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THE MAGAZINE for TANDY Computer USERS

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COCO & SOFTGOLD

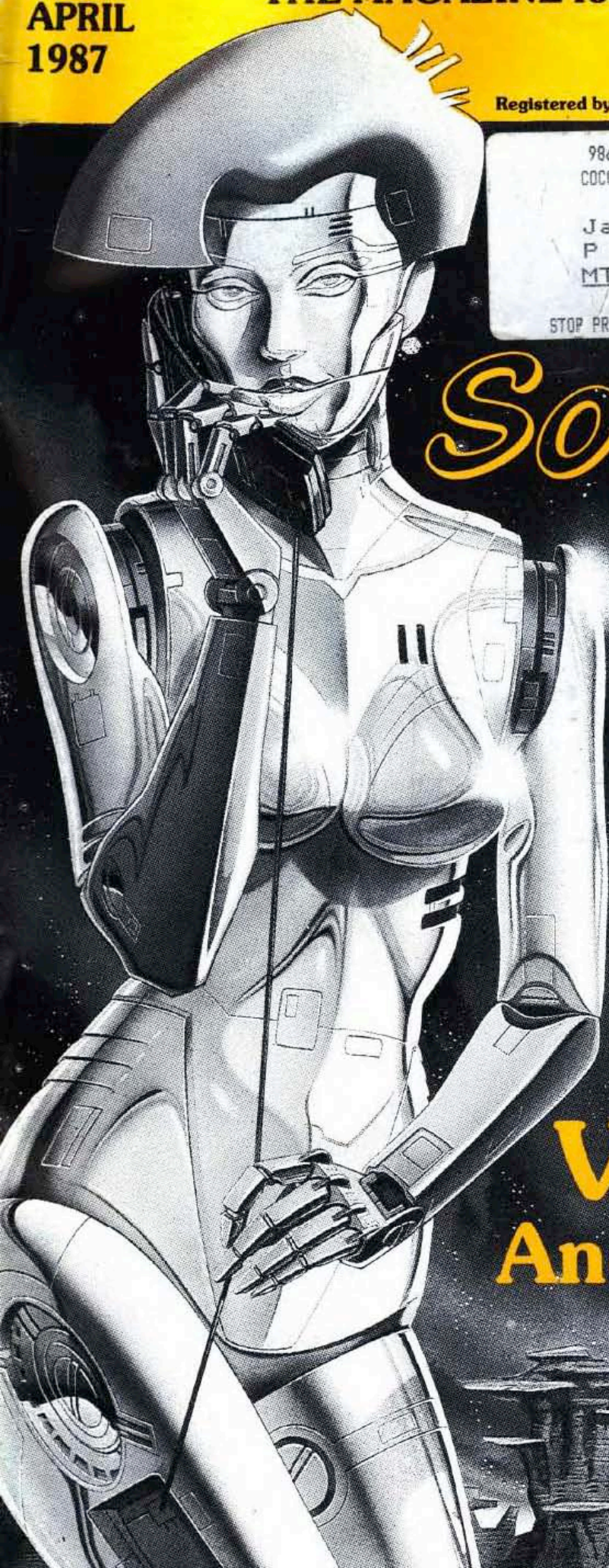
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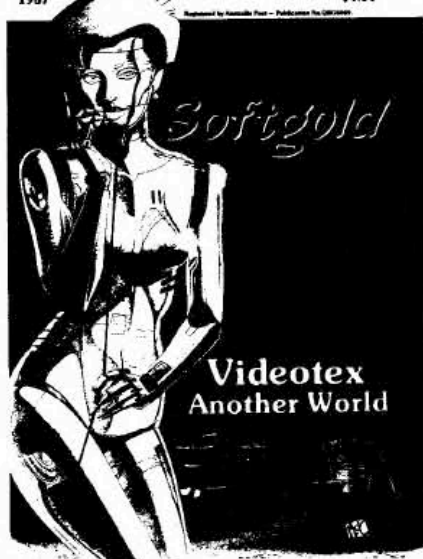
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DELIVERY





WHO IS THIS MAGAZINE FOR?

This magazine is for computer users – especially users of Viatel, Tandy Colour Computer users, Tandy MC-10 computers, Tandy 1000 and 2000's and IBM PC's and compatibles.

WHO PROVIDES THE MATERIAL IN THIS MAGAZINE

The readers of this magazine supply the information you will find here. All of it has been volunteered and remains the property of the individual authors.

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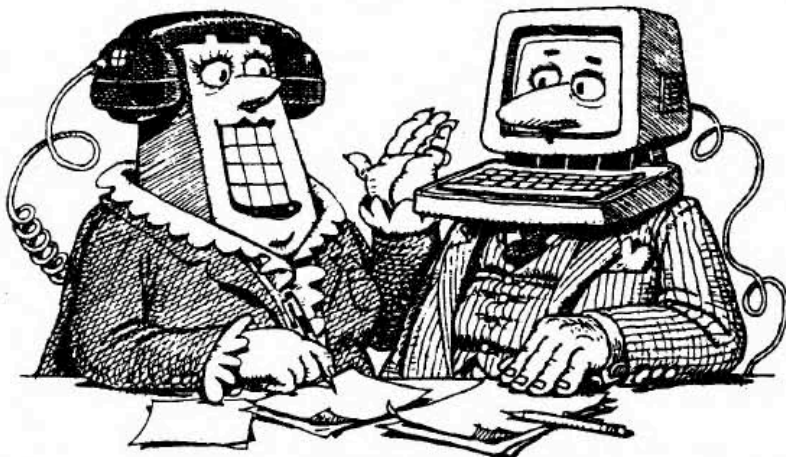
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Clubroom

Melbourne - WOW!

Last month I travelled to Melbourne to do a bit of business and to see the Viatel and Tandy computer users in that city.

Last time we met at Ringwood, we had heaps of people and so we were all a bit worried that we'd be inundated, but fortunately we had a nice number - about 60 turn up.

But what a night!

Firstly, Ron Wright showed his latest version of CoCoTex (3.1) which takes advantage of the GIME chip to provide high speed screen updates on the CoCo 3.

We have been used to working with the Sony dedicated Viatel terminal.

Being a dedicated terminal, one has to expect that it might reproduce Viatel more efficiently than many computers.

However on this night, it stayed to the side, as the CoCo 3 showed the Sony how to make Viatel work - FAST!

And the surprise of surprises is that this 3.1 version is a free update for existing 3.0 owners!

As if this wasn't enough, Jerome Siappy from Blaxland Computer Services came down for the night with his hard drives and OS-9 Level 2.

This was the first showing of this amazing hard/software, and was something of a compliment to the club that they were permitted by Tandy to be the first in Australia to see it.

The OS-9 Level 2 software allows operation of 8 programs at once. Jerome had 4 separate programs running on the one screen in windows, and 4 others running on 4 other screens, all at the same time, all with no speed diminution!

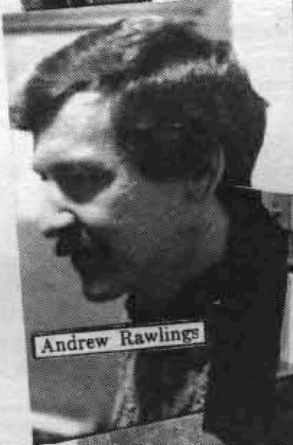
Ivor Davies and son



The Duck & Helen



Andrew Rawlings



A typical Viatel Office - hard at work!



Before....

....after



The Princess and Karen

Here he is girls!



Jeremy...hiding

Wombat's place

The exciting thing about this is that we will soon be able to have a printer printing a long file, while we write another, while we access Viatel, while we play a game, while we work on a spreadsheet....and so on!

Anyway, expect to see more on this exciting development in Australian CoCo Magazine in the coming months.

Our thanks go to Andrew, Ivor and the group for getting this meeting together at short notice.

And whilst on the subject, congrats to Andrew who recently received an Advance Australia Award for his work with the Ringwood group.

This is the first time any of our contacts has been so honoured, and reflects the increasing awareness in the community of the value of such people.

On the Friday evening, we had dinner with a number of Viatel users at the Shark Fin Restaurant.

I must admit to some measure of surprise at being allowed into the place at all, but then I suppose there must still be some people who haven't heard what Viatel users are like.

About 25 people turned up, and we had a top time!

The time went very quickly as we talked, looked at the 100's of photos people have sent to us, and generally got to know each other in a most enjoyable environment.

About midnight, the proprietor finally woke up to himself and asked us to leave, and some of us went on to the place where the Saturday evening bash was to be held. There was, I believe, some silly notion in the offing that we'd await the arrival of a contingent from Sydney.

At 3.30 AM they hadn't arrived, so some of us headed back to the Princess' place where at 4.30, we updated Goldlink for several hours.

At 6.30 I thought it might be a good idea to get changed and ready for the rest of the day, so I went back to where I was staying, got changed and straight back to the Princess' place to pick up the same crew and off to Manticore's where a number of the South Australians had congregated.

(Why does Manticore attract South Australians?)

Then it was off to Belgrave to climb onboard Puffing Billy and a ride through the lovely

Dandenongs!

I was a bit concerned that we might have space problems on the train, but once the Viatelians got on board, they resolved the problem very satisfactorily because everyone else in the carriage left!

