INTERFACE
EASAMS' INTERNAL NEWSPAPER
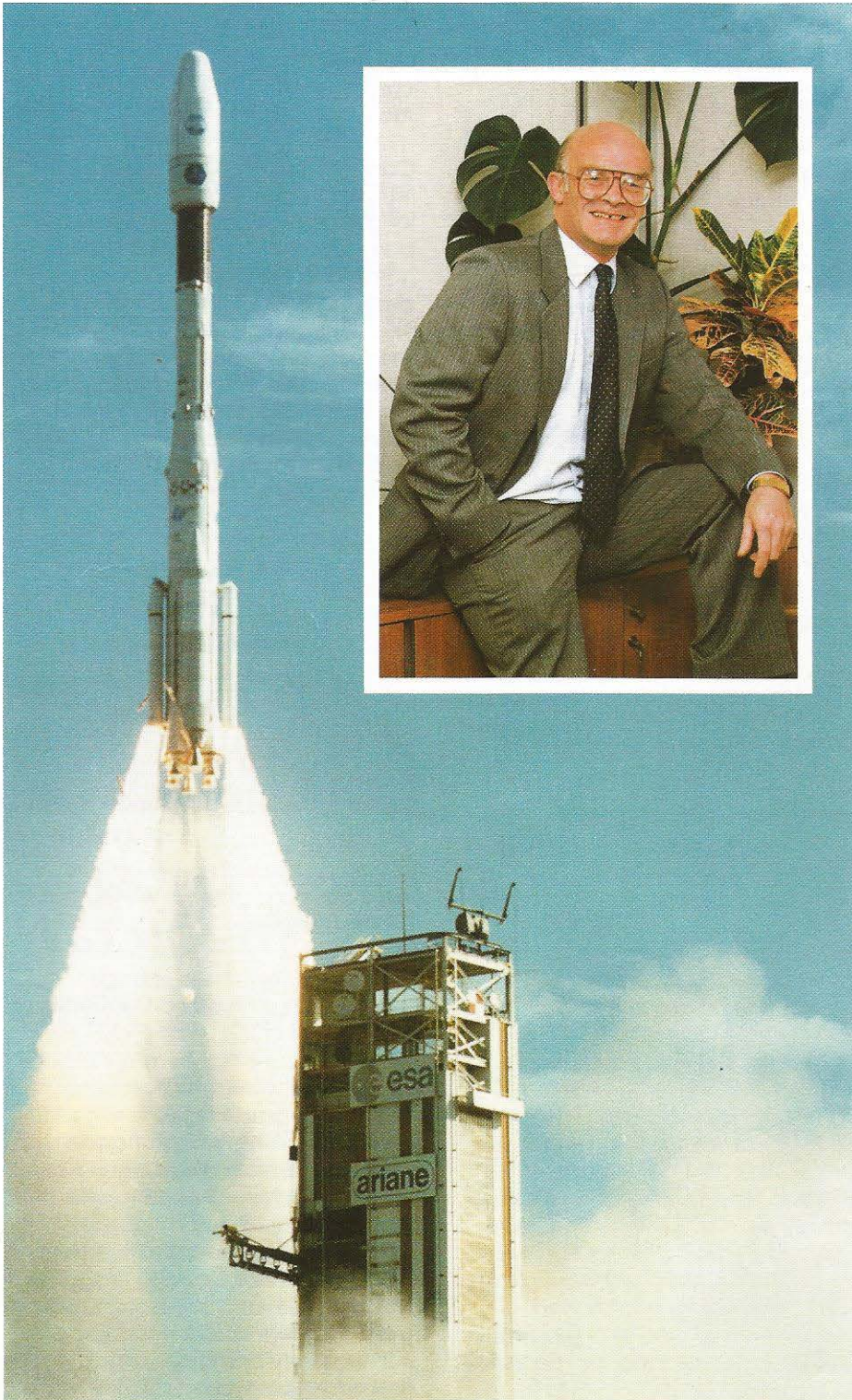
What happened to 1989?

It seems to have passed in a flash! I've heard of life in the fast lane and the new EASAMS Turbo model is proving to be a rapid mover!

All of the main operating divisions of the Company have set a high level of achievement in 1989; Systems Engineering got in early with its success on SIDFAC against intense competition; more recently, Studies capped a consistently good track record through the year with a major win in a new sector of naval business at home and an overseas definition study which will grow into a major implementation project. Software has continued its rapid expansion and diversification with a wide range of customers in the civil sector including a whole new range of applications based upon IBM computers. ADCIS has grown virtually from scratch into a major business in its own right. The Weymouth and Munich units have both achieved expansion of their work and the newly opened EASAMS Australia has secured its first orders and is well on the way to becoming an established part of the Australian business community. Put this all together and we now have a company with an order book of well over £100M, annual sales approaching £50M and a staff of 1100 including the creation of 200 completely new jobs in the last year.

1990? Definitely not recommended for the faint-hearted or those who enjoy a quiet life.

I would like to thank all of you who have worked hard and contributed to the success of our Company in 1989. I wish you and your families a very Merry Christmas and a Happy (and challenging) New Year.

Angus Cairns

A MESSAGE FROM DOWN-UNDER

Now that spring has gone in the Northern Hemisphere it is time for spring in Australia. Spring is a time of growth and blossoming and the same can be said of EASAMS (Australia). Over the past few months a number of new contracts have been signed which has heralded the end of the dark winter months for the Company. From now onwards things are looking extremely good.

Current projects include:

- Test Programme management for Navy, RAAF and private industry

- Risk management of Software Intensive Projects for the New South Wales Railways

- Bid management of LINK 11 bid for Australian Defence Industries Pty Ltd

- Cadastral database study for the Australian Capital Territory (ACT) Administration.

These current projects are keeping over 12 staff fully employed on revenue generating jobs and we are busy trying to generate more opportunities that will increase the size and scope of the local company.

In addition to the current Projects EASAMS has recently tendered for:

- ASSTASS PDR - a study into the surface ship towed array system. If won, this study will be done in conjunction with the Studies Division at EASAMS Limited.

- Queensland Land Information System. If won, this project involves the design and development of a Prototype system off the Barrier Reef in Queensland.

- The Space Port Study. If won, this study will be in undertaken in Queensland to investigate the feasibility and possible risks of a Cape York Space Port.

- F/A-18 Mission Computer Support. When won, this activity places us in a management role with Philips and CDC(USA) looking after the support of the XN6.

- Mine Warfare System. If won, this study will provide support to the RAN in determining the requirements for a Mine Warfare System Centre.

