

NEWS

WELCOME — GSD!

Bill Alexander's announcement of the formation of Guidance Systems Division pointed out that the Company will be enabled to make the best use of the combined resources and technical skills of the previous inertial Navigation and Gyro Divisions, in the light of changing markets and product areas. Integration of the previously separate but complementary activities of the two divisions is well underway, with any necessary relocation of staff and facilities to take place when appropriate. Peter Hearne, into whose responsibility GSD falls, quickly announced some senior appointments and divisional and department heads have followed on.

For example, **Doug Harris** is appointed Divisional Technical Executive and three Chief Engineer-like names are **Graham Baker** as Manager, Gyros and Land and Sea Systems, **David Powell** as Manager, Aircraft and Missile Systems, and **Andrew Runnalls** as Manager, Systems, Software, and Future Projects. **John Keeble** is Commercial Manager, **Bob Shaw** QA Manager, with **Fred Stockton** as Deputy; **Dave Harries** is Production Manager with **Brian Herring** as Deputy, and **Denis Halliwell** is Marketing Executive.

Separately, **Alan Essex** has been appointed Production Executive, responsible to Mr Hearne with the primary role of

advising on improvements to efficiency within the production areas of that group of divisions.

The new Division already has some promising new products; the Digital Colour Map Unit which attracted a great deal of attention at Farnborough 84, the START solid state rate gyro which is getting considerable interest from a wide range of potential customers, and MAVLANS the vehicle navigation system which is also being evaluated for gun applications. The division is also actively pursuing opportunities in underwater, missile, and aircraft applications of its established systems.

Everyone will wish good fortune to the new Division.

SAFETY FIRST — AGAIN!

The company has been granted, for the second time, the British Safety Council's Safety Award in recognition of ten years consecutive annual awards. In receiving the 1983 annual award making up the twenty, **Harry Staff**, who is responsible for all safety matters, was reminded that the award is a very special achievement as only a small percentage of Britain's workplaces qualify each year. The award-winning companies are leaders in the conservation of resources, both human and financial!

Counting in manual workers areas only, the company's factor of accidents with respect to each thousand workers was 3.36 against the national average of 6.7. In manual areas only, six lost time reportable accidents occurred losing 450 man/hours, and in clerical areas only one (male!) losing 40 hours. This from a total of over 3½ million man hours.

Keep it up — well done.



MEMORIES OF ELLIOTT AUTOMATION DAYS

Since 1967 one great character has been a link through many company name changes. Everyone who has arranged meetings at Portland Place and Long Acre will be very sorry to learn that Margaret Collins has been forced to retire through ill health. In fact, we nearly lost her altogether last winter when she was rushed into intensive care where her chances were rated at no better than 50/50. Fortunately Margaret's Scottish Constitution thought otherwise but she now finds that shortness of breath becomes a problem. As not the least of her attributes was a fierce determination to ensure that everyone behaved up to the standards she believed in, and told them in no uncertain way if they failed to do so; shortness of breath would have clearly been too great a handicap!

To be serious, Margaret ran the London Office like clockwork, carrying out all the jobs which in a "chalk-line" sense would have needed several assistants. She was invariably helpful but at the same time would betide anyone who overstepped the mark and assumed rights and privileges which were not justified.

We all send her our best wishes. We shall miss her.



Dr O'Kane and Mr Pateman giving their best wishes to Margaret.

www.rochesteravionicarchives.co.uk

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



CUDDLY TOYS

Highest Quality, Lowest Prices, Owls, Seals, Traditional Teddies, Dogs, Cats, Lions etc.

Commissions Welcomed

Contact Alan Briggs Med 62497 Int 2416
Samples Available for viewing

WANTED:

Volunteers for a thoroughly good time

For those with a regular supply of free time there can be few more rewarding activities than amateur musical productions. Providing you love music and can pitch notes with some semblance of control, the lack of virtuoso qualities will not prevent you enjoying the fun of rehearsals and the exhilaration of performance as a valued member of Medway Opera Company's chorus.

The Company, who are producing Johann Strauss' 'tuneful' "Die Fledermaus" at the Central Hall from 13-17 November, have assembled a very strong cast and invite experienced or prospective singers to augment their chorus (men especially welcome) and give this charming work and subsequent ones the support they deserve. Every assistance will be offered to newcomers. The next production is to be "Pirates of Penzance" in May. Overtures should be made *prestissimo* to Mrs Sue Lycett (Med 571530) or Dave Potten, ISD (2920).

SAILORS – BEWARE!

Dear Sir

I write in haste in order that you will get this report before you form your own preconceived opinions from reports in the world press, for I am sure that they will tend to over-dramatise the affair.

We had just picked up the pilot, and the apprentice had returned from changing the 'G' flag for the 'H', and being his first trip was having difficulty in rolling the 'G' flag up, I therefore proceeded to show him how, coming to the last part I told him to 'let go'; the lad, although willing is not too bright, necessitating my having to repeat the order in a sharper tone.

The Chief Officer overhauling from the Chart room, and thinking that it was the anchors that were being referred to repeated the 'let go' to the Third Officer on the forecastle. The effect of letting the port anchor drop from the 'pipe' while the vessel was proceeding at full harbour speed proved too much for the windlass brake, and the entire length of the cable was pulled out 'by the roots'. I fear that the damage to the chain locker may be extensive. The braking effect naturally caused the vessel to sheer in that direction, right towards the swing bridge that spans a tributary to the river up which we were proceeding.

The swing bridge operator showed great presence of mind by opening the bridge for my vessel, unfortunately he did not think to stop the vehicular traffic. The result being that the bridge party opened and deposited a Volkswagen, two cyclists and a cattle truck on the foredeck. In his efforts to stop the progress of the bridge the Third Officer dropped the starboard anchor, too late to be of practical use for it fell on the swing bridge operator's control cabin.

Up to now I have confined my report to the activities at the forward end of my vessel; all they were having their own problems. At the moment the port anchor was let go, the Second Officer was supervising the making fast of the after tug, and was lowering the ship's towing spring down onto the tug.

Appointments and Promotions

The Editor apologises to those concerned for his slips of the pen last month. The correct version reads that **Don Price** is now Chief Scientist in FARL; **Barry Read** is marketing Manager in CACD in his own right. This month, we record the appointment of **Jim Carter**, previously in Gyro Division, to be Divisional Controller in ADD; and of **Gordon Walker** as Marketing Manager of ISD, where he has been in Engineering Department for many years.

The family tree of the new Guidance Systems Division is rapidly being defined: among senior appointments so far announced are 3 Engineering Managers; **Ted Bristol** reports to Graham Baker, **Brian Paxton** to Dave Hussey, and **Mike Tomkins** to Andrew Rummals. On the Production side **Dave Harries** is Production Manager assisted by **Fred Rowe** and **Brian Box**, with **Nick Gibson** as Chief of Test.

AS&RD News

Elaine Hobbs, a member of the Purchasing Department, left to further her career in London. (Probably aware of the fact that the streets are paved in gold). In any case, so she won't be disappointed, friends presented her with a gold watch and calculator.

