

RE-DECCO

ACC meeting on Saturday July 10th at 2.0pm.

DIGITAL EQUIPMENT Co.
8 th floor FOUNTAIN HOUSE, BUTTS CENTRE, READING

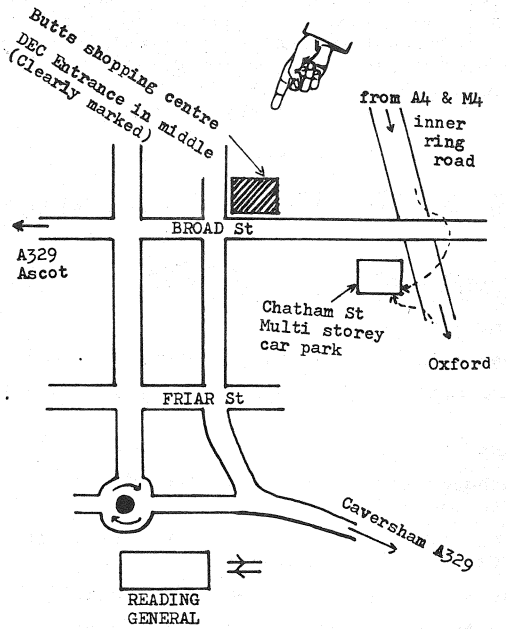
This is a repeat of the highly successful visit of January 1975; possibly one of the best ACC gatherings yet. It is to be held at DEC's training centre, so they have a lot of systems available for hands-on use - staff will be on hand to talk informally about hardware, software, applications, prices (leave your credit cards at home!).

DEC go to a lot of trouble to lay on these presentations so we urge all members who are able to come along - you won't regret it. Last time we had a pre-release view of the LSI-11 'PDP-11 on a board'; what's it to be this time?

If you've specific questions you would like to ask, or any particular item of equipment you'd like to see, drop a line to Mike Reeve 6 Limes Ave., N. Finchley, London N12 8QN before the visit.

Mike Lord (0268 411125 after 6.0pm) will co-ordinate those wanting or willing to share transport to Reading.

FOR SECURITY REASONS ONLY ACC MEMBERS BEARING MEMBERSHIP CARDS WILL BE ADMITTED.



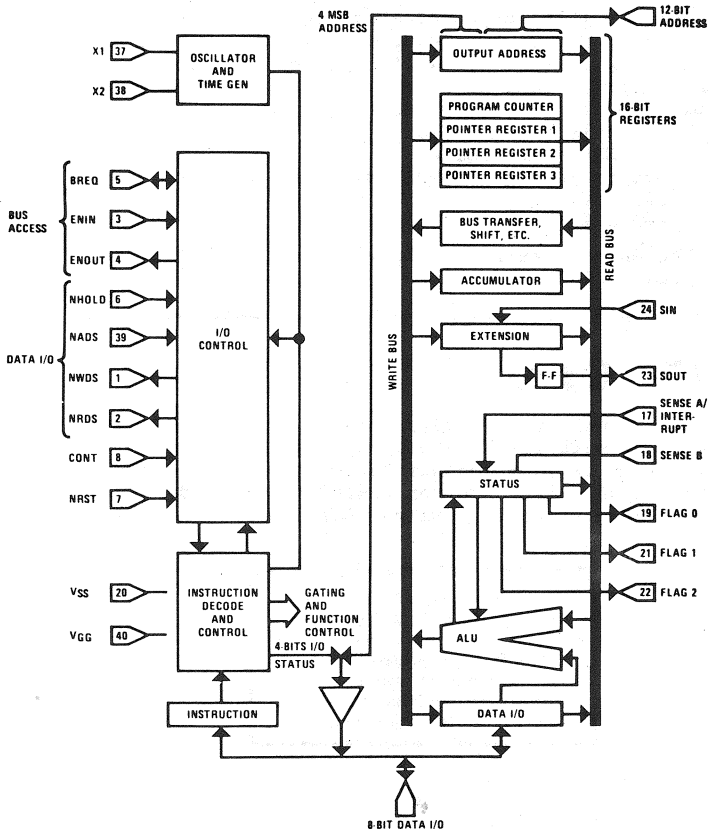
TUNE

A visit to the Electronic Music Studio, Putney, has been arranged for Saturday 14 August at 10.30 am. These are the people who use computers to control synthesisers and sound processing equipment. Unfortunately attendance is strictly limited, so would anyone interested send a stamped addressed envelope ASAP to M Reeve 6 Limes Ave., N Finchley, London N12 8QN.