Then it was back to the palace of the princess where we updated Viatel for an hour or so, before heading off to Black Panther's place for the event of the trip - the Viatel Bash.

And what a bash! Food everywhere - people everywhere - and two live Viatel terminals!!

Black Panther runs "Game Masters" on Viatel; we also had the company of a mysterious lady from Microtex 666; and we had Viatel personnel there too.

And there were people from Sydney, South Australia, and a HEAP (no, I don't mean Woodrow) from Victoria.

We had a ball - Viatel wasn't forgotten - we updated from the party and from Queensland - and at about 4.00 am new time (Queensland time) we left and headed for our various beds!

We'll have to put out a separate mag if all the photos taken at the party arrive, so in the meantime I've included a few of mine!

WE WANT YOU !

SPECIAL

This Month Only!!

Subscribe to This Magazine Now!

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Next major bash will be in Sydney in August to coincide with Conf '87 and we are planning another for later in the year for the Gold Coast.

But its obvious that such an event is not for the weak hearted! You need plenty of sleep before and after to survive!

Conf '87

As the Princess would say, ARGHHHHH!

Everytime I go to make some arrangements for this event, something goes awry!

But subject to any further changes, which are unlikely, Conf this year will be at the Uniting Church Conference Centre in Bundeena NSW.

Again costs are unconfirmed at this stage, but they look like being in the vicinity of \$80 for non stayers and \$120 for stayers for the weekend, ie people who stay overnight in the accommodation at the camp site.

The frustration is caused because I can do the conference on the Gold Coast for much the same price as last year. However I'm reminded that people would spend much more than the cost increase on travel to the Gold Coast, so perhaps its not as bad as it seems!

One thing is certain - the conference is on the weekend of 15th August - so plan to be there.

We've not been so remiss with regard to planning the events and the seminars - these are largely organised - and we're expecting to have some very interesting speakers who will present worthwhile information!

Competitions

Come on everyone! I admit to having some good stuff here for the competitions, but there is room for more!

Martha's been pleasantly surprised. She thought she'd see some pretty average stuff for her competition, but some of the progs submitted so far have been very good.

Don't forget - Tandy is going to buy the best CoCo 3 and the best CoCo 2 game submitted to us before July 31st - and that's worth big money - so get cracking on those programs!

Programs are also sought for the T1000 for which there will be appropriate prizes..

Telgraf

Telgraf is a new Videotex service you can access from anywhere in Australia at no

cost.

In other words, instead of using your CoCoTex or VTex2 program to access just Viatel, you can now access Telgraf too.

The phone number to call is 008 25 1355. When you have accessed this frame, you will see a phone number to call, to obtain your visitor password.

There is not a lot of info on the service at present, but as it grows, there will be more. (See ad this month.)

Telgraf is concentrating on information which may be of interest to women, although there will be a range of other material there too.

The Chatline alone is worth being on Telgraf. On a busy night it moves very fast, and can be very absorbing, especially when Sue, one of the Sysops, is on!

Best of # 11

Best of CoCoOz # 11 is an education issue which was released last month.

Please note that it has been specially created for Disk users ONLY.

We've experienced disk supply problems recently and we have also got a tape making machine which is not working too well at present, so there may be/may have been, problems getting disks and tapes to you. Please be patient, we're working on it!

On the subject of these special disks and tapes, we have the CoCo 3 disk/tape # 3 waiting in the wings ready to be released once our current disk/tape hassles are resolved - which hopefully means that you can purchase it as you read this! The cost is \$16.00 disk or tape, and it includes the program ARTIST which occurred in last month's Australian CoCo Magazine.

Club News

Allan Allsop is the new contact at Woodridge. Allan's phone number is 07 349 1831.

Woodridge is a new group, sired by Bob Devries and John Poxon. Its great to see it growing.

The Toronto (Canada) CoCo club has started off the Fall (Autumn) season with a full program.

The club has a new president, Franz Lichtenberg, who takes over from Paul Good.

General meetings are held on the 4th Monday of the month at 7.30 at Bloor Collegiate in Toronto, and special interest

groups for OS-9 are held on the second Monday of the month.

Our magazine is of considerable interest to the group who recognise it as being "different"! (Apparently that is a compliment!)

The contact for the Toronto CoCo Club is Franz Lichtenberg, phone 416 845 2889.

Doug Barber (contact, Armidale) recently sent some info from a small tabloid called "Comploid".

The issue raises the problems created by viruses which are placed into public access systems and which upon download, can wreck considerable parts of your software library.

Brian Dougan has been preparing an article on this subject for us, so I wont steal all his thunder, suffice to say at this stage that there are some small minds around, and you should treat anything you download - especially for the IBM machines, with the utmost suspicion.

Comploid is published by Michael J Brennan & Assoc, 216 Dumaresq St., Armidale. NSW. 2350.

The Ringwood Group has its first Hardware night upcoming at their May meeting.

In May, they'll show you how to get a "power on" light on your CoCo.

We received the Latrobe Valley Bulletin and as usual, enjoyed it very much this month.

It really is incredible that publications of the quality of this one, don't get the support they deserve from their local people.

Another regular club magazine through our door is the Port Noarlunga Club's magazine.

This club seems well supported and the magazine certainly reflects a club with strong membership.

The other club magazine received recently was the OS-9 Users' Group Newsletter which really is a credit to Graeme Nichols, its Editor.

The magazine this month is full of all sorts of goodies for the OS-9 user - in fact it is a must for anyone with OS-9!

Please note that Bob Devries phone number is 07 372 7816. It appears we got it wrong again.

Photos Please!

Come on you User Groups!! We want your photos!!

Sheesh!! What does it take!!



Hello & Goodbye.

Julie has left us to start her own business. We wish her well in her new venture.

Paul, who previously handled your incoming and outgoing mail, has now gathered in the reigns of the paste up job and I'm sure you'll agree that this magazine, his first effort, is pretty good!

Wayne Such, a Commodore 128 user (we're trying hard not to hold it against him!), has joined us to take over Paul's job.

If you have a difficulty getting things from us, Wayne is the man to speak with!

The Tandy Store Award.

Indooroopilly store is not a stranger to this award, but their recent performance over the Christmas period needs to be acknowledged.

They sold enough computers to be the store with the second highest number of sales over Christmas, but they did it against great odds and still maintained a strong commitment to good customer relations!

Mike Walker, the definitive dynamic manager has now moved from Indooroopilly to Redbank, and Jim Patching, who was at Tamworth, has moved to Indooroopilly.

He has a tough act to follow!

Which store was the top store over Christmas? Well next month I hope to have a photo to show you, so we'll leave that news till then!

Have a great month. This will certainly be our toughest month, we have so much happening here, I'm not sure how we'll all get through it!

Boy! New videotex services, Viatel, Ads to sell, competitions to run, conferences to organise, a tape maker to fix, oh - and two magazines to make!

Think I'd better go!

PEEKs & POKES

Printer Pokes

POKE149,4:POKE150,88	50 baud
POKE149,2:POKE150,227	75 baud
POKE149,1:POKE150,246	110 baud
POKE149,1:POKE150,110	150 baud
POKE149,0:POKE150,180	300 baud
POKE149,0:POKE150,87	600 baud
POKE149,0:POKE150,41	1200 baud
POKE149,0:POKE150,25	1800 baud
POKE149,0:POKE150,23	2000 baud
POKE149,0:POKE150,18	2400 baud
POKE149,0:POKE150,10	3600 baud
POKE149,0:POKE150,7	4800 baud
POKE149,0:POKE150,3	7200 baud
POKE149,0:POKE150,1	9600 baud

PEEK(65314)

= odd, printer offline,

= even, printer online.

POKE360,162:POKE361,191

All text output to printer

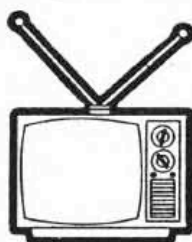
POKE360,115

Restores the above in Extended Colour BASIC

POKE360,203:POKE361,74

Restore the above in Disk Extended Colour BASIC

For those whose screen dump only prints halfwidth just put printer into elongation mode for DMP110 send: CHR\$(27); CHR\$(14). To end elongation send: CHR\$(27); CHR\$(15).



TRIVIA

by Barry Sidebottom

32K ECB + 'T.V. Trivia

IF YOU LIKE TV shows Beverly and Get Smart and have a copy of "Trivia Fever" (Australian CoCo, October 1986), then this is for you!

Future 'TV shows' to appear in the next few months are:

- : Gilligans Island (Gilligan)
- : Happy Days (Happyday)
- : Hogans Heros (Hogan)
- : Homicide (Homicide)
- : M.A.S.H (Mash)
- : Mr Ed (Mr Ed)
- : The Sullivans (Sullivan).

If you want to use them all, simply change the following lines appropriately: 310, 420, 480, 835, 1140, 1145, 1150, 1390, 1391, 1395, 1396.

As I said originally, I am adding new files all the time (or when I feel like it!).

Ed's note: Due to the nature of the files mentioned here, these files will appear on CoCoOz titled as "Beverly" and "Getsmart".

Feedback

NEED HELP? Write to Graham, to Dr CoCo or leave a message on Viatel and we'll do our best to answer your enquiry in these columns as soon as possible.

