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## FOREWORD

Laurie Hampson

Welcome to those in our Division who have joined us since the last newsletter. MASD has undergone significant expansion in personnel strength and space at both Rochester and Yeovil in the last year and our efforts to improve working conditions are beginning to bear fruit.

Within the next few months the whole of our new area at Rochester will come into use and we will once again become the best-looking (as well as the Best) Division.

Speaking of the "best Division", we had an excellent year on the various sports fields in 1986, winning the athletics and golf trophies and the cricket shield. I hope that you are all limbering up to defend these trophies against attack from the other divisions in 1987.

On the work front our old and new projects are progressing well; difficulties are being overcome; delays are being rectified and new markets are opening up. Our main product line is at least up to, and in most cases is ahead of, anything that is available from other manufacturers, although we can never overlook the fact that, in a limited international market, there are many factors we cannot control which affect a customer's choice of avionic systems.

Our major and long-term thrust into the US market is beginning to take effect, as is our entry into the field of ground-based training aids. After many years of development we now have a lightweight

Tactical System to offer the general market and our newest ASW system, AQS 903, looks set for a long and successful life in multiple applications.

AQS 901, on which our Division was founded, continues to satisfy its users and will, with the development work which still continues, remain an effective operational tool for some years yet.

AQS 902 has grown from a simple system to a complex set of systems and is an excellent illustration of the Division's ability both to produce the goods in the first place and to exploit and develop its products in the longer term.

I seem to have gone on a bit - as I am wont to do - but I believe that we in MASD have a great deal going for us. It is up to us to make the most of that. The customers will be the best judge of how good we are and an expanding Order Book will be our best evidence of success.

A handwritten signature in dark ink, reading "Laurie Hampson". The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

Laurie Hampson  
Divisional Manager

#### EDITOR'S NOTES

COPY DEADLINE: 21st April 1987.

Please send any articles for inclusion in the May issue by the 21st April 1987.

The editor reserves the right to edit any article which is included for publication.

## ROGUE'S GALLERY - WHO'S WHO



John Goodhand, Production Manager

I left school with the ambition to pursue a career which would lead to my ultimate objective of being a draughtsman in the engineering industry. At that time there were many opportunities for engineering apprenticeships in the Medway Towns with companies such as Wingets, Blaw Knox, BP at the Isle of Grain and H.M. Dockyard in Chatham.

I joined a small company tucked behind a large hangar at the north side of Rochester Airport whose prime products were Swift and Swallow weighing machines, food preparation equipment and Fisher valves. Their high technology products were radar turrets and asdic equipment for ships of the Royal Navy.

Elliott Brothers (London) Ltd had been increasing their apprentice intake and I was one of a group of 12 taken on into a company which employed 500 people. During my apprenticeship I studied Mechanical Engineering on a part-time basis and on completion of the apprenticeship I worked as a Planning Engineer in Inertial Navigation Division (IND) on the Inertial Navigation System for the Blue Steel stand-off missile. I then studied Production Engineering and General Management and spent one year at Birmingham University on Post-Graduate work leading to a DGS in Engineering Production and Management.

Returning from Birmingham in 1963 I was Production

engineer in charge of the Short Batch Shop in Military Aircraft Controls Division (MACD) working mainly on T.S.R. 2 but not for long. This project was cancelled in 1965 and I then worked in MACD production department developing production procedures and investigating the use of computers in the management of the production department.

From 1967 to 1970 I was Production Manager of MACD producing equipment for the Lockheed C5A, Buccaneer, Lightning, Phantom and Harrier. In 1970 MACD merged with Transport Aircraft Controls Division (TACD) to form Flight Controls Division (FCD) and I was appointed deputy Production Manager. This gave me interesting experience of assisting in a merger and I learnt some of the aspects of manufacture of equipment for Concorde, VC 10 and BAC 11.

In 1973 I joined Head Office as a Chief Production Engineer working in a consultancy role in IND and at Basildon, and in 1975 I joined MASD as Production Manager. The production department at that time had 30 members who were spread very thinly over the sections and gradually we built on the experience of the original staff, introduced many new staff and built up a department to handle the manufacture of hardware for AQS 901 and AQS 902. We have come a long way since then, into AQS 903, hybrids and signature analysis.