As can be seen, a lot of our current business and projected business is non-defence based. We are currently considering, particularly with the Space Port project, to become more involved in Environmental Sciences. We have an association with a US company already in this area. We also have associations with Price Waterhouse in numerous consulting areas related to Space Systems.

If the above list is not enough for a company the size of a very small group, in the UK Company we are bidding with UK support on the following major opportunities:

- AUSTACCS

  Roger Cooke has now been in Australia for the last year preparing the ground for us to put in a very credible bid on this Army C³I system.

- IASSF

  The Australian company is being supported by the System Engineering Division on this support project for the F/A-18 avionics.

- HREF

  To support our case with IASSF we are also working on the Radar Evaluation Facility for the F/A-18's.

The total value of the above three programmes is over 35 million pounds.

Since formation a year ago the Company has expanded to three offices (Sydney, Canberra and Newcastle). We have plans for offices in Queensland and Adelaide within the next six months if current activities generate revenue. Although the Company is very small, we are projecting a large and capable image and with support from the UK divisions all our goals will be realised.

Nigel Hennessy, Australia

AIR STUDIES IN CANADA

Mike Quinn, Kevin Hyman and Dave Buckle of System Studies visited Canada earlier this year for a technical progress meeting on the Radar Seeker Head Specification Study. This is a programme of work EASAMS is undertaking for the Defence Research Establishment Ottawa, a department of the Canadian DND. The meeting was highly successful, impressing the customer with EASAMS' capability in the radar and EW fields.

Canada was a culture shock. We felt very uncomfortable driving on long straight roads without any other cars. Our thoughts turned wistfully to home and the happy hours spent admiring brake lights on the A325. And traffic lights. Millions of them. The Canadians don't believe in roundabouts. We only found one in the entire country (actually it was a flower bed with a surrounding road) and drove round it three times nostalgically.

Driving on the wrong side of the road was no problem. We do that in England anyway.

To recover from these strange foreign experiences we frequently took refuge in the 'One Oak' - an 'English Pub' not far from our digs. All the beer was actually lager. The one saving grace was the size of the cans (everything is bigger and better in the New World). This was especially appreciated by Mike.

After the last of the meetings, Kevin and Dave drove down to Niagara, which is on the US border. The falls were wonderful but the Canadian side was very commercialised. The American side was said to be better but, unfortunately, we were not

allowed in and were deported as undesirable immigrants. Dave did not have a US visa (a requirement for entering the US only from a third country). We declined the kind officer's suggestion to stamp our passports 'Welcome to the USA',and we also declined to pay 50$ for the (normally free) visa ("sold 50 of those yesterday"). Instead we contented ourselves with much colourful discussion on the 'Special Relationship'.

The flight back was a novel experience. Depart Ottawa 9.30 p.m. arrive London 10.30 a.m. Now we know why it is called the 'Red Eye'. Halfway across the Atlantic the stewardess started being rude. The pilot announced customs were working to rule and tube and train drivers were on strike. The plane was on time at Gatwick but we got stuck for an hour on the M3.

It was great to be home.

Kevin Hyman
Air Studies Group

WEYMOUTH OPEN EVENING

Well supported by the Marketing group, the EASAMS Open Evening at Weymouth turned out to be a resounding success, following the issue of a vast number of invitations to military and non-military contacts. Forty seven visitors attended, led by the Deputy Director of ARE, Dr David Tyte, with some from as far afield as Bath and Portsmouth.

A wide range of computer-based systems were set up and displayed by Studies and Engineering creating overall a mini Olympia scene in the western end of the new office block, all of which attracted considerable interest from visitors and staff alike. A major contribution to the success was the enthusiasm of EASAMS' staff who manned the displays, provided an efficient reception service and generally hosted the visitors. Particular thanks go to Lynn Thorne and her team of ladies who provided a magnificent array of drinks and choice dishes for the buffet.

As well as generating several business initiatives the occasion provided an excellent opportunity for EASAMS' staff to see some of the Company's products and talk to their colleagues in other Divisions. The event is sure to be the forerunner of similar 'get together' evenings to be organised for 1990.

**Lawrence Mitchell, Marketing**
George Pearce, Weymouth

STUDIES DIVISION AT MILCOMP

From 26th to 28th September, Studies Division was busy plying its wares at the Milcomp exhibition at Wembley.

Mike Mee and Graeme Jenkinson of Graphics Department did a first class job at designing the 24² m stand, producing the graphics boards and assembling and dismantling them. On display were WARD, AWSEM, the transputer-based Acoustic Signal Processing, Napier and the advanced mapping system. During the three days 160 enquiries were received; Clive Radley and his team are now diligently following up the enquiries and it is expected that a considerable amount of work will be forthcoming.

On a light-hearted note, two bottles of champagne were awarded to the staff obtaining most enquiries - Tony Beeton of Marketing and Clive Porter of Land Systems group were winner and runner-up respectively. The photo shows them receiving their prizes from Clive Radley, Divisional Consultant. The other photo shows the 'stand-manning' team who were on duty on the final day.

Eileen Brown
Marketing
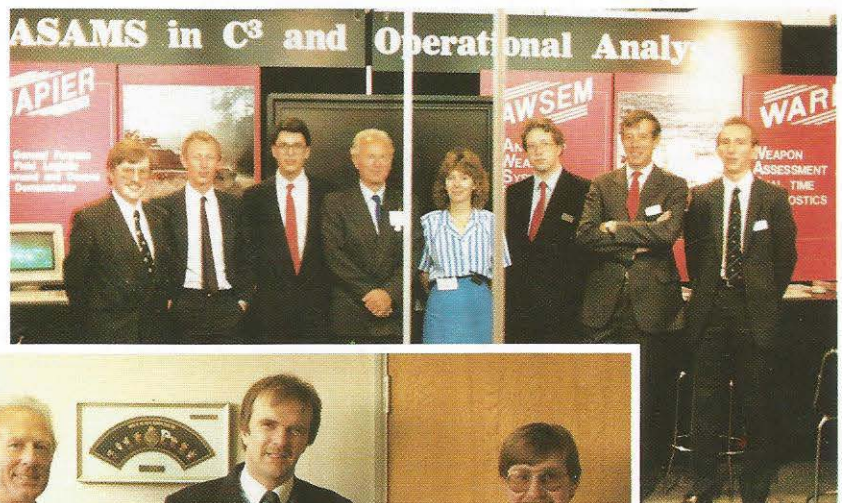
SOFTWARE DIVISION - PAST, PRESENT AND FUTURE

Most of the articles in this issue arrived on my desk as a result of several pleading phone calls over recent weeks. Not so for the following article on the Software Division. On a sunny November morning I presented myself at Keith Jenning's office and, with the help of a tape recorder, the history of the Software Division began to unfold.