A former apprentice (1967) Tim Southam made the national papers recently. Tim worked for David Summers presently a foreman with the division. Quote: "PILOT Timothy Southam 35, from Elgin, Scotland, who landed an RAF jet after it ran short of fuel, has won a Queen's Commendation."

In Praise of the Housewife, at Home

The Divine Office of the Kitchen

("God walks among the Pots and Pipkins" – Saint Teresa)

*Lord of the Pots and Pipkins, since I have time to be
A Saint by doing lovely things, and vigiling with thee,
By watching in the twilight dawn, and storming heaven's gates –
Make me a Saint by getting meals, and washing up the plates.*

*Lord of the Pots and Pipkins, please, I offer thee for souls,
The liveness of tea leaves, and the sticky porridge bowls!
Remind me of the things I need, not just to save the stairs,
But so that I may perfectly lay tables into prayers.*

*Accept my roughened hands because I made them so, for thee!
Pretend my dishcloth is a bow, which heavenly harmony
Makes on a fiddle frying pan, it is so hard to clean,
And ah, so horrid! Hear dear Lord, the music that I mean.*

*Although I must have Martha hands, I have a Mary mind;
And when I black the boots, I try thy sandals, Lord to find.
I think of how they trod this earth, what time I scrub the floor,
Accept this meditation when I haven't time for more.*

*Vespers and compline come to pass by washing supper things;
And, mostly I am very tired; and all the heart that sings
About the morning's work, is gone before me into bed,
Lend me, dear Lord, thy tireless heart, to work in me instead.*

*My matins are said overnight, to praise and bless thy name.
Beholdhand, for tomorrow's work, which will be just the same;
So that it seems I go to bed still in my working dress,
Lord, make thy Cinderella soon a Princess!*

*Warm all the kitchen with thy love, and light it with thy peace!
Forgive the worrying, and make the grumbling words to cease,
Lord who laid the breakfast on the shore, forgive the world that saith
Can any good thing come for God, "out of poor Nazareth"!*

Cannon

GEC EMPLOYEE SALES CANNON GAS COOKERS AND FIRES

Cannon gas appliances are now available to GEC employees at group discount prices.

Prices include delivery to home address and 12 months warranty.

Please contact

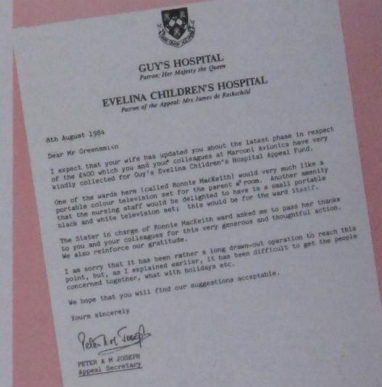
Jim Collins – Social Club

for brochures and order forms



TIDDLERS FOR TODDLERS FUND

This letter has been received by Guaid Greensmith



CAREER COUNSELLING

Within the Rochester establishment there are twelve divisions each having its own market and operating structure and offering a diversity of career advancement opportunities to the Company's employees.

Many employees wishing to broaden their experience and improve their work performance limit the scope of their aspirations to one Division, possibly a natural consequence of the Company's decentralised structure or possibly due to a lack of knowledge of existing vacancies in other Divisions. The Personnel Department plays a major role in career counselling and is able to provide employees with details of all current vacancies in the Company and recommend, where appropriate, that employees be further counselled within their own Division or considered for transfer. It should be borne in mind, however, that transfers are primarily made for promotional reasons.

Any employee wishing to discuss their career development with the Personnel Department should contact Mrs C Carter on internal extension 2367 to arrange an appointment.

FRED RETURNS TO THE MOUNTAINS OF MOURNE

Fred Bingham has been with the company for 6½ years, in FARL where he has worked on a number of projects and has become a Senior Development Engineer, originally coming from Ireland via Keele University.

Fred soon became involved with the FARL social committee and when the MAV/BP Club was formed 2½ years ago he was elected to their Management Committee. He has now decided to return to the Belfast area where his family are and will be working as Systems Engineer with Short Bros. On the occasion of his leaving, Director of Personnel John Bradley gave the company's thanks and a presentation pair of binoculars. Looking on are Rod Cole, Hugh McArthur, Melvyn Doggett and Jim Collins all of the Management Committee.



SEPTEMBER 8th-9th



□ 2 MILE SWIM □ 50 KILOMETRE WALK
□ 100 MILE CYCLE RIDE □ 26.2 MILE MARATHON

RACE REPORT

Although last year's winner 29 year old geologist Richard Crane, famous for his trek across the Himalayas with his brother Adrian, was again entered for this event described as the toughest race in the world, the man most people chose as their favourite was Rainham's 27 year old **Steve Upton**, a Mechanical Inspector in ATE Division who was runner up to Crane last year.

Then, he underestimated himself - this year he didn't. Steve came to win and win convincingly, this he did without any doubt as to who would prove to be the better man: Crane, himself or indeed anybody else in the near one hundred strong field.

After the first event, the 2 mile swim transferred from the sea to Brighton Marina because of the bad sea conditions, there was no doubt that Crane would have a colossal task on his hands to hold on to his title. Upton was out of the water in 1h 09m 21s, just inside the first thirty finishers in what is his weakest event of the four disciplines. Crane took 1h 18m 36s which proved to be too tough for 25 out of the 91 starters!

Whilst Crane was struggling to recover from his swim ordeal, Upton was off and race walking out of Brighton with only one thing in mind - those in front. It wasn't easy, for Brighton's Steve Shaw was excelling himself in the walk after a fast swim time of 48m 39s. The finish of the 50 km (31 mile) walk at Tunbridge Wells was close but Steve Shaw hung on to his overall lead - just, Upton was only a couple of minutes behind! Upton's walk time of 5h 20m 29s was the fastest for that section with Shaw clocking a useful 5h 44m 57s. Crane meanwhile was still struggling and only managed 6h 22m 04s for the walk, well down on last year.

Remembering Steve Upton's superb 100 mile cycle to and around Brands Hatch last year, when he left the rest of the field literally standing, spectators were wondering if new boy Steve Shaw could respond on his cycle and at least make Upton fight for his victory!

It wasn't too long before we had the answer and it was that Upton was well and truly on his way. His cycle ride took 5h 00m 12s, Shaw took 6h 24m 34s, the end of his challenge. Crane was making his move albeit a little late but he had the satisfaction of recording the second fastest only to Upton in the cycle with a fine 5h 23m 43s clocking.

At the start of the marathon run in the early hours of the Sunday morning last year, Steve Upton was approximately 25 minutes in front of the field but Crane caught him. This year Upton doubled his starting lead and this time no one would catch him or even get near.

Whilst much happened on the last stage Upton kept well in front and was first over the finishing line in Gravesend in 16h 08m 08s, a new record for the four discipline event.

His final run of 4h 04m 13s was not fast, it didn't have to be. He set out to do what he said he would do and that was to beat Richard Crane and win the Foster's Quadrathlon.

Crane after his struggle over the first half of the competition finished strongly to third place in a very creditable 17h 15m 18s.

