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M.O.C.

VOLUME 4      ISSUE NUMBER 2

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--- A Club Facility ---

A program listing facility for those with no printer. Just send in your program on tape (or 5.25" disc) with a pre-paid envelope addressed to yourselves and the club will do the listing for you.

--- Names and Telephone Numbers. ---

i. Paul Wood for 3.5" disc copying, general info and Comms specific info.

Tel 0905 24260

ii. Alan Dobson for help with the following adventures:  
Alice, The ZDD and Man From Granny  
Tel 061-980-6288

Phil & Hazel Eyres  
13 Copse Road  
Townhill Park  
Southampton

Many thanks for all the good wishes you have sent Hazel and myself for our marriage. We would like to thank everyone and wish you all a Very Happy Christmas.

It has taken a lot of time and effort this month to 'get on top' of the backlog of mail, thankfully with the help of Alan Hamilton looking after the program library, all mail is now up to date and this magazine is out just about on time.

As you can see on pages 12 and 13 the program library is taking shape well, hopefully in the next month we will have a booklet out containing all the reviews from past magazines. Alan requests that members write to him if they would like to see the library on non-CP/M format, and also any other ideas on the library that they might have.

We have now got the System Variable sheets on disc, so all updates and snippets of info in this area will now be gratefully received. Lets hope we can get a really good document up together!!.

Now for the Christmas Competition:-

The best (fastest, most original,visually astetic) 12 hour to 24 hour clock conversion program. A 1988 Diary to the winner.

This idea was sent in by Liam Redmond.

I can read/write only disc's in 5.25" format and up to 500K, if anyone with 3.5" systems would like something from the club or has something to offer on 3.5" format please send to Paul Wood, his address is listed opposite.

Ready for the new year the club has purchased a limited quantity of 1988 Diaries. Because they have the club logo (in gold!) on the front cover they will obviously be the 'in thing' to have. The diaries are 'month page' and have several pages of useful figures at the front. At only £1.75 each(P&P 25p) they are an ideal Christmas present. Send off soon for them as they will be sent out on a first come first served basis.

I should now be in most evenings, except for the odd game of squash, so I think that it would be best to revert to having the club Hotline between 6 and 7 pm any evening, the same as it used to be many moons ago. Please where at all possible refrain from phoning after 9pm.I hope this is

ok for everyone. The number to phone now is (0703) 585106, ask for Phil.

If anyone would like back issues they are available for the small remittance of 80p each. At present there are 30 back issues, 10 for volume 1, 10 for volume 2, 10 for volume 3 and 1 for volume 4.

It should be noted that all articles are the copyright of the sender and M.O.C., anyone wishing to have articles published elsewhere should inform us first.

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## Software

Software prices for the best and most popular software:-

Zarkos	£7.00	Chamberoids	£7.00
Qogo2	£7.00	26*26 SpreadSht	£8.50
Karate King	£7.00	Son Of Pete	£7.00
S.M.G	£7.00	T.Snooker	£8.00\$120only
Doodlebugs	£5.00	Super Bike	£5.00
J.J.Flash	£5.00	Ed/Asm	£8.50
Cee-5	£7.00	MTX Asm Lang Cse	£10.00
Highway Encounter	£8.50		

Some late news, Ron Gladwin of Uk Home Computers has reported to me that he has heard that some people are selling MTX500's boxed and badged as 512's. This is obviously a serious problem, so be careful to check properly when you buy.

## INTERFACING PROJECTS

Why not make your new years resolution one which will lead you into the exciting world of micro electronics. Infact what better way to start than with an MOC D.I.Y. kit. Everything you need is supplied, except a soldering iron, wire cutters and of course a few hours of your time!!. So why not order now.

### Interface price list

A full set of components and instructions for the LED kit  
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Connecting cable for the internal port (needed for projects)  
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All prices are fully inclusive. Please allow 14 days for delivery and make cheques payable to MOC.



# FLITTER PART 4 By Brian Clarke

Well, I see we are going to have some fun with this programme.

We have three bugs, the first of which is that, on startup, the two craft are positioned one on top of the other. Thus the computer assumes that they have crashed!

This is caused by me not transferring the variable data from the BASIC programme into the machine code. This is simply overcome by including the following:

```
1540 POKE 16414,LX: POKE 16415,LY:POKE 16416,LZ
1550 POKE 16417,RX: POKE 16418,RY:POKE 16419,RZ
1560 POKE 16420,SPSN:POKE 16421,SPLN
```

P.S. Don't forget that, if line 20 assembles to £8010, to add 16384 to the 'POKE' value.

The second bug is a little more difficult to find; if you move one of the ships into a different 'speed zone', the ship (for example) increases in size, as it should. But then, it disappears from the screen altogether. And finally, it re-appears, but this time as a small ship, increasing in size. This is because in the machine code I did not include the BASIC lines 280 & 290 -

```
IF LZ<32 THEN LET LZ=32 ELSE IF LZ>250 THEN LET LZ=250
```

As we are using a single byte to store variables, the value of that byte will increase by one per programme cycle from 128 to 255; as 256=0 for a single byte register, the value will then increase by 1 from 0 to 255, then 256=0 ... ad infinitum.

To overcome this, we need to insert some extra steps in the ZCOMPARE: section of line 20. Before we do this, the third bug is that the ship furthest away from us (the smaller of the two) appears in front of the larger when they overlap. This is a simple error of logic on my part, and is also in the ZCOMPARE: section of the programme. So load the programme, enter assembler on line 20 (ASS.20)<ret> and list the programme from the label ZCOMPARE.

What! You don't know how to list from a label? Haven't you been reading the manual? At the prompt, type L ZCOMPARE <RET> and you get a screen of listing from that label.

```
From the listing, find the line
JP C,ZCOMPARY which should be
JP NC,ZCOMPARY
```

To change this, type 'E £4190' (assuming that is where it is) + <RET>, and insert the 'N' using insert mode. Enter the mod (<RET>) & <CL5><RET>.

This clears the bug of which sprite is in front of the other. The LZ and RZ limits is slightly more complex, so here is the new listing of ZCOMPARE to ZCOMPARY in full, the logic is that, on loading A with (in turn) LZ and RZ, we call a subroutine to check for a value of 32 or 250, resetting A if the value is outside these limits, and reloading A into LZ (or RZ) before continuing. The programme is:

```
4188 ZCOMPARE:LD A,(RZ)
          CALL ZLIMIT
          LD (RZ),A
          LD B,A
          LD A,(LZ)
          CALL ZLIMIT
          LD (LZ),A
          CP B
          JP NC,ZCOMPARY
          LD A,1
          LD (SPLN),A
          LD A,3
          LD (SPSN),A
          JP ENDLIMIT
ZLIMIT: CP 32
          JP NC,LIMIT1
          LD A,32
          RET
ZLIMIT1:CP 250
          JP C,ZLIMIT2
ZLIMIT2:RET
ZCOMPARY:LD A,1
```

So you should be able to work out for yourself if the mods need to be EDIT or INSERT changes - remember to edit a line type (eg)

```
E £418A
or to insert before that line, type
£418A
at the prompt.
```

To start this months changes, we are going to pass most of the variable set-up and control to line 20, also defining the remaining variables that need to be added to the variable list. To control the routine of initiating the variables, we will set up a variable, called FLAG. On startup, this will be set to 0. The loop of setting the variables will end with the command to set the flag to 1. The first command in the loop will be to check if the flag is set to 0, if so, initiate the loop.

