





Editor: Francis Latter

### GEC Avionics News

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- Rod Cole, MADD; Dave Lucas, ADD;
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- Lionel Budge, SESD;
- Maurice Sparham, CDD, (Flying School);
- Phyllis Ellis, CMS.

Volunteers should offer their service through  
Divisional Administration Officers or direct  
to the Editor

### Editor's Notice Board

#### PICKWICK PINS

In order to assist in raising money for the Medway Cancer C.T. Total Body Scanner, to be sited at the Medway Hospital, Gillingham, the Rochester Police have designed and had manufactured two tie tacks/lapel pins. These are Dickens characters, Mr Pickwick from 'The Pickwick Papers', and Mr Bumble, the Beadle, from 'Oliver Twist', as shown above. They are brightly coloured and sized roughly as shown, and available from P.C. 3572 John Endicott, at Rochester Police Station, Medway 827055 Ex 250. They are £1 each or, if you want a nice boxed set to send to some-one abroad, £2.50. Bulk orders would be welcome.



#### FOUND

On Family Sports Day, near the First Aid Tent on the Sports Field,  
One Child's sandal,  
Beige, Size 4.  
Cinderella - phone Surgery, Ex 3675.

## GAv & the Community

# A Great Boost for The H.I.P.S. Fund

The Swimming Section of the Social Club have once again presented a big cheque to the children's charity.

Following a Sponsored Swim in the club pool, the sum of £2100 raised by the Section, with the addition of £150 from the Central Charity Fund, was handed over at a Presentation Evening and Disco. The total sum raised by the swimmers on three occasions has now passed £5000.

H.I.P.S. - Help in Plaster and Splints - is a local support group for parents of children with congenital dislocation of the Hips. Children cannot normally be X-rayed to detect this disorder until they are six weeks old, by which time they will probably need major surgery lasting until they are about two. During this time they are encased in plaster and splints from waist to toe.

The earlier contributions went towards the purchase of a special scanner which can be used to detect the disorder at birth. The scanner means that babies can be diagnosed and treated before the problem becomes serious. The older a child is before hip dislocation is diagnosed, the more difficult the condition is to correct.

Our swimmers, aged from 3 to 50, had to swim as far as they could in 30 minutes. This ranged from widths with armbands, to a maximum of 100 lengths (nearly 2400 metres) by Steven Michie (16). Avril Nuttall, seen in the picture, is herself in a wheelchair but took part.

Before the formal presentation, there was a Magic Show by Tony Chestnut, better known to us as Tony Hanscombe of CACD. Certificates provided by the Leeds Building Society, Strood, were given to all who took part in the swimming, and a cake was given for the children in the ward at Medway Hospital where the scanner is situated. A Disco followed, for the older children and grown-ups.

Section Chairman Cyril Moffett thanks the Club's Management Committee for



Cyril Moffett presides as Avril Nuttall, Chairperson of Medway H.I.P.S. holds the cheque. With them are Graham Dutton (he's an ex-patient and it's his birthday), Denise Dutton (right) H.I.P.S. Secretary and teacher for the Section, and Sister Nora Clark of the Children's Ward at Medway Hospital.

sponsoring the evening, also Denise Dutton and all the other helpers at the Swim - and the swimmers themselves and those who sponsored them.

## Love to Lisa



Little Lisa, 4 year old daughter of AS&RD Quality Technician Paul Zakrzewski and his wife Maureen, receives a cheque for £750 from the EETPU Centenary Fund. Sister Anna smiles happy thanks.

The cheque was pre-

sented by EETPU Senior Official Rodney Hurford at the monthly meeting of the GEC Avionics Branch of the Union. The money will help pay for special electronic learning aids for Lisa, who suffers from Cerebral Palsy.

The EETPU Centenary Fund, which was started last year to mark the first hundred years of the Union, has raised over £60,000 so far and is hoping to raise and distribute £100,000 per year to help members' disabled or handicapped children.

## A Taste of France!

We have received a Certificate signed by P. Condon, Chief Constable of Kent, which states:



This is to Certify that a contribution from GEC Avionics enabled 20 seriously handicapped or poorly children to have a 10 day adventure in the French Pyrenees.

It is through such generosity that the Kent Police Charity Team can continue serving the community and supporting those less fortunate than ourselves.

Thankyou

P. Condon  
Chief Constable

The children had a marvellous holiday based at Lourdes. They travelled in two specially adapted coaches known as Jumbulances, and were able to enjoy a number of outings and activities. These special people combined excitement and adventure with medical care and supervision, and parents and relations at home were able to relax knowing that the youngsters were enjoying themselves.

# FLYING HIGH

## CACD and a 3rd Year School Project

Third year girls and their teachers from Chapter School, Strood, visited the Company to accept a cheque from CACD which would enable their project on "Flight" to start.



Chris Humphris, CACD Divisional Manager, hands over the cheque. The Chapter School group are Miss Dore, Head Teacher; Mrs. Hewett, Deputy Head; and Miss Clesham, with pupils Rebecca Jarrett, Parenjeet Kaur, Rachel Brown, and Elaine Shedd.

The efforts by our Training Department to encourage links between Divisions and local schools resulted in a working relationship being formed between CACD and Chapter School. Following a number of discussions the third year girls (13 to 14 year olds), led by their teacher, Rose Clesham, presented a proposal to CACD, for a project on the "Theory and Practice of Flight".

All the third year, about 120 students, would be involved in a problem solving cross-curricular technology project centred around Science, CDT and Computing. The aim would be to satisfy one of the themes of the National Curriculum. Different groups would investigate the Physics of Flight, the requirements for "getting into the air and staying there" and the effects of wing shapes and controls.

Costs of materials were identified to enable a working wind tunnel, model gliders, kites, and a radio controlled powered glider to be built. CACD was requested to assist with these costs.

During the school's visit to receive the £400 donation from CACD, Rose Clesham remarked that "this project has enormous educational relevance to the students and offers an excellent opportunity to forge further links between education and industry".

On completion of the project a 'Fly-off Day' is planned - we hope to report this later on.

# Takings from 'Tickets' go to Telethon

## £300 for Charity

The Telethon '90 day on ITV provided the opportunity for MASD to undertake another of their fund-raising efforts. A raffle, master-minded by Pat Warner and Gary Turner of Production Dept, resulted in the grand sum of £300 being pledged for charity.

Contributions towards the prizes came from several local sources. Broadly speaking, the prizes were divided into 'Goodies' - things good for you such as fruit, and

'Baddies' - such as choos, cakes, and ciggies. Several, such as a haircut, a night out at a local night club, or wine, could have been placed in either category, according to the lucky winners!

Thanks are due to everyone who took part. It's worth noting that this is not the first time such a raffle has been held by MASD; an earlier occasion was the BBC 'Children in Need' appeal.

# ISD<sup>2</sup> and MASD jump to it

Two mixed teams of three men and three women each from ISD and one team of six men from MASD took part in the Joint Mayors' Charity Fun Assault Course Competition at the Strand in Gillingham on 22 July. Chris Bower tells the tale.

Arriving early the ISD teams had a distinct advantage as we were able to walk the course first and identify the possible difficulties, under the recording eye of cameraman Peter Jordan (ISD).

We found we were competing against approximately 30 teams from local companies and organisations such as the police, judo clubs, Savacentre, Halifax Building Society and Black Horse Financial Services.

The armed services were

also competing against each other with teams from the US Marines, US Air Force, Paratroopers, Commandos and the Ordnance Corps to name but a few. However, there was a slight difference as they had to run the course twice round!

ISD's B team ran first and managed to complete the course in 5 mins. 9 secs. Carefully observing this the ISD A team ran next and managed a time of 4 mins. 27 secs.

As these two teams were

mixed men and women(!) a great deal of teamwork was called for to help the ladies negotiate the more difficult obstacles. I personally had a large footprint on my back from Miss Jane Hilton as I was acting as a step for the ladies to get across a 6ft vaulting horse. Every member of the team had rope burns about the ankles from a rope suspended between two trees which we had to cross. Paula Brown also gained a large bruise on her derriere after a misunderstanding with Dave Hales who, although being the complete gentleman and helping her across the rope, dropped her.

The all-men MASD team ran next and finished with an excellent time of 2 mins. 37 secs. This inspired a bit of inter-division rivalry and the men from the two ISD teams

banded together to form the GEC Bulldogs, paid another entrance fee and ran the course again. Unfortunately someone (and no one will admit it!) incurred a time penalty of 20 secs. on the way round thus giving a final time of 2 mins. 51 secs. making MASD the victors.

Both our male teams recorded surprisingly good times as the paratroopers managed two laps in just over 5 minutes. Although it must be said that no-one in either team could have run another step after the first lap!

The MASD team came 4th overall and the 'Bulldogs' came 6th out of nearly 30 entrants. We were all very pleased considering we were beaten by the Rainham Judo Club A and B team and the Chatham Police.

ISD's team were sponsored by people within the

division and managed to raise a total of £172 for the Joint Mayors' Charity.

We would like to thank Laurie Hampson for giving us the opportunity to enter as we all had a great day out.

**ISD A team**  
Chris Bower, Dave Hales, Roger Fudge, Paula Brown, Jane Hilton, Joanne Witt.

**ISD B team**  
Steve Dann, Dave Bradley, Kevin Ward, Linda Shackleton, Jan Walker, Louisa Virleton.

**GEC Bulldogs**  
Chris Bower, Dave Hales, Steve Dann, Dave Bradley, Roger Fudge, Kevin Ward.

**MASD**  
Chris Bryant, Phil Stancliff, Mark Hitchmough, Chris Rossiter, Ian Smythe, Steve Mann.

## Rochester Airport (Sixth of Six)

by Arthur Prosser

## CHESS PROBLEM



## Obituary

A great many people will remember with affection **Bill Wilson** who died in hospital on 25th May.