Only 38 of the 91 starters finished this gruelling race, including one lady - Melanie Evans a schoolteacher from Strood, who clocked 22h 19m 15s, and a certain Gerald O'Dowd (26th in 20h 36m 32s) who is the brother of pop star Boy George!

Paul Nihill, MBE
Race Walk Administrator
Foster's Quadrathlon

STAGE WINNERS

2 Mile Swim	Ron Evans	43m 11s
50 km Walk	Steve Upton	5h 20m 29s
100 Mile Cycle	Steve Upton	5h 00m 12s
Marathon Run	David Hurst	3h 24m 15s

Some of the 'local' winners.

1st	Steve Upton (27) Mechanical Inspector, Rainham	16.08.08
2nd	David Hurst (27) Mechanical Technician, Strood	16.49.29
4th	Ron Wood (33) Gym Instructor, Chatham	17.23.01
15th	Ron Evans (26) Bank Official, Rochester	19.16.51
16th	Bernard Atkins (33) Truck Driver, Gravesend	19.18.48

Central Charity Fund Progress

The Fund is now well established having been in business for over a year. The first AGM was on Tuesday 18th September and a report will be included in the next issue of this paper. Many requests for financial help are received, some of which are declined as not really being for charitable purposes. National appeals are referred to GEC Stanhope Gate who deal with such appeals. Organisations which have been helped this year include:

	£
Rochester Veteran Club	50
Kent Association for the Blind	100
Gemma Smith and Cystic Fibrosis Appeal	95
RAF Assoc. Wings Appeal	
Supplying 500 programmes	
Soldiers, Sailors & Airmen Association	50
Medway Adventure & Resources Unit	25

With the help of donations from the Company our income is at present in the region of £2000 per annum so there is a limit to how many requests we can meet, however genuine and worthwhile. If you know of any cause, preferably in the Medway Towns area, that you would like to see helped, please send details to the Chairman of the Fund c/o Personnel Department.

More members would enable us to give assistance to more worthy causes. The contribution is 10p per week. Application forms are available from your supervisor or from the Personnel Department.

John Roberts

CHRISTMAS IS COMING AT THE CHATHAM OLD PEOPLE'S WELFARE CENTRE

Age Concern in Chatham have two events planned to help the old folk at the time of year when extra funds become so important. The Company has already donated £100 from the Central Charity Fund in respect of the planned enlargement of the existing premises or the procurement of a larger building to meet the increased demands of their work. A Flag Day has already been held at Savacentre, but you might like to add the following dates to your diary.

SATURDAY 17th NOVEMBER

CHRISTMAS BAZAAR

at the
EBENEZER CHURCH HALL
CLOVER ST. CHATHAM

10.30 - 3.00

SATURDAY 1st DECEMBER

CRAFT COMPETITION AND EXHIBITION

at the
WELFARE CENTRE
RIVERSIDE, CHATHAM

2.00 - 4.00

At this year's Farnborough Show was an impressive display of the Company's products



Farnborough 84 was the occasion chosen to announce publicly the new name of the company. And at a press reception held in the chalet, Jack Pateman told a large gathering of technical and aviation journalists that in his opinion this was the most exciting Farnborough show for a long time. He was delighted to say that GEC Avionics foresaw a substantial intake of orders in the next year, and went on to comment on a number of major achievements.

Such as the successful flight trials at China Lake of the night attack system for TA-7C - "nobody in the world can touch us on this; night vision is a revolution in warfare and gives a totally new facility to pilots". The SCADS Air Data equipment on offer to the US Army Air Force had a very good chance of winning substantial orders, and the Jaguar fly-by-wire system being demonstrated "is at least as good as any in the world".

Malcolm Moulton took up the theme by announcing the company's contribution to the new Fokker Maritime Enforcer aircraft, and that British Airways was receiving their first Orion ATE. Also the Indian Navy had selected MASD's award-winning AQS902 for its Sea King anti-submarine helicopters. He also mentioned that it was to be announced during the show that GAV and McDonnell Douglas were to co-operate in developing a helmet mounted display.

After the show, Malcolm said how pleased he was at the world press's response to the company's presence at Farnborough. He estimated twice the response of the previous show which in itself had been 3 times that of 1980. Around 200 "press packs" had been given to interested journalists, and he explained that the show is one of the ways in which we make direct contact with customers, through such press coverage as well as by meeting them on the spot. Major contributions were also made by experts from divisions at all the sites, in putting over the company's message throughout the week to the aviation world at large. The impressive exhibition stand, mounted under the guidance of Roland Thomas, demonstrated in working displays many of the newly announced and established products of GEC Avionics. No count is available of the number of visitors to the stand, but on the trade days it was crowded and on the public days was a big attraction to boys (and girls) of all ages. Many of the visitors were individually or in groups visiting Farnborough from our various factories.

Overall, the Show provided a comprehensive display of the international industry which provides us with our business, with many of the aircraft to whose success we contribute.



The GEC Avionics exhibition stand was 'manned' by relays of receptionists and sales and engineering staff from Divisions. Seen here are Brenda Jewell and Janet Moss, from the 4th floor.

GEC Avionics has been selected to make a major contribution to the new Fokker Maritime Enforcer aircraft. MASD has been nominated by Fokker as the overall Mission Avionics integrator and as a supplier of major sub-systems for the aircraft.

Fokker's choice is based on the systems experience and equipment which has been applied to a number of major maritime aircraft. GAV was the only company which could offer Fokker the total range of highly capable tactical processing and sensor processing systems, which are needed to achieve success in attacks against modern types of submarine.

A key to mission success in the demanding maritime environment is effective management of the various patrol tasks and the ability to assimilate and exploit the large amounts of sensor data available in the modern patrol aircraft. MASD's unique experience as supplier of the Central Tactical Systems in the Nimrod Mk1 and Mk2, and the major anti-submarine system in the Nimrod Mk2, is able to provide Fokker with a modern, lightweight Tactical Processing Centre, linked by a MIL-STD 1553B databus to the mission sensors and navigation systems.

The Fokker Maritime Enforcer has been developed as a medium-range Maritime Patrol Aircraft equipped for Anti-Submarine Warfare, Air-to-Surface Vessel, Search and Rescue, and Economic Exploitation Zone operations.

The Tactical Processing Centre is designed to maximise the aircraft's effectiveness in all its roles and is the culmination of 18 months close co-operation between Fokker and GEC Avionics. It represents a successful application for the MOSAIC avionics integration concept, offered for multi-mission and multi-sensor aircraft.



On display for the first time, at the Farnborough '84 Air Show, was this sensor suite installation in the Fokker Maritime Enforcer.

The system incorporates a Twin-CRT AQS-902 sonobuoy processor and the related Tactical Processing System. A multi-purpose display shows the optional FLIR or the Marconi Defence Systems HERMES ESM. Multi-purpose controls are incorporated throughout.

The integration of the system has been the subject of some 18 months of close collaboration between Fokker NV and Maritime Aircraft Systems Division.

The three UK aerospace companies which have developed the "Fly by Wire" Jaguar's actuator system combined with the UK government's approval of the aircraft's flying display at Farnborough. GEC Avionics and Dowty Boulton Paul shared the British Aerospace, whose project pilots Captain Peter Orme carried out the flight demonstration.