LETTERS

Dear Graham,

I am having trouble with the program "Tank Battle" listed in the September 1986 Australian CoCo and would appreciate your help. I have checked my typing a number of times and can find no errors. You have not published any corrections to this program.

The first listing works OK and shows on the screen to enter ML listing by pressing a key. Pressing a key to add the ML listing gives an FM error and it will not load. By changing line 200 in the first listing to CLOAD instead of CLOADM the ML listing will then load but the program will not run.

In line 120 of the ML listing there is a printing error in the fifth line which reads:-

3, F8, 3F, F8, 1F, F, F8, 1F, EC, F, 8

I have taken the blank space to be an 8, however this may not be right. In checking with your Newcastle agent, Lyn Dawson, her copies are the same and she was not aware of any contacts that have typed this program.

It would be greatly appreciated if you could advise me re the above and any other corrections needed to make this program work.

J.D Hunter

Mereweather, NSW

Doug,

"Tank Battle" does work and there is nothing wrong with the listing.

However, this game will not work on a computer with their disk controller plugged in. It is strictly a non-disk arcade game.

In order to make Tank Battle run effectively, you should do the following:

1. Get a blank tape and save listing one on this tape.

2. Type in listing two and replace line 25 with:

25 INPUT "PRESS PLAY & RECORD AND PRESS <ENTER> WHEN READY"; AS: CSA
VEN "TANK-M", 14624, 16382, 14624

3. RUN listing two; when prompted to press enter, insert

your blank tape and press <ENTER>.

4. Turn off computer, turn on computer, rewind tape, and type in CLOAD & RUN.

5. Play game.

*

Dear Graham,

I am a new CoCo 3 owner and have read with interest Australian CoCo magazine. I am interested in getting some "Best of CoCoOz" tapes but it is not clear whether each tape contains all the programs listed under the category title (eg Education) or only one which the purchaser can nominate. Could you please enlighten me and also let me know if all the "Best of CoCoOz" programs will run on a CoCo 3?

J N Matthiessen

Wembley, WA

Dear J N,

All programs found in one of the "Best of CoCoOz" series (in this example, "Education") will contain all those programs under the banner of "Education".

For example, if I wanted to buy the "Best of Education # 1" I would be getting all the programs listed under that heading.

Not all programs will run on the CoCo 3. In particular, some of the business & utility programs will not work, but other than those few programs, every other program will work.

*

Dear Graham,

About 18 months ago I bought a 64K Colour Computer 2. Since then I have been involved in educational courses in programming and have been going along well.

Because I had this particular computer I found it very difficult to get information, other than what was in the instruction book, but I managed to get the September 85 issue of CoCo. Needless to say I found so much of interest in it that I have been trying to get more copies but was unable to do so,

one of the reasons being the cost as I am a pensioner and live in a remote area.

So I decided to write to one of the User Group Contacts found on the back of the magazine.

His name was David Berger and he lives at Lithgow. Last Friday he came to see me and left me a number of CoCo Magazines together with some hints and tips from his club.

I am telling you all this because I think he deserves a mention in Softgold as being a person that will help others no matter what their circumstances might be.

There really are some great people in this old world of ours and he is one of them. If this is the general type of person involved in the club then it must be a very good club. I commend them highly.

Dear,

As evidenced by Andrew Rawling's Advance Australia Award last month, David is but one of a number of very dedicated people in our community, who are prepared to give of themselves to Tandy computer users.

David is a long-term user of the Tandy Colour Computer and I'm sure, like so many other contacts, he deserves this praise.

*

Dear Graham,

Could you give me any information you have relating to the use of a network.

Our school set-up consists of the following:-

Network II controller

1 Disk Drive

1 Model 2 64K

5 Model 2 16K

8 grey 64K

In particular I would like to use a simple database and spreadsheet. I would like to CSAVE the program to all student stations and CLOAD their files and SAVE ON DISK for their use next time round.

The system I am using for word processing is adequate. Each student has a ROM pack version

of Scripsit. They can CSAVE their files to me and I can SAVE ON DISK for later use with DISK SCRIPSIT.

K. E. SWAN

Computer Co-ordinator,
St. Mary's High School.

Dear K. E. Swan,

Why not try using the database by Paul Humphreys which occurs on the Rest of CoCoOz #4 - Business.

As for spreadsheets, there have been several in the magazine which may be suitable but as I've never used any of them in a network situation, perhaps a reader may in a position to further assist you.

*

Dear Graham,

As of late I have become very interested in sound synthesis on the computer. I own a number of keyboards and synthesizers, and would be grateful if you could tell me the name of a fully fledged synthesis program (and price).

Most synthesizers these days, have a system called a 'MIDI interface' which allows the user to connect the synthesizer to other synthesizers or computers. Is there a program that configures the CoCo for such a task?

Thanks for your help,
Darren Ottery,
Kingscliff, NSW

Dear Darren,

A program and interface are available in the US from Speech Systems.

*

Dear Graham,

I always enjoy reading the magazine and I was wondering if you or anyone knew a POKE to make the keys go 'beep' when you press them down. Keep up the good work.

Thank you,
Andrew Green,
Taree, NSW

Andrew,

The answer to your problem can be found on CoCoOz #26 (May '85); "KEYBEEP", by Pixel Software, which will cause your 16 or 32K CoCo to 'beep' everytime a key has been pressed.

*

Dear Graham,

I have typed in Alex. Hartmann's "How to Extend Colour Basic Part 4 - DRAW", however

when I go to run it I get an NF error in 32.

I have checked my work and found it to be correct and but still get an NF error. Please advise me on what to do with line 32.

I have a TRS-80 Extended Colour BASIC computer with 64K.

Alf Bate
Moree, NSW

Alf,

That was a little bug left in the program. The way to remedy that is to edit line 31, go to the end (press the 'X' key), get rid of the 'GOTO32' statement and replace it with a 'NEXT' statement.

Then, replace line 32 with:

32 RETURN

*

Dear Graham,

Hi! The following is something of a thought provoker. Any chance of publishing this letter for any feedback it might generate?

I recently finished a Teleprinter program for my CoCo using EDTASM+ and was making a copy of object code tape to send to a friend when I discovered the following:-

The program Printerr is at &H4000 to &H4134.

The tape loads with CLEAR 150,&H4000:CLOADM:EXEC&H4000 - and works! Later a disassembler shows it is indeed at correct memory location.

Yet tape copiers respond as follow:

Tapemaster	5847 598A FA62
Tareomni	5846 598A FA62
Beauty	FM ERROR!!

When recorded with CSAVE"PRINTER2",&H4000,&H4135,&H4000. All as should be, and copier all then give correct info.

What gives with mongrel EDTASM+??

Glad to hear from anyone ...
Frank Rees
27 King St
Boort, 3537

Dear Frank,

Ok, I give in. What does give with mongrel EDTASM+??

*

Dear Graham,

Good day, I am the fairly new owner of a CoCo 2 and have been faithfully buying Australian CoCo from the time I first bought the computer. It is a very good magazine and I enjoy

reading it.

I have one request though. Especially now it is going to be an Aussie production. I am frustrated by having a program announced and then I'm told it is too long to put in the magazine. eg Aug' 86 "Sword Quest" comment: "but space restrictions allow only one adventure per issue - ed".

Oct.: "Solgans Escape"

Dec.: "Crystal"

Feb.: "The Battle of the Generals"

Yet there are 4 pages of "photos" & 2 pages of "Com Station 642", 3 pages of Viatel, 1 page to inform us of the magazine name change in the February issue alone!

I am finding with increasing tax burdens, higher mortgage repayments, and cost of living expenses going up all the time, that I have to "squirrel" away my \$1 per week to be able to pay for my monthly CoCo and have a real long range project to save for a printer.

I realize you have many interest groups to give attention to and the difficulty you must have in producing such good magazines each month.

But I think including some of these longer programs would make a good magazine even better. \$3.75 I can handle, but \$13.75 is out of the question!

PS. I realise you printed "Sword Quest" but I used the comment to add weight to my argument and would not expect 2 long programs in a magazine.

G. N. Albert
Tamworth, NSW

Dear G. N.,

The policy under the new system is to print all programs if at all possible.

Graham.

*

Dear Graham,

After reading the June '86 issue of Australian Rainbow I require a little information.

On page 6 you have a software review about "CoCo Knitter", this program is of great interest to my mother as she has a thriving backyard business using her knitting machines.

Any information you can supply me with as to its availability, price and system (cassette or disk) would be most helpful.

I enjoy reading Australian Rainbow (now CoCo) very much and although I'm no electronics whizz I would love to see more article and projects for linking my CoCo to external appliances and tasks (if the instructions

are clear and easy to follow, I'll have a go at anything!)).

I'm always looking towards your next issue.

Ian Alexander.

Dareton, NSW

Dear Ian,

The program review was of a program released in the US but unlikely to be released here in Australia. You might like to contact Paris Radio Electronics in Sydney, mentioning the owners of that software and ask them to import software for you.

Graham.

*

Dear Graham,

I have not been able to get "PSKIP" on pages 40-42 of the July '86 Australian Rainbow to work.

I have a DMP-200 printer. The code for form feed is CHR\$(12). The manual says don't use this except for graphics applications, however.