In both the FIRE and CRASH routines, we need to calculate the ABS differences between two values. As we are using unsigned single byte variables, (i.e. using the byte range 0-255 to represent the value 0-255), a value of 43-87 = -56 in decimal, but 200 in binary. However when the value of register A passes through the transition from 255(FF) to 0(00) or visa versa, the carry flag is set. Thus we can use the JP NC command to skip operations if the flag is not set (i.e. the result is positive). The operations we would skip is to subtract the answer from 256. (256-200=56, the answer we need). But in our 8-bit byte, 256 is the same as 0, so we can subtract the answer from 0.

FIRE ROUTINE. If the gun power is less than 4, the gun cannot fire, so jump to next routine.

If the fire button is not pressed (i.e. LF<>1) the gun should not fire, so jump to next routine.

As both requirements are satisfied, we need to draw the shots on the screen.

```
RST 10 {set m/c to give screen output}
DB 100 {access VS 4, don't CLS}
DB 164,27,65,3,1 {attribute 3,1}
DB 165,2,29,40,29,157 {line 29,40 etc}
DB 133,2,32,40,32,157 {last RST 10 command - line 32,40 etc}
```

Then as gun has been fired, subtract 4 from gun power.

Check for proximity to other ship, using the DIFFX/Y/Z values calculated, and comparing them to preset values.

If all the proximity limits are within range, set RS to 40. (RS is subtracted from the ship power level later on).

Finally, undraw the shots from the screen. As Attr. 3,1 (overplot) is on, we simply need to redraw the shots, and reset ATTR 3,0.

```
RST 10
DB 165,2,29,40,29,157 {line command}
DB 165,2,32,40,32,157 {line command}
DB 132,27,65,3,0 {last RST 10 command - ATTR 3,0}
```

Finally repeat the above for the Right fire routine.

POWER ROUTINE. Left power=LP-LS\*5 units, thus if the ship was hit during the FIRE routine, lose 40 units of power, but recover 5 units by solar conversion. If the ship is destroyed, LP<0. However (single unsigned byte again), we cannot sense -ve values. But the maximum power level is 150. Thus the max value of LP=150-0+5=155. Thus if the value of LP>155 then ship is destroyed. Use value of 175 to be on the safe side. Thus if A>175 set A=0.

POMLA. If power level still greater than 150, reset it to 150.

POMLB. Save new value of power to LP. Reset LS to 0 (even if it already is 0, it may be 40).

If the power<41, but the power plus gun power>40, then add the two together, resetting gun power to 0. In this way, the ship could survive one more hit, giving one last chance to escape.

Repeat these for left power.

L370. = BASIC line 370, i.e. if gun power less than 10, transfer 1 unit of energy to the gun from the ship.

The associated programme is shown as 2 sections, from label 'START' to label 'KEYS' and again from label 'ENDLIMIT' to label 'SCRNUP'. I have filled the intermediate registers with DS commands to achieve the correct register numbers. If your register values are different to mine, but the programme still functions, don't worry.

The basic lines listed are the only ones required up to line 420, so all others can be deleted.

```
10 GOTO 900
20 CODE
4010 START: LD A,(FLAG) 405C RS: DB 0
4013 CP 1 405D DIFFX: DB 0
4015 JP NC,KEYS 405E DIFFY: DB 0
4018 LD A,148 405F DIFFZ: DB 0
401A LD (RX),A 4060 TEMP: DB 0
401D LD A,128 4061 LL: DB 0
401F LD (LZ),A 4062 LR: DB 0
4022 LD (RZ),A 4063 LU: DB 0
4025 LD A,108 4064 LD: DB 0
4027 LD (LX),A 4065 LF: DB 0
402A LD A,95 4066 RL: DB 0
402C LD (RY),A 4067 RR: DB 0
402F LD (LY),A 4068 RU: DB 0
4032 LD A,3 4069 RD: DB 0
4034 LD (SPLN),A 406A RF: DB 0
4037 LD A,0 406B LX: DB 0
4039 LD (LB),A 406C LY: DB 0
403C LD (RB),A 406D LZ: DB 0
403F LD (LP),A 406E RX: DB 0
4042 LD (RP),A 406F RY: DB 0
4045 LD (LS),A 4070 RZ: DB 0
4048 LD (RS),A 4071 SPSN: DB 0
404B LD A,1 4072 SPLN: DB 0
404D LD (SPSN),A 4073 KEYS: LD A,0
4050 LD (FLAG),A 4075 DS 250
4053 JP KEYS 416F DS 165
4056 FLAG: DB 0 4214 ENDLIMIT:LD A,(LX)
4057 LG: DB 0 4217 LD B,A
4058 LP: DB 0 4218 LD A,(RX)
4059 LS: DB 0 421B SUB B
405A RG: DB 0 421C JP NC,DIFX
405B RP: DB 0 421F LD B,A
4220 LD A,0
4222 SUB B
```