The Software Division has grown from the Software Engineering group which was formed four years ago to provide vital software skills to the Company's operating divisions.

Initially, the Group concentrated on company-orientated research and development, the provision of in-house consultancy and the training of staff. The Group's activities involved the staff in leading edge software skills. From the outset it was recognised that opportunities existed to sell the Group's expertise on the open market and it was intended that the Group should become a self-sustaining profit centre at the earliest opportunity.

The Software Division was formed in June 1986 with the Software Engineering group providing a nucleus of software engineers. The Division's brief was to operate as a profit centre based on the sale of software skills. It was intended that the Division should concentrate its activities in the commercial (non-defence) sectors of the market-place since the Company was already very firmly established in the Defence Operational (MOD(PE)) sector.

In the three years since formation the Division has established a very creditable presence in the commercial sector. The Division has demonstrated that EASAMS can operate effectively in the commercial sector and it has made a significant contribution to the Company's overall performance.

The Division's success has come from a straightforward business strategy devised in the very early days.

New software development technologies for which there is a growing or a predicted demand are identified early in their life. A nucleus of expertise is created in each technology using a small number of highly skilled staff. These experts are used to train other members of staff in the new skills and the skills are sold in the market-place in the form of software development consultancy and as a bespoke software system development capability.

The Division's main day-to-day objectives are to win business, to carry out existing business, to introduce new technology and to recruit and train staff.

To win new business the Division employs a team of three salesmen. Each salesman is tasked with selling the Division's services in one or more areas of software development technology. The salesmen maintain very close links with the suppliers of the proprietary software products which form the basis of the development technologies. Close ties are also fostered with the computer manufacturers on whose processors the Division provides solutions. In this way the salesmen maintain a detailed knowledge of the market for the Division's skills.

To ensure that existing business is carried out successfully the Division's current projects are divided into groups. Each group of projects is controlled by a business manager. The projects are grouped on the basis of software development technology. In this way the project groups form strong centres of expertise in the various technologies used by the Division. This concentration of expertise enables the Division to focus its technical capability in response to the demands of the business. This approach is a major influential factor in the Division's business performance.

The Division sustains a continuous programme of investment in new technology. This programme, known as the Forward Look project is used to investigate and introduce new software development technology and advancements in computer processor technology. The programme is also used extensively to train staff in new skills. Experts from the Forward Look programme are used to support sales activities and existing projects.

There is a further very important reason for the existence of the Forward Look programme. It holds a pool of staff ready to meet the demands of the Division's customers. Without this pool of staff, customer requirements could not be met in a timely manner and the Division would rapidly lose its position in the market-place.

The Forward Look programme is funded and managed centrally under tight control. The idea is that by exercising control from the centre a close match is kept between the demands of the business as seen by the senior managers and the sales force and the technology investment programme.

Every contract won, every new project, has come either directly or indirectly from the investment and Forward Look programme. Nothing has come by chance!

Recruitment and training of staff is another extremely important area which is treated as a major goal by the Division's senior managers.

There exists an acute shortage of skilled software staff. This shortage is exacerbated by the reduction in the numbers of people entering the labour market. In consequence, the competition for staff is ferocious. The Division employs a Resource Manager whose major objectives are to meet the staff recruitment and staff retention targets. A wide range of recruitment techniques are employed by the Division.

A small number of new recruits already have the skills marketed by the Division on entry. However, the majority require training. This training is provided as an adjunct to the Forward Look programme discussed earlier. The existence of formal training is a major attraction in the competition for new staff.

The Division's successes to-date derive largely from the provision of modern software skills and to a much lesser extent from the provision of older, more traditional software skills. In particular, the Division has established itself as a leading supplier of Relational Database

Management System (RDBMS) and Fourth Generation Language (4GL) expertise.

Earlier this year, the Division received an award for the Number One Ingres System Builder in 1988/89, establishing the Company as the foremost supplier of solutions based on this technology in the UK. Other development technologies exploited by the Division include Oracle, Sybase, Syoon, RDB and real-time languages.

The Division's staff has extensive knowledge of modern software design methods and tools. In particular there exists good knowledge of SSADM, the design methodology mandated by CCTA, the Government procurement advisory body.

The Division's knowledge of processor technology is as vital as its software skills, and its staff maintain close contact with the processor manufacturers. The processor market is seen as coming down to DEC, IBM, ICL (in the UK) and the UNIX suppliers.

A large percentage of the Division's business is done on DEC processors. However, the percentage of UNIX business has been growing steadily for the last year or so.

From the beginning it was felt important that to operate effectively in the commercial sector the Division had to have coverage of the IBM market-place. Moves were made to build a relationship with IBM and the winning of the Cavewood project gave the Division its first IBM project. In the wake of this project, in late 1988, an agency agreement was signed with IBM for the AS400 mid-range processor. A lot of agreement has gone into the AS400 agency and the relationship is going well.

Earlier this year ICL chose Ingres as their strategic database. This presented the Division with the opportunity to develop contact with ICL on the commercial side. This contact led to the Division's largest ever contract to provide a housing database to ICL.

The Division now has excellent coverage of all the major processor suppliers.

The Division's customer base spans industry, finance and government (non-defence). In the industry sector major organisations such as BP, Thorn EMI, DRG, Unilever and Heinz have become clients for relational database technology. In the financial sector Ingres solutions have been provided to the International Commodity Clearance House, County Natwest, Banque Paribas and others. In government there is the Department of Transport, British Tourist Authority, the Training Agency and so on. The customer base currently numbers over 50 organisations.

All of that does not include the Ariane programme. The Division inherited the Ariane software development project when it arrived at EASAMS. In addition to continuing to successfully provide flight control software to the Ariane 3 and 4 programmes, the Ariane team played a major role winning the Ariane 5 development work to be carried out in EASAMS GmbH. The Customer was keen to see this work undertaken by EASAMS despite the withdrawal of funding by the UK Government, something that speaks volumes for the quality of the Ariane team.

So much for the past and present. For the future the Division has a new three-year plan, the main objective of which is to give EASAMS a major presence in the commercial sector. The details of the plan cannot be covered here but is essentially one to accelerate the Division's growth from its existing base. To do this a number of actions will have to be taken; in particular there is a need for investment in accommodation and facilities, technology and training, and in sales and marketing.

Many of the actions are already happening. The need to provide modern accommodation and facilities has long been necessary in the fight to recruit and retain staff. In January this goal will be achieved with the move to Water's Edge.