One of the decisions that we made at the time was to carry out engineering development work in the department using production methods and procedures as far as possible. The intentions were to give the projects as efficient service as possible, to provide production experience into development designs at an early stage, to give production "hands-on" experience of future production, to establish closer ties with project teams and hopefully, to improve job interest all around. This exercise has been reasonably successful although it is a very difficult area to control.

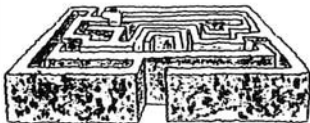
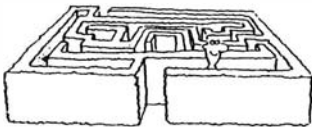
In another role, I am currently Chairman of the GEC Avionics (Rochester) Long Service Association.

Micro circuits are a long way from mechanical

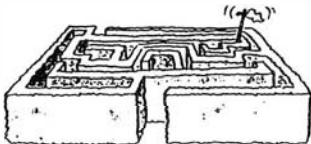
weighing machines and during my career I have worked for several large companies, several different divisions, many managers and had many interesting tasks on a variety of projects - nearly all the time at the Rochester site.

With the rate of change in our business continually accelerating I look forward to meeting the challenges that this will bring; but it is difficult to imagine that one day our current AQS 903 technology will be considered as gear wheels and thermionic valves are now.

#### DIVISIONAL REFURBISHMENT



"HAMPSON'S COURT"



As most people in the division are aware we have at last occupied the first 6000 square feet of the refurbished engineering department (commonly referred to as "Hampson's Court" - editor's comment). This signals the first of what is planned to be several phases of refurbishment for the department during the current year, leading eventually to the whole of the engineering department occupying the south west corner of the main factory.

Although plans and schedules have changed considerably during the last year or so it has been, almost without exception, due to the influence exerted on us by other divisions during the site refurbishment and relocations.

Apart from an area of ADD Production we are now free from these influences and pressures and, together with Works Engineering Services, can proceed at full speed towards completion.

The schedule currently shown being worked to is for information only, and should not be considered inviolate, particularly for the second half of the year.

#### April

- a) Relocate:  
Divisional Manager and Sales and Marketing to new 1st floor.
- b) WES start to refurbish toilets.
- c) Relocate 902/ISK Rigs to new Lab area.

#### May

- d) First half Front Offices complete - vacate remaining Front Office area.

#### July

- e) WES complete Phase 2 including 2250 square feet of Lab/Rig space and 4000 square feet of office area.
- f) Relocate 901 Rigs and Prime Computer in new Rig area.

#### August

- g) Start relocation of Production to their area.

#### September - December

- h) Complete new Rig area - move 903.
- i) Complete office area - move 903 team from ADD.

Although not specifically mentioned it is anticipated that Q/A and Tech Pubs will be

refurbished during the latter half of the year, the start date dependent on the relocation of Product Support.

We will be aiming to get more of the systems furniture in the new engineering areas - if the DM can prise more money out of the kitty.

Gerry Wood

COPY DEADLINE: 21st April 1987.



DAGMAR - The early stages

The initial worth of the AQS 903 system was established during 1986 Sea Trials.

The need and objectives of trials have changed emphasis since the AQS 901 SSAPT in that these earlier trials were undertaken with a proven late development system and sought to demonstrate performance. AQS 903 trials are being carried out with the first prototype system with the aim of evaluating conceptual design. This radical change in philosophy has been very successful in advancing 903 development by providing valuable feedback to the design team together with confidence to the customer that our system has the potential for meeting the very demanding performance requirements.



A complete and formal itinerary of trials is planned in five phases towards the summer of 1989. Supplementary to the formal schedule additional trials become necessary from time to time associated with specific investigations. The most notable of these during 1986 has been the exploration of DIFAR Sonobouy performance detail and its effect upon AQS 903 Input Conditioning design. Such trials are appended to the formal schedule.