I ran a program on CoCoOz called "PSK" which put it into memory. Next I typed NEW to remove the resident program and typed in POKE M+60,0:POKE M+1,6 to set the page length.

Top of form is set automatically with the DMP-200, but when it didn't work, I typed POKE M+2,0 in an attempt to set the top of form the way they said. This didn't work. I typed POKE M+3,64 in an attempt to set the line length to 64. That didn't work, either. On each occasion I loaded a suitable program to send to the printer but it printed over the perforations as before. I cold booted and started again - each time to no avail. I even used the M+4,60 and M+5,6 pokes too (whatever they're for) with the same result. I printed out and wasted 6 meters of paper on both sides!! Is it the DMP-200? If so what do I do?

My understanding of the theory is that the program PSK (in memory) counts lines, adding one each time to the M+0 until it reaches 60 the skips 6, three on the bottom and three on top of the next. Somehow I seem to have missed the intent of what I should POKE into the computer.

The idea of setting the line length & stopping the print going over the perforations on fan-fold paper is a good one. I hope you can help. I'd sure appreciate it!

Allan Thompson

O'Halloran Hill, SA

Dear Allan,

I can't help you with this. In our programs, we've always

resolved the problem by keeping length of the page length.

Perhaps a reader may be in a position to help you.

*

Dear Graham,

I have a Colour Computer 2 with 16K ECB. I find it depressing having black and a choice of 2 other colours only to work with in Hi-res. I know there is a way in machine code to achieve more than 2 colours in hi-res because Tandy sells programs like 'DeskMate' for the CoCo 2 and those programs have about four colours in hi-res.

Could you please tell me how I can obtain more colours in hi-res with assembly language?

Thank you,

Martin Preston,

Belmont, VIC.

Dear Martin,

Best advice I can give you is to obtain a copy of "Expanded Colour BASIC" by Tino Delbourgo. This program allows you a choice of 64 colours which should be sufficient to keep you going for a while. Tino's telephone number is amongst the User Contact Numbers towards the back of this magazine.

*

Dear Graham,

Could you please give me some information on the PLAY command and tell me how to change channels on the CoCo. I will give you an example how it works on the MSX, eg "03CDEF0AB", "05CDEF0AB".

This plays octave 3 and octave 5 at the same time. Could you please tell me how it is done on the CoCo and has it got sprites?

Could you tell me how it works? I am a very inexperienced as I only have had a CoCo for a few months now.

Are there any user groups in NSW, preferably near Taree.

Thank you very much.

Andrew Green,

Taree, NSW

Dear Andrew,

The PLAY command is fully documented in the instruction book, however should you continue to have problems, contact John Carmichael who lives in Taree who will be able to guide you more fully.

*

Dear Graham,

I am writing to you for two reasons:

The first is, while at the Mt

Druitt Tandy store I noticed this woman using one of the computers. As I stood watching her, one of the staff at the store told me who she was. He then introduced me to her and I had a most interesting and helpful conversation with her.

The lady I was introduced to Johanna Vagg. If this is the type of person you met because of the CoCo, I am very proud to own one.

Johanna is a person who can talk to anyone, even at a level that a novice like myself can understand. "Johanna - thank you!!"

My second reason for writing is, I have been playing the games in the Best of CoCoOz #2 part 1. In the game "Checkers" the instructions are displayed in true upper and lower case writing. As I haven't got a printer I am having trouble trying to work out how it is done. Could you please help me with this problem?

Dennis J Cooper

Kingswood, NSW

Dear Dennis,

The character set you see in "Checkers" is a character set the author has created which he calls from time to time when he requires text on the high-res screen.

There have been several methods put forward to allow this to happen, but we would suggest that you get to understand the graphics on the high-res screen first before attempting to use one of these methods.

Johanna Vagg is yet another dedicated Colour Computer user who deserves high praise for her devotion to helping others.

At Goldsoft, we think she's kinda special!

Graham.

*

Dear Graham,

Please advise me which tape now has the "Old Time Printer Banner" program which was supposed to be on the June 86 Rainbow on tape and which you printed an apology due to the program not coming from America. I have a DMP-105 printer and would very much like to have the Banner program.

John Bettinelli

Airport West,

VIC

Dear John,

The program occurred on July '86 Rainbow on Disk, which is now not available from us.

Graham

Dear Dr CoCo,

I am writing about the screen dump program in the March CoCo which said it would work on most DMP printers!

I own a DMP110 printer. The sample in the magazine was done on a DMP130 printer at 2400 baud which mine can not handle so would that make any difference?

When I typed the program in and ran it all the prompts came up with no errors so if you or your staff could help me I would be very thankful.

The only other thing I can say is keep up the good work.

David Lynch
Miller, NSW

David,

No, the baud rate shouldn't be a real worry. If your DMP110 runs at 1200 baud, then before you dump your picture, type in POKE150,41.

To be honest, I can't help you at all with your printer's inability to dump pictures on the DMP110 with "Screen Dump".

Craig Stewart said that this program SHOULD work on all Tandy DMP printers. This could be one of them that won't work.

Perhaps Craig will one day create a patch for DMP110 owners.

*

Dear Dr CoCo,

Are there any special loading instructions in loading "The Maze of Moycullen" off the May 1986 Rainbow on Tape?

Janis Bender

Janis,

The loading instructions for "The Maze of Moycullen" are as follows:

If you have a tape only system (ie, you have no disk drive attached to your computer) then you have to type in POKE25,6:NEW BEFORE you load the game in.

If you have a disk drive system attached to your computer, then you have to type in POKE25,14:POKE&He00,0:NEW BEFORE you load the game in from disk.

*

Dear Dr CoCo,

I have typed in the program "Rockfall" by T.J. Davies found in the October 1986 edition of Australian CoCo Magazine.

When I run the program on my

ECB TRS-80 CoCo 2, nothing will show up on the screen!

I would like to thank you for your help.

Tran Q.S.

Dear Tran,

We have run the program here and we can't find anything wrong with it. It works fine on a CoCo 2 with ECB!

However, the lines you COULD check for typing mistakes are 6 and 62. You may have made a typing mistake in those lines.

*

Dear Dr CoCo,

My name is Nick and I own a Colour Computer 2. I would like to ask a question. In the June 1986 edition of CoCo Magazine there is a program called "Long Division" by Bob Horne on page 44.

I've checked the program several times and found that in line 1040 and 1099 there's no program code; the same thing exists in lines 1130 to 1199. Why is this so?

Also in line 1410 it says to go to 1046 else 1170 which don't exists at all ... why???

Also, the tables aren't shown clearly at all ...

PLEASE HELP!!!

Nick Bogdanis

Dear Nick,

That's true, there is no program code between lines 1040 & 1099 and 1130 & 1199. Why?

The probable reason is that the author designed them to be like that. Some authors design their programs so that it is 'modularized', for example line 1100 onwards is the subroutine to 'Get the Next Player'. Line 1040 was probably the end of another subroutine.

In the other example (between line 1130 & 1199), line 1130 is the end of one subroutine while line 1199 signifies the start of another.

When programming, you don't necessarily HAVE to do so in sequential numbers; you can modularize them.

For example, if I wanted to create a game, I could have say lines 1000 to 1240 to print the score in the top left corner, lines 1300 to 1360 to take care of any aliens that have been zapped, lines 400 to 740 to read the joystick values and move the ship, and so forth.

Coming back to your problem, if you look towards the middle

of line 1410, you'll see a REM statement. The computer will ignore everything after the REM statement.

That is probably there because the author wanted the computer to do something else but had a better idea. He might have thought, "I'll keep the old code just in case I want to use it".

*

Dear Dr CoCo,

I have a lot of American games and utilities and they all turn out black and white on my colour TV. I have read about the PAL system in the TV's that makes the programs be black and white in your magazine. Is there any way of making these programs change to the right colours? In the August 1985 Australian Rainbow Magazine you said to Keith Wray that there could be a hardware fix for the system but you were not allowed to talk about it at the time. Is this hardware fix out yet (can it fix the colours)?

If it is, where could I buy this and for how much?

Another suggestion - would it work if I bought an American Colour monitor and bought a transformer so I could plug it in here (would the colours be right?).

By the way, I have a DMP-110 printer, the Tandy Multi-pack interface with the Tandy voice and the FD-500 disk drive.

Steven Batey,
Mooroopna, VIC

Dear Steven,

The American TV system runs under an NTSC system, a much lower resolution than the European and Australian PAL system. Therefore the colours you see on the American TV systems are artifacted colours, ie the computer doesn't really know they're there, but they are because of the lower resolution.

If you wanted your games and utilities to come out in colour, you could do one of two things:

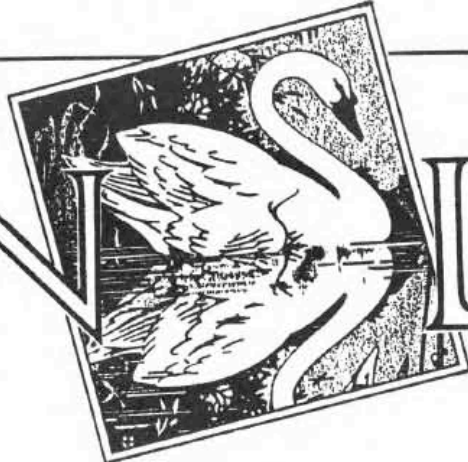
1. You would have to buy the following equipment from America: Colour Computer, Monitor, and a transformer to change between 110V and 240V which will cost you a lot of money (because of the present Australian dollar), or ...