Bill joined the Company in January 1956 as a fitter in the Toolroom, transferring to Training in April 1967, firstly as a Mechanical Instructor then as a Training Supervisor.

He influenced the lives of many young people during this latter period, encouraging and guiding them in their work as well as their outside activities, always ready to listen and advise.

Throughout his sixty five years everything Bill did was done to the full in both his work and leisure, from cycling in his earlier days to the many hours spent on the air as an Amateur Radio enthusiast – call sign G3YAK.

He took early retirement in January 1987 and moved to Norfolk with his wife Mary and one of his sons, looking after his new home and garden with the same enthusiasm as with everything else. Sadly these days were short lived but greatly enjoyed by both Bill and Mary.

To Mary and her family we extend our deepest sympathy and assure them we all have many happy memories of Bill.

*from Training Department*

**David Brien**, Senior Quality Assurance Engineer in Recording Systems Division, died suddenly on 8th June.

This came as a great shock to his friends and colleagues at Nailsea as he had been at work the previous day.

David had joined RSD in January 1986, after 11 years as Quality Engineer with MSDS at Portsmouth. This followed a career in the Royal Navy during which he rose to Chief Petty Officer.

He had contributed to the development of the Division and will be greatly missed by his friends at RSD and the Nailsea site. Representatives from Nailsea attended his funeral, and messages of sympathy have been passed to his wife and family.

*From RSD*

It is with deep sadness that we report the deaths of **William (Bill) Gillham**, for many years foreman of the Stove Enamel Department, and of **Glenn Philbrook**, a recent employee within CMS.

Continuing the tradition of pride in product, **Bill** and his team had over the years achieved many accolades for quality and professionalism. Although suffering from a serious illness over the past 3 years requiring many short stays in hospital **Bill** had continued to be a lesson to us all and drew admiration from many for his cheerfulness.

He was an inspiration to all he met, our deepest sympathy is extended to his widow and sons.

**Glenn's** cheerful outlook had made him a popular member of our staff. He collapsed whilst taking part in a fun run with the local Sea Cadet Corps who respected his memory by forming an Honour Guard at his funeral. Our sympathy goes out to his daughter.

*CMS wish to link these tributes with the professional and compassionate service provided by the ladies of the Company Welfare Department who we feel by their dedication are a source of comfort to the bereaved in times of great sadness.*

*From CMS*

We have heard with regret of the sudden death at his home of **John White**, on 16th June. **John** was Divisional Administration Officer in MASD for over eight years, and then had to retire early because of ill health in 1988. Prior to coming to Rochester, **John** had worked for MoD, following over 25 years in the Army. He leaves a widow and grown-up son.

*From MASD*

It is with great regret that we learned of the sudden death of **T V (Terry) Edwards** on 30th June at his home.

After working at GAv for 27 years, **Terry** took early retirement in August 1988, whereupon he established himself as a Consultant, maintaining contact with various Universities, carrying out Mathematical Research into Neural Networks.

He leaves a wife and three daughters to whom his friends and colleagues send their deepest sympathy.

*From SESD*

# Inventiveness Brings Its Reward

## 'Suggestion of the Year' Award goes to Dave Peck

**D**ave, a Quality Technician in Aviation Service and Repair Division, joined GAv as an apprentice and has now been with us for 20 years. He was presented with the 1990 Award by **Bill Alexander** at a small ceremony and lunch.

The cheque for £918 which came with the plaque, was assessed on the effort he put into the suggestion, the benefit to the company, and the Prize for the best suggestion.

Dave derived two computer programs to assist in fault diagnosis of BITE faults in the A320 Slat/Flap Control Computer. The first program allows the user to ADD, CHANGE, or CREATE a file from a selected Bite category, the second program, built from the created or changed file, allows any other technician to enter a Bite code and see a display of all previously known card and component faults.

One of the great advantages of this suggestion is

that it can be adapted for fault diagnosis on a variety of equipments.

**Bill Letley**, now LCSD's QA Manager and Chairman of the Suggestions Commit-

tee, says – "It is of interest that in the last four years, AS&R Division has won the Suggestion of the Year Award three times, so come on all the other divisions, don't let us get away with it,

keep your suggestions rolling in and you never know, one of you might be the proud recipient of a generous sum of money and a handsome inscribed plaque next year."



# PEDALLING HARD

## Sanj Sakaria's epic ride with FCD and the many thousand.

For "The Biggest Bike Ride in the World", the London-to-Brighton Granada Wheel Appeal sponsored run, our cyclists set off from Rochester at 4.45am, to be at Clapham Common by 6.00am. Typically, **Nige Munn's** bike had a puncture when it was unloaded from the company lorry (what a poor excuse for trying to avoid the ride!).

After a 6.15am start from Clapham the 'A' team shot off and stopped for 'lunch' just before 8.30am. This also gave

**Gary Lambkin** a chance to wake up properly. Dave 'what a stupid time of the day' **Hughes** caught sight of the young lady in pink lycra bottoms and decided to chase her. He never saw her face but apparently her back view kept him going.

The route of the ride is mostly downhill(?) and even the 'biggies' (e.g. **Morgan 'Kamakazi' McCulloch**) attained some extremely high speeds. Try stopping his weight down the hills!

The last hill, **Ditchling Beacon**, took its toll on the group, with only four people managing to ride up it. Mind you, even the posers with all the kit and 80 gear bikes were walking.

The ride from the top of **Ditchling to Brighton** is mostly downhill (just as well). The smell of the sea obviously inspired everyone, because most people finished with a sprint. (Shame about the **CACD ladies** – they rolled in



## Presidents in Active Control

The current Presidents of the SBAC and the RAeS have a common background in what are now called active control systems – something of a GAV speciality!

Ron Howard, now coming to the end of his term as President of the SBAC, and Geoff Howell, the new President of the RAeS, spent much of their technical careers working on automatic control and fly-by-wire systems. They both worked in the 1950s on developments arising from the RAE Farnborough team led by Dr Karl Doetsch, the inventor of aircraft artificial stabilisation, from which came the current active control systems.

Here they recall their past common interests at the Royal Aeronautical Society in London.



at 4.30pm.). The last FCD President finished about 1.00pm.

Next year, we intend to enter a much larger team to compete with the likes of Ford and Hewlett Packard. Maybe we can see who could provide us with support such as they did – hospitality tent, beach barbies, refrigerated catering. Good for the morale, if not just publicity!

The prime objective of this ride was to raise money for the British Heart Foundation (and not to see how many women you could charm on the way – Morgan). To this end the team raised approaching £2000 – and its not too late for further donations.

Finally, on behalf of all those who took part, I would sincerely like to thank Mike Smith for driving the lorry for us and meeting us in Brighton. Also thanks to GAV for paying

for the transport, and we look forward to a better supported and larger entry next year.

*"By the time we reached Ditchling Beacon, 5 miles from the finish – we were also finished. But we did complete the biggest ride in about 4½ hours!"*

Chris M

*"A good day out – some riders were not content with just doing 58 miles – they tried it juggling on unicycles or on a 12-seater. Thanks to Sanj for organising a great event."*

Dave W

*"It was only Nige, Dave, Pete, and me who had the sense to take a barbie – everyone else went to join the 3-hour traffic jam."*

Andy McK

*"Cycling from dawn to dusk, seemingly mostly uphill (? Ed) with 20,000 other head-*

*cases. An absolutely wonderful way to spend a Sunday!!!!" M*

These are the people on the bike ride –

C. Marsh, D. Walker, G. Lambkin, M. McCullough, N. Pickett, S. Sakaria, T. Sakaria, D. Hughes, I. Brimlow, I. Morgan, M. Hunter, P. Crundwell, A. McKenzie, G. Reeves, S. Crouch, N. Munn, N. Kirkwood, P. Redman, G. Redman, J. Hawker, D. Adams, D. Hebdige, D. Flack, H. Parmar, C. Colston, D. Elmore, J. Read, S. Read, A. Moss, G. Joyce, M. Smith, & H. Hall.

# NBG - THE REAL MEANING?

Last month's Stop Press noted FCD's second placing in the finals of the GEC National Business Game. Now the 'playoffs' have taken place, and Paul East has a shareholders' report of the event.

**FCD** Software Engineers Paul East, Jason Davies, and David Chronnell were finishers among 107 teams originally entered in the Game, nominally of 5 members but faced like many others with change and attrition. Tom Hamill and later Ray Dennis were our Advisers.

The Game is a yearly competition based on the management of a small manufacturing company over a simulated 15 month period. It involves making decisions about aspects of running a model company, for example pricing, staffing, wages, training, research and development, credit control, stock control, advertising levels, capital investment, delivery periods and production.

Entry is open to teams from any company, though the majority of entries are from British GEC subsidiaries. Teams have entered from as far away as Norway, America and Australia. This year, in the final rankings, there were no other GEC Avionics teams in the top 10, though a GSD team did enter the lower half of the top ten earlier on.

In the course of the competition, regular pro-

gress reports and results are assessed by the game Administrator at GEC Management College, Dunchurch, and rapidly changing merit orders are issued.

## The Final Stage

The playoffs, held over a weekend at Dunchurch, consisted of running the 'company' for a further year. At the end of this period the FCD team came in fifth. We think this result was mostly due to a poor starting position in the first period coupled with a bad policy decision about market behaviour.

The main feature of the playoffs was the sheer speed at which decisions were needed. Having become used to spending five-plus hours analysing each set of results, to be suddenly required to submit decisions within an hour was a great change.

Also, a few surprises were thrown at the teams. The first of these was a union negotiation with representatives of all our production workers. Playing the part of the union were four full-time negotiators from the APEX and MSF unions. Talks started 90 minutes after our arrival at Dunchurch, continued for the allotted two hours, through dinner and then another half hour.