TALK

A talk on the Motorola 6800 MPU, supporting chips and applications will be given by Peter Beckett of Motorola on Thursday July 15th starting at 7.0pm in room 468 at the South Bank Polytechnic - Borough Road, near the Elephant & Castle. With any luck we should be able to find out what devices Motorola will be releasing over the next year - rumours of a ten-times faster version of the 6800!

SC/MP



In This Issue

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The simple to use, £12.50, microprocessor from National Semiconductor. The SC/MP (device code is ISP-8A/500D) was designed to fill the gap between 4 bit MPU's and the currently available other 8 bit devices, which require several supporting circuits, e.g. clock driver, I/O control, to make them work.

An on-chip oscillator and clock driver requires only a single external capacitor (or, preferably a 1 MHz crystal). Separate 8 bit bidirectional data and 12 bit address buses allow you to use up to 4k bytes of memory space without needing address latches - a further 4 bits of address are multiplexed onto the data bus allowing you to have up to 64k bytes by adding some external logic. The chip can be used in a single (12V) power rail system with CMOS circuits, or by powering it from +5 and -7Volt supplies, the inputs and outputs are TTL compatible (will drive one standard TTL load). Bus access and data I/O control signals allow you to build multi-processor bus oriented systems, to access slow memory, and to 'single cycle' the CPU for debugging.

Internal registers accessible to the programmer are:

Four 16 bit pointer registers - R0 to R3. R0 is the program counter, R3 is usually used to hold the address of an interrupt service routine, while R1 & R2 are general purpose address pointers.

An 8 bit accumulator (AC)

An 8 bit extension register (E). This can be

used as an 8 bit serial shift register having its input and output brought out to pins on the chip-SIN and SOUT-giving the user a simple I/O channel.

An 8 bit status register. Bits 0,1 & 2 are connected to chip outputs FLAG 0 - FLAG 2, giving another three simple output channels. Bits 4&5 are connected to two chip inputs -SENSE A & B. Bit 3 is an 'interrupt enable' bit; if set then external interrupt requests are recognised via the SENSE A input. Bits 6 & 7 hold Overflow and Carry /Link information from the ALU.

The basic instruction set is;

LOAD data into Acc
 AND " " "
 OR " " " data from memory
 XOR " " " or E reg
 Decimal Add
 ADD " " "
 Complement & Add
 Load data from Acc into memory or E or status reg.
 Increment (or decrement) memory & load Acc
 Jump
 Jump if Positive, zero or not-zero
 Exchange the low or high byte of any pointer reg with the ACC.
 Exchange R1,2 or 3 with the PC (effecting a JUMP)& SAVE type of operation).
 The E reg can be shifted (for serial I/O)
 The Acc can be shifted or rotated right with or without the Link bit.
 The Status reg can be copied into the ACC
 Interrupt can be enabled or disabled.
 An unusual instruction is DELAY, which halts the processor for a defined period (can be approx 26uS to 250mS)
 All instructions are either one or two bytes.

The memory addressing is rather unusual; Immediate mode addressing is allowed (data byte follows immediately after the instruction byte). All other memory addressing instructions use the second byte of the instruction as a displacement (-128 to +127) which is added to the content of a pointer reg (specified in the first byte) to give the actual address. This gives PC-relative or indexed addressing depending upon the choice of pointer reg. In addition, for R1,2 or 3, auto-indexed addressing may be specified. In this case if the displacement is less than zero the pointer reg is decremented by the displacement before the contents of memory are fetched or stored, while if the displacement is zero or positive the pointer reg is incremented by the displacement after memory has been accessed.