2. Go through the software and find the code to change the

PLAYER ONE

ANDRONE			R Boxall	28820	MEGABUG (Tandy)		Mike Thayer	Toowoomba 50
A. Voutsis Babinda	660440		DORKEY KING (Tom Mix)		Anne Marie Callow Ips	27274	Simon Cox	Dubbo 50
A. Oates Macquarie	72270		A. Voutsis Babinda	315000	Lori Lehane Penrith	19540	Richard Pankhurst	Revill 50
Jim Ramsden Cabramatta	56055		Stuart Sanders Mt Hawthorn	13100	A. Voutsis Babinda	10294	RADIO BALL (Tandy)	
ASTRO BLAST (Mark Data)			DOODLE BUG		MICROBES (Tandy)		Hazel McGuinness Coota	1100300
Mark De Wit Ipswich	91000		Wayne Kely Ipswich	425970	A & S Oates Macquarie	212760	Sean Sheet	1168800
Wayne Kely Ipswich	89200		Leath Muller Townsville	124990	Andrew Wyllie Somerset	185550	Paul Harris	Minto 1004950
Leath Muller Townsville	82375		Russell Lucas Kyabram	51910	Paul Harris Somerset	140700	REACTOIDS (Tandy)	
ASTRO LANDER (CoCo Software)			DOUBLE BACK (Tandy)		MIDDLE KINGDOM		Georgia Voutsis Babinda	100000
R Boxall	4250		Anne Marie Callow Ips	410940	Bernard Florence	11548	RETURN OF THE JET-1	
ATOM (Tandy)			highest grab	71920	MONSTER MAZE (Tandy)		Bernard Florence N.S.W.	272167
Richard Baker NSW round 1.2 - Rh			Ian Reynolds Prospect	351540	Ian Reynolds Prospect	250840	Lloyd Golato Gold Coast	152996
Bria Joyce round 1.2 - Rb			highest grab	140870	Alex Hartmann Gold Cst	45240	ROROT BATTLE (Spectral)	
BAGITMAN			Alex Hartmann Gold Cst	170970	Sean Sheet	8800	Michael Horn Gold Cst	9300
Ken Dunlop Werribee	227950		highest grab	62540	MONTE ZOOMERS (Computer Hut)		Alex Hartmann Gold Cst	4900
Wayne Dunlop Werribee	214990		DRACONIAN (Tom Mix)		Mike Driscall Bowen	27650	R Boxall	10/4850
BASEBALL			Mark De Wit Ipswich	425900	MOON SHUTTLE (Data Soft)		ROMAN CHECKERS	
Sean Sheet	91		Sean Murdoch Bringelly	103850	David Thurbon Canberra	27700	Chris Nagle	Condobolin 62
BEAM RIDER (Spectral)			Neil Otway Perth	242180	MR DIG		Richard Pankhurst	Revill 60
Kieran Power Duffy	1207360		EZSKI (Chomasette)		Leigh Eames Emerald	1132250	SAILOR MAN (Tom mix)	
Alex Hartmann Gold Cst	67120		Wayne Kely Ipswich	49274	Alex Hartmann Gold Cst	75980	Bernard Florence N.S.W.	647800
Tony Evans Bowen	483060		David Aubrey	24056	MS GOBLER (Spectral)		Hazel McGuinness Coota	445100
Neil Otway Perth	239630		Chris Nagle Condobolin	19896	Lynne Barrett Muttama	38770	Neil Otway Perth	348100
BLOCKHEAD (Computerware)			FIRECOPTER (Adventure Intl.)		Malcom O'Brien Coota	15500		
Paul Harris Minto	234675		R Boxall	69152	Wayne Kely Ipswich	13760	SECTER	
Grant Menner Parkwood	67550		FOXHITS REVENGE		Yvette Barrett Muttama	12700	Ian Choat O'Connell	Win in 7 min. 47 sec.
Michael Horn Gold Cst	29825		Wayne Kely Ipswich	5150	MUDPIES (Microdeal)		Ken Uzzell Roseville	Win in 21 min. 51 sec.
BREWMASTER (Tom Mix)			Tony Evans Bowen	4750			SEA QUEST (Mark Data)	
Hazel McGuinness NSW	99075		Richard Pankhurst Revill	1050	NINJA WARRIOR		J Dugan & J Gans	Bris 165
Wayne Dunlop Werribee	95600		FLYBY (Chomasette)		Mark De Wit Ipswich	41900	J Holt	Glen Iris 150
Lynne Barrett Muttama	79450		David Coleman Yeronga	32000	Paul Conroy Brisbane	41500	Darren Reed	Watsonia 100
BUST OUT (Tandy)			FROGGER (Tandy)		Stephen Price Brisbane	10700	SHARK (Computerware)	
The Caped Avenger Roma	3646		Damien Ryan Riverhill	44495	OUTHOUSE (Comp Shack)		Alan Mansfield Quimba	90000
A. Voutsis Babinda			Jason Ryan Riverhill	32885	Richard Pankhurst Revill	4126	C. Voutsis Babinda	52000
20 Balls 7634			Patrick Van Brakel Prkville	122055	PEANUT BUTTER PANIC		SHENANIGANS (Mark Data)	
Richard Pankhurst Roseville			FROG TREK		Melissa Blackhall NSW	152	J Gans	Bris 112
20 Balls 2490			S. Oates Macquarie	17450	Melissa Gransden NSW	152	Carla Miller	Burwood V 148
BUZZARD RAIT (Tom Mix)			A. Oates Macquarie	12580	PENGON		Wayne Kely Ipswich	100
Unknown	168500		Darren Reed Watsonia	9770	Michael Callow Ipswich	39750	SHOOTING GALLERY (Tandy)	
Lynne Barrett Muttama	148550		GANIKLET		Chris Nagle Condobolin	36610	John Hollans	Perth 67320
Jason Hardy Oakville	154400		A. Hartmann Gold Cst L10	78940	PHANTOM SLAYER		C Hinton & Q Hill	NSW 54310
CALIXTO (Mark Data)			GALACTIC ATTACK (Tandy)		Bernard Florence Croydon	748	Sharon Avery	Way Way 52700
J Gans	Bris 162		Greg & Ian Choat O'Connell	129680			SKIING (Tandy)	
CANYON CLIMBER (Tandy)			Ian Choat O'Connell	42160	Russell Lucas Kyabram	140	Paul Conroy	Brisbane 0:32:49
Groucho Roma	1200000		A. Voutsis Babinda	36240	PINBALL (Tandy)		Jack Rae	Mt Isa 0:36:00
Michelle Avery Way Way	882800		GALAX ATTACK (Spectral)		PIPE LINE (Rainbow)		SKRAMBLE (Tom Mix)	
CASHMAN (Comp Shack)			Wayne Kely Ipswich	139400	Wayne Kely Ipswich	1072	Peter Dockett	Altona 120760
Wayne Kely Ipswich	17750		Steven Penzo Rye	138349	Leath Muller Townsville	978	Simon Hogan	110840
Ane Marie Callow Ips	17730		A. Oates Macquarie	48550	A. Oates Macquarie	811	Stephen Price	Brisbane 101490
Glen Otway Perth	13600		S. Oates Macquarie	28950	S. Oates Macquarie	454	SPACE ASSULT (Tandy)	
CAVERN COPTER (Rainbow)			GHOST GOBLER (Spectral)		PLANET INVASION (Spectral)		Paul Harris	Minto 40290
Richard Pankhurst Revill	1509		Stuart Sanders	118510	Lachlan Mead Bomaderry	90450	Nick Cooper	16949
CHAMBERS			Ian Choat O'Connell	11094640	A. Voutsis Babinda	85000	Darren Reed	Watsonia 10430
Lynne Barrett Muttama	57300		A. Voutsis Babinda	84800	Michael Callow Ipswich	90400	SPACE RACE (Spectral)	
CHOPPERSTRIKE (Comp Shack)			A. Oates Macquarie	1159440	POLARIS (Tandy)		Stephen Price	Brisbane 51375
Wayne Kely Ipswich	25600		GRABBER		Ken Voight Ipswich	206700	Michael Horn	Gold Cst 33875
Ken Uzzell Roseville	25300		ICEBLOCK				Brendan Gay	Gold Cst 29400
CLOWNS (Tandy)			Richard Pankhurst Revill	58610	Michael Callow Ipswich	60750	SPACE SENTRY	
A. Voutsis Babinda	83160		ICE CASTLES		POLTERGEIST (Tandy)		Paul Harris	Minto 2067300
Vince Barrett Muttama	50690		Sean Murdoch Bringelly	622547	Bernard Florence Croydon	4955	SPACE SHUTTLE (Tom Mix)	
Alex Hartmann Gold Cst	37540		JUNIOR'S REVENGE (Computerware)		Unknown	4955	Lachlan Mead Bomaderry	515
COLOR CAR			Andrew Law Sunbury	325100	Michael Elliot Brisbane	4895	Tony Evans	Bowen 491
Lynne Barrett Muttama	117962		KATAPILLAR ATTACK (Tom Mix)		POOYAN (DataSoft)		Richard Pankhurst	Revill 344
Yvette Barrett Muttama	12061		Chris Nagle Condobolin	12681	Michael Popp Toowoomba	1400000	SPEED RACER (Spectral)	
COLORPRIDE			Stephen Price Brisbane	9457	Unknown	365400	Leath Muller Townsville	93840
Wayne Dunlop Werribee	567201		Steven Marks Yanco	9412	POPCORN (Tandy)		Michael Horn Gold Cst	94520
David Abbey Werribee	205534		KING TUT		Chris Nagle Condobolin	240000	SP-71-281 (Tom Mix)	
Alex Hartmann Gold Cst	170893		Sean Murdoch Bringelly	39900	Allan Rae Mt Isa	56770	Bernard Florence Croydon	.4 Miles from target
CUTHBERT IN THE MINN			David Hill Oakville	26300	PROJECT NEBULA (Tandy)		Simon Cox	Dubbo
Jason Hardy Oakville	13640		KOMET KAZE (Color Quest)		Paul Simpson	540	1 mile from Target	
David Hill Oakville	7560		Ken Uzzell Roseville	14000	Michael Horn Gold Coast	410	STARFIRE (Intellectronics)	
CRYSTAL CASTLES			LANGER (Spectral)		Ken Uzzell Roseville	255	Andrew Law Sunbury	65000
Unknown	534297		Wayne Kely Ipswich	572700	PROTECTOR (Tom Mix)		STELLAR LIFELINE (Tandy)	
DANGER RANGER			Paul Simpson Minto	201900	Andrew Law Sunbury	165322	Paul Harris	Minto 42110
Yvette Barrett Muttama	625		LASERWORM (Rainbow)		Steven Bullock Roseville	1589	SUB HUNT	
DEFENSE (Spectral)			Wick Cooper	58745	Pyramid (Tandy)		Warren Macintosh	Revill 5135
Paul Harris Minto	47255		Leath Muller Townsville	30862	Simon Cox	Dubbo 220	SANDS OF EGYPT (Tandy)	
Michael Horn Gold Cst	43650		Glynn Catherall Gold Cst	30366	Darren Reed	Watsonia 220	Richard Pankhurst	Revill 127 Turns
Richard Pankhurst Revill	31730		LE MANS		J Gans	Bris 200	TEMPLE OF ROM (Tandy)	
DEMON ASSULT (Aardvack)			Sean Sheet	49 Secs	QIXS (Spectral)		Brian Joyce Weetangera	67900
Paul Harris Minto	2076600		A. Voutsis Babinda	55 Secs	Hazel McGuinness Coota	97164	A. Oates Macquarie	448800
Richard Pankhurst Revill	31250		LUNAR ROVER PATROL (Spectral)		Lynne Barrett Muttama	56172	Wayne Kely Ipswich	370100
DEMON SEED (Comp Shack)			Wayne Kely Ipswich	149000	Michael Cowie Coota	24672	Hazel McGuinness Coota	105400
Ken Uzzell Revill	11350		L Vanjour & Q Hill NSW	75300	QUASER			
DEVIL ASSULT (Microdeal)			Wayne Dunlop Werribee	60750	Richard Pankhurst Revill	87		
Kirsten Anderson	179700		MARBLE MAZE		RAAKATU (Tandy)			
Hazel McGuinness Coota	173900		A Hartmann Gold Cst	144020				
DEVIOUS (Spectral)								