Last year saw the completion of Phase 1 and Phase 2 Trials which addressed in the main the MDS performance of the system with regard to Jezebel, DIFAR and BARRA Sonobuoys. The MDS, or Minimum Detectable Signal, performance is stringently specified for AQS 903 and deals with the ability of the system to separate target signals hidden within the ambient noise of the sea.

In order to perform trials of this nature, the location of the trials site needs to be selected with some care. We look for areas of deep, quiet water, free from the interference of passing surface ships. The sea depth, typically in excess of 1500 metres, needs to be sufficient to reduce the affect of signal reflection from the sea-bed. Consequently the composition of the sea-bed must also be considered.

So it was that we narrowed the choice to 2 trials sites offering acceptable conditions, the very North Atlantic south of Iceland operating out of Stornoway or the Mid Atlantic operating out of the Azores.

The Azores were chosen principally because the weather is more predictable and more stable for a longer portion of the year. The North Atlantic, though closer, is uninviting before June and too hostile after mid July. Our trials vessel, "The Colonel Templar", can operate on trials tasks up to sea state 6.

The Azores site proved to be a good choice. During Phase 1 and Phase 2 only once was the cessation of a trial considered due to sea conditions. Coupled with the extremely creditable serviceability record

of the trials system our trials yield was greater than 100%, that is we achieved more than we set out to achieve. The additional cost of the Azores based trials was justified by better trials yield.



The Azores, Europe's most western islands, lie in the Atlantic (lat 40 N) about 780 miles from Portugal. The nine rugged, volcanic islands are in three groups. Corvo and Flores in the far west; Graciosa, Faial, Terceira, Sao Jorge and Pico in the centre and Sao Miguel and Santa Maria in the south east. Sao Miguel, the largest island, contains more than half the population of about 290,000 with Ponta Delgada the capital and main port, which was chosen as our base for the trials. It takes the "Colonel Templar" six days to transit from Falmouth to Ponta Delgada.

The trials team do not accompany the ship during this transit, preferring to fly out by RAE aircraft from Farnborough to meet the ship at Ponta Delgada on its arrival. A couple of days are spent alongside at Ponta Delgada prior to commencement of the embarked trial, checking out all systems after

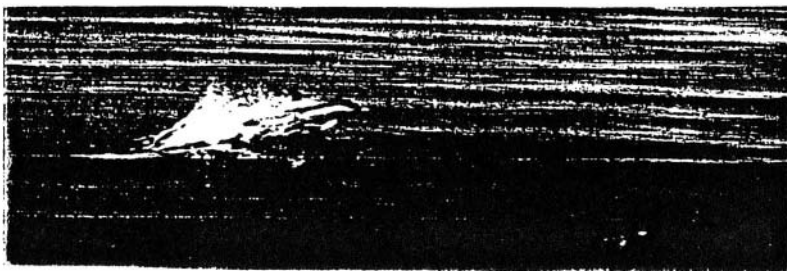
the lengthy, and on occasion, rough passage across the Bay of Biscay.

The trials proper are split into two embarked periods of usually eight days with a half time break of two days alongside. Whilst embarked we position the vessel 70 to 100 miles south of Sao Miguel centred around a defined location nominated 'Terminus'. Each day we commence the trial from this point and then drift in a silent state with all ancilliary systems shut down to prevent noise being generated into the sea. With the sonobuoys deployed at 'Terminus' the ship is positioned to set up a specific relative movement between the ship and sonobuoys dictated by the nature of the trial. Setting up this geometry requires a great deal of skill and experience from the ships-master, since the movement of the sonobuoys is determined by the ocean currents and the movement of the ship by the direction and strength of the wind, none of which are particularly predictable during the course of the day.

The typical trials day commences at 0700 hours with preparatory duties in readiness for sonobuoy deployment at 0800 hours. The trial continues for the life of the sonobuoy, which is usually 8-9 hours for the passive sonobuoys. Consolidation of results and a trials debrief absorb a further 2 hours. If all goes well this represents a 12 hour day. Extensions to the working day are often incurred by sonobuoy failure, equipment performance queries, discussion and the necessary preparation for the next days trial.