4223 DIFX:	LD (DIFFX),A	42B6	RST 10	4347	LD B,A		
4226	LD A,(LY)	42B7	DB 101	4348	LD A,(RP)	Symbols:	
4229	LD B,A	42B8	DB 164,27,65,3,1	434B	SUB B	TEMP	4060 LL 4061
422A	LD A,(RY)	42BD	DB 165,2,29,40,29,157	434C	LD B,A	LR	4062 LU 4063
422D	SUB B	42C3	DB 133,2,32,40,32,157	434D	LD A,5	LD	4064 LF 4065
422E	JP NC,DIFY	42C9	LD A,4	434F	ADD A,B	RL	4066 RR 4067
4231	LD B,A	42CB	LD B,A	4350	CP 175	RU	4068 RD 4069
4232	LD A,0	42CC	LD A,(RG)	4352	JP C,POWRA	RF	406A KEYS 4073
4234	SUB B	42CF	SUB B	4355	LD A,0	LX	406B LY 406C
4235 DIFY:	LD (DIFFY),A	42D0	LD (RG),A	4357	LD (RP),A	LZ	406D RX 406E
4238	LD A,(LZ)	42D3	LD A,(DIFFZ)	435A	JP L370	RY	406F RZ 4070
423B	LD B,A	42D6	CP 32	435D POWRA:	CP 150	SPLN	4072 SPSN 4071
423C	LD A,(RZ)	42D8	JP NC,L680	435F	JP C,POWRB	ENDLIMIT	4214 FLAG 4056
423F	SUB B	42DB	LD A,(DIFFX)	4362	LD A,150	LG	4057 RG 405A
4240	JP NC,DIFZ	42DE	CP 10	4364 POWRB:	LD (RP),A	LP	4058 RP 405B
4243	LD B,A	42E0	JP NC,L680	4367	LD A,0	LS	4059 RS 405C
4244	LD A,0	42E3	LD A,(DIFFY)	4369	LD (RS),A	DIFFX	405D DIFFY 405E
4246	SUB B	42E6	CP 8	436C	LD A,(RP)	DIFZ	405F DIFX 4223
4247 DIFZ:	LD (DIFFZ),A	42E8	JP NC,L680	436F	CP 41	DIFY	4235 DIFZ 4247
424A LFIRE:	LD A,(LG)	42EB	LD A,40	4371	JP NC,L370	LFIRE	424A RFIRE 4246
424D	CP 4	42ED	LD (LS),A	4374	LD B,A	L630	4294 POWER 4302
424F	JP C,RFIRE	42F0 L680:	RST 10	4375	LD A,(RG)	L680	42F0 L370 L386
4252	LD A,(LF)	42F1	DB 165,2,29,40,29,157	4378	ADD A,B	L380	439E SCRNUP 4386
4255	CP 1	42F7	DB 165,2,32,40,32,157	4379	CP 41	POWLA	431B POWER2 4344
4257	JP NZ,RFIRE	42FD	DB 132,27,65,3,0	437B	JP C,L370	POWLB	4322 POWRA 435D
425A	RST 10	4302 POWER:	LD A,(LS)	437E	LD (RP),A	POWRB	4364 START 4010
425B	DB 100	4305	LD B,A	4381	LD A,0		
425C	DB 164,27,65,3,1	4306	LD A,(LP)	4383	LD (RG),A	30 RETURN	
4261	DB 165,2,29,40,29,157	4309	SUB B	4386 L370:	LD A,(LG)	100 POKE (16493),LZ	
4267	DB 133,2,32,40,32,157	430A	LD B,A	4389	CP 10	110 POKE (16496),RZ	
426D	LD A,4	430B	LD A,5	438B	JP NC,L380	120 GOSUB 20	
426F	LD B,A	430D	ADD A,B	438E	INC A	200 LET LG=PEEK(16471)	
4270	LD A,(LG)	430E	CP 175	438F	LD (LG),A	210 LET LP=PEEK(16472)	
4273	SUB B	4310	JP C,POWLA	4392	LD A,(LP)	220 LET RG=PEEK(16474)	
4274	LD (LG),A	4313	LD A,0	4395	CP 0	230 LET RP=PEEK(16475)	
4277	LD A,(DIFFZ)	4315	LD (LP),A	4397	JP Z,L380	240 LET LX=PEEK(16491)	
427A	CP 32	4318	JP POWER2	439A	DEC A	250 LET LY=PEEK(16492)	
427C	JP NC,L630	431B POWLA:	CP 150	439B	LD (LP),A	260 LET LZ=PEEK(16493)	
427F	LD A,(DIFFX)	431D	JP C,POWLB	439E L380:	LD A,(RG)	270 LET RX=PEEK(16494)	
4282	CP 10	4320	LD A,150	43A1	CP 10	280 LET RY=PEEK(16495)	
4284	JP NC,L630	4322 POWLB:	LD (LP),A	43A3	JP NC,SCRNUP	290 LET RZ=PEEK(16496)	
4287	LD A,(DIFFY)	4325	LD A,0	43A6	INC A	300 LET SPSN=PEEK(16497)	
428A	CP 8	4327	LD (LS),A	43A7	LD (RG),A	310 LET SPLN=PEEK(16498)	
428C	JP NC,L630	432A	LD A,(LP)	43AA	LD A,(RP)	410 REM SCRNUP - SCREEN UPDATE	
428F	LD A,40	432D	CP 41	43AD	CP 0	420 SPRITE 5,10,32,(RZ+RZ-	
4291	LD (RS),A	432F	JP NC,POWER2	43AF	JP Z,SCRNUP	LZ-LZ+95),0,0,6:	
4294 L630:	RST 10	4332	LD B,A	43B2	DEC A	SPRITE 4,10,224,(LZ+LZ-	
4295	DB 165,2,29,40,29,157	4333	LD A,(LG)	43B3	LD (RP),A	RZ-RZ+95),0,0,12	
429B	DB 165,2,32,40,32,157	4336	ADD A,B	43B6 SCRNUP:	RET		
42A1	DB 132,27,65,3,0	4337	CP 41	43B7	RET		
42A6 RFIRE:	LD A,(RG)	4339	JP C,POWER2				
42A9	CP 4	433C	LD (LP),A				
42AB	JP C,POWER	433F	LD A,0				
42AE	LD A,(RF)	4341	LD (LG),A				
42B1	CP 1	4344 POWER2:	LD A,(RS)				
42B3	JP NZ,POWER						

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# HARDWARE AND SOFTWARE PRICE LIST

December 1987

MOC

Phil Eyres

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Below is the list of available software for the MTX series, titles held in stock will be dispatched by return, all other titles ordered immediately and sent by return when received. All MOC titles always in stock and sent by return. Please make cheques payable to Memotech Owners Club.

Title	Price	Title	Price	Title	Price
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Tutorial Book £9.50 (240 pages)

The MTX FIG-FORTH requires an MTX512 or expanded 500, the dictionary associated with Forth is held as part of the Ram-Disc which can be saved separately, fairly quickly. The Ram-Disc allows for 24 'edit' screens to be created and in memory simultaneously. A tutorial will be necessary for the beginner, for this the club has obtained a quantity of the publication Fundamental Forth (This may

Ready for the new year the club has purchased a limited quantity of 1988 Diaries. At only £1.75 each (P&P 25p) they are an ideal Christmas present. Send off soon for them as they will be sent out on a first come first served basis.



## WIMPS for WIMPS

by Geoffrey Gardiner

After three years on the market, the Memotech ought no longer to be the ultimate in computers, so what is the position? Should we quality buffs who chose the Memotech be moving on? I have had an opportunity to examine one of the new 32 bit machines and my discoveries may surprise.