A look to the future reveals marvellous opportunity. The Division has an exciting mix of modern software skills and knowledge of modern processor technology. The task ahead is to seize the opportunities that have been covered by the hard work of the last three years and to create new opportunities.

Finally, to introduce some of the staff. They are a unique group of people, they are the Software Division.

Keith 'Mr Nice Guy' Jennings. High flying Software Divisional Manager who makes it happen. Works too hard and makes everybody else work too hard. Enjoys having two or three punch-ups daily, especially in the mornings. Hopes the Company will buy him a new Porsche for Christmas.

Janet (Whizzer) Green is the Divisional secretary and the main interface with the outside world. Her reputation for being able to work at 100 mph in a cool and professional manner is well known. She runs the Division, ...really! **Catherine (Rambo) Dalton - skirmish organiser** and secretary to Bernard Richardson, **Jo (Show jumper of the year) Bute** and secretary to the salesman **and Norma Smith (Ariane).**

Paul (Thug) Taylor. Manager of the Forward Look programme. Gets the highest possible performance from everyone and still complains. Is responsible for recruitment of many of the Division's best technical experts. If you can survive an interview with Paul you are in. (It can take four hours of grilling - no lunch or coffee breaks).

Nigel Half-Nelson keeps a grip on the Division's contracts. Has been with EASAMS for many years so has a good understanding of the Company. A cool head in a crisis, so he keeps busy most days. Cooks the books very gently.

Uncle Dave Collett - Salesman responsible for the Ingres business. Good for a toffee or biscuit most days. They say the Division's Ingres award cost him a year's wages, probably somebody else's wages.

Richard (Whirlwind) Muddiman responsible for the Oracle business. A member of the Oracle User Group Committee. Says he is a famous racing driver and needs sponsorship. Any offers via his manager (Keith Jennings) please.

Alan Wilson responsible for the Oracle business, won the Cavewood project. He is an excellent business analyst and a tricky wee Scot to boot! Just been big game hunting in Kenya.

Dan Honey IBM AS400 salesman. Has a good reputation and good contacts throughout the IBM organisation. Actually his reputation is much bigger than him. Says he needs a chauffeur but we palmed him off with a car-phone that doesn't work.

Thorsten Lake. Held in the highest esteem by IBM (so he says). Six foot nine blonde Adonis from Scandinavia ("where is that?" Dan Honey says "do they need an AS400?"). Good at rounders and other girls' games.

Richard Broughton. Another blonde Adonis. Models braces and in his spare time runs the Cavewood project.

Tim Clapham. Keeps BP Exploration in business (or perhaps not!). Designer stubble gives the impression that he works all night long. Is he a burgler?

Gordon Hamilton. Knows more about Ingres Performance issues than anyone. He's got handfuls of youngsters so his performance is quite good. Yet another tricky wee Scot with a beard.

Heather (Bossy-boots) Moore. Just returned from a long holiday courtesy of the Division. Hope she's not planning any more (holidays that is).

Nick (The Spiv) Mills. Every customer's best friend. Reckons that the Division's investment programme should include a small flutter on the dogs at Wimbledon.

Bob Smith. Ariane Project Manager. He must be brilliant: he's an Englishman who speaks French and works in Germany.

Peter Grant, Mike Gregory, Tony Grubb, Kevin Hogarth were all here at the beginning and are all still very important members of the technical team.

More about them and others next time.

WHAT I DID AT MILCOMP THIS SUMMER (WELL AUTUMN I SUPPOSE)

So, I had a whole 30 minutes to present my paper - 'The Integration of Object-oriented Programming and Knowledge-based Systems for Concurrent Simulation Applications'. It looked like it would be OK, I just had to say the title a couple of times and that would be most of the time gone!

The audience looked pretty mean. There were well over 200 delegates from the military, commercial and academic domains - all waiting to hear why OOP, IKBS and transputers were the best thing since EASAMS' planned conversion of K Block into multi-storey car park. I started by putting up my first overhead which simply said who I was and where I came from - it's a useful trick for keeping your mouth busy while your brain comes up with something sensible to say! For some reason the audience started to cheer up. They all looked happier, some smiled, some even giggled - marvellous I thought, until I turned round and noticed the caption was upside down -aarrgg!!!

Oh well, things could only get better, and they did. I completed the talk with no further problems, and spent a good ten minutes answering some excellent questions from the delegates - a process which continued more informally after the session over coffee.

Unfortunately, both the EASAMS and RSRE papers were upstaged by the French paper. The French author who was to have presented the paper (and who spoke fluent English) had missed his flight. However, his co-author (whose English was as poor as my French - i.e. terrible) decided that 'the show must go on'.

With a lot of bottle, plus having problems with his overheads as well as the English, he struggled through - finally earning a standing ovation from the audience.

Alas it's all over now, but there is always Milcomp '90 to consider, and I think I feel another paper coming on!?! I'll have to think of a good intro' though. How about -

"Bonjour mesdames et messieurs. Je parle une peu Anglais ..."

John Watkins. (Plus thanks also to my co-authors Alan Pitman and Brian Knapp)
Studies Division

WHAT IS ADCIS?

If you gaze out from the back of K Block towards the Motorway, you may glimpse Albany Park M Block, the current home of ADCIS (behind Payless, third sleeping policeman and turn right!)

The ADCIS team, now some 130 strong and a 'strong brew' of EASAMS, Logica and other contractors, is now 18 months into the £100 million project programme, which represents half of EASAMS' current turnover.
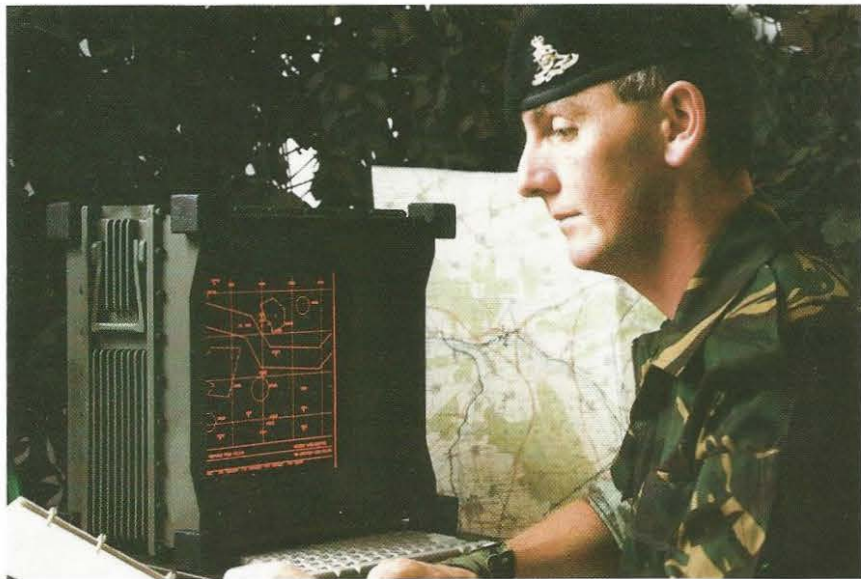
I've had the privilege of working on this project since some six months before we signed the contract in April 1988. Some of us, like Trevor Saunders, have been with it much longer including the 'long haul' of Engineering Studies, bids and rebids needed to clinch the contract. Eileen Brown has been pestering the project for an Interface article, and so the task fell to me.