For evening relaxation we have video, parlour games, duty free in the wardroom and the biggest aquarium off the stern of the ship which is observed by means of a giant flood light. In the Azores this attracts all manner of marine life and offers an imaginative and relaxing interlude.

On the subject of marine life a number of memorable recollections are retained: The friendliness and antics of the dolphins and their chatter which can be heard through the audio broadcast from the sonobuoys; the multiple sighting of whales during the return transit to Ponta Delgada at the



conclusion of Phase 1 trials which was a very rare privilege. Pairs of whales congregate off the Azores during May/June as part of the mating ritual and it was this that we were fortunate enough to witness.

The presence of whales provided, until recent years, a major occupation for the inhabitants of the Azores - they were renowned for their skill and daring in hunting whales from small outriggered craft. Happily, the hunting of whales is now illegal from all save one of the Azorean islands but evidence of the past remains in the now defunct villages which once formed the centre of the industry.

The Azoreans are a poor people, around 10% of the population at Sao Miguel make a reasonable living in Ponta Delgada. The remainder gain a meagre living from the sea or the land. These are islands generally 50 years behind our way of life. Attempts at commercialisation by the Portuguese remain as monuments of failure. Half-completed office blocks and sumptuous, but deserted, hotels remain. Attempts to build the islands for the holiday industry have failed due in part to the temperate weather, the location and cost of access. The food in restaurants is basic and at times even inedible. The pineapples are good but relatively expensive; the cheese comes from goats and the wine, though Portuguese, is not recommended.

The natural beauty of the island is impressive rising to 3000 feet in places, and abundantly green. A mixture really of the ruggedness of the Canadian Rockies, the lush low mountain scenery of Austria and the coastline of Cornwall - all in the area approximately that of the Isle of Wight. The flora is outstanding; wild azaleas, hydrangeas and

giant lilies line the mountain tops and roadsides. The roads are a mixture of tarmac, gravel and cobblestones gravel but with a witless driver the island can be seen in a day - it would take much longer to fully appreciate its finer points. However, no future trials are planned at this location.

## John Page

6116

For 6116 we are supplying an AQS 902 G-DS system for the Royal Navy Sea King MK6. We are taking two current systems from the MK5 and integrating them. This system will process Jezebel, Difar, Dicass and 2069 sonar.

We are contracted to supply over 100 systems and we have already supplied 2 B-models (production hardware with an early software version). 1 B-model is supporting Westland Helicopter activities and the other is supporting integration work at the Plessey Waterlip Quarry. This is bringing together the Plessey wet end, Dowty winch and our processor giving an insight into its performance.

We are due to supply 1 B-model which will be identical to the production standard around the middle of the year. This equipment will be used by Westlands.

We will be involved in trials activities towards the end of the year on the 'Crystal' research and development vessel. This is sited in the middle of Portland harbour and is doing detailed performance checks for the complete system. Early next year we will be involved in Joint Sonics Acceptance Trials (JSAT) which are sea-going trials aimed at releasing equipment for in-service use.

## Andy Cavill

FWE

FWE stands for 'foreign weapons evaluation'.

This evaluation will be carried out by the US Navy with the AQS 902 G system which will process Jezebel, Difar and Dicass sonobuoys. It will be conducted in two phases:

- a) a bench evaluation which will be conducted at Pax River, Patuxant, Washington and
- b) a fly-off between MASD and CDC, also at Pax River.

This is an important competition to win and it is given high priority in the division. It also gives us an opportunity to break into the US market.

We are at present ready to send the first set of cables and trays to be incorporated into an SH/2F (Lamps 1) helicopter at Kaman Aerospace.

Andy Cavill

MAPADS 02F

The US Navy have placed a contract with Grumman Aerospace for the supply of AQS 902 F system to go in their aircraft; the Grumman S2T Tracker.