The machine I was able to experiment with is the Atari 520 STFM, coupled with the famous "Flight Simulator II" program and "First Word Plus", a sophisticated wordprocessing program. The Atari uses the Motorola 68000 chip running at 8 Megahertz, twice the speed of our Z80A. It has a 512K memory as standard, and a single sided 320K 3.5inch disc drive. All this is about £300.

Let us dispose of sound first as it is virtually the same as ours, although it uses a different sound chip. Judging by the demonstration program it is not quite as good as the Memotech, but that may be a programming fault.

The graphics resolution in sixteen colours is 320 across the screen compared with our 256. Down it is 200 instead of 192. This is not a very significant improvement in definition but any pixel can be coloured; one does not appear to be limited to two colours per row of eight pixels. The medium resolution is 620 x 200, the same as the FDX, but in four colours only, not six. However, it appears to be bit-mapped so it should give much better graphics than the FDX. There is a 640 x 400 high resolution monochrome mode that requires a special monitor, and produces a not very crisp black on white background. There is no question of the ST running two or four monitors at once as does the MTX-FDX combination. The computer senses what monitor is attached and will not accept an instruction to use the wrong mode. Both composite and RGB are available from the same socket which is proprietary type so that one cannot manufacture one's own cable. The definition in medium resolution did not seem to me quite as comfortable to view as from the FDX. I was using the RGB output fed into a Beovision Television through a Euroscart connector.

There is only one parallel output, not two like the MTX, and it may not be both input and output. Certainly there are fewer connections than on the MTX so it must be intended for use with a printer only. Just to make sure that you have to buy proprietary cables the parallel output is a 25 D type socket, not 34 way Centronics, and the one serial output has a male not female socket. The serial port configuration is DTE like our port B but again to confuse you Data Carrier Detect is connected not to the conventional pin 8 but to pin 22. I tried to get the Atari and the Memotech to communicate, I was able to transfer

data from one to the other but with different connections. In the time available I was not able to find a wiring connection that worked in both directions.

The Atari is equipped with GEM and the manual gives no information about any other operating system than WIMP. There is no information about the operating system (TOS, for Tramiel Operating System) such as we CP/M users are used to, but for £16 or so you can buy a book, and there are other books for other essential programming information. There is no 'PANEL', by the way. WIMP stands, I believe, for "Windows, Icons, Mouse, and Pull-down menus". Personally I think it stands for the sort of people who need such a system. It is marvellous for those who cannot, or will not learn to type, which presumably includes most office managers who purchase computer equipment. For anyone who can use their fingers to type the system is slow. To operate a mouse you have to take a hand off of the keyboard, which is in itself undesirable, and the movement required to move the arrow around the screen is quite considerable even though it is adjustable. I think that an experienced computer operator would want to be able to switch the system off, as one can I believe, on Pc clones such as the Amstrad. The WIMP system necessitates that programs be menu driven and this too can be a nuisance to a skilled operator. I found that working one's way through a "tree" of menus is a slow business. What it comes to is that "user-friendly" is often = "slow". If therefore you are a computer amateur and a two finger typist by all means be a WIMP-user, or use menu driven programs.

One of the "freebies" given away with the Atari is a Z80 emulator. This enables one to use CP/M and Z80 programs. The effect is of a Z80 running at 2 Megahertz, half the FDX's speed. CP/M programs like PIP are not supplied, even though CP/M 2.2 now only costs \$14.95 in the States, but there is a suite of utility programs to support the emulator. The emulator is of German origin and with typical German efficiency it has removed some bugs from CP/M. In particular CTRL C is not required when one changes disc. After the WIMP system it was a relief to see again the CP/M prompt winking at me and I wished I could PIP my CP/M programs to the Atari disc. I did write a Basic program to transfer PIP.COM to the Atari but I then found that the utility program that is provided to enable one to convert programs on TOS formatted disc's to CP/M format requires two drives, and I had only one. Writing a Basic program on the Atari was not easy despite four windows. I never completely mastered editing, and the owner of the machine, previously used to BBC basic, is not impressed with Atari Basic. There are, by the way, no sprites.

There is facility to build in a silicon disc. To overcome this severe disadvantage one would need to buy a Mega-ST with a 4 megabyte memory and a program to configure part of the memory as a RAM-DISC. Large main memories may be attractive, but in practice, the FDX's ability to address up to four eight megabyte silicon disc's is a terrific advantage, and I cannot understand why it has not been copied, it is such a superior concept. In theory the Atari ST could have a 16 megabyte main memory, whereas the Memotech can have (using a variation of CP/M available from the German, Bernd Preuss) 782 kilobytes of main memory plus 32 megabytes of RAM-DISC.

I may be failing to understand the situation completely but it seems to me that a lot of the 32 bit chip's ability to handle data in large chunks is wasted. It may be able to manipulate 32 bits, but the data bus is only 16 bit so the 32 bit byte, or "longword" to give it its correct name, has to be carved in two 16 bit words for transmission along the data bus, and as disc memory is still in eight bits the "word" has to be carved in two "bytes" again for disc storage. Much of the potential speed gain must surely be lost. Of course, it would be expensive to have the memory in 32 bit bytes, and very wasteful, as most of the bits would be empty. Wordprocessing needs only 8 bits so as a wordprocessor an FDX with a silicon disc has only one failing: it does not have the ability to control every pixel of a high definition screen, so it cannot display what a sophisticated dot matrix printer can print, such as Italics, condensed, expanded, or proportionally spaced characters. It cannot therefore be used for desk-top-publishing.

The wordprocessing program, First Word Plus, seems to copy all the NewWord good features, but having to use a mouse is just a fiddling nuisance. Its superior features are the inclusion of a spelling checker, a word count, and drivers for modern printers; the last is an attraction, though it does not support all the typefaces available on a modern dot-matrix printer.

But what of "Flight Simulator II"? The ST I was using belongs to an ex-RAF navigator who still instructs in the ATC unit he has known for nearly 50 years. He was over the moon, indeed the stars, with it, and for him the ST was necessary. But he has acquired a monochrome monitor as the better definition is needed. Probably the program needs the Amiga for use in colour. Certainly my guide on hardware matters from whom I had the MTX-FDX, Ramesh, of Mighty Micro, Manchester, advocates the Amiga. Even if it were possible I would not like to use "Flight Simulator II" on the MTX as the definition is not good enough, but it could in theory, I suspect, run adequately on an FDX with a revised 80 column board, and with a silicon disc, could in some ways run better. But unfortunately even if the hardware were available the software is unlikely to be

written. Is it worthwhile for the rest of us to buy a computer for one spectacularly successful program? If you truly want to experience flying while sitting at your desk the answer maybe "yes", and I suspect you might never need any other program. But for those of us who use a computer for serious purposes all our Memotechs need is an Epson LQ driver, an improved Newword that could handle in a simple way the capabilities of modern printers to produce such things as italics, and an improved screen driver, that could show things on screen. One would certainly miss the Memotech's flexibility and wide input-output facilities. MTX buffs would also miss those lovely utility programs on our system disc.