The next surprise was an edict from our holding company ordering a certain policy of credit control. This last minute change was announced at 10 pm on Friday evening, with twenty minutes allowed to reconsider policy. Due to a lack of time to consider options we made errors in stockholding levels.

Finally, we were confronted with a Sunday budget debrief meeting with a GEC Main Board member. At this meeting all teams presented their forecast and actual figures for the previous year, together with their forecasts for the next year.



(L to R) Paul, Jason, and David at the doors of 'The Board Room', Dunchurch.

In conclusion, the playoffs weekend was hectic but quite enjoyable. We would have liked to have achieved a better result, but even to get as far as the finals was a first for GAV.

Now – who's going to enter the next NBG? Entries are called for by 17th September.

## Other GAV Teams taking part

**CACD** Neil Moulton, Pete Fellows, Chris Stubbs, Stewart Leinster-Evans, Alan Bristow. Adviser, Barry Smith.

**MASD** Mike Baxter, 'Ge'e' Khambay, Kevin Middleton, Donna Robinson, Dave Page. Adviser, Sue Wood.

**ISD** Ian Pound, Paul Ralph, Dave Stockey, Sue Keeble, Paul Foulser. Adviser, Dave Eldridge.

**ISD** Tim Mowatt, Linda Shackleton, Bob Gee, Alan Briggs, Paul Robson. Adviser, John Bezant.

**Personnel** Sarah Kenny, Peter O'Malley, Ben Morton, Paul Jarrett, Sarah Kellett. Adviser, Tony Williams.

**APD** Jenny Wilson, Kevin Church, Bruce Grant, Ian Smith, Fiona Skellett. Adviser, Dave Harris.

**GSD** Mike Grace, Joe Cardwell, Richard White, Rob Humphrys, Ian Brown. Adviser, Bob Curtis.

**GSD** Gary Pritchard, Steve Parker, Andy Hetherington. Adviser, John Keeble.

# EFA

# The EUROPEAN

The EFA programme, for which GEC Avionics has now received four prime contracts, is well into full scale development. It will make a major contribution to the advancement of technologies and management skills which can be applied to a wide range of civilian products. International teams have bid for most of the equipment; contracts are being awarded by Eurofighter to the prime or lead company in a team. That company thus holds responsibility for equipment development and team co-ordination.

The four-nation EFA (European Fighter Aircraft) is a canard delta, single seat, twin-engined aircraft, optimised in the air-to-air combat role. It has a basic mass empty weight of 9.75 tonnes, a gross wing area of 50m<sup>2</sup> and a thrust of 90kN per engine. Maximum level speed is higher than Mach 1.8, and take-off and landing distance approx. 500m.

The industrial Company responsible for EFA's development, Eurofighter/Jagdflugzeug GmbH, is based in Munich and is wholly owned by the four partner companies - Aeritalia, British Aerospace, CASA and Messerschmitt-Bölkow-Blohm. Engine development is undertaken by Eurojet GmbH, also based in Munich, and owned by Rolls Royce, Motoren and Turbinen Union, Fiat Aviazione and I.T.P. The Main Development Contract for EFA was signed on November 23rd, 1988.

Most of the equipment has been selected, and contracts are being awarded to suppliers, many of whom are forming international teams.

Eight Prototypes (including 2 two-seaters) will be built, 3 for Britain, 2 each for West Germany and Italy and 1 for Spain. The first will fly in Germany in 1992.

The current requirement is for over 750 aircraft.

## Head Up Display (HUD)

Airborne Display Division is leading a consortium with Teldix GmbH of Germany, Selenia of Italy, and CESELSA of Spain, who have now received the contract to develop the EFA pilot's Head Up Display, incorporating several innovations. The same consortium has already been selected to supply the Computer Symbol Generator (led by Selenia) and the Cockpit Interface Unit (led by Teldix). The three units jointly form the core of equipment which provides the pilot with greatly enhanced information and visibility of the outside world by night as well as by day.

The latest holographic HUD is a considerable advance on the system which was developed for the LANTIRN project for United States aircraft. Five years of intensive

research by the company has exploited computer aided design to create the ultimate wide-angle dual-mode diffractive solution to the problem of providing today's fighter pilot with the information he needs. The advanced optical concepts and the high efficiency holographic lens originated in the Queen's Award winning work of some years' duration undertaken by the Data Presentation group at Avionics Research Lab., Baddow, and in FARL/TSRL; this was followed by a major development programme in ADD.

A main feature is the single flat combiner, through which the pilot views the outside world with minimum obstruction, but with high brightness symbology, raster (TV like) display, or both superimposed. The entire design ensures maximum

pilot safety and preserves the large degree of pilot's head freedom necessary for the successful conduct of operations. It also includes an advanced flat panel display which combines fuel gauges with displays of communications and engine data, and the HUD control.

For mission debriefing purposes, the system also incorporates a cockpit colour television sensor which continuously records the outside scene.

The potential value of the development contract and production is over £54 million. GAv and its partners are confident that the innovative design will remain the state of the art in HUD technology for many years to come.



## Air Data Transducer (ADT)

Instrument Systems Division is leading the Consortium of GEC Avionics, Bavaria Avionik Technologie (BAT) of Munich, and Eurotronica of Madrid which has won the contract to develop the Air Data Transducer (ADT) for EFA. In this consortium GEC Avionics is the leading partner, responsible for overall design and programme management. Eurotronica will provide two of the four main electronic modules including the processor module, and BAT will provide the air data probe

module and special-to-type Test Equipment. GEC Avionics also supplies the STANAG 3838 Remote Terminal Pressure Transducer module, and chassis assembly, and will assemble and test the complete units. All software will be developed by ISD, and the ILS, Reliability/Maintainability and qualification programmes will also be performed by ISD.

The ADT marks a change in emphasis in ISD's highly successful Air Data business. The heart of the ADT is a

moving vane type probe developed by the French company, Badin Crouzet. By using such a vane, the ADT can provide in a single unit, the functions of static and pitot pressure measurement and a direct measure of the angle of airflow relative to the fuselage. A total of four ADTs are fitted to each aircraft, each providing pressure and flow angle information to the EFA Flight Control Computers via the STANAG 3838 data bus. The use of the moving vane eliminates errors due to angle of

incidence from which fixed probes normally suffer. It has the added advantage of direct measurement of all the air data variables on which control of EFA depends.

The contract, with a potential value of £47 million including production, confirms GEC Avionics' overall position as one of the world's leading suppliers of Air Data Systems. The EFA ADT programme provides the opportunity to extend our capabilities into the distributed Air Data Systems market.

## Total Fuel

Monitoring and Control Division was awarded the Company's first Prime Contract from Eurofighter to supply equipment for the EFA. The Division will develop and produce the Total Fuel Flowmeter which measures all the fuel delivered to the Eurojet EJ200 engines. With an initial value of £1.2 million, the contract has a potential total value with production in excess of £8m.

The equipment uses an innovative technique, designed by MCD, called the 'Flexwave Flowmeter'.

Whereas conventional flowmeters usually have rotating parts to measure fuel flow, the Flexwave Flowmeter is solid state, therefore more reliable, easier to maintain, and has higher accuracy over a wider flow range, and can measure fuel flow in either direction. The Flexwave Flowmeter contains a vibrating reed and the vibrations are measured with the fuel flow. The Flexwave Flowmeter can calculate the fuel flow rate. The reed measures accurately over a wide range of fuel

# Family SPORTS DAY



Last year...

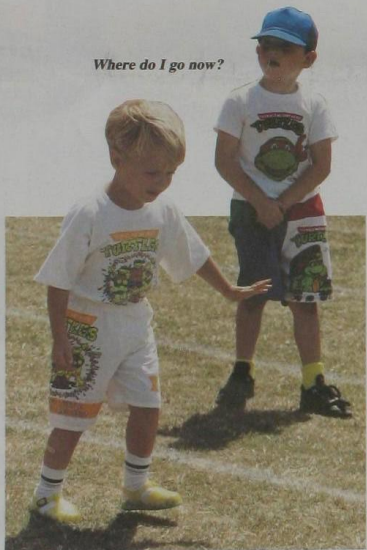


... and this year

A Souvenir of the Family Sports Day at the GAv/BP Kent Club on Sunday 15th July

## A sunny day for the Children

Where do I go now?



Fly-by-wire?



[www.rochesteravionicarchives.co.uk](http://www.rochesteravionicarchives.co.uk)

## Races For All The Family

Dads ...



David Reeves (GAv), 'Ben' Matthews (CACD), Roger Jenner (AS&RD), and Peter Carrington (MASD) in the Veterans' Handicap.

... Children ...



Sack and Track



... and Serious Athletes

In the 800 metres final, Graeme Saker (AS&RD), Ian Coaker (GAv), Sanj Sakaria (FCD), Mick Sheridan (FCD), Steve Flack (FCD), Stewart Gray (MASD), and Glenn Saphin (ISD).



## Family Sports Divisional Sports Champions



At the end of the Family Sports Day, there were still a number of the GAv team around to receive the Shield for the new competition.

The whole team numbered about 80, and was drawn from almost all of the service departments on the Rochester site.

EVENTS	DIVISIONAL SPORTS CHAMPIONS POINTS TABLE									
	GAV	ADD	FCD	MASD	AS&RD	ISD	SPSD	CACD	PCSD	CS
HOCKEY							1			
5-A-SIDE FOOTBALL	3½	5	6	½	½		5	6	4	
ATHLETICS	½	½	3	½	½					3
SWIMMING	5	6	1	2	4	3				
TUG OF WAR	5	6	4	1	2	3				
BOWLS	½	4	5	½	6	½			5	
NETBALL	6			3		4	1			
TOTAL	5	1	4	3	2	6	7	6½	6	5

The Table shows the points gained by the first six divisions in each competition. First Place = 6 points down to Sixth = 1. 'Equal' scores are calculated by sharing the points for that place and the one above.