Our Atlanta office are fronting the project and this is why it has been given the name MAPADS 02F to distinguish the manufacturing centre. MASD will be undertaking the majority of the development activities. The system will process Jezebel, Difar and Ranger and Atlanta are contracted to supply 37 systems.

Andy Cavill



## FINCASTLE TROPHY

The Fincastle competition, which was held at the end of 1986, was won by an RAF crew from 120 squadron, Kinloss, flying an AQS 901 equipped Nimrod MR MK2.

This competition, for anti-submarine prowess, which is held annually, involves crews from the RAF, Australian, Canadian and New Zealand Airforces. All except the RAF flew variants of the P-3. Their task is to find a submarine by day and by night. By day, the submarine must not present a radar detection opportunity, thus placing the full pressure on the acoustic processing system.

Each nation flew 2 sorties, one by day, the other by night, from the RAAF base at Edinburgh near Adelaide, Australia, to locate and make simulated attacks on a diesel-powered submarine hiding in 4,900 square miles of ocean. Untypical weather, heavy seas and thunderstorms, compounded the crew's difficulties.

Congratulations to the RAF and our AQS 901 team.



## WORKERS CASH AIDS BABY UNIT

THE baby unit at Medway's All Saints Hospital is £200 better off, thanks to workers at GEC Avionics, Rochester. Staff in the maritime aircraft systems division raised the money by a series of competitions and collections. Dave Betts and Brenda Cardwell, representing the division, handed over the cheque to Theresa Philpott, sister in charge of the unit.

### THE OLIVER FISHER SPECIAL CARE BABY TRUST

By a series of raffles and collections held over the last few months, the production department raised over 200 pounds for the special care baby unit at All Saints Hospital.

Dave Betts representing the office and Brenda Cardwell representing the shop floor, presented the money to Theresa Philpott (sister in charge of the unit) on Tuesday 13th January 1987.

A thankyou letter was subsequently received from the treasurers of the Trust fund - Mrs Ducker.

Dave Betts



THE OLIVER FISHER SPECIAL CARE BABY TRUST  
All Saints Hospital, Magpie Hall Road  
Cantham, Kent ME4 5NG

Mr. D. Betts,  
M.A.S. Division,  
G.E.C. Avionics,  
Airport Works  
Rochester, Kent

3rd February, 1987

Dear Mr. Betts,

Please would you pass on our grateful thanks to everyone who contributed to the sum of £220 to help the babies on the Special Care Baby Unit. We appreciate all the hard work that goes into raising such a large sum.

Your gift will be put towards the setting up of a fifth (and, hopefully, sixth) Intensive Care Cot to enable all our babies to be cared for in their local hospital and not be turned away for lack of equipment.

Thank you all for caring.

Yours sincerely,

*R.A. Ducker*

Mrs. R.A. Ducker  
Treasurer

RD 34C      3<sup>rd</sup> February 1987  
Received from Friends at M.A.S. Division.  
the sum of Two hundred and twenty  
pounds  

£	220	00
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*R.A. Ducker*  
THE OLIVER FISHER  
SPECIAL CARE BABY TRUST  
All Saints Hospital

Please could anyone who has any unwanted gifts or would like to donate something towards the raffle in aid of the "Oliver Fisher Baby Trust" please contact:

Brenda Cardwell  
Ann King  
Pat Warner  
Dave Betts  
Rod Cole

Please do not forget the May Charity Dance to be held at the Hoo Club on Saturday 2nd May 1987. The raffle of unwanted gifts/donations will take place at that function.

MASD SOCIAL SECTION

Sat May 2nd

7.45 - 11.45

# MAY CHARITY DANCE

at the

HOO CLUB

Admission £1

Music By SPIRAL

All proceeds to go to the  
Oliver Fisher Baby Trust

TICKETS FROM - ROD COLE



## CONGRATULATIONS

Paul and Lesley Adam on the arrival of their baby girl; Sian.

Nick and Debbie Raynham on the arrival of their baby girl; Caroline.

Bill and Janet Delahaye on the arrival of their baby girl.