British Aerospace, as prime contractor to the Ministry of Defence, devised the specification and worked with GAV and Dowty Boulton Paul to develop a Jaguar fly by wire system. Recently the aircraft has fully completed the programme to demonstrate Active Controls Technology (ACT) to be applied by the Experimental Aircraft Programme.

ACT, which will thus form part of the next generation of agile combat aircraft, involves a set of controls between the pilot's control column and the fly computer completely replacing all mechanical control linkages.

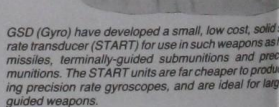
With ACT, an aircraft handles normally, even deliberately made unstable. Aerodynamically unstable aircraft can be made more agile, smaller, hence cheaper than fully stable designs, and a greater variety of loads. Active Controls then enable more efficient aircraft to be designed, ensuring and also provide pilots with "carefree" manoeuvres enabling high performance to be achieved without overstressing the airframe or losing control.

At the heart of the Fly by Wire Jaguar's ACT is a quadruplex, digital, Integrated Flight Control (IFCS), which was designed and produced by GAV. It drives the aircraft's flying control surfaces via high performance duo-triplex actuators, designed and built by Dowty Boulton Paul of Wolverhampton.

After demonstrating the effectiveness of the system, BAe designed the system to enable the aircraft to fly in unstable flight, and had the confidence in the effectiveness of the design. The aircraft is actively destabilised by adding leading edge "stubs" to the wings and a quarter of a ton of lead in the tail. It has a 10% negative manoeuvre margin, which was impossible to fly without the IFCS. Visitors to Farnborough saw the aircraft flying in this unusual configuration for themselves how well it handled.

The Fly by Wire system in the Jaguar is designed to a very high level of "fail safe" integrity, and has been built to production standards. Test good Electro Magnetic Compatibility (EMC) firming the system to be proof against lightning. ACT system being demonstrated was the first produced to such high standards, to have flown on a combat aircraft in an unstable configuration.

GAV is prime contractor responsible for the system currently in service in the European II with Dowty Boulton Paul and British Aerospace co-operating on the Experimental Aircraft Programme (EAP) for the next generation of combat aircraft.



GSD (Gyro) have developed a small, low cost, solid-state rate transducer (START) for use in such weapons as missiles, terminally-guided submunitions and precision munitions. The START units are far cheaper to produce than precision rate gyroscopes, and are ideal for large quantities of guided weapons.

Based on the Company's research into alternative spinning wheel gyroscopes, a new solid state rate transducer (START) has been developed. Its production cost, an order of magnitude below that of rate gyroscopes, will meet new and growing requirements for sensors used in weapon guidance systems.

START, which is smaller than thumb-size and weighs less than 25 grams, is a product of the Gyro Division of Guidance Systems Division.

GSD is now offering a range of new guidance applications where relatively short flight times are required with a need for low cost and high volume production. Farnborough Air Show was regarded as a good opportunity to discuss such applications with customers.

Work done to date shows that START can well outperform more conventional low-cost rate gyroscopes when applied in single axis or multi axis rate applications. This arises from its low size, weight and power requirements, robustness and virtually instantaneous start-up.

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Cockpit video recordings, made during a highly-successful series of 78 test flights of a GEC Avionics integrated night vision and attack system, were shown at Farnborough. The system was provided for evaluation on a US Marine Corps TA-7C aircraft at the Naval Weapons Center, China Lake, California commencing in April this year.

The flight test programme of some 150 hours fully demonstrated the feasibility of low level and night time close support missions, using a low-cost FLIR podded sensor in conjunction with a raster-Head Up Display, night vision goggles and a "touch sensitive", high resolution Head Down Display. ADD supplied, integrated and ground tested the total night attack system, in a period of six months from the go-ahead decision, in conjunction with Basidon and MAV Inc, Atlanta.

This system, which owes much to work originating at the Royal Aircraft Establishment, Farnborough, enabled demonstrations to be made to many senior United States officers, who gained first hand experience in the two-seat TA-7C.

The use of head up and head down display surfaces for the FLIR imagery and the "Cat's Eyes" night vision goggles gave considerable flexibility to pilots in operating the system under different conditions.

The trials were highly successful over a wide range of weather, light conditions, terrain and targets. Accurate bombing runs were made on totally blacked-out targets, using the normal weapon aiming symbology overlaid on the FLIR scene.

The key trials objective, of enabling daytime procedures to be used in night operations, proved attainable with minimal retraining and familiarization.

The success of the trials stems from GAV's unique capability to offer, as proven items, the total range of night attack equipment, either as independent units or in a fully integrated system, as demonstrated in these trials.

With the approval of the United States' Government, GEC Avionics has made an agreement with McDonnell Douglas Electronics Company to co-operate in developing a helmet-mounted display system for advanced aircraft of the future. The two companies have agreed to combine their experience for the development and production of a new type of integrated display system, for use in day and night operations.

Airborne Display Division will be responsible for system integration and for the pilot's display itself. This will be based on the successfully-tested Cat's Eyes night vision goggles, using the same optical combiner system and the LED matrix displays already tested successfully in several US and UK aircraft. The display will be linked to the well-proven electro-magnetic Head Positioning System, which is produced by the Polhemus Navigation Sciences Division of McDonnell Douglas Electronics Company.

ADD is producing a modular system, with the flexibility to display imagery from electro-optical sensors, either image intensifiers or remote steerable FLIR, and to combine this with symbology for piloting and weapon aiming.

A prototype of the new display system is under full-scale development at Rochester. It will provide a unique combination of direct "see-through" vision, with low light or FLIR imagery selectable at will.

The display system will be applicable to attack helicopters, tactical transports and ground attack fighter aircraft.



This improved low weight version of the GEC Avionics "Cat's Eyes" night vision goggles gives pilots the ability to see in the dark without affecting the normal cockpit instrument scan as has been proven in a series of 78 night vision and attack trials in a TA-7C aircraft at China Lake, California. They are also the only night vision goggles available which enable a pilot to see FLIR imagery and flight symbology on any head-up display, including the wide angle systems with diffractive (holographic) optics.

The Digital Colour Map Unit (DCMU), developed by Guidance Systems Division, will provide a powerful capability for en-route navigation, target acquisition and weapon delivery.

Recent advances in bulk data storage techniques, combined with advances in electronic colour displays have been applied to produce a compact unit which can completely replace film-based map displays.

The 3/4 ATR (short) DCMU can present any kind of map, with choice of scale and orientation on a shadow mask, raster scan or CRT flat screen. The same screen is able to display symbology showing navigation data and to enable map matching for target location with either radar or forward-looking infra-red data. The map data is rapidly available, using innovative digitizing techniques, from existing paper maps.

The DCMU has wide ranging capabilities including in-flight overwriting/updating of route or target information, exact scale matching with radar, continuous scrolling, smooth display rotation, instant map scale change and facilities for in-field reprogramming for mission planning and update. The display also contains a present position indicator giving an aircraft's exact map-related position with steering, bearing, track, distance and time-to-run information.