## Competitions in progress

Football





# s Day Results

The Interdivisional Cups were presented by Mrs Edith Alexander



ADD won both the Swimming and the Athletics cups. Here, Alan Ward collects the Athletics cup. On the left is Jim Collins, who was behind much of the day's arrangements and in charge of the cups and medals. MASD's Hockey trophy is collected by Marguerite Blackwell.

Ken Rhodes coached AS&RD's Tug-of-war team of Alec Bain, Mark Ungar, Dave De-Knop, Paul Gorman, Ray Newman, Barry Rayment, and Roger Jenner.



Two 5-a-side football teams made the long trip from Nailsea. The PCSD team (in the red strip) were delighted to justify this by taking the Football cup home with them. RSD came third. In the picture are Welsh MacKendrick, Pete Luckhurst, Chris Coveney, Tony Smith, Alan Hannah, Steve Grimmer, Nick Camp, Andy Lockyer, Steve Cavanagh, Ricky Paul, Dave Adams, Sean McCloughlin, and Dave Teanby.



GAV's Bowls team, captained by Colin Goodman, with Peter Beby, Mervyn Goodman, and Dave Boynes.

points  
visions  
points  
culated  
below.

## Swimming



## Netball



## Bowls



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# Individual Results

## Athletics

### 100 metres

Men	sec
1 L Parsons (MASD)	12.0
2 M Forder (GAv)	12.1
3 S Robb (ISD)	12.3

Women	sec
1 K Newton (FCD)	14.1
2 S Willicombe (GAv)	14.2
3 L Mosse (ADD)	14.2

### 200 metres

Men	sec
1 M Forder (GAv)	24.7
2 L Parsons (MASD)	25.4
3 S Jury (ISD)	25.5

### 400 metres

Men	sec
1 G Saker (AS&RD)	51.9
2 M Forder (GAv)	52.5
3 S Hall (GAv)	55.6

### 800 metres

Men	min/sec
1 G Saker (AS&RD)	2:09.9
2 I Coaker (GAv)	2:14.2
3 S Flack (FCD)	2:15.4



Nicola Saker won Victor Ludorum (Ladies), Graeme Saker and Mark Chapman shared Victor Ludorum (Men). Cups were presented by Mrs Enid Howard.



Women	min/sec
1 S Willicombe (GAv)	2:30.6
2 L Shackleton (ISD)	2:48.6
3 L Mosse (ADD)	3:15.7

Women	min/sec
1 S Willicombe (GAv)	5:33.4
2 L Shackleton (ISD)	5:52.9
3 T Sakaria (FCD)	6:04.9

Women	metres
1 S Nash (ISD)	24.12
2 V Chapman (FCD)	21.36
3 N Saker (AS&RD)	19.88

Women	metres
1 S Nash (ISD)	30.50
2 S Holder (GAv)	26.44
3 W Logan (ADD)	25.74

### 1500 metres

Men	min/sec
1 G Saker (AS&RD)	4:19.4
2 S Flack (FCD)	4:40.4
3 S Beaney (GAv)	4:43.7

### Discus

Men	metres
1 M Chapman (ADD)	31.44
2 P Mayger (AS&RD)	29.66
3 S Small (TSRL)	24.74

### Javelin

Men	metres
1 M Chapman (ADD)	46.34
2 L Parsons (MASD)	45.26
3 I Matthews (SES)	37.04

### Long Jump

Men	metres
1 P Chapman (ADD)	5.67
2 M Hichmough (MASD)	5.65
3 G Dias (ADD)	5.51

Women	metres
1 K Newton (FCD)	4.47
2 N Saker (AS&RD)	4.21
3 G Evans (SES)	3.96

### 1500 metres Walk

Men	min/sec
1 S R Cheetham (TSRL)	8:14.1
2 M Craven (AS&RD)	8:18.7
3 J Kemp (ADD)	8:35.9

### Shot

Men	metres
1 M Chapman (ADD)	10.63
2 A Raine (ISD)	10.33
3 P Stancliff (MASD)	9.18

### Veterans 100 metres

Men	secs
1 G Cheetham (TSRL)	11.2
2 G Joyce (CACD)	11.7
3 R Jenner (AS&RD)	12.8

### High Jump

Men	metres
1 P Chapman (ADD)	1.83
2 A Lucas (ADD)	1.70
3 L Parsons (MASD)	1.65

### Inter-Relay

Men	Women
1 MASD	ADD
2 TSRL	AS&RD
3 ISD	GAv

## Swimming

### Victor Ludorum (Girls)

Kirsty Samuels (GAv)
Lisa Holmes (ISD)

### Victor Ludorum (Ladies)

Carol Knight (FCD)
Joan Murphy (ADD)

### Victor Ludorum (Boys)

Richard Jibb (ADD)
'Dan' Jibb (ADD)
Richard Gotting (ADD)

### Victor Ludorum (Men)

Mike Sweeney (ISD)
Ian Stitt (GAv)



Joan Murphy (ADD) and Carol Knight (FCD) shared Victor Ludorum (Ladies).



Hard work in a cool place on a hot day. George Graham (ADD) in action.

### Freestyle - 1 Length

Boys 8/12 Years	Sec
1 Richard Gotting (ADD)	14.41
2 Ian Snelling (ADD)	15.48
3 Sanjay Mistry (CACD)	16.86

Girls 8/12 Years	Sec
1 Lisa Holmes (ISD)	14.92
2 Kalli Samuels (GAv)	15.24
3 Kay Snelling (ADD)	16.95

Boys 13/14 Years	Sec
1 'Dan' Jibb (ADD)	15.37
2 Benjamin Trodd (GAv)	15.62
3 Paul Bonner (ADD)	20.03

Girls 13/14 Years	Sec
1 Sarah Moffett (FCD)	13.50
2 Ceri Samuels (GAv)	14.50
3 Emma Snelling (ADD)	14.50

Boys 15/16 Years	Sec
1 Richard Jibb (ADD)	12.60
2 Chris Jibb (ADD)	13.07

Girls 15/16 Years	Sec
1 Kirsty Samuels (GAv)	14.38

Men 17/30 Years (2 lengths)	Sec
1 Lee Thompson (MASD)	22.99
2 Mark Baldwin (ISD)	23.05
3 Alan Stitt (GAv)	26.01

Ladies 17/30 Years	Sec
1 Carol Knight (FCD)	13.09
2 Jane Ah-Thew (FCD)	13.41
3 Sharon Baldwin (ISD)	14.48

Men 31/50 Years	Sec
1 Mike Sweeney (ISD)	12.27
2 Colin Matthews (FCD)	12.37
3 Philip Holliman (ADD)	13.23

Ladies 31/50 Years	Sec
1 Jane Wallace (ADD)	17.82
2 K. Earl (FCD)	17.99
3 Ann Hollands (FCD)	20.33

Men 50 Years & Over	Sec
1 Ian Stitt (GAv)	13.02
2 Noel Beby (GAv)	13.77
3 Dave Williams (ADD)	15.27

### Ladies 50 Years & Over

1 Joan Murphy (ADD)	23.05
2 Cecilia Barton (AS&RD)	24.76

### Back Crawl - 1 Length

Boys 8/12 Years	Sec
1 Richard Gotting (ADD)	17.85
2 Ian Snelling (ADD)	19.92
3 Sanjay Mistry (CACD)	22.18

Girls 8/12 Years	Sec
1 Lisa Holmes (ISD)	17.38
2 Kalli Samuels (GAv)	17.58
3 Kay Snelling (ADD)	20.41

Boys 13/14 Years	Sec
1 'Dan' Jibb (ADD)	20.08
2 Paul Bonner (ADD)	21.68
3 Benjamin Trodd (GAv)	22.27

### Girls 13/14 Years

1= Ceri Samuels (GAv)	17.50
1= Emma Snelling (ADD)	17.50
3 Sarah Moffett (FCD)	18.46

### Boys 15/16 Years

1 Richard Jibb (ADD)	16.00
2 Chris Jibb (ADD)	17.91

### Girls 15/16 Years

1 Kirsty Samuels (GAv)	17.27
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### Men 17/30 Years (2 Lengths)

1 Mark Baldwin (ISD)	29.83
2 Lee Thompson (MASD)	29.85
3 Alan Stitt (GAv)	29.91

### Ladies 17/30 Years (1 Length)

1 Carol Knight (FCD)	16.21
2 Jane Ah-Thew (FCD)	18.15
3 Sarah Barton (AS&RD)	18.24

Men 31/50 Years	Sec
1 Mike Sweeney (ISD)	14.30
2 Colin Matthews (FCD)	14.66
3 Philip Holliman (ADD)	18.97

Ladies 31/50 Years	Sec
1 Ann Hollands (FCD)	21.27
2 Jane Wallace (ADD)	22.03
3 Glynn Fry (AS&RD)	22.39

Men 50 Years & Over	Sec
1 Ian Stitt (GAv)	17.93
2 Noel Beby (GAv)	20.15
3 Trevor Wilkinson (SES)	21.43

Ladies 50 Years & Over	Sec
1 Joan Murphy (ADD)	26.97
2 C Barton (AS&RD)	30.26

### Mens Relay

Men	Min:Sec
1 ADD	1:09.07
Richard Gotting, 'Dan' Jibb, Richard Jibb, Dayne Reast, & Philip Holliman	
2 GAv	1:26.52
Sam Mayo, Christopher Brown, Benjamin Trodd, Alan Stitt, & Ian Stitt	
3 AS&RD	1:28.13
Mark Newman, Neil Barton, Carl Jenner, Steven Richards, & Ray Newman	
4 CACD	1:30.89
Christopher Moore, Sanjay Mistry, Andrew James, Russell Harris, & Graham Moore	