Martin and Sally Politowicz on the arrival of their baby girl; Georgina.

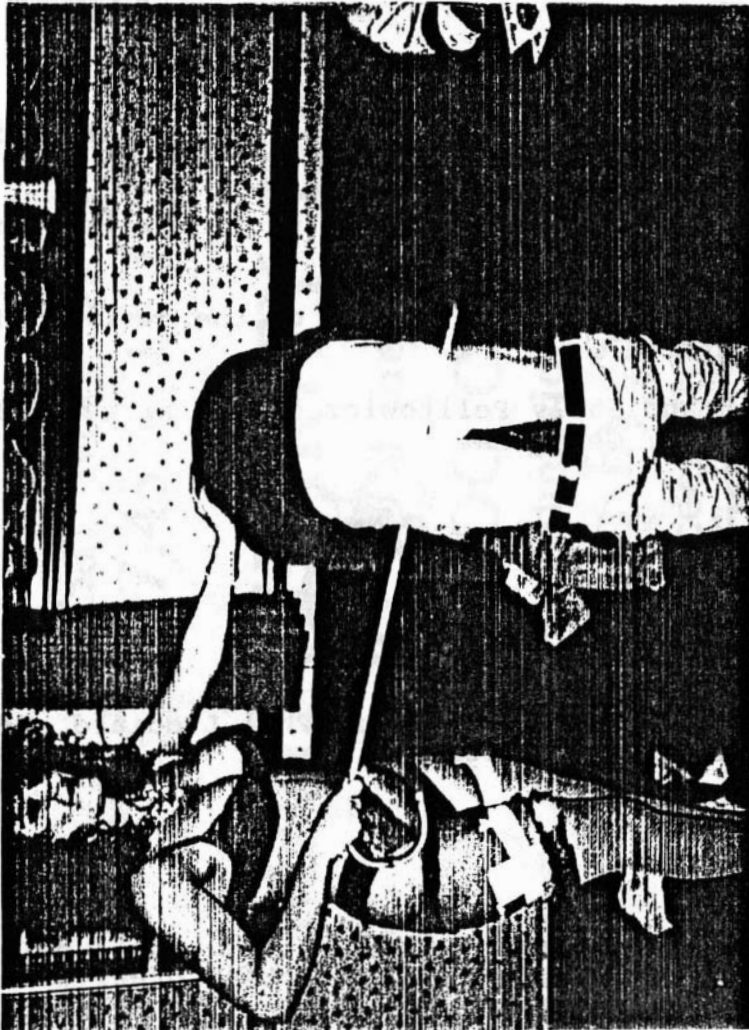


Also congratulations to Phil Liddiard and Alison Ward on their engagement.

Due to the success of the Borehamwood sub-contractors night out the other week, it is hoped that similar activities will be arranged for the other sub-contractors in the division eg. GEC Software, Marconi Software and SHL etc. If any of you are interested, please contact M. Blackwell (4225).

## CAPTION OF THE MONTH

Can you think of a suitable caption for this photograph? Please send your caption to M. Blackwell; the most appropriate caption will be printed in the next issue. Also, other pictures could be printed - so if you have a humorous photograph/picture that you would like included in future issues, please see M. Blackwell.



COPY DEADLINE: 21st April 1987.

## FOR SALE

1 Zenith II SLR Camera.

1 year old including holdall, strap and flashgun.

45 pounds ono

Andy Hughan 3483.

## WINNERS AND RUNNERS-UP IN DIVISIONAL CONTEST

### BOWLS:

#### Winners:-

902 S/W 'A'  
P Barnicott  
B Nock  
N Baker  
A Bridge

#### Runners-up:-

902 S/W 'B'  
M Endacott  
D Hemmings  
A Bulford  
M Terry

### BASKET BALL: Winners:-

Production  
C Matthews  
K Newbury  
K Hanley  
D Humphrey  
P Willmott

#### Runners-up:-

902 S/W  
M Endacott  
B Nock  
N Baker  
A Bridge  
D Hemmings  
A Bulford

### VOLLEY BALL: Winners:-

System Test  
V Krishna  
M Walden  
B Eades  
S Potter  
P Carr  
C Mistry  
G Blythe  
S James

#### Runners-up:-

902 S/W  
N Baker  
B Nock  
A Bridge  
M Endacott  
S Kent  
D Hemmings  
A Bulford

Trophies and medals for these events will be presented in the near future.