SWAN LINE



by Samantha McCormick

HELLO AGAIN! It looks like I've been conned into making SWAN LINE a feature, so I hope you enjoyed the first article! It was as you probably realized, tailored towards our Viatel friends. This is because it actually hadn't occurred to me that there are still people out there who don't use Goldlink. Still, I guess insanity can't be completely nationwide.

So, for all of you, as yet, innocent souls who have not experienced Viatel, and of course Goldlink, allow me to introduce you!

How To Recognise a Viatellian

There are several sub-species of this creature. They fall into 3 broad categories. These are:

1. Viatellian Dabbelus

Appearance: Slightly confused looking, talks to himself, still fumbles with keyboards, modems and printers. Occasionally logs off by accident, and puts messages up like "Hello...Are you there??" as if using a telephone.

Habitat: Almost normal with the marked exception that he tends to hide in small darkened rooms for up to an hour at a time and come out with a worried expression on his face.

Characteristics: Periodically looks horrified and screams "Oh my god... I forgot to check my messages!!!!!" and rushes away into his dark little nest emerging depressed if there are no messages for him.

2. Viatelleian Users

Appearance: Generally rumpled, slightly glazed expression, fairly adept with keyboards, modems and printers. Occasionally logs off by accident and blames Viatel.



Knows his way around the bulletin boards and service providers. Has been known to play games available on Viatel and download software.

Habitat: Generally found in small darkened rooms firmly attached to the keyboard. Has been seen to emerge for food and drink and occasionally greet a visitor or friend or spouse for up to 20 minutes at a time.

Characteristics: Conversation peppered with words like Clubroom, Com Jok, MB, Download, Update etc. Looks smug if people don't know what he's talking about.

3. Viatellian Addictus

Appearance: Completely dishevelled looking. Red eyes with pupils that constantly

flicker back and forth (at about 1200 baud). Long prehensile fingers, capable of controlling printer, modem, swapping disks and typing simultaneously. Twitches when passing telephone, keyboard or screen of any kind. Occasionally gets logged off but NEVER by accident.

Habitat: Telephone is continually engaged. Has never been sighted outside of small darkened rooms where he sits hunched over a steaming keyboard surrounded by home service food wrappers and empty drink cans.

Characteristics: This nocturnal creature has very limited verbal communication skills and in extreme cases must use his keyboard to communicate at all. In general his conversation is limited to grunts, screams (in cases of interruption), and hysterical sobs (if his "New Messages For You" light isn't flashing). Has been known to try to pawn his mother to pay for Viatel bill.

Viatel as you may have gathered by now, has its own language. To further assist you in understanding this, and in dealing with smug users (see Viatellian Users) I have compiled a short glossary of commonly used words and their definitions.

COM JOK - Harried, Masochistic, workaholics that sit behind (in this case it is the Goldlink Main Computer, furiously reading, downloading and adding messages to the bottom of messages that pour in from Viatellians around Australia.

M.B.'s - Messages of all descriptions; technical, rude, romantic, problems, chatty, you name it, that arrive all at once or not at all. Are never evenly spaced.

continued overpage

SWAN LINE

from page 11

DOWNLOAD - What Com Joks do to MB'S when Viatel will let them.

UPDATE - Similar to download but one step further. It's when you actually get to see your MB displayed, with comment, on the board of your choice.

BBS or BULLETIN BOARD - (see "Things to do on Goldlink") . A variety of public display frames on a variety of subjects.

CLUBROOM - A public Board generally available for everything from showers and massage to debates and debarcles. Occasionally one can even have a reasonable conversation there. (Ok I said OCCASIONALLY!).

LOG OFFS (3 Definitions)

1. Involuntary Log Off

An especially vicious torture designed by Viatel's KGB to drive Com Joks and Viatellian Addictus MAD and to add considerably to Telecoms coffers!!! Only ever happens at the worst possible moment.

2. Accidental Log Off

Viatellian pushes the wrong button. Major difference in recognizing which is which is that the swear words are slightly different.

3. Voluntary Log Off

(Least likely of the three). The Viatellian is somehow coerced, threatened, tempted or towed away from the keyboard.

Page 92: The easiest and possibly least personally dangerous way to induce voluntary log off. A running total of this month's Viatel bill.

As I'm only allotted one page in this mag, I'll continue your introduction in next month's issue. So as a true Viatellian I will log off from page 92 and catch you on the BBS.

Swan

PLAYER ONE

from page 10

S.Oates Macquarie 102400
TIME BANDIT (Michtron)
Henry Roomes Millicent 289920
Hazel McGuinness Coota 141170
Lachlan Mead Bomaderry 104670
TOUCHSTONE
Paul Conroy Brisbane 69160
Mark Conroy Brisbane 61880
Barnabas Hood Brisbane 60640
TRAPFAIR (Spectral)
A.Oates Macquarie 117214
Chris Nagle Condobolin 100244
Paul Harris Minto 62830
TUT (Aardvark)
Keith Savage 69430
TUT'S TOMB (Mark Data)
Tony Evans Bowen 53280
Barry Tomkinson Tregear 29840
Alex Hartmann Gold Cst 24680
VIKING
Ken Uzzell Revill
King in 16 years
WHIRLYBIRD RUN (Spectral)
Lachlan Mead Bomaderry 94200
Eddie Driscoll Bowen 81300
Leath Muller Townsville 61800
WILDCATTING (Image Producers)
Anne Marie Callow Ips 42796
Colleen James Gold Cst 39169
R Boxall 34692
ZAKSUND (Elite)
Leath Muller Townsville 412850
Nick Cooper 136050
Jeff Wetzig 97100
ZAXXON (Tandy)
Russell Scott Traralgon 144100
Mike Fitzpatrick S.A. 118700
The Caped Avenger Roma 128600
ZONX (Australian Rainbow)
Mark De Wit Ipswich 17900
David Aubrey 15900
Wayne Kelly Ipswich 16900