Thus the SC/MP is simple to use, in both the hardware and software senses, and would make an ideal MPU for a beginner. However, there are some possible drawbacks for anyone wanting to build a large machine (something the SC/MP wasn't really designed for);

- the basic instruction execution times are rather long; typically 36uS for an ADD from memory.
- the simple instruction set has some real limitations, in particular if a required memory location doesn't happen to be within - 127 bytes of the address in any of the pointer registers, then one of the registers must be re-loaded, via the Acc. For this and similar reasons, one may expect the SC/MP to use more memory locations to perform a given function than more sophisticated MPU.

Finally, the INTROKIT. This sells for around £50 and comprises all components and a PC board to build a functional system with 256 bytes of RAM. Only problem for the amateur is that you need an ASR33 teletype (or equivalent) to run it, as this is used with a monitor program (supplied in a 512 byte ROM) as a 'control panel' for loading programs into memory, starting & stopping the MPU, and examining the contents of registers and memory locations. And as an ASR33 costs at least £250 !

Cheap Hardware Information Centre

It has become apparent over the last couple of years that individual ACC members occasionally come across sources of cheap computer hardware, which would be of interest to other members, but for various reasons - usually the length of time involved - the information doesn't get into the newsletter.

To try to overcome the time lag caused by the relatively infrequent publication of the ACCN, the ACC has decided to experiment with a new service for its members - CHIC. The service will operate as follows;

Equipment is divided into the following categories;

- 1) Paper tape readers & punches - 8 hole
- 2) " " " " " " <8 hole
- 3) Teleprinters & VDU - ASCII code
- 4) " " " " - non-ASCII code
- 5) Mag tape equipment
- 6) Disc & Drum equipment
- 7) Computers

Anyone knowing of any equipment in the above categories which would be available to ACC members at a price which is significantly below the current market level should pass full details to;

Bob Warren
 90 Tudor Rd., Hampton, Middlesex
 tel; 01 979 4193 (home)

This information will then be passed on to those members who have previously supplied Bob Warren with three stamped, self addressed, envelopes, each bearing on the back ;
 The ACC membership number
 The number(s) of the equipment categories in which the subscriber is seriously interested.

Notes; Please don't clog up the system by applying for information on equipment unless there is a good chance that you will buy it.

Please tell Bob quickly of real bargains.

Please don't expect miracles - the system will be worth it even if it only comes up with one or two items per year.

HELP

Following the unprecedented success of the commissioning of our 1901 computer, we find ourselves exceedingly short of 2400' reels of 1/2" 1600 or 800 BPI computer tape in cannisters. Anything in a useable condition considered.

We are also looking for;
 one EDS 8 controller
 two or four unit 1971 tape deck cluster
 1933 printer
 1902A processor

The Galdor Centre, 52 Brighton Rd, Surbiton, Surrey (01 399 1300)

HF CPU ☐

Surrey University Amateur Radio Society are negotiating with the PO about running their PDP ? on the 2m or 70cm amateur bands; they are looking for support (i.e. another computer). Anybody who is interested contact Galdor Centre.

A computer expert we know is under contract to do research on the lives of saints. He punches data into cards and feeds the cards into a computer for correlation studies. His problem is that the holes in the cards are healing.

MPU NEWS

RCA CDP1802 CMOS MPU - it is now reported that second-source agreements have been reached in the US with Hughes Microelectronics & Synertek

Texas Instruments TMS8080JL now £21.20 (1 - 29), £13.25 (100 up). Plastic package version introduced TMS8080NL @ £10.20 (100 up).

TMS5501 I/O controller now £20.30 (1 - 29)

New Motorola MPU to be released this year; 6800D, compatible with 6800 but almost twice as fast, and relaxed clock drive requirements. 6802, the basis of a small chip set system together with the 6848 combination RAM, ROM, I/O chip. The 6802 will incorporate the clock driver on the chip. 6600 MPU, will contain CPU, 1k UV erasable ROM, 64 bytes RAM, designed for applications such as automobile control.

National Semiconductor SC/MP is now generally available - at £12.50, one off!