\*\*\*\*\* Geoffrey Gardiner \*\*\*\*\*

REVIEWS...REVIEWS...REVIEWS...REVIEWS...REVIEWS...

TITLE:- FLUMMOX

MACHINE:- MTX 512

PUBLISHER:- ORION SOFTWARE

PRICE:- £7.70

Reviewed By Andrew Owen

FLUMMOX is an arcade game based on a very simple idea - fairly well implemented.

The idea is to 'blast' your way through over 40 levels. Each level has the same basis (ie 7 lanes with a gap down the middle in which you can manoeuvre), but provides a new 'alien' to 'battle' with. To shoot aliens you must be in the same lane as them and also facing them as your armament consists of 1 forward facing gun.

The first 3 levels of the game just introduce you to the game gently. It is at the 4th that battle really commences; this is when the tanks appear, these pose a problem as the shots just 'bounce' off of the front of them, to solve this problem you must first allow them to go past and then blast them in the back (this may sound cowardly, but unless you do they roll straight over you). On about the 7th level you get a chance at an extra life:- but you must be quick:- a 'mushroom' shaped alien drifts across the lower half of the screen; this must be blasted to gain an extra life.

One amazing thing is the screen at the end of each level, on which an inane comment appears (always beginning 'My view of your abilities is :-') the punchline depends on which level you have reached (level 1's punchline is 'Stick to Pacman'). While this is happening a repetitive tune plays in the background.

The documentation for FLUMMOX was virtually non-existent and so it proved difficult to get into. The graphics, although smooth and colourful, were fairly basic and after a while repetitive.

On the whole I wouldn't recommend FLUMMOX to anyone, unless they are looking for a way to shut up the kids for an evening (and they can get it cheap); I wouldn't spend £7.70 on it.

Graphics	7	Sound	7	Instructions	4
Addictive Qualities	5	VFM	4	Overall	6

## YOUR LETTERS

### Help lines

1. Would it be possible for someone to send me a simple program to type into Ed/Asm as I have tried and tried (unsuccessfully) to get a program accepted by this without any error messages.

Please send direct to: Allan Ayre 24 Skirbeck Road, Gillshill Road, Hull, HU8 0HR.

2. Please could you inform me where I could get a 5.25" disc drive repaired (the drive constantly gives the message 'disc error'), I have tried MCL who said they could only sell me a new one.

Leslie Gornall, Binchester, Bishop Auckland.

Ed-> It should not be too much of a problem to find a local electronics repair shop, perhaps if you try the Yellow Pages you will find one. They are usually only too pleased to repair your kit, especially if it is a fairly standard disc drive.

3. Could you suggest some games on tape that include a save routine which will run on a MTX 512 with SDX disc drive. I have tried two 'Level 9' adventures which were found to be faulty when returned to the supplier. They would not run properly with the disc drive connected to the computer. The introduction screen would appear, followed by machine code. A similar fault was found when the disc drive was disconnected.

I would be interested in any ideas that you have, as I do not want to risk buying another game which may have the same fault.

Mr T. Eudall Oakham Leicestershire.

Ed-> I think that you have been the victim of a 'duff' batch of software. Normally, most games load without too much trouble, especially on a stand-alone MTX 512. Level 9 have been the most prolific writers of Adventure games for the MTX range over the years, and there is little else around to match them.

4. Dave Dulson is willing to transfer programs on any 5.25" and 3.5" in MTX format for any members of the club free of charge. Just send the formatted disc and the one or ones to be transferred and the return postage.

Dave Dulson 241 Fratton Road, Fratton, Portsmouth PO1 5EZ.

5. Leslie Gornall wishes to contact fellow MTX owners (preferably with disc drive) to swap programs, tips and tricks.

Leslie Gornall The Old School, Binchester, Bishop Auckland, Co. Durham DL14 8AU

6. I recently upgraded to SDX CP/M 2.2 and have been for some time now happily using this great operating system. However, I have been trying somewhat in vain to make an electronic switch which resides inside the computer which connects both video output ports to the same monitor, so allowing software control over switching VDP's. If any other readers of Memotechniques have tried to do this I would be very grateful if they would get in touch. (Address as above).

7. I would like to offer a Memotech computer repair service to club members. In order to provide reliable repairs at a reasonable cost, I have split the charges into two groups. Minor repair's (General keyboard faults etc) £7.50, and Major repairs £15.00, both prices are + P&P (£3.00). Should these charges not be sufficient to effect a repair, the customer will be contacted prior to work being carried out. I am offering a high quality, low cost repair service that will generally be 48 hr turn around (parts permitting), this has come about after several people enquired following being quoted the higher prices by M.C.L.. Should people wish to avail themselves of the service, I can be reached at the address below or by phone. (0905) 24260.

P.S. I still have several pack's of 10 function key overlays, should anyone require any they can be obtained from me for the meager sum of £1.00.

Paul Woods 12 Bishops Ave, Worcester, WORCS. WR3 8XA.

### Tips And Tricks

1. Uk Home Computers are selling a small add on ROM board that will give FDX owners SDX basic. The real advantage here is that SDX basic leaves you with the full MTX 512 memory configuration, instead of only a 32K machine. The ROM costs about £13 and is required if FDX owners want to use programs like John Graysons Advanced Graphic Designer.

2. This month I have had several phone calls along the lines of:-

"I have been experiencing some problems when using FOR-NEXT loops, the MTX does not appear to do the last 4-5 times around the loop"??

Ed-> The problem is that when the program finishes, the editor which occupies the bottom 4 rows of the screen is displayed, this blanks anything which is on those lines. If

## YOUR LETTERS Continued From Previous Page

this happens fast enough it looks like they were never there in the first place, and thus a program fault. This can be cured by a line such as:-

```
100 GOTO 100
```

which will cause the program to loop at the end, so that you have time to see the last four lines. Pressing the BREAK key will stop the program.

### Chit Chat

1. I note from the magazine that other people have suffered from the purchase of a 500 dressed up as a 512. I visited Ron Gladwin as I could not get some tapes to load and found that I had been sold a 500 as a 512. I purchased an extra memory board from Ron to make up to a 512. Ron was not pleased about this con but he will of course help and convert for anyone, he charges £19.95. Being very new to computing I found him very helpful.

Malcolm Taylor, Burford, Oxford.