MICO GAMES

BREAKOUT
David Hill Oakville 3176
Justin Westley Dapto 968
BOMB RUN
David Hill Oakville 1300
Juliette Hill Oakville 400
CATCH
David Hill Oakville 100

COPS N ROBBERS
Jason Hardy Oakville 4771
COMPUTER CRICKET
David Hill Oakville 86
Nathan Hewitt Windcor NSW 75
Juliette Hill Oakville 55
DEMON'S DEFIANCE II
David Hill Oakville
Level 3 5550
Juliette Hill Oakville
Level 8 5000
Allison Clarke Oakville
Level 1 5025
EGGS
David Hill Oakville 5455
Justin Westley Dapto 1060
FIRE
Jason Hardy Oakville 7

FLIP
Jeanette Hill Oakville 2980
Terrence Hill Oakville 1460
MICONANIA
David Hill Oakville 5180
Jason Hardy Oakville 3680
MISSILE
Juliette Hill Oakville 80
David Hill Oakville 70
Jeanette Hill Oakville 60
SALE OF THE CENTURY
Jeanette Hill Oakville 145
Jason Hardy Oakville 55
SKIER
David Hill Oakville 50
SPACE ASSAULT
Jason Hardy Oakville 73238
TYPING ATTACK
David Hill Oakville 79930
Juliette Hill Oakville 4320
WORM CHASE
David Hill Carina 123270
John Radman Oakville 12300
Justin Westley Dapto 3990

T1000 GAMES

DEMON ATTACK (Tandy)
Roger Heath Leeton 32210
Jenny Dutton Carina 1120
CONQUEST
Roger Heath Leeton 102360

(Note: Most non-fancy games are available from the Computer Hut in Bowen, Qld, or their agents).

DR COCO

from page 9

programs into colour. This can be quite a long process! Some time in the near future Alex will be writing an article on how to change the colours found in Machine Language programs. Keep an eye out for it!

As far as I know, there is no hardware fix for this.

*

Dear Dr CoCo,

Could you please tell me what is the best disk drive I could purchase for my CoCo 3 for up to

\$600? I would like something more powerful than the present Tandy drives.

Also, I recently acquired a Dick Smith GP-100 parallel printer and would like to know of an inexpensive serial to parallel interface to use it with my CoCo 3.

Hope you can help me,
Paul Cordingly.
Toongabbie, NSW

Dear Paul,
Blaxland Computer Services will have an alternative set of drives for you for your CoCo 3. Contact them on (047) 39 3903.

As for the inexpensive serial to parallel interface, try Geoff Fiala on (02) 84 3172. He can help you.

ON HUB, ERIC, AND SYSOPS

WRITE AN ARTICLE on Hub, Graham says, Ok I said, I'd love to. Me and my big mouth.

So where do I start? Well I suppose the beginning would be the logical place, but if you ask anyone, I'm not logical, as this story shows.

How about I tell you what a Hub is. Well Hub is the Hobart Users Bulletin Board. My very own BBS. It's a 300 Baud rate system catering for all sorts of computers and the phone number is 002 49 4405.

What makes this BBS unique are two things; one, it is the only public BBS in Hobart and Southern Tasmania. There are others but they are closed boards for certain types of computers. The other thing is, well, ... me. I think I can quite justly claim to be the only female sysop in Tasmania and one among few in Australia.

Now how did I get to be a sysop? Well it's a long story and I can quite firmly put the blame on my friend Joe Altoff. Joe runs the Electric Dreams BBS in QLD and one day after the usual complaints about the lack of a BBS in Hobart, he said that if I could get enough people interested, he would send down his spare 56K Microbee, modem, monitor, disk drive, and software so that a BBS could be set up in Hobart.

As usual I said yes without thinking it over. I wrote to David Hinley who writes about computers for our local newspaper and asked him to mention in his column about the BBS and ask people who were interested to ring me.

So I sat back and waited for the calls. About 60 people contacted me. Goody I think, this looks promising. I then tell Joe and he said Ok, we go ahead. I phone Telecom to have a second line put in and wait for the advent of Hub.

Meanwhile Hub is on trial run in Queensland to iron out any

bugs which might appear. But due to a small problem, Hub's trial run is cut short by three weeks. I am informed that Hub will be winging its way down to Hobart and is due on the 9th of January. I greet this bit of news with immense jubilation. Me more the fool.

So Hub duly arrives on the 9th and I unpack it with the aid of my sister, my mum and two ankle biters. Joe says that he enclosed limited instructions on how to set up Hub. Limited is right, two bits of paper, one with a few diagrams and the other with a couple of scribbled lines.

We got Hub up according to the instructions, plugged everything in, switch on the power, boot the disk and - NOTHING!! Aaaaaaaargghh!!!!!! (actually the language was a bit stronger than that but this is a family magazine).

I pick up the phone and dial QLD, tell Joe what has happened or what hasn't happened and he comes to the conclusion that it is the real time clock. "Oh yes, the clock", I say. Where is that?? Underneath both boards of the computer Joe informs me. So there I am pulling a Microbee to pieces with instructions via the telephone. I fix it and hang up mindful of the 60c per minute STD charge.

I think I made around 10 calls to QLD that day and as I got ready to go to bed, I started to think that this was the end of my problems. But no! The disk decided to crash. That entailed another call to QLD to fix and as you guessed it, more problems. The modem decided that it was getting jealous of all the attention that the computer

was getting and decided to drop peoples' carriers out. Joe has the patience of a saint. He must have got sick of the sound of STD beeps. I know I did.

Since then, the clock on the Microbee has mucked up more times than I can remember. All of which involved me pulling the Bee apart. Me who hasn't even dared to look inside her C64 yet.

I now date my life in two separate stages, BH (Before Hub) and AH (After Hub). BH was characterised by its calmness of life. AH is characterised by its frenzied rounds of fixing, phoning, copying and sysoping. Now I know a little of how Graham felt setting up Goldlink.

Hub has been in charge of my life for just over a month now and in that month I have racked up an enormous phone bill to QLD, made new friends and had lots of fun. Hub has developed its own personality and is now called Eric (Fans of Monty Python will know why) and we all tend to regard Eric as a real person.

So if you want to get acquainted with Eric and all the other users of Hub, you are most welcome to call. Eric and I are online from 3PM to 7AM and would love to hear from you.

Denise Webber

COM * STATION 642

GOLDLINK 64290211a 0c
#02 The Tandy Users' Board
379900200 Member
THU 19 MAR 1987 12

> HELP WANTED....Whilst running a program called "COCOCHER" I am told that the 16.667 Ms clock is running TOO SLOW. I am using the last Coco 2 model they released. Also on warm days (over 30 deg) I cannot access viatel as ails I get 1 s garbbage. Any help would be much a ppreciated.
Snake Byte..

*

GOLDLINK 6423667a 0c
The IBM & Tandy 1000 Board Member
596853930
WED 11 FEB 1987 18

Hi there!
At work we have a new IBM PC (can't remember which one) and using MS-D OS.. My boss wants to know if there is a ny way of putting a tag or write protect on a file on a floppy disk to prevent o ver writing. I know I can on my Sega...a nd you can on the 20 Mg H/disk

Help please!

xxx Princess Cygnus xxx
MB answers please..

*

GOLDLINK 64290199a 0c
#01 Clubroom Member
063003280
SAT 21 MAR 1987 23

> How could you be so cruel to my frien d Woodrow? And he speaks so highly of you too. Quite obviously you are unawar e of his sensitive nature. I've seen th e messages he has sent tonight and I thi nk you are changing them. Do you do tha t often?

WEAZEL
Sitting here every night of the week has its advantages. One for example

gets to recognise the individual word formats you all use. It often doesn't need a signature to know who wrote a message. The last message Woo

*

GOLDLINK 64290193a 0c
#01 Clubroom Member
486145180
SAT 21 MAR 1987 22

> G. Now I know I'm tired but this is getting ridiculous!! Why do I keep gett ing different pages everytime I try to g et here? I just got charged \$4 magazine but didnt get to leave my name !!!! Are you sure you have recovered fr om last week. Why ask me about the Duck ? Glad you think the kids are cute. I t hink so too. HELEN

I just checked the magazine section

it seems to work...I've only been changing the boards not the

GOLDLINK 6423965a 0c
The MSX Users' Board Member
333768740
THU 12 MAR 1987 23

> Can anyone advise me on the best Dot matrix printer to use with a Sony HB-75AS computer.. I wanted an Epson but the cable from Sony is out of production.