RANDOM DECIMAL NUMBER GENERATOR

- Take any eight digit number (say 12345678)
- Multiply by 23 (= 0283950594)
- Remove the ninth & tenth digits counting from the right (02)
- Subtract these from the remaining eight digit number (83950594 - 02 = 83950592)
- The result (83950592) is a random eight digit decimal number.
- Go back to step (b) to generate another.

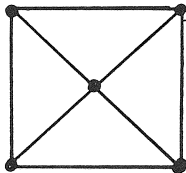
Note; the series repeats after about 6 million iterations!

?

An interesting problem, solveable by 'brute force' methods on a computer (by going through every possible combination) is shown below;

The problem is to arrange the digits 1 to 10 (two should be left out, you have to decide which two) using each digit once only, on the lines, such that the sum of the lines at each node adds up to 16.

I'm informed that there are only two distinct solutions, not counting rotations and reflections. (see Scientific American Jun 74 'Mathematical Games' p 116-120)



P D Maddison

1301's FREE

All ICL 1301 computers in Britain are now in the hands of ACC members. Following the item in ACCN Vol 4 Iss 1 'Free 1301' the last four machines have been removed from a London Insurance Company and are being re-assembled by ACC members. Only two machines are being resurrected while the others are kept as a source of spares. One system is at a farm in Kent, the other in rented accommodation at a Bletchley trading estate. The 1301 is a big 2nd generation machine built about 1960. It is getting easier for amateurs to set up large systems, lets hope we know how to use them. Britains first Alternative Computing Bureau - The Galdor Centre - has successfully interfaced its own 1301 with some 1900 series equipment. The possibilities for old machines are endless!

ANTIQUÉ 8008 ? PLUS BITS

From the title you may guess that I have built a computer using an 8008. Some of you may already be saying 'bonkers' but if you look back to last June when the chips were bought it was about the cheapest thing around and the fancy MPU now available were hardly known. Anyhow, back to my machine. So far I have an ASR33, an old punch and a tape reader made from another punch (hopefully to be replaced by one of the £16 wonders as per issue 1) The program level is low at the moment being limited to diagnostics and Hex paper tape generators etc. but things are improving. The next step is a diskette unit for a crude form of VS and prog storage etc.

A form of software program controlling the TTY was developed but has now been replaced by a homebrew serializer/deserializer thus the CPU is not tied to the TTY. A simple method of program storage was also used for a time using a cassette recorder by taking the TTY output to a 2kHz osc., and recording the actual ASCII code as 2kHz bursts playback meant rectifying the 2kHz bursts and deserializing as per TTY. Slow but reliable.

Construction of the CPU is in a card rack with modules on separate cards e.g. 1k RAM, I/O decoder, I/O ports etc. There is a single data bus which is bidirectional there being a companion line which basically is + data out, - data in, referenced to the MPU. The ROM for initial program loading is home made and is only 10 instructions, but it gets the first 255 bytes in, and after that one restart and you are away!

Should anyone like to see my 8008 or require any details I would be only too happy to oblige. Also, I would like to obtain access to the program library so if there are enough 8008 users how about us joining together to produce the £50 (or is someone already a member?)

Finally, it must be obvious to many that amongst us there are quite a number of very different computers all with different instruction sets, I/O etc. So, a suggestion of mine is; how about a few more algorithms and software principles rather than programs in BASIC or FORTRAN which are of no use to me or the number of users of Weeny-Bitters. Even flowcharts would be a good idea e.g. how do we do multiplication or double precision arithmetic?

I agree with G Beer on putting up membership and expanding the newsletter, each copy of which is awaited with anticipation. Possibly we could have a couple of people dealing separately with hardware and software and possibly a pool of ideas whereby we are listed under skills e.g. myself; Hardware engineer (Blue Box Co) 8008 user. Thus any enquiries in areas that are related could be passed to myself - a sort of Information Interchange?

For disposal; 16k x 25 bit Plessey store
Power supply to match above
(parts of ICL storage unit, the rest has been gutted for my own use)

Wanted; ASR33 maintenance manual / copy

D V Goadby 5 Queens Rd, Hinckley, Leics,
LE10 1ED 0455 35621

PEOPLES COMPUTER COMPANY

Especially for those involved (at either extreme) with schools computing, and anyone who believes that BASIC is a programming language, the PCC news paper is really worth the \$6 subscription (that's in the US, they don't say that overseas subscriptions cost more, but I'm sure a couple of extra \$ would be appreciated). Vol 5 starts July 76, runs for 7 issues.