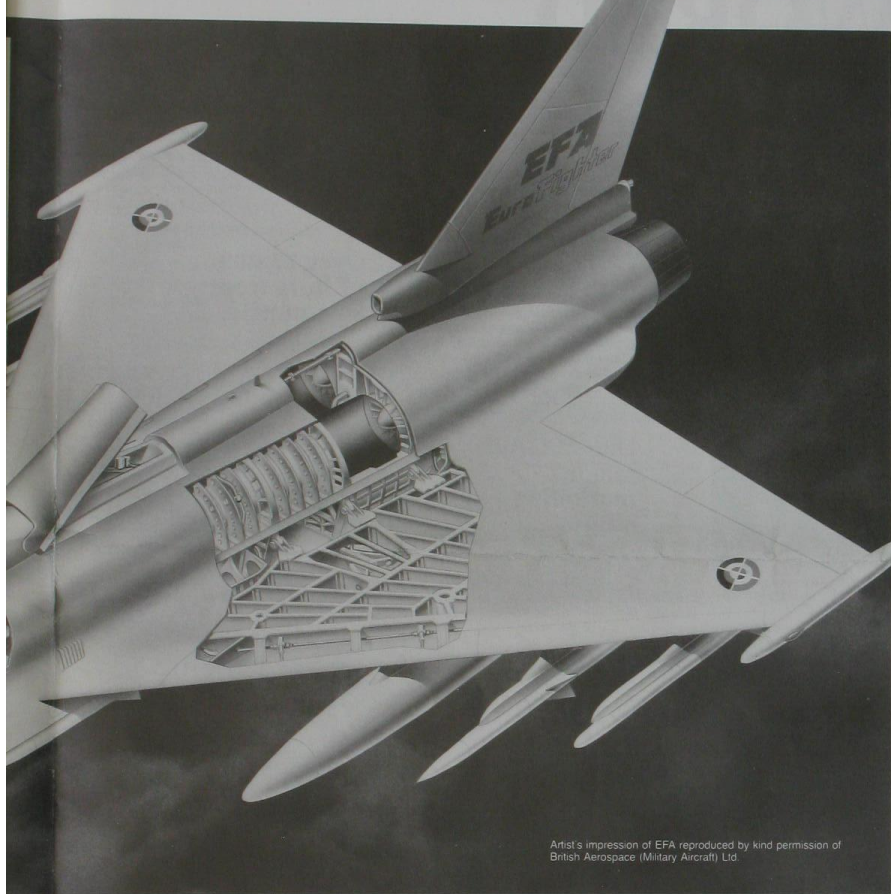
### Ladies Relay

1 GAv	1:27.23
Kalli Samuels, Ceri Samuels, Kirsty Samuels, Ann Fairclough, & Linda Samuels	
2 ADD	1:34.87
Kay Snelling, Emma Snelling, K B Holliman, Jane Wallace, & Joan Murphy	



Here are some of the children who took part in the H.I.P.S. Splash Gala, when well over £2000 was raised for Medway Hospital. Story on Page 2.

# PEAN FIGHTER AIRCRAFT



Artist's impression of EFA reproduced by kind permission of British Aerospace (Military Aircraft) Ltd.

## Flight Control Computer (FCC)

Combat Aircraft Controls Division is the leader of the consortium of GEC Avionics, Bodenseewerk of Ublingen, Germany, Aeritalia of Turin, and Inisel of Madrid, which has been selected to supply the Flight Control Computer.

This is the core element in the EFA full-time digital fly-by-wire flight control system, which stabilises and controls the aircraft through the 'canard' foreplanes, leading edge flaps, trailing edge flaperons, and rudder. The outstanding agility and manoeuvrability throughout the flight envelope are features of the 'carefree handling' already proven on experimental aircraft.

The quadruplex design ensures that the system can survive two failures without loss of specified performance. This integrity means that no reversionary mechanical or electrical flight controls are needed – the origin of the term fly-by-wire. Based on 32-bit microprocessors, the FCC contains ADA software developed from earlier work on a civil aircraft project.

The computer uses the latest Application Specific Integrated Circuits (ASICs), designed and developed by CACD to maximise performance and reduce system size and weight. The devices are manufactured elsewhere in GEC. Comprehensive built-in test will provide continuous system monitoring to assure easy system maintenance in service conditions.

The FCC and the whole FBW system are the vital key to the operation of EFA, a single-seat aircraft with a very busy pilot.

The award of this contract is the result of over 16 years of investment by the company, and development of the digital fly-by-wire concept in CACD and its predecessors, with vital assistance from other divisions. The programme started with the system installed by BAe for the Jaguar Active Control Technology demonstrator aircraft. That first full-time quadruplex system, flown in 1981 in an aerodynamically stable aircraft, was followed in 1984 by an enhanced system in a deliberately unstable aircraft configuration. The technique was thus proved as a way of safely implementing an extremely agile performance.

Farnborough '88 saw the first public demonstration of the next derivative, the new EAP – Experimental Aircraft Programme – machine. That aircraft led directly to the design of the EFA.

The GAV led consortium has now been awarded the development contract which with potential production orders has a value in the region of £135 million. This follows a long record of successful collaboration on European projects including the Tornado, the Aeritalia-Macchi-Embraer AM-X, and the EAP.

## Fuel Flowmeter (TFFM)

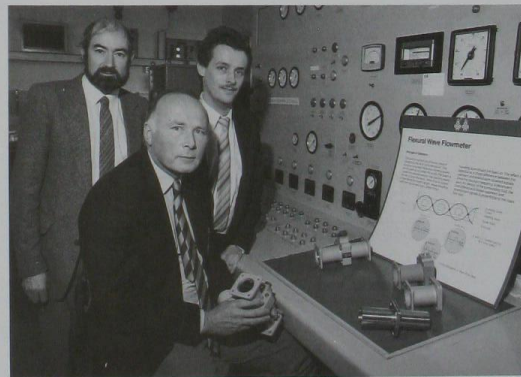
conventional usually contain to measure the the Flewwave solid state and reliable and maintain. It has a key over a wider and can measure their deflection. ave Flowmeter vibrating vane, rations change uel flow. By e vibrations, it the fuel mass The technique rately over the of fuel flow

experienced during a flight, from the low rate of an idling engine at high altitude, to the high rate for maximum afterburner power at low altitude. This ingenious technique has been developed by Monitoring and Control Division over seven years under the guidance of John Rowland. Fuel Flow Engineering Consultant with the initial research carried out at the Research Laboratories, Baddow. The electronics were developed by John Dredge of the Division's Electronic Design Team under the leadership of

Graham Mason, Chief Systems Engineer. For the EFA contract, development work will be carried out by MCD's Engineering Department. The manufacture of 30 prototypes will be shared between Instrument Systems Division and Teldix GmbH of West Germany. Teldix supply machined parts while ISD manufacture the electronics and carry out final assembly and test. To aid calibration and testing of the Total Fuel Flowmeter, a new Production Fuel Flow Rig is to be installed in the existing

Fuel Flow Laboratory near the Phase III building. This contract extends the range of true mass flowmeters which started in the mid-fifties and which the Division has successfully supplied since then (as Powerplant Systems Division) on such aircraft as Tornado, AV-8B/Harrier and the civil Airbus A320 and Transall aircraft.

Graham Mason, John Dredge and John Rowland (seated) in MCD's Fuel Flow Lab, showing the Total Fuel Flowmeter and its component parts.



# GAV ON SHOW TO THE WORLD



One important visitor to the GEC-Marconi stand was Tom King MP, Secretary of State for Defence. In the picture he is talking with Marian Moon of GSD, with Peter Rowell (GSD) and Ray Reese looking on.

## BAEE

The British Army Equipment Exhibition at Aldershot, organised by the MoD in June, was the venue for one of GAv's major marketing efforts. Over 25,000 visitors included Ministers, senior military staff, government officials and industrialists from 84 countries, who saw the products and capabilities of over 180 British equipment manufacturers. Among these, the GEC-Marconi stands showed equipment from a dozen of its companies, and at the hospitality chalet we were able to welcome many important existing and potential customers for land-based systems.

'APES' artillery positioning system was on show by their customer GKN Defence, and they also joined with ADD, CACD, and GEC Sensors in a

**Over 25,000  
visitors from  
84 countries**

### One of GAv's major marketing efforts

GAv's principal contributions were from GSD, FCD, ADD, SEDS, with other divisions participating. GSD's

display on the theme of the Fighter Helicopter. Equipment such as NVGs, helmet mounted displays and thermal imaging FLIR can combine with the addition of digital maps and terrain referenced navigation systems, resulting in a highly capable aircraft able to operate by day and night.

FCD's Phoenix Battlefield Surveillance and Target Acquisition System, again together with GEC Sensors, is already destined for the British Army. Its Remotely Piloted Vehicle - unmanned aircraft - was prominently displayed as an outdoor exhibit with the rest of the system. SEDS showed their latest ORION.

## FARNBOROUGH INTERNATIONAL '90

"FI90" - one of the world's most important market places for the huge aerospace industry. GAv's contribution is a major part of a carefully planned and co-ordinated exhibition which will convey a striking impression of the competence and capability of the GEC-Marconi Group. After incorporating parts of Plessey and Ferranti International, GEC-Marconi is now Europe's leading defence electronics contractor, and its largest and broadest ranging avionics company in both civil and military areas. It is that image that needs to be displayed for an ever more discriminating and competitive market.

This September, nine GEC-Marconi companies are represented at the Show, together with three GEC sister companies with aerospace interests. They combine in a co-ordinated GEC-Marconi presence which

includes the main stand and display, an outside area and the "chalet" for hosting and entertaining company guests and customers. This year much of the responsibility for "putting the show on the road" is in the hands of GEC Avionics, as agents for GEC-Marconi, and the monumental task started just a year ago.