The DCMU provides a more powerful capability for en-route navigation, target acquisition and weapon delivery than conventional film-based map display systems. The photograph is of an actual display, showing the high resolution. This is made possible by using innovative digitizing techniques and recent advances in bulk data storage.

The Indian Navy has selected the AQS-902 as the sonobuoy processor on its new Westland Sea King anti-submarine (ASW) helicopters. The aircraft will also use the TPS (Tactical Processing System) to integrate the other tactical sensors into a centralised display and control system.

MASD has supplied AQS-901 and 902 sonobuoy processing systems for the RAF Nimrod Mk2 Fleet, the RAAF P-3C squadrons, the Royal Navy's Sea King Mk5 squadrons, and the Royal Swedish Navy, and is developing AQS-903 for the RN's EH 101 helicopter.

AQS-902 is a modular sonobuoy processor which can be configured to process signals from any or all of the standard or developing sonobuoys in the quantities required by a particular customer.

The Central Tactical System in the Nimrod Mk1 and Mk2 is supplied by GEC Avionics and a lightweight version of the system, comparable to the TPS in the Indian Sea King, is standard equipment on the Fokker Maritime Enforcer.

The TPS uses identical hardware to that of the sonobuoy processor, with obvious logistical advantages, and effectively replaces the tactical navigator's chart, navigational computer and log. It permits displays of inputs from all the sensors, selectively or simultaneously, to permit rapid and effective tactical decision making.

Whilst the Farnborough Air Show was actually in progress, ATED was preparing to deliver to British Airways the latest type of automatic test equipment, part of the new ORION family of cost-effective ATE. It is being installed in British Airways' overhaul and maintenance facility at Heathrow to support the maintenance of international jet airliners.

Orion, launched to the electronics industry only four months ago, was being presented to world airlines for the first time at Farnborough.

Complete with test programs and adapters for 22 different test subjects, it will be used by British Airways for testing a range of avionics equipment. Tests for serviceability, as well as fault diagnosis to electronic component level, will be carried out in a fraction of the time required for manual testing.

Versions of the ORION ATE family, ranging from a simple in-circuit tester to a full functional test system, have already won orders worth £1.6 million. They are being used for testing industrial electronics, in addition to avionics test subjects from flight control, head up display and inertial navigation systems.

POSTING BOX PROJECT FOR MENTALLY HANDICAPPED CHILDREN

Gideon Hale, Steve Sharp, and Mick Walton (Student Technologists) write:

We have recently completed a project aimed at helping mentally handicapped children. The project consisted of designing and producing fifty teaching aids for Toy Aid Projects, a company run by volunteers to provide toys and teaching aids specifically designed for mentally and physically handicapped children.

The teaching aid consisted of a Posting Box for various shapes, when the correct shaped block is posted in the correct opening, a reward in the form of a coloured light is displayed. The blocks also act as an aid to children who have difficulty in co-ordinating their hands by providing different size handles for each block.

The team were introduced to the project and its requirements and given three weeks to produce a viable design. This included assessing materials, various design parameters and their respective costs, along with the planning associated with a production run of fifty units.

During this time visits were made to Nine Acres School in Woolwich, which caters for all types of mentally and physically handicapped children, to allow the team to gain first-hand experience in the surroundings the product would be used in. Discussions also occurred with one of the teachers, who is also a director of Toy Aids Projects, about the requirements and any improvements to our initial design. A demonstration of the final design occurred at a later date, and the formal approval given by the customer.

Production of the boxes was undertaken by a group of mechanical apprentices at the Training Centre, Hoppewell Drive, with the students acting as supervisors and design consultants.

After painting, which was kindly undertaken by CMS Paint Shop, the units were wired by two keen and aspiring YTS trainees! The students were left to commission and test each unit, along with nine hundred and one other things!

After seemingly never-ending unforeseen problems and delays, the boxes were completed and delivered to the customer.

We would like to take this opportunity to express our gratitude to all the people who have contributed various items, services, time and effort, without whose help the successful completion of the project would not have been realized. Particular mention must be made of John Griffin, Chief Mechanical Instructor, for his never-ending assistance, advice, humour and confidence in the face of great adversity!

The apprentices most involved were Steve Chowne, Roy Culmer, Spencer Diprose, Alan Fosberry, Chris Gilbert and Darran Hilbert and the YTS trainees were Darren Swan and Kim Still.

Their blood, sweat, and maybe tears were the means by which the units were actually manufactured under our guidance, but we must not forget the contributions also made at times by other apprentices, trainees and instructors too many to mention at Hoppewell Drive.



The picture shows the students presenting a selection of the posting boxes to Peter Toft, a director of Toy Aids Projects; (left to right) Gideon Hale, Peter Toft, Mick Walton and Steve Sharp. The three students are all reading for an honours degree in electronic engineering at Brunel University and were in their second industrial training placement at Rochester as part of their sponsored sandwich course.

RETIREMENTS



Mrs E. Morris with Peter Burrows, Production Manager of CMS, and Fred Pound, Paint Shop Foreman, when she retired (reported last month). (B)

On Wednesday 8th August Brian Box, Assistant Production Manager IND, presented Sid Page with a Stereo Radio Cassette Player on behalf of his friends and colleagues in the Company.

On leaving school at 15 Sid joined Short Bros. (Rochester) where he learned the craft of Panel Beating (Aircraft and Bus work). He worked on Empire Boats, Sunderlands both Mayo and Mercury, staying with Shorts until they closed down and moved to Ireland.

Sid then joined J.C. Beadles (Coach Builders of Dartford) and after a few years left to join Elliott Bros. in March 1953 in the Sheet Metal Shop, carrying out work for Swift and Swallow, MER and on the A.G.W.A.C. (Australian Guided Weapons Project), ATE, MACD Model Shop, Hydraulic Lab., TSR 2 and on FCD Maintenance.

Then Sid joined IND in 1971 as the Mechanical Maintenance fitter.

Sid has several hobbies including model making, photography, collecting old books, metal detecting, knocking dents out of cars, caravaning, and is a staunch supporter of Gillingham F.C. with the aid of his son and three grandsons. He has been a

stern supporter of Inter Divisional Football and is an enthusiastic preservationist for the Royal Aeronautical Society having worked on the Spitfire that was refurbished recently.

Brian Box stated, on behalf of all his friends Sid was wished a cheerful farewell on completing 50 years of interesting work. Joyce, his wife, will continue to "support" him in his retirement until next year when she herself retires from IND.



Sid Page with a number of his friends on his retirement day. (B)

Bert Daw retired 10th August 1984 after 19 years. Bert joined the company then known as "Elliott's" in November 1965 as a Miller in Fuse Division. From Fuse he came to CMS as an Inspector where he soon made his mark as a 1st-off inspector. He then joined the planning Department in CMS originally as a Salvage Planner and then went on to planning and became involved in programming NC and CNC machine tools.

Much to his credit, Bert became fully conversant with computer aided part programming techniques which he has used up to this day, thus making a success in an area which many would say is a young man's field. His many friends and colleagues wish him every happiness and good health in his retirement.