Also from the same people, and of especial interest to anyone running BASIC on the WBL;

"Dr Dobb's Journal of Tiny BASIC Calisthenics & Orthodontia; running light without overbyte."
1976 subscription \$9 9 issues

PCC PO Box 310 Menlo Park Ca 94025 USA

LETTERS

WB BITS

If anyone wants a WBl simulator to run on an Elliot 900 series machine with TTY and paper tape station, I have one which allows you to monitor the WB programs (trace store locations, dump core etc.)

N Murray 47 Gladstone Rd, Maidstone, Kent

Regarding WB2, I do hope that the ACC proceeds with it. The comment about extra cost isn't so important if one has already built WBl. Perhaps the messy bit, ie the control unit, could be designed around a microprogram, using TTL ROM or even RTL type ROM. The ELBIT 100 for example uses a (400nS) 256 address RTL ROM for the microsteps. An RTL type ROM should be low cost to build.

The proposed VDU interests me.

Eventually I hope to have WB2 + core + VDU + cassette. The applications in mind are initially a morse to ASCII converter and a Baudot to ASCII converter so that my radio listening can be made more interesting.

Two items that may interest members, both are from the HAM RADIO magazine;

1) COMPUTER HOBBYISTS !

Bargain hunt or sell via ON-LINE

18 issues per year \$3.75

Free sample issue from

ON LINE 24695 Santa Cruz Hwy

Los Gatos, Ca 95030

I would imagine that they would need postage for the UK. The PO have a 20p International voucher for such.

2) DECODER IC

The SC-427 is a new decoder chip from SCARPA LABS, 16 pin TTL Schottky. Converts TTL levels from 7 segment to BCD. 25ns conversion time allows the use of calculator or clock chips as

input to computers. Information from;

Scarpa Labs, 46 Liberty St, Metuchen, NJ 08840

M H Baker

Some time back, a member had enquired in the news letter about any 'living' IBM 1620 installations, well, Wolverhampton Polytechnic has one of these in working order (mainly used for demonstrations to school kids, so that they can get some 'hands on' experience, and for introductory courses in computing for the same purpose). The system comprises Main Console Unit, Core Store Unit, Disc, Paper Tape and Card readers & punches, Line printer and Graph Plotter. On the verge of breakdown due to lack of spares (e.g. when cards get jammed, removing them is a delicate operation as the very fragile sensing mechanism cannot be replaced, also the console typewriter has quite a few letters missing!)

I'd like to recommend a superb book; DIGITAL DESIGN WITH STANDARD MSI & LSI (357 pages) by Thomas R Blakeslee (Wiley Interscience 1975) There are chapters on subjects ranging from basic design philosophy, through logic design and programmed logic (ie microprocessors - some good reading on assemblers, compilers and interrupt programming) to timesharing, input/output devices, statistics and system reliability and even on 'The Social Consequences of Engineering' !! On the whole a very readable, up to date, practical book which is well worth the investment (about £10.30 circa August 1975)

M S Kaleel

LOCAL GROUPS

I would like to hear from anyone in the Bucks, Berks, Oxon region who would be interested in forming a local group of the ACC. Despite my being a high-level programmer my main interest is in the construction of WBl, then WB2, then peripherals for same also naturally microprogramming.

Steve Davies 6 Court Lawns, Tylers Green,
High Wycombe, Bucks HP10 8DH
tel; (day) 0865 64861 x 382
(else) 049481 3558

We are a group of students who are pooling our financial resources with the hope of building a mini-computer using the Data General Micro NOVA series of chips. We would appreciate any technical advice in connection with construction, and we are looking for the following items;

- 1) A core stack to provide at least 16kx16 bits preferably with details of a 16 bit driving circuit.
- 2) A teletype with eight level paper tape reader and puncher. Any repairable condition considered.