The indoor stand in the Main Exhibition Hall is a focus of interest for visitors. It is not a showcase for the entire range of the Group's products, but a meeting place where we and our potential clients can discuss the Group's activities in an environment which reflects our total capability. Our 1990 central theme is the European Fighter Aircraft, chosen as a project which illustrates the range of our products. Surrounding a spectacular model of EFA, the various companies have their own

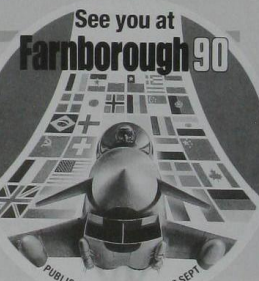
display areas for showing their wares and talking business, with specialist stand-manners on duty to respond to all enquiries.

The Chalet hospitality is a vital element of Group and Company customer relations. The 4000 or so guests invited from the UK and overseas are nominated by companies and divisions as being important to their business - often by more than one sponsor. A timely and efficient invitations system is vital to ensure that our guests are received and looked after by the right company people, from Board level downwards. To handle this enormous administrative task a specially designed programme was installed on a computer at Rochester and has been in constant use for many weeks now - but with the "personal touch" much in evidence.

Aerospace and specialist

correspondents will come to Farnborough from throughout the world, and the media they represent are of particular importance to the company as a link with the markets. To assist them, press releases, personal briefings by executives, and a company "Press Breakfast" conference are all used.

If the 1990 Air Show is as



successful as it promises to be, prospects for much vital future business for the company can be secured. That's what Farnborough is all about.

## Synchronised Gliders

For the second time, GEC-Marconi is sponsoring the Synchron Flyers to perform in their graceful, silent acrobatic show during the Farnborough flying display. In 1988 their performance provided the finishing touch to an excellent flying programme.

In sponsoring these gliders

GEC-Marconi is expressing its admiration for the skills of all aircraft pilots through what is one of the purest forms of flight man can experience.

This year the Synchron Flyers will be performing on the first 3 and last 3 days of the show.

# GSD 'START' at SANDRINGHAM

Bob Ruggles and John Stevens spent two days in Norfolk for the filming of BBC's 'Tomorrow's World' at Sandringham House in May. The programme featured the seven finalists for the Prince of Wales Award for Innovation and Production. Here is John's account of the preparations and their meeting with Prince Charles.

On the first day, the START gyroscope was the first of the competing products to be described for the cameras by the presenter Howard Stapleford.

Filming is like an interactive design process. Just when everything appeared faultless to the uninitiated, so the production team would film once or twice more to achieve perfection.

The process seems to the outsider to be—lots of splendid equipment, lots (and lots) of people, lots of chat, outbursts of controlled panic, lots of action, more chat, more action, maybe more panic, then suddenly 'Are you happy Fred? Are you happy Bill?' etc. 'Right, everybody's happy' and bingo, 30 to 60 secs of perfection (to us) on the screen.

So off they go for the next shot.

Somewhere during the proceedings we met The Producer who actually showed us our part of the script contributed by our assistant producer. We made several 'helpful' suggestions and went off and concocted our own versions—which were the ones actually used. This meeting was just like any other management meeting, we went off being sure/fairly sure/not quite sure what had been agreed—but anyway we would sort it out at the next meeting. What next meeting!

## The Big Day

Day 2 dawned, with 7 am breakfast before joining the BBC for the inevitable bacon sandwiches. Our props started to arrive. The Lotus grand prix car was already there slightly mis-shapen from being man-handled by a joint GAV/BBC crew on Day 1. Then the Lotus Excel with active suspension using our START gyro was delivered, but the almost

brand new red Lotus Elan was just the Lotus man's runabout.

The astronaut's helmet which was to be one of our main props arrived from the RAF Institute of Aviation Medicine. It does contain a START gyro but there was a danger that it would dominate our part of the show because it looked interesting and was a nice colour.

Luckily we were able to watch the first exhibit being filmed with the Prince of Wales and see our first fellow sufferers going through it.

Immediately after this Prince Charles and his entourage moved off and fortunately for Bob Ruggles stopped for an introduction very close to him. This then resulted in an early meeting with the Prince for Bob which no doubt reduced the tension for him (you only have to bow and say Your Royal Highness the first time you meet). No such luck for yours truly who was standing on the opposite side.

We were due to be filmed later in the morning, then after lunch, then 4 p.m. and eventually at 5.30 p.m. It hardly makes for a relaxing day. We did use some of the time usefully at Lotus Engineering who have fitted out a dozen cars with our START gyro and sent six of them to General Motors in Detroit. We also had plenty of time to learn our lines, as the BBC didn't offer us non-professionals the use of their nice Portaprompt machine.

I spent a lot of my time repeating over and over again 'Institute of Aviation Medicine' which is a bit of a tongue twister (try it). Obviously it was time well spent the way it came out on the screen!

## Production

Finally, after a couple of hours in the sun in the gardens overlooking the lake watching more filming of more victims, we were about to be on. Everything was positioned exactly where it was the first day to give the impression that everything had been filmed on the same day. But the one thing that had definitely moved was the sun, and we were positioned so that we were looking straight into it just over the Prince's head.

After introductions and a quick informal discussion to settle us down Prince Charles was given his instructions. 'Just drive this car (never driven it before) away and drive it back in to more or less

exactly where it is now (in a courtyard with several people and things around the edge) at a slight angle to this table where these two are standing' (somewhat stiffly). He did it beautifully, twice—and with that long bonnet never more than 18° off target.

Between the three of us and including an equipment failure (not ours) we did it in about 2½ takes. Not bad or perhaps the BBC team wanted to get home that night.

We finished on the lawn in front of the house for the presentation of the award for the "Winner of the '80s"—we were the audience and you may have recognised our shadows on the grass behind the award winner.

So ended the two days that proved a most interesting experience and a privilege to take part in. We returned home without any art treasures or silverware in our suitcases.

The seven finalists now go forward to the Production Stage which runs until early 1992, after which the overall winner will be selected. Watch this space.

# "FIRST OFF" FOR GERMANY



Over the next five years, 161 Central Air Data Computer units are to be supplied by ISD through the prime contractor, MBB, in a German Defence Ministry programme known as ICE (Improved Combat Efficiency) for Luftwaffe

F-4F aircraft. The established Phantom II fighters are being upgraded to give modern combat capability, especially against multiple targets.

In April, ahead of schedule, the first CADC was handed over to Herr Neuert, Programme

Manager, and Herr Buche from the German Government QA Department.

Hosted by Neil Wolford (Principal QA Engineer) they are watching Barry Cook (Leading Hand, Test) perform the final acceptance test.

# BETTER THAN YOUR DIGITAL WATCH

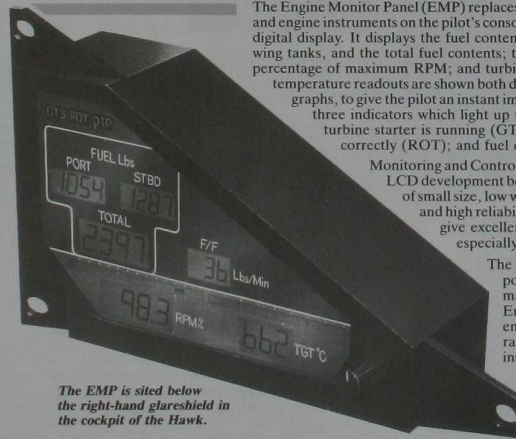
## MCD's new Cockpit Display

The innovative Engine Monitor Panel which is to be supplied to BAe for the Hawk 100/200 will be the first GEC Avionics production contract for Liquid Crystal Displays (LCDs), using the latest 'Reverse Contrast Twisted Nematic' (RCTN) technology. MCD's Displays Team, under the leadership of Project Manager Trevor Spearpoint, has spent six years developing this technology, in conjunction with the LCD manufacturer, to achieve a high contrast, high readability display suitable for the cockpit environment.

The Engine Monitor Panel (EMP) replaces a range of electro-mechanical fuel and engine instruments on the pilot's console with a lightweight, highly reliable, digital display. It displays the fuel contents of the port wing and starboard wing tanks, and the total fuel contents; the fuel flow rate; engine speed in percentage of maximum RPM; and turbine gas temperature. The speed and temperature readouts are shown both digitally and as thermometer-style bar graphs, to give the pilot an instant image of engine status. There are also three indicators which light up to inform the pilot when: the gas turbine starter is running (GTS); the compressor is rotating correctly (ROT); and fuel dip (DIP) is taking place.

Monitoring and Control Division has chosen to invest in LCD development because of the inherent advantages of small size, low weight, low power consumption and high reliability. These liquid crystal displays give excellent contrast and clarity, especially in bright sunlight.

The Division is strengthening its position in the engine instruments market by offering the inclusion of Engine Health Monitoring within engine displays, and by extending its range to include other cockpit instruments.



The EMP is sited below the right-hand glareshield in the cockpit of the Hawk.

[www.rochesteravionicarchives.co.uk](http://www.rochesteravionicarchives.co.uk)

## GAv Long Service Awards & Retirements

### 25 Years' Service



**Tony Broodbank**, Senior Design Engineer in GSD, has been in the division since he joined us from ICL as Design Engineer; he has worked on many big projects right through from Jaguar days to the

present work on START. Tony's outside interests include gardening, woodwork, and walking. Divisional Manager Bob Ruggles handed over Tony's presentation barometer. (A)



**Ken Lark** of GSD, with 36 years' service in Fisher, ISD, Gyro and GSD. Ken has been an Inspector for many years. (A)



**Ken Read**, Buyer in ATED, left before the name change after a total of 27 years in the division, in Stock Control and Buying.



**Stan Payne**, Senior QA Engineer in ADD. All of Stan's 27 years were in that division. (B)



**Mary Knight** has been Library Clerk in (old) FCD and then CACD, for over 12 years. (A)



**Gordon Watson**, Quality Manager of APD (Borehamwood) has built up over 30 years of service – he has been Chief Engineer and Technical Manager of X-ray products, and in this latest post for 15 years.