Bert Daw receiving a retirement gift from CMS Manager, Peter Burrows. (B)

Les Collins retired from Planning Dept in ISD; he had been with ISD and its predecessor AEID since 1961, but prior to that he had been with Swiffs and MER since he first started at Rochester no less than 39 years ago. The earlier years were spent in the machine shops and he became Foreman in 1962, but the last 20 years have been spent as Planner and Planning Engineer. Les has also distinguished himself as a football player on the company team; Production Manager John Clover gave the Department's best wishes on the occasion, together with a Workmate, spirit level and a pipe and baccy.



Les Collins and John Clover. (A)

25 YEARS' SERVICE



Stan Wells. (A)

On 27th July, **Stan Wells** completed 25 years' service with the Company. The occasion was marked by the presentation of a Carriage Clock by Keith Snelling, Divisional Manager, CACD.

Stan joined Military Aircraft Controls Division from the RAF, and continued to be closely involved with flying as a Flight Trials Engineer on the OR 946 programme. Before long he was persuaded by Alf Harrison to become involved in the manufacturing side of the business, and with the formation of Flight Instruments Division in 1961 he became Assistant Production Manager. Two years later he became Production Manager, and has held that position in FID, ISD, and now CACD, for a total of 21 years. During this time the business has changed dramatically in scale, technology, and manufacturing techniques. Stan has played a major role in these changes, always looking for new ideas, prepared to pioneer new techniques, and accepting that introducing change is never easy has persevered through the initial difficulties and disappointments to achieve very successful results, as demonstrated by his record of introducing such things as computerised stock control, automated stores, semi-automatic PCB assembly and automatic test facilities.

The recent transfer to CACD has created a new challenge for his experience and ideas; ensuring that the Production Department not only efficiently maintains its present high throughput of Tornado FCS equipment, but also gears up to cope with the ever increasing complexity and cost competitiveness of tomorrow's technology which successful future business will demand.



Brian Davis after his presentation. (A)

to mark the completion of 25 years' service.

Brian Davis was just 22 when he joined the company, in Aviation Division as Electrical Tester. Various reorganisations took him through MACD, FID, ISD, and in 1971 Brian first went to AS&RD, as Instrument Technician. In 1972 he became one of the first ever Quality Technicians, and after spending two years in FCD as a Planner, he took up his present duties as Production Engineer in AS&RD in 1975. Technical Manager Mike Barton presented Brian with a silver tea set

Friday 24th August was the day of IND Wireman **Ernie Botley's** 25 year service presentation by Divisional Manager Bob Ruggles.

A clock was handed over in the presence of many friends and colleagues. Ernie began his time in IND on the Blue Steel project and has since worked on most of the division's contracts, at present being involved with Jaguar production and 2nd line test equipment. This follows a variety of work in Methods, development and production. Ernie's wife Sheila now works in PSD D.O. and his son keeps up the aviation tradition - he is with the Fleet Air Arm at Yeovilton.



Ernie Botley receives his presentation clock. (A)

Doug Harris (then Technical Manager of IND) received a pair of binoculars from Divisional Manager Bob Ruggles when he completed 25 years service in August. Although Doug started his career with GEC, the 25 years in Rochester service have all been with the erstwhile IND; after a preliminary year here he went to Australia for 5 years on the Blue Steel contract, then became consultant on the Polaris system, and in 1967 became Chief Engineer, when he led the teams on the development of systems for Jaguar (E3 and E5 platforms), Nimrod and NCSI. In 1973 he became Technical Manager. Doug said in reply to Bob Ruggles that he wanted to share the occasion with so many of his colleagues, engineers and others whose main task he saw, as with himself, as problem solving. Many anecdotes were recalled of the young hands, the old hands, and the ageless ones - but without stating to which group he belonged!



Doug Harris with Bob Ruggles. (A)

John Goddard's 25 years leading up to his present position as Methods Engineer in CACD began with his engagement as Wireman. Soon he became Leading Hand, and in 1964 he became, it is believed, the first Work Study Engineer in the Company, watching work all day. Subsequently and until the formation of FCD he was Chief Work Study Engineer, and he then became Production Engineer, moving after a year to IND. Alf Harrison was constantly "after" John's expertise in cableform design, and John was later requested back in FCD, going the CACD way when the division split. Throughout all these years he has worked on projects right through from Lightning to AMX, under eight different Production Managers. Replying to Divisional Manager Keith Snelling after receiving his presentation clock, John said he was looking forward to the next 19 years with the host of friends he had made in the company.



Keith Snelling presents John Goddard with his clock. (A)

Andrew (Bob) McKenzie joined Elliott Brothers at Borehamwood on the 24th August 1959 as an on-site engineer, moving to Rochester with AS&RD on the 5th October 1959. During his service he has worked in the field on a number of projects including Lightning, V.C.10 and is currently a Senior Technical Representative based at BAe Watton looking after Tornado TVTAB and E. Scope.



congratulations

Births

Jackie Gingell (nee Pett) and **Geoff** snatched the headlines with the arrival on the same day as Prince Harry of their second child, Samantha. Jackie used to be in Personnel and Training Departments and Geoff, formerly in MASD, is now with the Yeovil team.

Sally and **Ian Tempieman** are congratulated on the arrival of Shane on 11th September. Ian is an Inspector in ADD.

Marriages

The marriage took place on 11th August of **Phil Wilson**, ATED, and **Denise Harvey**, who works at Lloyds, at St Stephens Chatham. Best wishes and every happiness to them both, from the boys of ATE Test.

Richard Bower, Project Engineer in FCD, and **Kay Law**, Draughtswoman in ATED, were married on 29th September at All Saints, Frindsbury.

On the same day **Julian Buckmaster** formerly of CACD and now in Training Dept, and **Wendy High** were wed in Cumbria.

Stephanie Woolmer, who has been secretary to Chief Engineer Brain Camp of ATED for four years, married **Nell Fearria**, Senior Applications Software Engineer for seven years also with ATED. The wedding was at the United Reform Church in Gillingham on September 8th. Congratulations and every happiness to both, from all their friends in ATED.



Brian Camp (left) made a presentation to the couple.

Pearl Wedding

Many congratulations to **Joyce and Carl Cremona** – their Pearl wedding is on 5th November.

Carl is Section Leader in MASD's D.O., and Joyce in GSD (IND) D.O. Library.

Hints on Pronunciation for Foreigners

I take it you already know
of Tough and Bough and Cough and Dough?
Others may stumble, but not you,
On Hiccough, Thorough, Lough and Through,
Well done, and now you wish, perhaps
To learn of less familiar traps?
Beware of heard, a dreadful word
That looks like beard and sounds like bird,
And dead, it's said like bed, not bead –
For goodness' sake don't call it dead!
Watch out for meat and great and threat
(They rhyme with suite and straight and debt).

A moth is not a moth in mother
Nor both in bother, broth in brother,
And here is not a match for there
Nor dear and fear for bear and pear,
And there's a dose and rose and lose –
Just look them up – and goose and choose,
And cork and work and card and ward,
And furl and fur and whet and wherd,
And do and go and throat and cart –
Come, come I've hardly made a start! A dreadful language?
Man alive, I'd mastered it when I was five!