E Singleton

13 School Board Lane, Brampton, Chesterfield, Derby

WOTSIT

I have recently purchased two ex-equipment boards fitted with a Plessey type 70/1445 core store (512 x 8 ?), also 4 x 7525, 8 x 75451, 4 x 75324 + a few '00 & '121. They have a card type no. 1313-S2/S1 -4. Does anyone have info on these? (They were obtained from G Milward, Birmingham) Kevin Hempson

17 Elm Rd, Drakes Broughton, Worcs WR10 2BL

I have just picked up a second hand core store; 16 x 4k made by Fabri-Tek, part No 747-0348-80 Rev D. Can anyone help with details of suitable drive circuitry ?

David Francis

12 Ash Rd., Onehouse, Stowmarket, Suffolk

SHOP

Wanted; working ASR33 or equivalent with or without tape punch. 20mA current loop or V24 interface - 20mA preferred. Reasonable price paid. A Breame No 1 Barnfield Cottages, Queens Road, Bisley, Surrey, GU24 9AT.

Wanted; cheap teletype unit - Creed or Flex - with or without PT punch, any condition considered.

Also, has any member a manual for the DEC VT50 or VT05 VDU ?

A Deas 6 Lime Close, Turnpike Estate, Newbury, Berks RG13 2PW tel; Newbury 47071

FOR SALE Brand new Sealectroboard Programming panels; XY matrix 32x24, complete with 60 diode pins. £11 each post paid. Additional pins 6p.

Quantity of spares for CDC9450 disc drives, cheap to clear.

D J Barrow G3YLQ Luton 25595

47 Cannon Lane, Stopsley, Luton, Beds

FLASH

A little program for the WB which I have found useful for demonstrations to non-computer people, it flashes the carry bit light about once a second. Trivial as it is, it seems quite effective at catching peoples' interest;

Addr	Octal	Mnemonic	
004	101	L: INC A	
005	003	SEC	
006	033	GNZ L	
007	004		light 'on' phase, double nested loop gives delay. Reset 'C' after ops which clear it.
010	003	SEC	
011	041	INC 3	
012	003	SEC	
014	033	GNZ L	
015	004		
016	003	SEC	
017	101	M: INC A	
020	033	GNZ M	
021	017		light 'off' phase. for faster flash rates change GNZ to GMI
022	041	INC 3	
023	003		
024	033	GNZ M	
025	017		
026	030	GTO L	
027	004		

R Mount

COMPS

The Society of Electronic and Radio Technicians are holding a competition - they are seeking a working application of a microprocessor by a home constructor which is simple, economic, and useful or entertaining. First prize is £150, and the winning system will be displayed at the exhibition associated with the 'Microprocessors at Work' symposium being held at the University of Sussex, 26 - 29 September. Application forms from the Microprocessor Secretary, SERT, Faraday House, 8-10 Charing Cross Road, London WC2H 0HP (01-240-1152)

Ounsdale Comprahensive School, Wolverhampton, won the Digital Equipment / Computer Weekly competition and first prize of a DEC Classic mini, a year's maintenance, and a training course worth a total of over £9000. Their entry, chosen from about 120 original submissions, was a project to develop a network analysis technique to find shortest and optimum routes.

TRIG SET

Herewith a set of trig functions, based on various ideas published in the ACCN. They work as follows;

TMOD is called by both SIN and COS to modify the value of the argument. TMOD first reduces X to the range $0 < X < 2\pi$, and sets IQTRIG to twice the value of the quadrant of X. (minus 1 if X is in the smaller half of its quadrant, e.g. IQTRIG = 1 if $0 < X < \frac{\pi}{2}$, 2 if $\frac{\pi}{2} < X < \frac{3\pi}{2}$ etc.). TMOD then reduces X to the range $0 < X < \frac{\pi}{2}$.

TMOD also sets the value of π to the machine accuracy (I have assumed 8 significant figures in this case). On some compilers you can save storage space by deleting the assignment and substituting;

EQUIVALENCE (PI,3.1415927)

SIN works by calling TMOD as above, then, (if X is in the 1st. quad) it evaluates the SIN function in a straightforward manner. If not, the arithmetic IF statement at 1 causes a jump to a label whose number is the same as the quadrant of X.