## PITCH AND PUTT COMPETITIONS

### DOUBLES

The doubles final is still to be played from the 1986 competition as due to inclement weather and holidays we ran out of time.

The final is to be played between Dave (I'll give you that 30 ft putt Mr Hampson, Sir) Humphries and Laurie Hampson versus Ian (through the Green and chip back) Anderson and Alison (I'll do my best) Ward.

### SINGLES

Unfortunately the knockout sheet appears to have been misplaced. Should any person know how the competition stands please contact A. Hughan or M. Blackwell.

Concerning the Pitch and Putt, we will only run a doubles competition this year as difficulties were found in getting matches played with holidays and all the other sporting activities.

We will have a time limit of 3 weeks for each match to be played, any match not played by then will be given to the opposing players. The entry fee will still be 50p.

Names to A. HUGHAN by 24th APRIL 1987.

COPY DEADLINE: 21st April 1987.

On Thursday 9th April 1987 at 9.30 pm, the Borehamwood sub-contractors are taking on MASD in a bid to win the three 10-pin bowling prizes. However, they don't know who they are really up against!! The results of this clash will be shown in the next issue.

Please could anyone who is interested in playing 10-pin bowling contact M. Blackwell (4225) as it is hoped that it will become a regular 'fun' event.

It is our intention, if sufficient support is forthcoming, to run the following sporting events again:

Superstars  
5-a-side Football  
Basketball  
Volley Ball  
Bowls  
Pool  
Pub Superstars  
Pitch and Putt

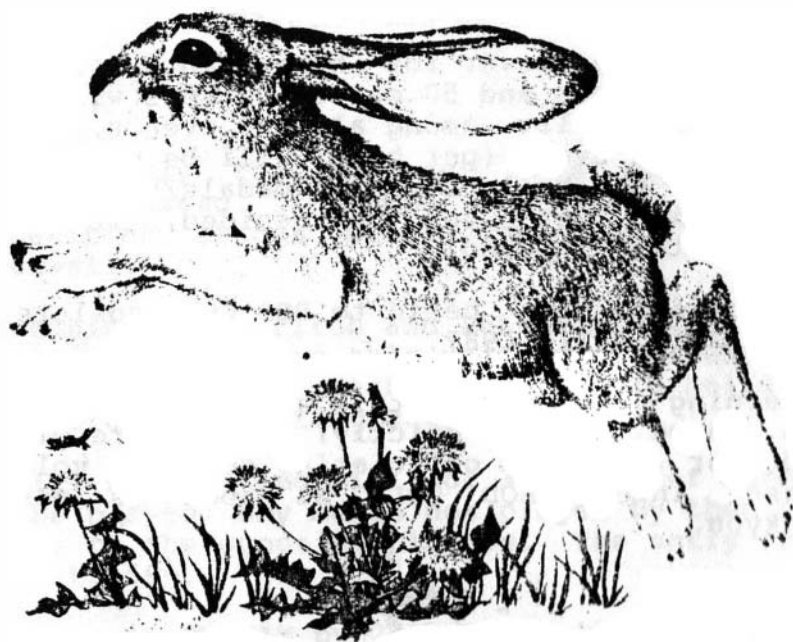
The insurance cover for these events has now gone up to 66 pounds and 50 pence, so this will have to be split equally among all the events. An entry fee to each event (per head) will be made to cover the cost of hall hire and medals/trophies. The amount is yet to be decided, it will be approximately 1 pound.

All entries must be in to ROD COLE no later than FRIDAY 24th APRIL 1987.

Concerning Superstars it is advisable that you get into shape rather quickly! Also there will be a need for help in officiating so could volunteers please inform ROD COLE as soon as possible. Thankyou.



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