Castle in the air

A NOTICE on the tower at Slade Castle, Co. Wexford, says: "The tall tower was possibly built by one of the Laffan family in the late 15th or early 16th century. The lower part was added in the late 18th century."

Pennington Daily News

OBITUARIES

By a sad coincidence, we have recently lost three of our colleagues all from one division, Aviation Service and Repair.

Reg Rose joined in 1961 as Production Control Manager in TACD, having previously worked for the Ministry of Aviation and the Australian Department of Defence. Later Reg moved into TACD Engineering, and his long service in AS&RD started in 1968 as Supplies Department Manager, successively as Support Systems Manager, Spares Support Executive, and for the last eleven years as Product Support Executive. Reg stayed on beyond retirement age and was 70 at his death on 3rd July.



George Oxford (Production Project Leader – Civil Equipment)

George Oxford was taken ill at the end of last year, and was diagnosed to be suffering from leukaemia. He fought the disease with determination and great courage but, sadly, died on 21 August 1984.

George joined the Company from the RAF in 1955, and was one of the founder members of AS&RD when it was formed in 1960. He remained with the Division from that time, becoming well known for his no-nonsense but ever helpful approach at work, and his enthusiasm and expertise as a keen member of the Company Indoor Sports League (cribbage and ball-and-trap a speciality). Needless to say, he made many good friends during these years, both in the Company and amongst his Airline customers.



The funeral took place on 29 August at Gillingham Cemetery and was attended by a large number of his colleagues. The Deaconess of St Margaret's Church, Rainham, and Mr B Ribbens of AS&RD, who is an Elder of The Rochester Christian Fellowship, conducted a combined Service in the Cemetery Chapel.

His colleagues from AS&RD and FCD sent a token floral tribute to his funeral but, at his widow's request, the major part of their collection has been sent to The Leukaemia Research Fund.

George will be greatly missed and our sympathy is extended to his widow and family.

(From AS&RD)

David Shailcross, who came from Cheshire, went to Oxford University (where he was Captain of Boats) and subsequently joined the Royal Artillery and became Major, second in command of a regiment. From there he came to Rochester in 1961 to be superintendent of the Publications Department of AS&RD, becoming Publications Manager in 1968 and Product Support Executive in 1976.



Sports and Social Club round up



Retired Personnel's Club ('65)

August 21

The monthly meeting was held as usual in the works canteen, and at the business meeting the chairman welcomed 4 new members, and announced the birthday and wedding anniversaries. Congratulations were offered and applause given. The pick up points for the outing to Clacton on August 29 were announced.

Owing to sickness, the planned entertainment was unable to be given, so the chairman, together with his family and friends, presented an old time "Music Hall". This was greatly appreciated by all the members, joining in wholeheartedly with the songs of yesterday. There was also the usual game of bingo.

August 29

On Wednesday, August 29, members enjoyed the annual outing, kindly supplied by the company. The venue was Clacton in Essex which had not previously been visited by the club.

All coaches assembled at the works, and took on board packed lunches, prepared by the canteen staff under Mr. Bill Gostling. These were found to be of super quality, and expressions of delight and pleasure came from all the travellers. It was a beautiful, warm, bright day, and everyone enjoyed the delights of this east coast town. A combination of sunshine and sea breezes being just the tonic required before the onset of winter. It was decided to convey our appreciation and thanks to the management for their generosity.

September

The Club gathered in the canteen for the September meeting which took the form of the Annual Cake Competition, and bring and buy sale.

The five classes of Victoria Sandwich, Sausage Rolls, Coconut Slices, Scones and Fancy Cakes, received a good supply of entries.

The judging was completed by members of the canteen kitchen staff, and prizes were presented to the winners by the president. Games of bingo followed, and in the business section further new members were welcomed into the club.

When the birthday and wedding anniversaries were announced, two special items were noted.

- 1) On that day, our chairman – Cyril Boorman – attained his 79th birthday. September 18th.
- 2) On the 21st September (Friday) Mr and Mrs Bob Black would celebrate their Golden Wedding!

They were presented with the usual "Golden Gift", Congratulated, and serenaded by all present with the chorus of "My Old Dutch" (suitably amended to 50 years).

Members were also advised of the company name change and due to this the committee would take early steps to consider whether our name could be amended to reflect the change.

Golf Society News

As the Societies season draws to a close, results of major competitions have emerged.

The company was represented in its two annual intersite matches against Basildon and Borehamwood at Ipswich G.C. on 11th June and against Portsmouth and Frimley at Mannings Heath G.C. Horsham, Sussex on 10th July. Both matches were successful for the Rochester teams steered by Captain Peter Warburton of ATED. The following scores were made by teams of 13 players and individuals.

Ipswich G.C.

Overall scores
Rochester 773 pts. Basildon 743 pts. Borehamwood 731 pts.

Individual Scores

All day
1st D. West (Basildon) 76pts. 2nd D. Sampson (B'wood) 76 pts.

1st a.m.
R. Marshall (Rochester) 42 pts.

1st p.m.
R. Trueman (Basildon) 38 pts.

Mannings Heath G.C.

Overall scores
Rochester 702 pts. Frimley 660 pts. Portsmouth 639 pts.

Individual scores

All day
1st A. Brandon (Frimley) 81 pts. 2nd D. Hussey (Portsmouth) 79 pts. 3rd P. Warburton (Rochester) 76 pts.

1st a.m.
J. Cole (Frimley) 44 pts.

1st p.m.
M. Reeve (Rochester) 40 pts.

The society again this year entered a team into the 'Grandmet' Silver Cup Golf Tournament, organised by the Grand Metropolitan Catering Group. This competition brings together company teams from all over the U.K. Our team were unfortunately knocked out in the first round against Klippon Electricals of Sheerness.

Two events closing in fast are the Annual Dinner Dance and Prizing on 2nd November and the Annual General meeting on 7th December.

Dinner Dance Tickets will be £5.00 each and available shortly through your Divisional Representatives, and at the Clubhouse Hoo.



Sports and Social Club round up



MAV/BP Computer Users Club

A.G.M.

Thursday 8th November
5.30 pm

Towers Conference Rooms

Horticultural & Gardening Club

MAV/BP Gardening Club wishes to remind members that now is the time to order Bulk Fertilisers, Dobies Seeds (25% Discount), Onion sets (40p/lb), Seed Potatoes etc.

New members are always welcome. Benefits include free admission to RHS Gardens at Wisley and National Rose Society Gardens at St Albans.

Further details from Mrs. E. Papworth (Int. 2217)

Cricket Finals

MASD win for second time

It was a cold afternoon on Monday 10th September when the inter-divisional Cricket final took place. It was played between the defending champions (MASD) and ATED.

The game started at approximately 4.30 pm and after winning the toss MASD went in to bat.

Colin Pack was soon dismissed, but a stand of 70 runs by Wayne Moore and Duncan Jenkins soon got the run rate moving along quickly with both players hitting fours and sixes. One of Jenkins sixes cleared the clubhouse and landed in the social club car park, fortunately missing all the cars!