The expressions thus evaluated are;

QUAD	EXP
2	SIN ($\frac{1}{\pi}$ -XTRIG)
3	-SIN(XTRIG)
4	-SIN($\frac{1}{\pi}$ -XTRIG)

COS works in the same fashion, except that the expressions are;

2	-SIN(XTRIG)
3	-COS(XTRIG)
4	SIN(XTRIG)

The values given assume an internal precision of 8 digits. For greater precision, the given values of PI, and the values passed to TRIG, will have to be adjusted. The value passed to TRIG by any function should be 2 greater than the value required to assure convergence.

TRIG is the function which does the actual evaluation. If IQTRIG (called J within TRIG) is an odd number, the function is evaluated directly; otherwise (because X is in the upper half of its quadrant) the argument of TRIG is complemented, and the alternate trig function is evaluated. Having evaluated the function, I is checked; if it is 1 (I thus having been odd at the beginning of the loop, and thus the evaluation being of SIN), TRIG is multiplied by X. The function then exits to the calling function.

R J Baker

```

FUNCTION SIN(X)
COMMON /XXTRIG/IQTRIG,PI
XTRIG=TMOD(X)
IF(IQTRIG.GT.2)GOTO 1
SIN=TRIG(XTRIG,15)
RETURN
1 IF((IQTRIG+1)/2-3)2,3,4
2 SIN=TRIG(PI/2-XTRIG,15)
RETURN
3 SIN=-TRIG(XTRIG,15)
RETURN
4 SIN=-TRIG(PI/2-XTRIG,15)
RETURN
END
    
```

```

FUNCTION COS(X)
COMMON /XXTRIG/IQTRIG,PI
XTRIG=TMOD(X)
IF(IQTRIG.GT.2)GOTO 1
COS=TRIG(XTRIG,16)
RETURN
1 IF((IQTRIG+1)/2-3)2,3,4
2 COS=-TRIG(XTRIG,15)
RETURN
3 COS=-TRIG(XTRIG,16)
RETURN
4 COS=TRIG(XTRIG,15)
RETURN
END
    
```

```

FUNCTION TRIG(X,I)
COMMON /XXTRIG/J,PI
TRIG=1
Y=X*X
IF((-1)**J.EQ.-1)GOTO 1
I=I-1
X=PI/4-X
Y=X*X
1 TRIG=1-(TRIG*Y)/(I*(I-1))
I=I-2
IF(I.GE.2)GOTO 1
IF(I.EQ.1)TRIG=TRIG*X
RETURN
END
    
```

```

FUNCTION TMOD(X)
COMMON /XXTRIG/IQTRIG,PI
PI=3.1415927
TMOD=X-2*PI*AIN(T(X/(2*PI)))
IQTRIG=1
IF(TMOD.GE.PI/2)IQTRIG=3
IF(TMOD.GE.PI)IQTRIG=5
IF(TMOD.GE.3*PI/2)IQTRIG=7
IF(TMOD-IQTRIG*PI/4.GE.0)IQTRIG=IQTRIG+1
TMOD=TMOD-(IQTRIG-1)*PI/4
RETURN
END
    
```

ACC AGM 1 April 1976 - Secretary's Report.

The meeting opened with the returning officers' reports. Mike Lord informed the meeting that the club closed the year with a membership of 405 and a balance of £22.80. Consequently this year's subscription will remain unchanged. However a review of the subscription rates will have to take place at the end of this year. A vote of thanks for Jon Aslett was then given. Jon, who has done so much for the club as its secretary for the past three years, was unfortunately unavailable for reelection due to MSc commitments. Subsequently Bob Warren was elected Chairman, Mike Lord was re-elected editor/treasurer and Mike Reeve was elected Secretary. Japp Crautzberg, Andrew Keen, and Bob Selby were elected committee members.

