 runs.

A Home For Toys

*I've inherited a new job, collecting surplus toys
For Christmas at the Children's Home for all the girls and boys!
So look into the toy box, and also in the loft,
Dusty books and trainsets or teddy bears all soft,
Doll's houses, my little pony, skateboard, a child will treasure,
They'll make some kiddies' eyes shine, will bring them so much pleasure.
Some crayons or a paint box, with painting book complete,
Some plasticine or play dough, for some a real good treat.
A Barbie doll, an Action Man, maybe a bike or two,
A jigsaw for a dark cold night, to mention but a few.
Monopoly or Cluedo for older boys and girls,
Perhaps a spare hot roller to give a girl some curls.
From beginning of December in Entrance Hangar Two
There'll be a box to put your toys, be they used or new.
But if you have a problem, if you're in Main Site direction,
Call me on 4369 and I'll arrange collection.*

Dimps (Mrs Ling) - PSD Production Department.

COMPANY CHRISTMAS BALL

Saturday 19th December
in the Main Canteen

with
**THE ANDY ROSS BAND AND SINGERS
and "MISTY"**

Tickets £8.50 including Buffet.

(All tickets will be sold on a first-come-first-served basis)

GEC Avionics Club ANNUAL GENERAL MEETING

The GAV Club's Eleventh Annual General Meeting will take place in February.

The Constitution requires a number of Management Committee representatives to seek re-election after two years in office.

At the AGM, 4 vacancies exist and nominations should be in the Secretary's hands by 19th December 1992.

Nomination forms are available from the Social Club Office, Snack Bar.
Elaine Beard, Ex. 4058.

GEC Avionics Club CHRISTMAS EVENTS at the Club House

Pre-Christmas
CANDLELIGHT DINNER DANCE
with The Peter Elligate Showband
SATURDAY 28TH NOVEMBER

CHRISTMAS EVE DANCE
with
The Keith Howard Roadshow

NEW YEAR'S EVE DANCE
with
The Peter Elligate Showband

Tickets will be available from the Clubhouse, or Social Club Office (Ex. 4058), Snack Canteen.

GAV Athletics Club is still in the Running - in fact they won!

As hoped in our last issue, the Club has won promotion to Division 4 of the British Athletics League as Champions of Division 5, in the season's final match at Bristol.

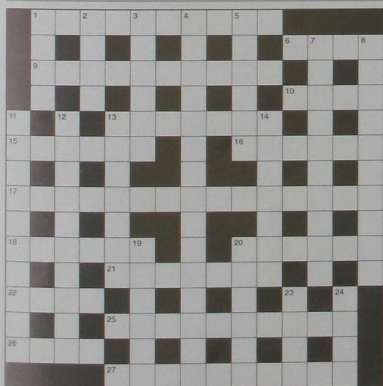
Sixteen years after winning the Kent League, the Club has completed a remarkable rise to establish itself among the top 24 clubs in the country. During those years numerous individual and team titles and victories have been achieved, notably including championship of Southern League Div. One, and promotion to the British League in 1989 at the fourth attempt. And the Club has produced an impressive list of AAA and International representative athletes at junior and senior level.

At the Bristol match in atrocious weather conditions, the Club dominated the track events, with wins in the distance races, 110m hurdles and both relay races, and in addition our correspondent Graeme Saker won the Steeplechase. He and Stephen Baggaley, another winner, are in fact the only survivors of that winning team of 16 years ago. In the field events, despite some absences for injury or illness, enough points were accumulated to complement the top track results and the Club's promotion was assured.

The Club is keen to build on this continuing success by recruiting new talent to help maintain their elevated status, especially in the field events.

Any interested athletes should contact team manager Len Murphy, on Ex 3851 or at home on Medway 408272.

Crossword No. 110 (For amusement only)



Across

- Check to give lines (10)
- Out of order, liquid food makes music (4)
- Not a good sign (3,2,5)
- Foreign capital (4)
- Do this after design or exposure (7)
- All may desire this, only the good succeed, they say (6)
- Rather more than know-how (6)
- A noisy fry-up (6,3,6)
- Teeth to bite with? (6)
- This pot with a foaming pint (6)
- First part of your car to wear out? (7)

- As it grows up, it grows down (4)
- Not one of the big shots in the Church (5,5)
- Means of varying sway (4)
- Not the sort of advice to a rolling stone (6,4)
- Down**
- Image from coin (4)
- Track (4)
- Nest of confusion (6)
- Well known aquatic friends (5,3,2,1,4)
- You could spot this creature in South America (6)
- Ancient history? (4,6)
- Not worn with a long dress (5,5)

- Boy + Girl + Cinema = ? (3,4,3)
- This type for life (6,4)
- Refuse to go down (7)
- Floored by wood (7)
- The last thing you will ever do (6)
- Spirited butterfly (6)
- In a year, in Rome (4)
- Unknown, soon (4)

Solution to CROSSWORD No.109

- Across**
- Chief of staff; 10. Equip; 11. Direction; 12. Interpose; 13. Payee; 14. Nelson;
 - Crosswise; 15. Rock cake; 20. Truff;
 - Loser; 24. Alexander; 26. Chinatown;
 - Hovel; 28. Hot favourite.
- Down**
- Hunt; 3. Esparto; 4. Old boy; 5. Surveyor;
 - Accept; 7. Fairy tale; 8. Beginners luck;
 - Once and for all; 15. Locksmith; 17. Oklahoma;
 - Cumant; 21. Teacher; 22. Lean to; 25. Drove.

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Family Sports Day 1992

The novelty races for the children were very successful this year - as well as this egg-and-spoon race. Sideshows were popular - indeed there was something for all the family as well as the Athletics and other events counting towards the Inter-divisional "Champion of Champions" Trophy.



Points Table

- 1st - 6 points
- 2nd - 5 points
- 3rd - 4 points
- 4th - 3 points
- 5th - 2 points
- 6th - 1 point

Divisional Sports Championship

EVENTS	GAw	ISD	ADD	CACD	PSD	FCD	MASD	MCD	GSD	CS	CMS	APHD	TSRL
Athletics	4	5	3	2	6	1							
Bowls	5	6	1		4			3					2
S-A-Side Football		6	4	1/2		3	5	2				1/2	
Hockey				5	3 1/2	3 1/2	6	1	2				
Netball	6		4			2	1	3	5				
Swimming	6	2	4	5	3	1							
Tug-of-War	4		2	5		2				6	2		
TOTAL	25	19	18	17 1/2	16 1/2	12 1/2	12	9	7	6	2 1/2	2	0



Men's Victor Ludorum winner Ian Coaker (ISD) leads the field in the 800m (won in 2min 13.2). Among the others in view are Dayne Reast (ADD), John Evans (PSD), Paul Oxenham (GSD), Sanj Sakaria and Mark Harding (FCD), and Kevin Ward (ISD).

Mrs Yvonne Tucker bands over the Inter-divisional "Champion of Champions" Trophy to Hughie McArthur of GAw.

MASD, second in the Football, in their match with CMS.



Computing Services pulling hard to win the Tug-of-war. Anchor man is Nigel Hughes, with Alan Holding, Andrew Mendoza, Ken Wilson, George Ford, and Andy McIlberon, and Roland Sayer (in green) telling them how.

Nicola Saker (PSD) takes the High Jump on her way to winning Ladies' Victor Ludorum. She Cleared 1.37m.



Provisional Diary date
Family Sports Day 1993
Sunday 11th July