2. I think Ron Gladwin of UK Home Computers deserves a special mention. Having ordered my MTX512 just before his summer holiday, I had not received it after about two weeks, when I unexpectedly found myself in Swindon for the day. I went to the address expecting to find a shop with unhelpful assistants behind the counter. In fact, I found his home, I was made to feel at home, given a cup of tea while Ron was fetched, had my order sorted out, and even given a lift back to the station. The whole family joined in with the same helpful spirit. I was most impressed, and was also able to return to Cardiff with the new computer under my arm. If only all computer shops were like this!!

Mike Kohnstamm Lakeside, Cardiff.

Ed-> Please do not all go to Ron directly to get your equipment, without first arranging it with Ron.

3. A bug has been found in Money Manager from the Program Library, an amendment should be made as follows:-

```
5420 IF M>12 THEN LET M=M-12: LET Y=Y+1
```

Should be changed to:-

```
5420 IF M>12.5 THEN LET M=M-12: LET Y=Y+1
```

An article published in Vol 2 Issue 4 explains some of the problems that can be encountered when using numbers and the MTX basic.

Mike Pike Great Baddow, Chelmsford.

### Club Contacts

#### 1. GATEWAY COMPUTER CLUB

Phil Herberer, 164d Radcliffe Road, Lakenheath, Suffolk.

We are a multi-User group and have 150+ members. The club

has been active for almost 5 years and we meet on the 3rd Sunday of each month at the Bob Hope Recreation Centre, at RAF Mildenhall between 14:00 and 16:00Hrs. Some of the larger individual groups ie MAC, Apple, MS-DOS etc also have a separate extra meeting at different times of the month. On Sunday 15th November we had a successful Families computing day and I had also arranged for APPLE UK to come and demonstrate their new MAC II with Laserwriter and DTP software. We gained another 18 new members at that meeting. On Sunday the 17th of January Acorn UK will be coming to demonstrate the "Doomesday Machine" and the Archimedes".

Yours Martin Randell

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### A GAP FILLER FROM A PREVIOUS MAGAZINE

Richard Dennis has sent us a useful Assembler routine, a Software keyboard debounce.