A discussion reviewing the success of the Weeny Bitter 1 as the club project followed. It was agreed that the WBL articles had been very informative, educational and of great benefit to those new to hardware design - this is illustrated by the fact that most WBL's are being constructed as school projects or by the club's younger members. Mike Lord commented that many people had been put off building the WBL by the number of connections involved! Also the recent fall in microprocessor prices had offered chips with a greater cost/performance ratio and only 40 pins! Upgrading to the WB2 would involve a complete rebuild of the control unit - be it with random logic or micro-programming techniques - and an outlay as much as the current cost of a microprocessor chip. Consequently it was felt that the WB2 should not be the main club project for the forthcoming year. However, space in the Newsletter would always be available to those constructing WB2's to expound the advantages of their implementation. This is within the spirit of the Weeny Bitter since it was originally defined as a code set and as such is hardware independent.

Several ideas for new projects were suggested. The most favoured was a series of modules constituting a display based around a television. A cassette data storage device and an X-Y plotter were also proposed, however it was felt that these contributed one or two article descriptions rather than a major part of the next volume of the newsletter. The tele-display project would consist of a base module containing a block of storage and control logic which would display the store contents as characters on a television screen, either by direct connection to a CRT or preferably via a suitable modulator plugging into the aerial socket of a domestic TV. This base module would accept an address and a character code for that address, thus making the possibilities for application endless. The obvious primary attachment is a keyboard perhaps with a microprocessor controlled editor function which acts on the block of data in the device's storage. But the fullest use of the module rests with the imagination of ACC members.

It was suggested that the club should decide on some standard for cassette data recording, so that even if several hardware solutions were implemented tapes would be interchangeable. Several ideas were discussed, one being the use of a two track machine with one track for data and the other for timing pulses to strobe the data. This is obviously very sensible since the speed of domestic cassette transports tends to be rather unreliable. Another idea was one recently described in an American electronics magazine and known as CUTS. However, the newsletter is open for suggestions.

Many ideas for visits and meetings - such as trips to manufacturers, and one day seminars on a programming language, etc. were discussed and they are being followed up. Could anyone having further ideas or contacts which might be of use in arranging visits please contact me.

As has always been the case at ACC meetings the discussion eventually found its way round to sources of surplus equipment. It is hoped to develop a pool, if not of hardware, certainly of data reg-

arding its availability, in the near future and any information would be most welcome. At this point Bob Selby demonstrated a paper-tape reader he was offering at low cost and immediately took several orders!

The formal evening closed with Mike Lord showing the very smart looking prototype Weeny Bitter.

Mike Reeve
Secretary

CHAIRMAN'S BYTE

As you will see, following the AGM I am now, much to my surprise, the chairman of this august and learned institution. So, first of all, since none of you are probably aware of who I am, let me introduce myself;

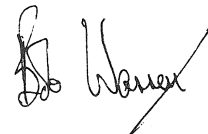
I am an electronics engineer working for one of the commercial TV contractors and virtually all of my professional life has been in the TV industry. One of my spare time hobbies in the past was the construction of various pieces of Amateur TV equipment, but this activity has now largely lost its appeal and in its stead I have become interested in the design, construction and programming of computers. This interest, by the way, is only recent and I have an immense amount to learn! Thus I hope that in my position as Chairman my background represents that of a fair percentage of the membership.

My first act, I think, should be to thank the retiring members of the committee for their efforts during the time that they were in office. Jon Aslett (I have yet to meet him!) was especially a tower of strength, and we will miss his presence.

The first meeting of the new committee was held recently and we discussed in some depth the aims and objectives of the club, especially in the light of opinions expressed by members who attended the AGM. From this discussion the main points are;

1. The club exists as a rallying point for widely scattered people interested in a rather specialised subject. The main way in which information and opinions can be exchanged is via the ACCN. Please therefore, support the newsletter by means of articles submitted to Mike Lord. Mike is interested in articles on either hard or soft ware, but at the moment the predominant need is for software material.
2. Members generally seem very interested in the ACC going into redundant computer equipment purchasing for re-sale to individuals. The committee are investigating this.
3. Club visits to computer installations have been very popular in the past and the committee will be organising some for the future.
4. ACC sponsored construction projects will continue. The project for 1976 will be a television VDU, it is hoped to have PCB's manufactured for this project.

The new committee has got off to a good start and I trust that we will act in the best interests of the members. If you feel we are not doing so in any way please let me or my colleagues know!



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