When both Moore (36) and Jenkins (69) had been caught on the boundary trying to repeat their shots, the score had moved rapidly to 125. With useful contributions by Dave Stratton (15) and Bob Wilkinson (16) the score had been pushed to 156 for 5 after the allotted 20 overs.

Chasing 156, ATED needed to get off to a quick start but with some tidy bowling by Gary Cordier and Peter Duckworth, this never looked likely.

With the tactical magician Colin Pack setting the field and some solid fielding (3 run outs) ATED never looked like obtaining the required target. Even the subtle chants of Aussie P. Powell (perhaps the after effect of the old amber nectar), the changing

bats of M. Ahmed and rapidly deteriorating fitness of MASD's side could not help them.

Mike Ryder and Dave Stratton also made contributions with the ball so with Steve Loader bowling the last over and ATED still 65 runs behind, last year's champions were home and dry.



Winners MASD

(L-R) Gary Cordier, Colin Pack, Dave Stratton, Peter Duckworth, Duncan Jenkins, Bob Wilkinson, Gerry Wood, Wayne Moore, Steven Loader, Alan Gallagher. Mike Ryder is absent, someone bought him lunch. (A)



Runners-up ATED

(L-R) Kit Patel, Nick Howard, Andy Thomas, Ian Rose, Peter Thomas, Keith Washington, Andy Gutsell, Mohsin Ahmad, Nigel Stevenson, Keith Mason, Tony Youren. (A)

MASD

Batsmen	How Out	Bowler	Total
1 C. Pack	LBW	Stevenson	2
2 W. Moore	CT. Howard	Patel	36
3 D. Jenkins	CT. Powell	Patel	69
4 M. Ryder	CT. Howard	Gutsal	8
5 D. Stratton	CT. Washington	Gutsal	15
6 B. Wilkinson	NOT OUT		16
7 S. Loader	NOT OUT		0
Extras			10
Total			156
for 5 Wickets in 20 Overs			

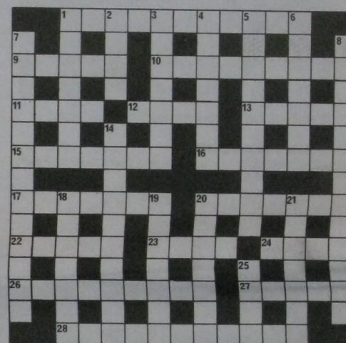
Bowlers	Overs	M	Runs	Wkts
1 Powell	5	0	31	0
2 Stevenson	5	0	30	1
3 Patel	5	0	45	2
4 Gutsal	5	0	40	2

ATE

Batsmen	How Out	Bowler	Total
1 A. Youren	CT. Cordier	Cordier	2
2 M. Ahmed	RUN OUT		22
3 A. Gatsell	RUN OUT		17
4 N. Stevenson	Bowled	Duckworth	0
5 K. Patel	Bowled	Stratton	6
6 K. Washington	RUN OUT		14
7 A. Thomas	Bowled	Loader	7
8 N. Howard	NOT OUT		11
9 P. Powell	NOT OUT		5
Extras			5
Total			96
for 7 Wickets in 20 Overs			

Bowlers	Overs	M	Runs	Wkts
1 G. Cordier	5	0	16	1
2 P. Duckworth	5	0	25	1
3 M. Ryder	5	0	25	0
4 D. Stratton	4	0	13	1
5 S. Loader	1	0	5	1

CROSSWORD No. 65



ACROSS

- Hats? Ask a tribal chief. (4-7)
- The words not music. (5)
- A doleful expression. (9)
- Send to Coventry. (4)
- Between duet and quartet. (4)
- Colloquialism for power source. (5)
- Take your turn in line. (5-2)
- Cleaned up after harvest. (7)
- Adjusted so as to make use of. (7)
- The top, if liquid. (7)
- Ancient tax. (5)
- Fresh water fish. (4)
- A rough file. (4)
- What a sight, when cabbages do. (3-4)
- To make butter, maybe butterflies. (5)
- Tantrums in public place, or stage props set. (5-1-5)

DOWN

- Her suit we hear? (7)
- Either villain or support. (4)
- The morning gift of nature. (3-4)
- Soon to be realised. (7)
- To whom one whispers three little words. (10)
- The Scoff's brush, or is it a purse? (7)
- Hand to hand conflict is at. (5-8)
- Come again, that's good! (6-7)
- The upper class, grouping. (10)
- It has a contrary meaning. (7)
- The spouse of highest ranking peer. (7)
- Large steps. (7)
- The usual method of custom. (2-1-4)
- Don't mention spots to a teenager. (4)

Solution to Crossword No. 64

ACROSS

- Australia; 6. Taste; 9. Relic; 10. Geometric; 11. Department; 12. Reap; 14. Estates; 15. Striped; 17. Steamer; 19. Aliases; 20. Near; 22. Persistent; 24. Ill humor; 25. Organ; 26. Lodge; 27. Fire marks.

DOWN

- Acid; 2. Sallpêtre; 3. Record time; 4. Legumes; 5. Amounts; 6. They; 7. Serge; 8. Escapades; 13. Brain storm; 14. Essential; 16. Passenger; 18. Reel off; 19. Assurer; 21. Allied; 23. Tongue.

Photographs taken by the Staff Photographers will be acknowledged in the following way: (A) Alan Keats; (B) Ian Douglas

The views and opinions expressed by contributors are not necessarily those of the Editor or Company. Any such opinions or comments are those of the contributor alone and are printed solely as a matter of interest.

Produced by Phoenix Publicity and Print Limited, Bradford for GEC Avionics Limited, Kent and printed by John R. Hirst & Company Limited, Cleckheaton, Yorkshire.



CLUB-HOUSE ATTRACTIONS

BP/AQUASEAL DANCE

Saturday 10th November
7.45 - 11.45

"FLYIN HI"

Raffle for Molly Wisdom Hospice

Golf Dinner Dance and Prizegiving

Friday 2nd November
8.00 - midnight

Buffet Meal
Ladies Putting Competition

Dancing to the
"IN-CROWD"

CHILDRENS DISCO

7.00 - 10.30
Friday 9th November

"MUSIC AND LIGHTS"

A GRAND OLD TIME MUSIC HALL

with

THE STRAND MUSIC HALL COMPANY

Friday 16th November
8.00 pm

Table reservations and waiter service

Tickets from Eileen Papworth (2217) or Club Bar

Angling Section

BUFFET DANCE

Saturday 17th November

Bowls Section

DINNER DANCE

Saturday 18th November
Dinner 7.30 and Dancing to

SOUNDS VERSATILE

Sub-Aqua Section

HALLOWEEN DANCE

Saturday 27th October
7.45 - 11.45

with

ELECTRA SOUND

BARN DANCE

with

"JEZREELS"

Saturday 3rd November
7.45 - 11.45 pm

Admission Free

MASD DANCE

with

KING'S RANSOM

Friday 26th October
7.45 - 11.45

Tickets from Rod Cole (2015)