;Keyboard Debounce Routine by Richard Dennis

```
LD HL,£B000; CHANGE THIS TO RELOCATE ELSEWHERE
```

```
PUSH HL
```

```
PUSH HL
```

```
LD HL,£FD51;TRANSFER USERIO TO PROGRAM
```

```
LD DE,JKBD
```

```
LD BC,3
```

```
LDIR
```

```
LD HL,BEGIN;RELOCATE FROM BEGIN TO HIGH MEMORY
```

```
POP DE
```

```
LD BC,£80
```

```
LDIR
```

```
POP HL;CHANGE USERIO TO REL'ED MEM. FOR K'BOARD
```

```
LD (£FD52),HL
```

```
BEGIN: PUSH AF;DEBOUNCE ROUTINE STARTS HEAR
```

```
PUSH BC
```

```
LD B,10;SET IDLE1 LOOP
```

```
IDLE1: PUSH BC
```

```
LD B,£FF;SET IDLE2 LOOP
```

```
IDLE2: DJNZ IDLE2
```

```
POP BC
```

```
DJNZ IDLE1
```

```
POP BC
```

```
POP AF
```

```
JKBD: DS 3;OLD USERIO JUMP TO RET TO KBD SCAN ROUTINE  
RET
```



```

1 REM *****
2 REM * CAROLS BY D BROWN *
3 REM *****
30 DIM N(67)
31 LET N(1)=955.657421
32 LET N(2)=N(1)/1.059
33 LET N(3)=N(1)/1.122
34 LET N(4)=N(1)/1.189
35 LET N(5)=N(1)/1.260
36 LET N(6)=N(1)/1.335
37 LET N(7)=N(1)/1.414
38 LET N(8)=N(1)/1.498
39 LET N(9)=N(1)/1.587
40 LET N(10)=N(1)/1.682
41 LET N(11)=N(1)/1.782
42 LET N(12)=N(1)/1.883
43 LET N(13)=N(1)*.5
44 FOR X=1 TO 12
45 NEXT X
46 FOR X=13 TO 66
47 LET N(X)=N(X-12)/2
48 NEXT X
49 LET N(67)=8
51 LET H=200
52 LET A=11: LET B=8: LET C=8: LET D=7
53 PRINT : PRINT : PRINT
56 PRINT " A CHRISTMAS CAROL"
57 PRINT : PRINT : PRINT : PRINT
58 PRINT " arranged for Memotech"
59 PAUSE 2000
60 CLS
61 PAPER 3: INK 13
62 PRINT : PRINT : PRINT : PRINT
63 PRINT " AWAY IN A MANGER"
65 FOR X=1 TO 2
66 GOSUB 1450
67 NEXT X
68 SOUND 2,0,0
70 FOR X=1 TO 2
71 GOSUB 1450
72 NEXT X
73 SOUND 1,0,0: SOUND 2,0,0:
SOUND 4,0,0: SOUND 0,0,0
75 FOR X=1 TO 2
76 GOSUB 1450
77 NEXT X
78 SOUND 1,0,0: SOUND 2,0,0:
SOUND 4,0,0: SOUND 0,0,0
80 FOR X=1 TO 4
81 GOSUB 1450
82 NEXT X
83 SOUND 1,0,0: SOUND 4,0,0:
SOUND 0,0,0
85 FOR X=1 TO 2
86 GOSUB 1450
87 NEXT X
88 SOUND 0,0,0

90 FOR X=1 TO 2
91 GOSUB 1450
92 NEXT X
93 SOUND 2,0,0
95 FOR X=1 TO 2
96 GOSUB 1450
97 NEXT X
98 SOUND 1,0,0: SOUND 2,0,0:
SOUND 4,0,0: SOUND 0,0,0
100 FOR X=1 TO 2
101 GOSUB 1450
102 NEXT X
103 SOUND 1,0,0: SOUND 2,0,0
105 FOR X=1 TO 6
106 GOSUB 1450
107 NEXT X
108 SOUND 1,0,0: SOUND 2,0,0:
SOUND 0,0,0
110 FOR X=1 TO 4
111 GOSUB 1450
112 NEXT X
113 SOUND 1,0,0: SOUND 0,0,0
115 FOR X=1 TO 2
116 GOSUB 1450
117 NEXT X
118 SOUND 4,0,0
120 FOR X=1 TO 4
121 GOSUB 1450
122 NEXT X
123 SOUND 1,0,0: SOUND 4,0,0:
SOUND 0,0,0
125 FOR X=1 TO 2
126 GOSUB 1450
127 NEXT X
128 SOUND 2,0,0
130 FOR X=1 TO 2
131 GOSUB 1450
132 NEXT X
133 SOUND 2,0,0
135 FOR X=1 TO 2: GOSUB 1450
137 NEXT X
138 SOUND 2,0,0: SOUND 0,0,0
140 FOR X=1 TO 2: GOSUB 1450
142 NEXT X
143 SOUND 4,0,0
145 FOR X=1 TO 2: GOSUB 1450
147 NEXT X
148 SOUND 4,0,0
150 FOR X=1 TO 4: GOSUB 1450
152 NEXT X
153 SOUND 4,0,0
154 LET A=12: LET B=11: LET C=10:
LET D=9
155 FOR X=1 TO 4: GOSUB 1450
157 NEXT X
158 SOUND 1,0,0: SOUND 2,0,0:
SOUND 4,0,0: SOUND 0,0,0

160 FOR X=1 TO 6: GOSUB 1450
162 NEXT X
163 SOUND 1,0,0: SOUND 4,0,0:
SOUND 0,0,0
165 FOR X=1 TO 2: GOSUB 1450
167 NEXT X
168 SOUND 0,0,0
170 FOR X=1 TO 4: GOSUB 1450
172 NEXT X
173 SOUND 1,0,0: SOUND 2,0,0:
SOUND 4,0,0: SOUND 0,0,0
175 FOR X=1 TO 2: GOSUB 1450
177 NEXT X
178 SOUND 2,0,0: SOUND 4,0,0:
SOUND 0,0,0
180 FOR X=1 TO 6: GOSUB 1450
182 NEXT X
183 SOUND 2,0,0
185 FOR X=1 TO 4: GOSUB 1450
187 NEXT X
188 SOUND 1,0,0: SOUND 2,0,0:
SOUND 0,0,0
190 FOR X=1 TO 2: GOSUB 1450
192 NEXT X
193 SOUND 4,0,0
195 FOR X=1 TO 4: GOSUB 1450
197 NEXT X
198 SOUND 1,0,0: SOUND 4,0,0:
SOUND 0,0,0
200 FOR X=1 TO 2: GOSUB 1450
202 NEXT X
203 SOUND 2,0,0: SOUND 0,0,0
205 FOR X=1 TO 2: GOSUB 1450
207 NEXT X
208 SOUND 2,0,0
210 FOR X=1 TO 2: GOSUB 1450
212 NEXT X
213 SOUND 2,0,0
215 FOR X=1 TO 2: GOSUB 1450
217 NEXT X
218 SOUND 4,0,0
220 FOR X=1 TO 2: GOSUB 1450
222 NEXT X
223 SOUND 2,0,0
225 FOR X=1 TO 4: GOSUB 1450
227 NEXT X
228 SOUND 1,0,0: SOUND 2,0,0:
SOUND 4,0,0: SOUND 0,0,0
1000 ----- subroutine -----
1450 READ V1,V2,V3,V4
1452 SOUND 1,N(V1),A: SOUND
2,N(V2),B: SOUND 4,N(V3),C: SOUND
0,N(V4),D
1455 PAUSE H
1456 RETURN
1460 READ V1,V2,V3,V4
1462 SOUND 0,N(V1),A: SOUND
1,N(V2),B: SOUND 2,N(V3),C: SOUND
4,N(V4),D
1465 PAUSE H: RETURN
1470 READ V1,V2,V3,V4
1472 SOUND 0,N(V1),A: SOUND
1,N(V2),B: SOUND 2,N(V4),D
1475 PAUSE H: RETURN
1499 REM AWAY IN A MANGER
1500 DATA 27,27,15,15,27,27,15,15
1505 DATA 32,27,24,20,32,27,24,20,
32,27,24,20,32,27,24,20,34,31,
25,15,36,31,25,15
1510 DATA 32,32,24,20,32,32,24,20,
32,27,24,20,32,27,24,20,36,32,
27,20,37,32,27,22
1515 DATA 39,32,27,24,39,32,27,24,
39,32,27,24,39,32,27,24,41,32,
25,25,41,32,25,25
1520 DATA 37,34,29,22,37,34,29,22,
37,34,29,22,37,34,29,22,34,34,
25,22,36,36,27,22
1525 DATA 37,34,29,27,37,34,29,27,
37,29,27,27,37,29,27,27,39,31,
27,15,39,31,27,15
1530 DATA 36,32,20,17,36,32,20,17,
36,29,20,17,36,29,20,17,32,29,
24,15,36,29,24,15
1535 DATA 34,29,17,14,34,29,17,14,
29,29,22,14,29,29,22,14,32,26,
22,10,32,26,22,10
1540 DATA 31,27,22,15,31,27,22,17,
31,27,22,15,31,27,22,13,27,25,
22,12,27,25,22,10
1545 DATA 32,24,24,20,32,24,24,20,
32,27,24,20,32,27,24,20,34,31,
25,15,36,31,25,15
1550 DATA 32,32,24,17,32,32,24,17,
32,29,24,17,32,29,24,17,36,32,
20,17,37,32,22,17
1555 DATA 39,30,24,15,39,30,24,15,
39,30,24,15,39,30,24,15,41,30,
24,20,41,30,24,20
1560 DATA 37,29,25,13,37,29,25,13,
37,29,25,13,37,29,25,13,34,29,
29,25,36,29,27,24
1565 DATA 37,29,25,22,37,29,25,22,
37,29,22,22,37,29,22,22,39,31,
22,15,39,31,22,15
1570 DATA 36,32,20,17,36,32,20,17,
36,29,20,17,36,29,20,17,32,29,
24,17,36,29,20,17
1575 DATA 34,29,22,13,34,29,22,13,
29,29,25,10,29,29,25,10,31,27,
25,15,31,27,25,15
1580 DATA 32,27,24,8,32,27,24,8,
32,27,24,8,32,27,24,8

```

## PROGRAM LIBRARY

Hello again! We have had a few problems with software going missing from the library in the changeover from Phil to myself and I have to admit that the list that was published last month had a few emissions and errors. However, all of you that ordered anything got the right programs.

I have spent quite a while re-doing the complete catalogue of software (which is correct!) and the abbreviated version. If you're writing to Phil or myself for any reason why not ask for a new list (free of charge!!!!).

This month for the festive period the Program Library is running a special offer (shock gasp!).

### Special Offer 1

Instead of the normal 2 programs on cassette, purchase 4 programs for 2 pounds - saving yourself 40p and get a mystery program free! (Saving yourself 1 pound in total)

### Special Offer 2

Buy two program library discs for 4 pounds saving yourself a pound! If you want the discs as well, then the special offer price is 6 pounds.

A new addition to the library this month is a compilation disc of programs that have been listed in the magazine. It's really a sort of mixed bag of proggies and it's 1 pound (no special offer). Don't forget to add pound if you want a disc.