**Stan Dale**, 27 years as Inspector, has been in many divisions including the former Naval Weapons, MACD, TACD and ACD, but IND/GSD have formed the major part of his experience. (A)



**Geoffrey Cook** has spent most of his 20 years in Project Control in ACD/MASD, and CACD. (A)



**Les Wilkinson**, Senior Estimator in FCD, has been with the company for 11 years. (A)

### Retirements



'Peter' Thomas of ISD. 33 of Peter's 41 years were in AEID/ISD, largely in the Model Shop of which he was Foreman for ten years. A long career in our industry started with Short Bros just as war broke out – when he was 14. (A)



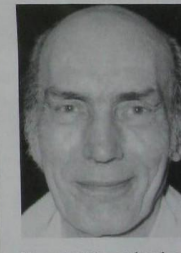
**Alf Herrington**, Principal Draughting Engineer in SESD, completed 36 years with the company, 30 of which were in the former ATED – out of a total working life of 51 years. (A)



**Henry Stedman**, Publications Manager in AS&RD, has 30 years – and one day – of service at Rochester, much of which was as a draughtsman; he was Chief Draughtsman in ADD for several years before moving to AS&RD in his latest post. (B)



**Dave Harding** of Goods Inward Inspection in APD, retired after 12 years' service.



**Harry Medhurst** has been an Inspector in CMS for ten years, and also had earlier periods of service with Elliotts and succeeding companies. (A)

## GAv Sports & Social Club News

### 3-1 to MASD Inter-Divisional Football Final

This year's game was played on a fine evening on 26th June between CACD and MASD. After an evenly played first half MASD who had pushed forward were two nil up. CACD came back with a goal into the second half but just couldn't get back at the MASD team, who won the game three goals to CACD's one. Good refereeing and linesmen added to this enjoyable final. After trophies were presented at the Club House, it was a chicken and chip supper followed with more football – World Cup style this time!

### The Splash is Bigger Great news from the Swimming Section

In two recent Galas the swimming squad has had outstanding victories against old rivals Faversham, Sittingbourne and Beaver.

At a Gala at Faversham on 9th June our team won against Sittingbourne and Faversham. We fielded a young team, some had to race against swimmers 4 years older than themselves, but they all swam strongly to achieve an overall win.

On 23rd June we staged a home gala at the Social Club against Sittingbourne and Beaver. Our swimmers rose to the occasion, with the result that we achieved an incredible 32 wins out of the 50 events, winning the gala by a tremendous margin.

Well done squad – when the going gets tough, the tough get going!

– Eric Gilroy

# Not as bad as it looked - a bit of bad luck

**Eric Fosbeary, team manager and crew member for our company entry in the Isle of Wight 24-hour yacht race, brought back a log of the event.**



Skipper and crew, Paul, Kate, Eric, and Alan, with Ian and Tony behind.

Wednesday 13th June saw the six crew members departing for Port Solent, all kitted out and ready to represent GAV in this year's Air Canada Industry Sailing Challenge. We were to be in the first heat in the 24-hour race planned to circumnavigate the Isle of Wight twice in 24 hours, weather, wind and tide permitting. The whole Challenge is sailed in five heats each of 14 identical boats, 36ft sloops 'Beneteau 355' chartered from SunSail International of Port Solent near the top of Portsmouth Harbour.

So it was that our skipper Kate Twynham (Senior Software Engineer, FCD) and her intrepid crew took command of 'Serpentis'. They were Paul Barrett (Principal Systems Engineer, MAsD) as Navigator; Ian Dance (Project Manager, CACD) Foredeck man; Tony Heritage (Project Engineer, GSD) Sail Trimmer; and Alan Fosbeary from CMS as Winch Grinder and Gorilla - every boat needs one of those! I was part-time Cook and moveable ballast.

## At the ready

Thursday morning dawned grey with the shipping forecast predicting Force 3 easterly with overcast all day. While Kate attended the skippers' briefing, the crew familiarised themselves with the boat's tackle and equipment. It was late morning when we slipped the mooring and took our place in the deep-water lock into the Harbour. The trip out to the Solent took us past HMS Victory, HMS Warrior, and HMS Dolphin, the Navy's underwater training establishment on shore at Gosport.

The Race was to start at 1300 hrs on a yellow marker buoy just outside the harbour entrance lined up with the race committee boat. The course was to be clockwise round the Island with the finishing line off Cowes. The pre-race manoeuvres were difficult and congested with 14 36-footers all jostling for the same spot on the line - impressive for spectators but a bit heart-stopping for the crews. Ian on the foredeck was calling converging yachts to Kate on the helm, while Tony, Alan and Eric stood by on the sheets ready to pull or slacken the ropes so as to position 'Serpentis' right on the line at the exact moment of the starting gun, with the boats approaching the line only inches apart.

## Good Start - then Disappointment

The gun - everything hard in on the wind and away, then a second gun. Someone over the line early, heart stops while the starter calls the sail numbers on VHF but it's not us! Two peel off and go round for re-start while we head for the forts off Bembridge with the crew on the weather rail. Although the wind was only Force 3 the boat was heeling nicely and it was soon clear that the GAV boat was clear of the fleet, five or six of us had made a good start but the rest were in some disarray on or around the line.

As 'Serpentis' tacked into the wind it became obvious that another boat was gradually catching us - the gaps when tacks crossed were getting smaller, and then the unthinkable - they overhauled us. What were they doing that we weren't? When we discovered a small adjustment was needed on a pulley block leading the genoa sail sheet back to the cockpit, we soon picked up as fast as the other boat, if not faster. At this point the crew noticed that most of the fleet were heading into Bembridge Bay instead of using our off-shore route to a turning buoy. This led to the biggest disappointment of our race as it became increasingly evident that the inshore boats had in fact made excellent speed and were stealing a march on us. While we were embroiled in our tacking duel covering what we thought was the danger, the rest of the race had gone away and were now leading us, leaving us from first to next to last. Disappointment wasn't the word!

## The Haul Back

Now the crew set about the opposition, and right round the back of the Island doggedly stuck to the task of overhauling. By the time we reached The Needles at the western point, we had overtaken three. Now, back in the Solent heading towards Cowes, Kate's expertise in the difficult local tides and conditions came into their own.

The sailing instructions stated that two green markers were to be passed inshore - on our port side. After rounding the Needles, unwary sailors can be swept out into the channel in strong tides towards Southampton and away from the

buoys. Kate explained that we must keep close to the shore to avoid this. In the growing dusk and a failing wind we sighted the first of the buoys, and there were five boats anchored on the 'wrong' side of the marker, quite unable to find enough

wind to get them back and round the buoy on the correct side. 'Serpentis' ghosted past the mark and over the finish line for the first time. It was after midnight and now we were in fifth place - maybe things weren't so bad after all!

## The Final Stages

Now with no wind, we drifted on into the night. Contact - difficult at times - with race control by VHF revealed that the leader was now a mile ahead (1 hour in front), with the fourth placed a half hour ahead and the next astern a further half hour. It was obvious that the tides would now play a major part in the outcome of the race. And so it was. As dawn broke all boats from fourth downwards were going to have to fight foul tides, while the same current was carrying the leaders further ahead.

Soon, in the not inconsiderable tide and a very light wind we heard other boats starting to retire from the race. Then, in increasing wind conditions the GAV boat drew ever further

away from the only other boat still in sight, the sixth placed. But it later became clear that the fourth boat had also retired, and we had battled on believing we were still fifth.

Finally, as we were just short of the southern-most point of the Island at St. Catherine's lighthouse, our 24 hours ran out and we turned and motored back to Cowes.

## So near but yet so far

Here we found that only the first three boats in favourable tides had managed the round-the-island trip twice, with the leader, Quad Electronics, making 23 hrs 36 mins, the others close behind. And GAV's 'Serpentis' was fourth. But the crew believe that lessons learned, given another crack next year, could be applied to do an even better performance. Who knows - 1991 could really be our year!

**Thanks and Congratulations to a 'magnificent crew'.**

# Splash Gala for the Family Day

The Swimming Splash Gala on Family Sports Day was a self-contained event, for which the final points counted towards the Divisional Championship. Eric Gilroy gives 'the inside story'.

Sports Day dawned fine and warm, just for a change. At 9.30 on Sunday morning the aspiring Duncan Goodhews and Sharon Davies began registering for the morning's gala. The T-shirt printers had obviously been working overtime.

This day was the culmination of many long hours of blood, sweat and alcohol by the Gala Committee, begun back in the winter, planning and drawing up the rules. The Committee decided that in order to reduce the risk of mass disqualifications, this year was to be a "splash gala" as opposed to one run to full ASA rules. There was to be only one rule - "Obey all the rules".

And underway, the pace was fast and furious with officials dashing nimbly all over the place holding bits of paper with names, times and placings on them. They had obviously trained very hard for the Gala. Every so often this was interrupted by several people in the water.

For the first time, the starting blocks had been moved to the deep end in order to confuse the officials, which it did very successfully - there were cries of "is this lane 1 or 5?" "why is he swimming in that lane?" - (Lane 1 is conventionally to the right of the swimmers). The solution seemed to be to ask the swimmers their names at the end of a race as they stood in the water red-faced, fighting for breath and wanting to die.

For two and a half hours the competition was very exciting

and to a remarkably high standard. Without exception, all of the swimmers should be congratulated on their board, with GAV a creditable second. What the results don't tell themselves on their own show is that all of the swimmer performance. The Swimming Section talent scouts were that the warmth and there taking notes - they need enthusiasm of the spectators aspiring young swimmers and was extended to all participants whether serious swimmers

or those there just to have a good time.

Congratulations to the swimmers for taking part and to the Swimming Section for staging such a professionally run Gala.