Well, I'll explain a little about what ADCIS is. Perhaps someone will follow up in a future issue with a little more on 'How are we doing it?', and explain how Keith Robinson, our Project Manager, has built up the team and our 'Software Factory'.

So just what is ADCIS, and why is it needed?

The British Army, whose 'front line' is deployed in Germany (the First British Corps or 1(BR)Corps) has many hundreds of Army air defence

weapons. These include Rapier - as used in the Falklands - and more recent systems such as Starstreak or High Velocity Missile (HVM).

These weapons provide defence to the Army, including defence around vital points such as Bridges, Headquarters, etc. Unfortunately these same weapons could pose a threat to our own RAF aircraft and the numerous army helicopter missions needed for 'tank busting', recce and support (e.g. moving ammunition or casualties).

One of the main functions of ADCIS is to ensure that these Army air defence weapons do not shoot down friendly aircraft, (i.e. it must reduce fracticide). The system must

also provide effective communications through the Army air defence command chain from Corps, through Division, Brigade and Battery Command posts, to the 'sharp end', the air defence weapons. A host of command and control facilities must be provided at these units to support air defence planning, early warning, resupply, etc., i.e. facilities to make the Army air defence system more efficient in its mission of shooting down hostile aircraft.

ADCIS equipment is to be delivered installed within the vehicles that comprise the air defence cells at the various Army command levels. At Corps this would be a truck-mounted container, and at Divisions and Fire Control Centres (the Battery Command Posts) typically a Saxon armoured vehicle.

Weapon Platforms are supplied with an intelligent Data Entry Device (DED) which communicates with its Fire Control Centre (FCC) via Combat Net Radio (CNR). The DED and radio equipment are mounted in the tracked Rapier or Starstreak armoured vehicle, or Landrover for Towed Rapier.

The ADCIS computer and display installations are built to withstand the 'normal' rigours of a modern land battle including survival of mechanical vibration and shock - such as a tracked vehicle racing over rocky terrain, and temperature extremes - from tropical to arctic conditions.

Corps, Divisions and FCCs are equipped with Raytheon 860 military VAX computers coupled to CDC 'Rough Rider' military Winchester 90MB disk backing stores. These air defence cells have local Plasma Interactive Display Terminals (IDT) and printers. All these VAX equipped cells are linked by the Ptarmigan packet-switched digital communications system.

VAX computer architecture formed a key element of EASAMS' bid for the ADCIS contract. DEC has sold some 140 000 VAX computers worldwide into both the military and commercial sector.

The Raytheon 860 processor is a military twin of the DEC commercial 6210 machine, based upon microprocessor chips designed by DEC.

Within EASAMS and the software industry of DEC software, there is considerable familiarity with DEC software such as the VMS operating system - important when one needs to build up an experienced software team rapidly. There is also a wide choice of well-proven products, both software and hardware, capable of exploiting and interfacing with VAX equipment.

The DED is a small hand-held computer not unlike the Husky Hunter, with its own integral display, keyboard, and connection to the CNR pack. Being portable, the DED can be dismounted from the vehicle and located 'in the trench'.

The CNR permits the FCC and a number of DED equipped Weapon Platforms to share a radio frequency and exchange data. EASAMS has developed 'packetised' high-level protocols that permit CNR to meet the stringent end-to-end performance requirements of ADCIS. Information such as alerting messages or weapons control orders must be relayed from any headquarters to hundreds of sites within a few seconds.

In a typical deployment of ADCIS there would be many tens of VAX-equipped cells and several hundred DED equipped weapon platforms. A Corps might include four Divisions, each commanding ten FCCs, each in turn controlling twenty weapon platforms.

A Corps, Division or FCC would normally have a 'step-up' - an identically equipped twin headquarters able to 'leapfrog' and exchange roles with the main cell. This Army requirement of switching command between units, so that one can be operating whilst the other moves to a new location, is a vital feature of ADCIS.

ADCIS automates Army air defence procedures including the automatic processing of friendly mission flight plans into Weapon Control orders. As an illustration of how ADCIS will provide safe passage for friendly aircraft, consider the following situation. A forward Brigade requires immediate evacuation of casualties

by helicopter which will require flying through a heavily defended area, the helicopter mission is tasked and the mission route entered into ADCIS by the Brigade's air defence Liaison Officer using his IDT. ADCIS then automatically distributes the message containing the route details to FCCs that control weapons covering the route. These FCCs automatically calculate the restrictions to put on each weapon, based upon other restrictions in force and the Weapon Platform's location and coverage, and broadcasts these weapon control orders over CNR. The DEDs located at Weapon Platforms receive the new orders and automatically display them at the time they apply to the particular weapons. The result is that weapons are restricted when necessary to provide a safe passage for the friendly mission while maximising their ability to engage hostile aircraft.

Although automation of Weapons Control orders is an important function of ADCIS, the system must provide a much wider range of facilities:

- Airspace control and air defence functions
- Logistics and deployment functions
- General purpose functions
- System management functions.

Examples of automation are:

- Switching of geographic information such as boundaries or routes for entry or display between map graphics, UTM or UK Grid, Lat/Long, GEOREF co-ordinate forms.
- Automatic addressing of messages based upon their type or operator command, such as all sites within a particular command's boundary.

The majority of ADCIS facilities are provided via the Plasma IDT Man-machine Interface (MMI). This Marconi display terminal can display messages and battlemap graphics on its Plasma Panel, and has a Qwerty keyboard and function keys for entry and retrieval of information. An internal processor provides local intelligence which gives improved performance and stand-alone capability when remoted from the host VAX computers.

So, how are we doing it? One of the early successes on the project was our use of MMI prototyping to make sure that ourselves, MOD(PE), and the army 'user', know exactly what software we are going to build and deliver.