The programs are:-

CYPHER	FPLLOT	ASCII	PLOTS	POLAR	PALETTE
CLOCK	COLOURS	SQUARES	PROGRAM1	PROGRAM3	BUBSORT
LABEL	COLOUR	PDUMP	GAME.M/C		

Software on the CP/M front has also been added - most of which have been written by me on Turbo Pascal but are available as .COM files. The programs are:-

BASE.COM	TRIANGLE.COM	GLORY.COM
GRAPHSIN.COM	DCTRYN.COM	MATRIX.COM

All the .COM files will also have their associated .PAS files for you to examine either through Turbo or through NewWord. The disc is the normal price of £2.50 and yes, the special offer does apply!

Also added are "Labels" and "Ski Version 2". The latter is the updated version by Mike Pike of the program published in an earlier issue of the mag and is very good fun. The former, by John Wilson allows the user to print labels on an Epson compatible printer. Finally, Deci\_Clock is now available on cassette only. It is Arthur Hills shot at the competition we had a couple of months ago. To say it is fabulous is a drastic understatement. Totally written in Assembler, it is well over 28K and keeps the time in Decimal format 24Hrs a day (while the computer is on of course!) and prints up interesting "ditties" on the screen to keep you amused as the hours roll by. Brilliant stuff!

Well that's all from me, have a super Christmas and New Year - and don't eat too much turkey!

Alan Hamilton (Tel 05055 2491)

Program Library

12 Roebank Road

Beith

Ayrshire

KA15 2DX

Cheques Payable To MDC Please.

# MEMOTECH OWNERS CLUB PROGRAM LIBRARY

This is the list of all the programs available on cassette and disc. The costs are: £1.20 for two programs on cassette (we supply the tape) and £2.50 on disc for 20 programs (or £3.50 if you want us to supply the disc). When ordering for discs please state clearly what memory capacity you work on (100K to 1Meg).

Disc 1 starts here.

- |                      |                                   |
|----------------------|-----------------------------------|
| 01. Hex/Dec/Bin      | Number conversion program.        |
| 02. CGEN             | Sprite Generator.                 |
| 03. 3D-Draw          | Rotate a cup & saucer in 3D       |
| 04. Whist            | Card Game                         |
| 05. Mem-Save         | Saves/Loads memory from tape.     |
| 06. MTX-Draw         | Basic drawing board               |
| 07. LOGO-Draw        | Turtle graphics drawing board.    |
| 08. Simplex Tableau  | Applications Program.             |
| 09. Breakeven        | Applications Program.             |
| 10. Statistics       | Applications Program.             |
| 11. Unsolved Problem | Applications Program.             |
| 12. Radio Routines   | Learn about Radio Electronics.    |
| 13. Light Cycles     | Arcade Game (TRON).               |
| 14. Hex/Dec/Bin      | USER commands conversion program. |
| 15. Character Ed.    | Sprite Generator.                 |
| 16. Quasimodo        | THE classic arcade game.          |
| 17. Planner          | Another Sprite Generator.         |
| 18. Manoi            | Classic Puzzle - good graphics.   |
| 19. Noble            | Simple text game.                 |
| 20. Hi-Lo            | Higher or Lower card game.        |

Disc 2 starts here.

- |                 |                                  |
|-----------------|----------------------------------|
| 21. Composer    | Sound Generator.                 |
| 22. Anova       | Applications Program.            |
| 23. Cashflow    | Applications Program.            |
| 24. Reversi     | Strategy Board Game.             |
| 25. Fulltime    | Football manager game.           |
| 26. Panel 3     | Panel extensions.                |
| 27. Word Pro    | Word Processor.                  |
| 28. Sw Mice     | Arcade game involving mice.      |
| 29. TNT TIM     | Very good assembler arcade game. |
| 30. Sw3D-FUNC.1 | First of two. Saturn.            |
| 31. Sw3D-FUNC.2 | Second one! Sinpr?               |
| 32. SwSpr-Ed    | And another Sprite Generator.    |
| 33. SwZ-Wandi   | Number Base Conversion program.  |
| 34. OXO         | Noughts & Crosses.               |
| 35. Solitaire   | Strategy game.                   |
| 36. Cross-Num   | Excellent strategy game.         |
| 37. Avoid Seven | Dice game.                       |
| 38. Numerology  | Name analysis.                   |
| 39. Chemin      | Another dice game.               |
| 40. Dice        | Another, Another dice game.      |

Disc 3 starts here.

- |               |                          |
|---------------|--------------------------|
| 41. Reversi 2 | Assembler version of 24. |
| 42. ISOT      | A really good maze game. |
| 43. DBase     | Simple database.         |

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|-------------------------|-------------------------------|
| 44. Diary               | Diary & Addresses Program.    |
| 45. Terminal            | Comm's via RS232 & modem.     |
| 46. Skittles            | Keeps league tables.          |
| 47. Card-Ind            | Produces card indexes.        |
| 48. 2 * H&W             | Large character printing.     |
| 49. Hangman             | A classic                     |
| 50. Account             | Third accounts package.       |
| 51. Mastermind          | Another good game.            |
| 52. Connect 4           | Two player game.              |
| 53. Journey Into Danger | NEW adventure game.           |
| 54. Connect 4 V2        | As for 52.                    |
| 55. Patience            | Card Game.                    |
| 56. Life                | Odd Puzzle.                   |
| 57. Enigma              | Like Mastermind.              |
| 58. FKEY                | Function key definer.         |
| 59. Skydiver            | Graphical game.               |
| 60. Digger              | RockFall or Repton type game. |

Disc 4 starts here.

- |                   |                                  |
|-------------------|----------------------------------|
| 61. MP6           | Calculates fuel consumption.     |
| 62. Spooler       | Dumps Panel & VS 4 to printer.   |
| 63. Labels        | Label printing program.          |
| 64. Ski Version 2 | Update of published SKI program. |

Cassette ONLY Software

- |                     |                             |
|---------------------|-----------------------------|
| CA01. Renum         | Rennumbers BASIC programs.  |
| CA02. Merge         | Merges BASIC programs.      |
| CA03. Money Manager | Home Accounts package.      |
| CA04. FKEY          | Defines Function Keys.      |
| CA05. DBase III     | Advanced database program.  |
| CA06. Filetech      | Great database program.     |
| CA07. Flight        | Brilliant Flight Simulator. |
| CA08. RamDisc       | Better than sliced bread.   |
| CA09. TextEd        | Assembler Word Proc.        |
| CA10. Deci_Clock    | Brilliant Clock program.    |

Disc Software

- |      |               |      |                 |
|------|---------------|------|-----------------|
| CPM1 | Z80 ASSEMBLER | CPM2 | EBASIC PROGRAMS |
| CPM3 | MAIL LABEL    | CPM4 | TURBO PROGRAMS  |

Don't forget the compilation disc at £1!

List updated at 15/11/87

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