Comments heard at the poolside:

- "Are you sure this pool is only 25 yards long?"
- "I could have done better but..."
- "... the lane ropes got in my way."
- "... I didn't hear the starter."
- "... my foot slipped on the block."
- "... I'm only used to a 50 metre pool."
- "... I was saving myself for the final."
- "... I haven't been in training for some time."
- "... my hat/goggles/trunk came off."
- "... this is not my best stroke."



GAV's Ladies' Relay team. In front are Ann Fairclough, Kalli Samuels, and Ceri Samuels (l-r), with Kirsty Samuels and Linda Samuels behind. Kirsty shared Victor Ludorum (Girls), and Linda was also one of the many hard-working officials to whom special thanks are due.

## CHESS PROBLEM SOLUTION

### ASSOCIATION OF IDEAS

- Key 1 Qd7! Waiting
- 1... Sxd7 + 2 Rg8 mate
- 1... Se6 + 2 Pf8 = S mate
- 1... Sxg6 + 2 Pf8 = Q mate
- 1... Rg8 2 Pxf8 = Q mate
- 1... Pg3 2 Qh3 mate

Many problems are combinations of ideas, and this blending of favourite themes of cross-checks and promotions is a good example. A Queen move off the top rank seems to tempt fate by exposing the White King to discovered checks, but 1 Qd7! is quite safe (not 2 Qc7? Pg3!). There are three cross-check promotion mates from the Q + P and B + R batteries. Black did the Queening in 1966 but White does it here!

**LONG SERVICE ASSOCIATION**

# Annual General Meeting

The AGM and Strawberry Tea took place in the Lounge Bar on 22nd June, with a record number of members present, nearly 100. Chairman John Goodhand ensured that all present were aware of and appreciated the tremendous help continually offered by the company and its service departments, and to the management for providing the facilities without any financial problems to the Association. Even including the continuing enlargement and improvement to the Canteen for the LSA's benefit at occasions such as the Dinner Dance! Canteen staff were particularly thanked. Secretary Jim

Collins endorsed this, pointing out that the annual Dinner had catered a full cooked meal for over 700 people at one sitting. The growth of membership is small this year, but since the LSA became independent of other company associations a few years ago, membership had almost exactly doubled, to its present 804. The newly instituted Buffet and Dance at the Clubhouse was confirmed on 15th September; coaches will be provided from the factory if there is enough demand. All the current officers and committee members were re-adopted.

**DIARY NOTE**  
**LSA**  
**DINNER DANCE**  
Saturday 20th Oct.

## Interdivisional Cricket Final 1990

**CACD (Engineering) beat MASD in a closely competed match**

The Final of the 1990 Interdivisional cricket competition was played to a thrilling conclusion on the evening of Tuesday 7th August at the Social Club ground at Hoo.

On a surprisingly green wicket, considering the heat of the summer, CACD won the toss and elected to field. MASD were off to a brisk start, having compiled a total of 51 for the loss of 2 wickets at the half-way point (10 overs). However, CACD stuck to their bowling task well, and after Tariq Mahmood was caught and bowled - a run which took Chris Berry to deep mid wicket to take the catch - the run rate slowed. At the innings close (20 overs) MASD had scored 97 for 6 with CACD bowling honours very much shared.

CACD had scored 21 in the fourth over before losing their first wicket, but continued to score steadily. With sixteen runs required and 5 overs remaining, the result looked certain until the sudden loss of Glenn Dickman, who having batted from the start of the innings was run out for 40, narrowly failing to complete a second run.

Two more wickets fell quickly, signalling a potential dramatic change of fortunes for CACD. But the task of taking the remaining 4 wickets, or containing the score, proved beyond MASD, who finally conceded the winning run with just 4 balls left in the innings.

After the match Keith Washington presented the medals to the runners-up and winners. CACD retain the trophy from last year.

The organiser Keith Washington and the players gratefully acknowledge the support of the Social Club Management Committee, and the special contribution of Maurice Finch and the Social Club staff, without whom this competition would not run.

### Interdivisional Cricket Results

**Final**

**MASD v CACD**

97 for 6	98 for 6
Innings closed	19.2 overs
Tariq 35, Hedge 15, Gray 13	Dickman 40, Hoskins 18, Fowler 13 (Tariq 2 for 8 in 5 overs)

**How they got to the final**

Date	Fixture	Result
29/5/90	CACD(P) v ISD	ISD won by 7 wickets
31/5/90	TSRL v Accounts	Accounts won by 18 runs
7/6/90	Graduates v MCD	MCD won by 6 wickets
12/6/90	ADD v MASD	MASD won by 43 runs
26/6/90	CACD(E) v Accounts	CACD won by 24 runs
5/7/90	FGD v MASD	MASD won by 4 wickets
12/7/90	AS&RD v ISD	AS&RD won by 7 wickets
19/7/90	MCD v SESD	SESD won by 9 wickets

**Semi Finals**

24/7/90	AS&RD/LCSD v CACD	CACD won by 21 runs
26/7/90	MASD v SESD	MASD won by 10 wickets

**The Teams in the Final**

CACD	MASD
Glenn Dickman, Stuart McFarland, Neil Hoskin, Peter Fowler, Mark Connolly, Chris Berry, Martin Lee, Paul Thompson, Tony Daly, Sean Cutler, Mahesh Mistry, 12th Man: Paul Ansell.	Andy Hedge, Stuart Gray, Tariq Mahmood, Simon Hutton, Mike Gwynne, Mark Hadfield, Phil Stancliffe, Stuart Harper, Chris Paul, Chris Bryant, Kevin Golding, 12th Man: Keith Bulford.
Umpires: Jason Isaac-Henry, Keith Washington (SESD)	

**GAV/BP KENT CLUB**

## Revised Opening Times

now in effect

Sunday	12 noon - 10.30 pm
Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	12 noon - 11.00 pm

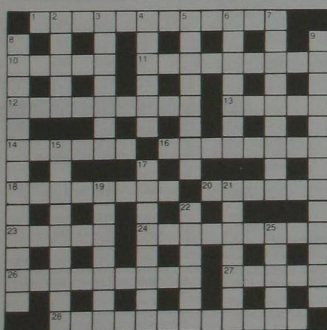
**Bar Opening Hours**

	Lunchtime	Evening
Sunday	12.00 - 2.00 pm	7.00 pm - 10.30 pm
Monday, Tuesday, Wednesday, Thursday	Closed	6.00 pm - 11.00 pm
Friday	12.00 - 2.30 pm	6.00 pm - 11.00 pm
Saturday	12.00 - 3.00 pm	6.00 pm - 11.00 pm

**Swimming Pool Open**

Sunday, Monday, Wednesday, Friday, Saturday  
12 noon - 2.00 pm and 4.00 pm - 8.00 pm

**Crossword No. 101 (For amusement only)**



**SWIMMING POOL**  
Heating system maintenance is planned to start on Monday 10th September, for two weeks. There will be no Pool heating or Hot Showers but **POOL REMAINS OPEN - USUAL TIMES**

**ACROSS**

- The fish that got away? (4-8)
- A residence for travellers. (5)
- A storehouse for the Bee family. (9)
- A complaint to the barman - tartly. (5-4)
- A yellow flowered shrub - mostly wild. (5)
- Hooded wicker cradle. (8)
- Something out of the ordinary. (8)
- What all of us need, and work for. (6)
- Plenty of space to swing a cat. (5)
- Lady Scout? (4-5)
- Prepare to ambush. (3-2-4)

- The golden type signifies rank. (5)
- Where the pound reigns. (8-4)

**DOWN**

- One Italian town with oats scattered. (5)
- Listens for a change. (7)
- What it is on way to the top. (6)
- A native of the city of canals. (8)
- Travels by sea. (7)
- Destination in the sea-shanty (3-6)
- Question to find the right way? (5-3-5)
- Pals not with us. (6-7)
- Little devils making progress. (9)
- Loop by which things are suspended - from fingers? (8)

- Hot red pepper. (7)
- A branch of mathematics, dealing in symbols. (7)
- One is said will never be a slave. (6)
- It shows a likeness. (5)

**Solution to Crossword No. 100**

**ACROSS**  
1. Semi-quavers; 9. Irene; 10. Innkeeper; 11. Rugs; 12. Skua; 13. Grips; 15. Get away; 16. Scythe; 17. Yule-log; 20. Sunspot; 22. Heave; 23. Read; 24. Slav; 26. Continent; 27. Pearl; 28. Right angled.

**DOWN**  
1. Sleight; 2. Meet; 3. Quickly; 4. Annals; 5. Evergreens; 6. Sophist; 7. Hieroglyphics; 8. Prospectively; 14. Swelching; 18. Leasner; 19. Garment; 20. Spartan; 21. Pollard; 25. Opal.

**Club House Attractions**

**SEPTEMBER**

**Saturday 8th**  
**PARLOUR DERBY**  
**8.00 p.m.**

**Saturday 15th**  
**LONG SERVICE ASSOCIATION BUFFET DANCE**  
with  
**"HAPPY DAZE"**  
LSA Members and Guests

**OCTOBER**

**Saturday 6th**  
**CHARITY DANCE**  
for a young  
Leukaemia patient

with  
**"ANCIENT LIGHTS"**  
**7.45 - 11.45**  
Tickets from Clubhouse  
**£1.50 members**  
**£2.00 non-members**

**Saturday 13th**  
**BARN DANCE**  
with  
**"JEZREELS"**  
**7.45 - 11.45**

**Saturday 20th**  
**COUNTRY & WESTERN EVENING** with  
**"JOHNNY YOUNG BAND"**  
**7.45 - 11.45**

**November 3rd**  
**ATTRACTION FOR MEMBERS ONLY**  
**MONTY SUNSHINE JAZZ BAND**  
**8 p.m.**

Photographs taken by the Staff Photographers are acknowledged in the following way:

- (A) Alan Keats  
(B) Ian Douglas

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