EASAMS and MOD have worked closely together early in the project programme to agree a detailed and precise MMI Specification. MMI prototyping and system simulation were used to permit Army Operational Staff to use ADCIS facilities within a realistic battle scenario. This permitted the MMI Specification to be validated to ensure that an operationally useful and user friendly system would result.

The MMI makes extensive use of menus, help facilities, and a rational set of principles throughout - such as mechanisms used to enter and check data, obtain HELP, graphical display and entry facilities, use of function keys, etc.

During the first year's System Design phase of the project, EASAMS invested considerable effort into computer modelling and simulation work. Computer simulation was used to 'test' the design of the system, particularly the ability of the software and communications to meet end-to-end timeliness requirements. Computer programs simulated the detailed flow of packets of information within computers and through the communications links.

Other models have been used to assist prediction of the 'combat effectiveness' of ADCIS, i.e. attempt to quantify overall capability of the Army air defence system to shoot down enemy aircraft whilst not endangering our own missions.

ADCIS software is to be written in Ada to program the military VAXs, Plasma IDTs and DED computers.

The project has established a large computer bureau at the Albany Park ADCIS Project site. The core of the bureau, managed by Angus Glen-West, consists of a DEC cluster of VAX 8530 and VAX 6310 machines, 7.5 Gbytes of on-line disc storage, networked to over 50 VAX station 3100/30 and 80 other terminals.

The bureau provides an integrated support environment for a wide range of activities including Specification writing, System Modelling, MMI prototyping, and Ada software production.

New techniques have been applied successfully to the project, including formal analysis and design methods and the use of a Fourth Generation Language (4GL) relational database to maintain design information. This design database has been used to support rapid prototyping of MMI and system functionality, Specification document production, and automated production of the operational Ada software.

The concept has been one of building a C³ System Factory with the ability not only to produce systems on time and within budget, but also to meet the user's real requirement.

Finally, a much more important issue: how does one pronounce 'ADCIS'? One or two 'old lags' have been overheard saying 'AddSiss', but in a recent survey at Albany Park, 100% responded 'AddKiss'.

I hope that you now know a little more about 'AddKiss' than you did before, so from all of us at Albany Park, a very Merry Christmas and a Happy New Year!

Robin Lovelock

EASAMS AT THE RYDER CUP

In the weeks leading up to the Ryder Cup at the end of September, several golfers within the EASAMS fraternity waited with bated breath for the announcement of Tony Jacklin's 'wild cards' to play in the European team against the United States. Early rumours, however, were unfounded, with the result that Europe had to be satisfied with a tie. If only ....

However, EASAMS **was** represented on each of the three days, although near perfect weather conspired to prevent a grand opening of the EASAMS golf umbrellas on TV. Hospitality units at this prestigious

event had been fully booked for months ahead, and EASAMS' decision to continue with corporate entertainment at selected events in 1989 had fortunately been made in good time, and we had reserved a table each day for up to 10 guests.

Gates opened at 7.30 a.m. at this all-ticket event at the Belfry near Sutton Coldfield. Our guests came from as far afield as Kent, leaving home at 4.30 a.m.! Eager to see the cream of the world's professional golfers in what promised to be a very keen and tight match, they were not to be disappointed, the resulting tie being only the second in the history of the competition. The Belfry is not the best spectator venue, but this was more than compensated by the tremendous excitement and atmosphere throughout, and those who were short in stature, or hadn't brought their step-ladders, or preferred the attractions of the hospitality marquee, were able to follow every shot on TV.

All good things have to come to an end, however, and judging by the fulsome thanks we have since received, our guests had a thoroughly enjoyable, if tiring, day.

Prize of the month, and my enduring memory, goes to one of our intrepid Software Division hosts, who, oblivious to all that was going on around him, was to be seen huddled amongst the trees with his radio-telephone trying to close an important order for EASAMS. That's devotion to duty!

Richard Earnshaw
Technical Services Department

Phil Keeble from RAF Conningsby with Jim Cole, (right) and Richard Earnshaw, (below).

RAF CONINGSBY CHALLENGES EASAMS

On October 20th the golf course at Woodhall Spa in Lincolnshire was the venue for a challenge match between RAF Coningsby and EASAMS.

EASAMS has maintained strong links with RAF Coningsby, the main operating base for air defence Tornado aircraft, and EASAMS decided to recognise the continuing relationship by presenting a Challenge Cup.

The team played four matches of 4-ball better ball, each match to be taken to the 18th to score 'holes-up'. After two matches, EASAMS had established a small lead, but it was not to be our day. The RAF won the third match to bring the scores level again, and our fourth pair were unable to remove their opponents' early lead despite a strong fight back on the last nine. So we had lost the match, and the Cup, and Tornado aircraft roared overhead to salute the RAF victory.

We presented the cup at a dinner in the Clubhouse in the evening, and received an inscribed RAF Coningsby shield to mark the occasion. It had been a very enjoyable day for hosts and guests alike. We left due notice that we fully intended to regain the trophy next time.

Richard Earnshaw
Technical Services Department

NATIONAL YOUNG EMPLOYEES COMPETITION 1989

The NYEC is an outward-bound type of competition organised by GEC to promote teamwork and leadership qualities. This year EASAMS entered two teams. The Lyon Way team members were: Tara Whitehead, Duncan King, Ian Boyd, Howard Merrion, Fraser Harris and Diane Mills, and the Weymouth team members were: Peter Beard, Alistair Tillotson, Adrian Bate, Ben Mottram, Bryan Green and Grenville Mercer.

The competition was split into four zones, each of four hours duration, as well as two night exercises. The activities included orienteering; golf; erecting a tent whilst blindfolded; crossing an 'electric fence' located in the middle of a 'minefield'; stealing a picture; abseiling and crossing a river by rope. We also had to build a bridge, do some sailing and build a raft. Overall the Lyon Way team finished a respectable 37th, with the Weymouth team doing slightly better at 30th. More importantly, we found NYEC to be a worthwhile and enjoyable experience (most of the time!), and would recommend it to any young employee from EASAMS. Thanks must be given to the Dunchurch organisers and the EASAMS' marshalls, Martin Howe, Peter Upshall, Peter Richards and Jo Etherington-Smith.

Ian Boyd
Duncan King
Underwater Studies Group
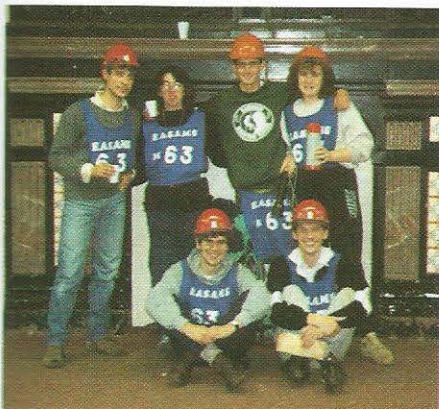
The intrepid Lyon Way team

RECORD TIMES WINDFALL FOR GREAT SAM RACERS

A fierce wind failed to hold back runners in Sunday's Great Sam Run as athletes set new records in the popular road race, organised by Bracknell Samaritans and sponsored by EASAMS.

Nearly 1000 runners gathered at the start of the eighth annual race - the biggest ever field for the 13 mile half - marathon between Wokingham and Bracknell.

ADCIS runner Roy Cloude.

Organisers hope the runners have raised about £4500 for the Samaritans.

Last year's champ Duncan Hurdwell sped home to take the men's title for the second time, beating his 1988 time to set a new course record.

The Maidenhead Athletics Club runner sliced 23 seconds off his winning time last year, despite a troublesome wind in the more open terrain at the beginning of the course.

Duncan, who also took the Wokingham Times' team trophy with three other runners from Maidenhead AC, said: "The Sam Run is one of my favourite runs. It's a great course for doing fast runs."

Members of EASAMS were out in force, headed by Dave O'Dwyer and John York, who did the honours by starting the run and presenting the after-race medals and prizes.

An intrepid band of helpers from the Accounts Department, were in attendance on the course (at least those that didn't oversleep) handing out well-earned drinks to the runners.
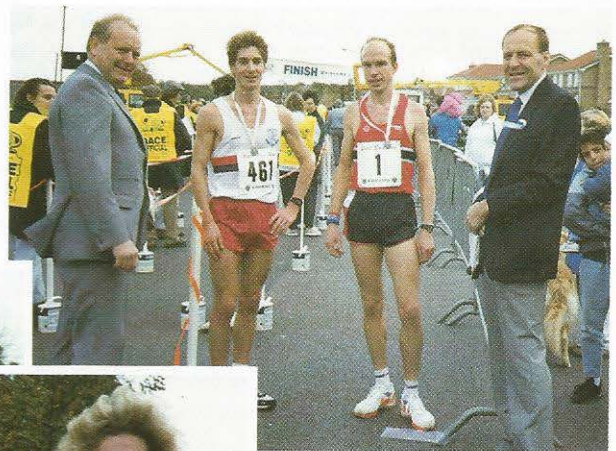
(above) Race winner Duncan Hurdwell (No. 1 and second man home). John Crane (No. 461). (left) Winning lady Diane Hoare after her record-breaking run.

Two EASAMS runners finished in the first 100, with Paul Cousins first over the line in 31st position overall, and Roy Cloude second man home in 91st position overall (21st in vet. category).

The EASAMS team of Paul Cousins, Roy Cloude, Peter Friar and Paul Taylor were fourth in the Company team category.

The Samaritans would like to extend a warm thank you to EASAMS and all those employees who helped to make the run such a *'runaway'* success.

In the ten race categories eight new records were established in this year's run, proving the Run's popularity with the better runners.

Les Webber

EASAMS FLIES THE FLAG

For the second time this year DMCP held a regatta in the Solent to which various companies, including EASAMS, were invited.

In an atmosphere of competitive spirit (not to mention spirits of a different kind) the EASAMS team, in 'Light Air' - a Moody 31 belonging to Alastair McKinnon - sailed itself into a creditable fourth position before the Skipper was summoned to Malaysia.

The true business got under way on the Friday night with a gathering at Ancasta Marina, Cowes, with company flags flying proudly from the mastheads. All our major competitors were present - a sorry sight in EASAMS' eyes - but an extremely cordial social evening was had by all concerned.

EASAMS, once again, sported a mixed crew headed by the Company's equivalent of Chay Blyth, Alastair McKinnon who trustingly permitted his treasure (the boat I mean) to participate in this event. The motley crew consisted of Chris (ADCIS) Storey and his wife Coral, Richard (Marketing) Hill and his wife Jane and, from Special Branch, Brigadier Jimmy Blake who took advantage of shore-based overnight accommodation!

Serious racing commenced at 9.30 a.m. on Saturday morning after a wonderful breakfast and a hair of the dog, both prepared by the Skipper. With grim determination we set off on the first race only to be thwarted by strong tides and lack of wind and failed to make a key mark - so disqualifying ourselves. However, we were not in the doldrums as tactics dictated that we leave immediately for the lunch-time anchorage at Osborne Bay so as to be well placed (and fed and watered) for the start of the afternoon race. Within minutes of finishing lunch we were ordered, via radio telephone, to start immediately for Yarmouth in a pursuit handicap race. Whilst the crew rushed to haul up the anchor, the Skipper was heard to enquire of the Committee boat over the airwaves whether we should leave the island to port or starboard. This,
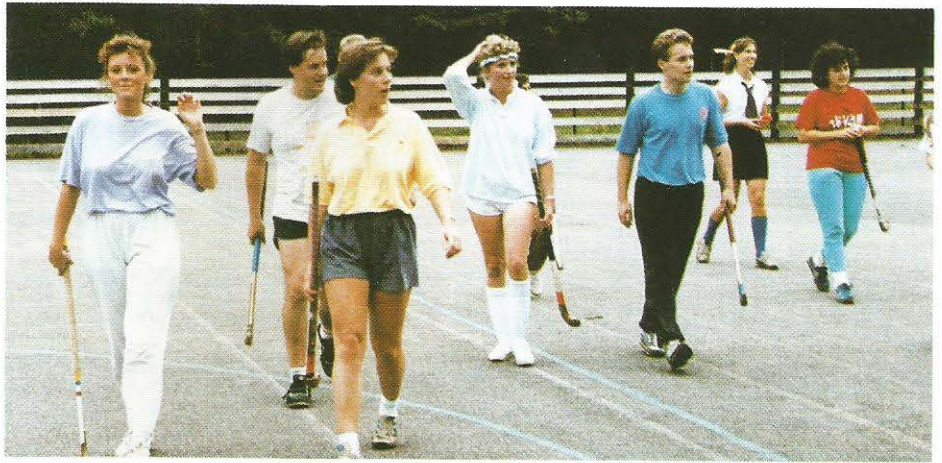
needless to say, caused a great deal of amusement amongst the fleet and, taking advantage of obvious hysteria on the other boats, we sailed off to take an early lead!

'Light Air' tacked and fought off her competitors in the turbulent waters of the Solent and was only overtaken in the last few minutes within sight of Yarmouth pier. We were just pipped into fourth place by 'Main Frame' (a 47 ft Nicholson) and two other large boats.

Saturday night saw us all in the Royal Solent Yacht Club in Yarmouth where we were provided with an enjoyable buffet dinner and friendly banter between crews. Unfortunately our evening was curtailed as our illustrious Skipper had to return to Frimley that night for an early morning start to Kuala Lumpur. The EASAMS team, suitably attired in blazers and evening dress(!) departed in style for Lymington some time before midnight, and faced a tricky and dark passage across the Solent and up the Lymington river to our marina berth - completed without difficulty of course!

A great weekend enjoyed by one and all. Here's to the next time.

Richard and Jane Hill

EASAMS' SPORTS DAY

After six hours of spirited competition, the Studies team led their Software rivals by a mere point. Six representatives of each team now eyed each other from opposing ends of a long rope. Studies and

Software were about to take the strain in the third and deciding pull in the final of the day's last event, the tug-of-war. The movement of the rope would determine the 1989 winner of the EASAMS Sports Association Challenge Trophy.

Twenty-four hours earlier, Ian McGaskill placed an ominous black cloud over the South-East of England and it seemed as if the destiny of the annual EASAMS Sports Day lay in the hands of someone whom Chairman Derek Garrett had inadvertently left off his organising committee. Saturday morning's early birds were, however, greeted by blue sky as they proceeded to prepare Hawley Sports Centre for the day's sporting activity. Early meteorological optimism was dampened by the inevitable fall of rain which was cued by the arrival of the competitors for the day's first events. The rain, which England's cricketers would have welcomed during the summer's test matches, was not received so hospitably by EASAMS' cricketers whose event became a casualty of the weather without a ball being bowled.

Meanwhile, members of the Studies squash team, blissfully unaware of the much cursed precipitation, were displaying their talents to good effect, providing Studies with a winning start to their bid to retain the Sports Day trophy. The Studies 6-a-side footballers were doing likewise on the all-weather surface as the rain, contrary to Ian McGaskill's Friday night prophecy, began to subside.

By mid-afternoon the rain had been forgotten. The Studies team added to their wins in the squash and 6-a-side football with a win in the table-tennis event, whilst Software staked their claim on the trophy with

victories in the tennis, croquet, hockey, softball and volleyball. The Systems team broke the Studies/ Software domination by winning the bowls competition, and Support notched up a win in the 11-a-side football by virtue of the goal scoring talents of their female striker who later denied claims that she was Gary Lineker's sister.

With only the fun-run and tug-of-war remaining, Studies and Software were tied for first place. Mike Quinn of Studies Division comfortably won the fun-run, pushing last year's winner, Software's Paul Taylor into the runner-up spot. Cathy Dalton warmed up for the task of carrying home her dishwasher raffle prize by being the first woman home in the fun-run. Studies were the first team home which gave them an advantage of one point going into tug-of-war. It was fitting that such an enjoyable, well-fought competition should produce such a close finish, with Software beating Studies in the final pull to bring them level with Studies on points overall, and to give them overall victory by virtue of winning the greater number of events.
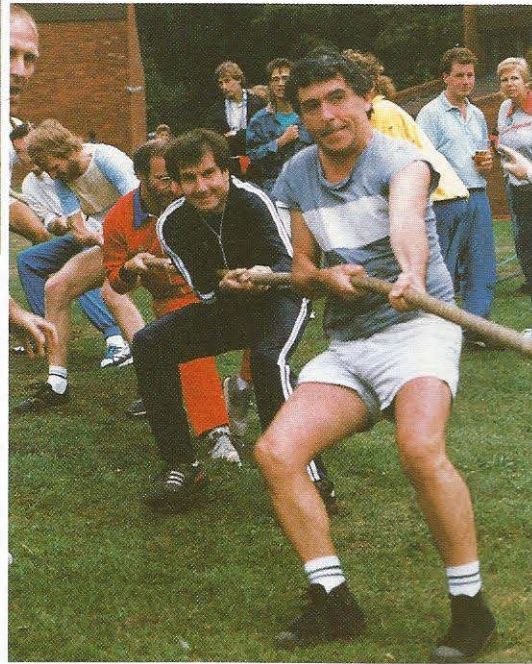
The success of the day's sport was matched by the fund-raising activities, both on the day and during preceding weeks. A total of £928 was raised, largely due to the concentrated efforts of Mel 'raffle-tickets' Parker, graduate of the Bob Geldof school of fund-raising (although I believe her persuasion techniques were somewhat more subtle than those of the Live Aid Orchestrator). The money will be donated to the Mayor's Charity Appeal in aid of the disabled.

Congratulations to the victorious Software team and well done to everyone who participated or

contributed to the organisation of this year's event, in particular the event's co-ordinator, Derek Garrett.

(Just how did you manage to shift those rain clouds, Derek?)

Mark Zymela
Studies Division

Here's a puzzle for you. Can you identify this picture? First person to phone Eileen on Ext. 4133 on Thursday 21st December, with the correct answer, will win a prize!

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SOCIAL OUTINGS ETC.

DATE	VENUE/DESCRIPTION	INDIVIDUAL ALL-IN PRICE, INC. COACH/TICKET	PICK-UP POINT	SEATS AVAILABLE/ WAITING LIST
29/12/89 FRIDAY	LONDON THEATRE TRIP 'ANYTHING GOES'	£?	EASAMS	MAKING UP PARTY WITH FLEET COACHES
29/12/89 SATURDAY	LONDON THEATRE TRIP 'ANYTHING GOES'	£?	EASAMS	MAKING UP PARTY WITH FLEET COACHES
22/3/90 THURSDAY	LONDON THEATRE TRIP 'ASPECTS OF LOVE'	£?	EASAMS	SOLD OUT WAITING LIST
	CHILDREN'S XMAS PARTY (ORGANISED BY SUE KELLY)			DETAILS & DATE ANNOUNCED LATER
	SHOWS WE ARE TRYING TO GET IN THE NEW YEAR: 'PHANTOM OF THE OPERA'			(SOLD OUT WAITING WAITING FOR BOX OFFICE TO RE-OPEN)
	'LES MISERABLES' 'MISS SAIGON' 'STARLIGHT EXPRESS' 'ASPECTS OF LOVE'			

ALL BOOKINGS TO EILEEN WADE IN MAIN RECEPTION or in her absence
TED PORTER on Ext. 4455.
Cheques payable to EASAMS' SOCIAL CLUB