Unbent

*

GOLDLINK 6429019a 0c
#01 Clubroom Member
755105770
SAT 21 MAR 1987 23

> Mr Morphett
sir
I find myself befor e you prostate...sound familiar. I did

eventually find my lost MB i am truly grateful however was not amused by yo ur scribbling come of us march to a dif ferent drum you sir miss not only the tempo but the point as well goodnight d ear friends I'm off to enjoy the rest o f the evening...darcy ps LL yes no yes

YES and 50 dollars but nothing kinky.ok but it'll cost another 50 bucks. darcy

*

GOLDLINK 64290128a 0c
#01 Clubroom Member
709813860
SUN 22 MAR 1987 21

> Goodevening G did you like my musical interlude?? What can I do for an encore? Play a violin concerto on my nasal hair?? dBEST 2

*

GOLDLINK 64290113a 0c
#01 Clubroom Member
063003280
SUN 22 MAR 1987 00

> MR MORPHETT
WHAT DO I HAVE TO DO TO CONVINCE YOU I AM NOT WOODROW? I KNOW IT MUST BE UNUSUAL TO HAVE TWO PEOPLE OF SUCH HIGH INTELLECT ON AT THE SAME TIME

BUT TONIGHT YOU ARE HONOURED. OR WOULD YOU PREFER THAT WE LOG OFF AND JUST ANUS E EACH OTHER (INTERLECTUALLY)
WEAZEL
FS
BECAUSE YOU ALWAYS LIKE TO PUT SOME SILL Y REMARKS AT THE END OF MESSAGES

GOLDLINK 64210a 0c
Com Station 642.
The Melbourne Bashes

My thanks go to so many people for making the weekend in Melbourne such a wonderful success.

To Andrew Rawlings & his team thank

you for putting your meeting together so quickly. Thanks too to the CoCoTex Kid for his help & to Blaxland Comput er Supplies!

Thanks to all who attended the Friday night bash. I'm sure you'll agree it

was a memorable evening!

And to the Duck

BP & FC

as well as

all others involed in Saturday/Sunday/ Monday

thanks for the huge q

*

GOLDLINK 6423964a 0c
The MSX Users' Board
434315070
THU 12 MAR 1987 19

> WANTED

Anyone who is interested in writing articles for a MSX Club Magazine. These may be Reviews Programs High-Score lists Hints & Tricks Etc... The Magazine/Newsletter will be sent overseas and around australia to other MSX Clubs & User groups. No Profit will be made from this venture just the transmission of information to MSX users around the World. MB.m_

*

GOLDLINK 6429024a 0c
Goldlink SUN 08 MAR 1987 11

Contact Graham Morphett
PO Box 1742
Southport
Qld. 4215.
075'51'0577

Or message us here
d to know that Speech Systems has a 512K upgrade available for the CoCo3 which w e can supply for \$199.00. Phone or Mail Box me for more info.

*

Com Station 642 6429030a 0c
#03 CS-9 Users' Board Member
755100150 FRI 20 MAR 1987 22

OS 9 level 2 was shown at the recent Ri ngwood meeting for the first time public ally. The program is unbelievable!!

GOLDLINK 6429025a 0c
@02 The Tandy Users' Board
352924510 Member
THE 10 MAR 1987 12

> COMING SOON 512k COCO3 UPGRADE
AVAILABLE AS A BLANK BOARD FOR
\$50.00

OR COMPLETE FOR \$179 PLEASE
WATCH THIS BOARD FOR MORE DETAILS

COCOTEX KID ...

*

GOLDLINK 6429026a 0c
@02 The Tandy Users' Board
608712690 Member
THU 12 MAR 1987 00

> WANTED
action called either FIRE DESPATCHER or F
OREST FIRE DESPATCHER. Anyway it is a pro
gram about a simulated forest fire in am
erica. It ran on a MODEL1 or 3 anyhow if
anybody knows of it or has a copy of it
all I need is a listing. Please help if yo
u can want to try & convert to COCO but
for Australian conditions. Write to me
Simon Cox
3 Fitzroy Street

Gourie
N.S.W. 2831

*

GOLDLINK 64290310a 0c
OS9 Users' Board Member
726288690
FRI 06 MAR 1987 23

> SIMO
Temon is the time sharing monitor
for when you have more than 1 user on th
e system.
Login is used to provide security
.the way this works is when anyone logs
on login looks in /d0/sys/password to see
what level of security you have. The way
it is now you have a sec of 0. Procs is
the number of processes going on in your
computer now.
U F O

*

Com Station 642 64290215a 0c
@02 The Tandy Users' Board
755100150 Member
FRI 20 MAR 1987 22

> The latest product we are releasing i
s a third CoCo3 disk/tape. It includes
two files for the program ARTIST as well
as ARTIST. At \$16
its a steal!

*

GOLDLINK 6423462a 0c
The VW Computer Users' Board
829327910
SUN 15 FEB 1987 00

> WOW !!! Finally a computer that I can
understand
the Health Minister.

GOLDLINK 64236610a 0c
The IBM PC & Tandy 1000 Board
343978320
SAT 21 MAR 1987 13

DOES ANYONE KNOW WHERE TOO GET SCENERY
DISCK FOR JET IN MELBOURNE? IF PLEASE MB
ME OR LEAVE A MESSAGE HERE. THANKS

GAFF!!

*

GOLDLINK 6429021a 0c
Tandy Users' PBS Member
726288690
SAT 28 FEB 1987 23

> Darcy I was only there a few hours be
fore you put this up and you didn't say
anything about the 3.

A word of warning about buying RGB mo
nitors. There are different kinds. RGB A
and RGB 1. For the 3 you want and RGB A.
The same is true for composite minito
rs
there are different types of PAL sign
al (Believe it or not!!)
U F O

*

GOLDLINK 64290220a 0c
Tandy Users' PBS Member
705471270
FRI 27 FEB 1987 19

> EPROMs programmed in Cairns.
Roger and Jeff will burn your EPROM with
your programme
for a lousy \$5. How can
we afford to do this? I don't know.
Send your EPROM and your programme (on
tape or disk) and we will burn it for
you.
JEFF

*

GOLDLINK 64290213a 0c
@02 The Tandy Users' Board
378651620 Member
FRI 20 MAR 1987 12

> Is there a program that would make it
possible to print out a grid for a cros
s word to the printer such as the one in
U.S. Rainbow May 86 called WORD+.
I use a CoCo3 and Radio Shack Line Pr
inter VIII.

Steve
378651620

*

GOLDLINK 6423966a 0c
The MSX Users' Board
434315070
FRI 13 MAR 1987 19

> Unbent
Toshiba have a printer called
the HX-P550 which comes with a cable or
you could buy an AMSTRAD CPC CABLE and
modify it. or if you have too much
trouble ME me and I will try to find
someone who will make you one up. Eg.
SVI users Groups or one of the other
MSX user groups. Do you belong to any
melbourne MSX clubs yet? as they may
have a member who can make you one up.
COSMUT C

GOLDLINK 6429032a 0c
OS9 Users' Board Member
737532360
SUN 22 FEB 1987 13

> Here's a tip for OS9 lev 1; v02 users
who have only one drive and want to
avoid the usually MYRIAD swaps which one
normally has to make. Simply make a cop
y of the Config disk (you may have to re
move some unwanted descriptors and drive
rs) and run the utility. Answer the prom
pts as normal
however when the program
tells you to swap disks
just press 'C'
and let the program build the bootfile o
n the same disk. If all goes well
reboot
the system from that boot
and then use
e COBELER on a new disk! ...DB..

*

GOLDLINK 6423963a 0c
The MSX Users' Board
434315070
THU 19 MAR 1987 19

> Be carefull when buying an Epson LX80
printer as they have been discontinued.
and replaced by the Epson LX86 also
Epson are discontinuing their GX80
printers. to be replaced by ??? model
..more when I hear it..
Anyone know where I can get a pre made
2nd disk drive for my msx in either
3.5" or 5" sizes or even 3"?...and
how much..

COSMUT C

*

GOLDLINK 6423968a 0c
The MSX Users' Board
434315070
TUE 17 MAR 1987 21

> Hey Everyone
I have found another
company that sells MSX Software.
over 300 software titles including
educational
bussines
arcade
utilities
..This is not an add for the company but
just to let people know where they can
BUY software..their address is..
MSX Computers & Software
11 Bradpole Road

Elizabeth Vest
S.A. 5113
Phone (08) 255 6738
This company also advertised in the
ENGLISH MSX COMPUTING Magazin_

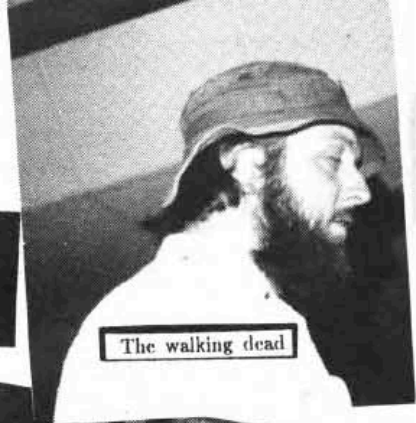
*

GOLDLINK 6423665a 0c
The IBM PC & Tandy 1000 Board
797926530
WED 04 FEB 1987 19

I have an IBM JX which was supplied
with Neologue 2v5 Vset Vistel soft-
ware but without a manual. I would
like to be able to download programs
etc but I don't know how to use the
software. Can anyone help? Please
leave message.

Noel Roberts.

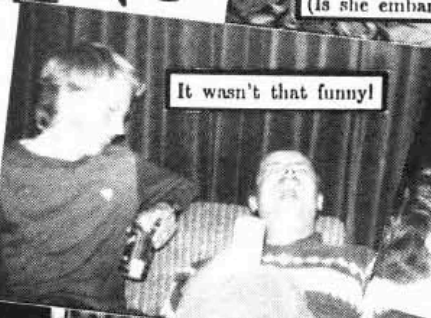
GOLDLINK PAIPARAZM STRIKE AGAIN!



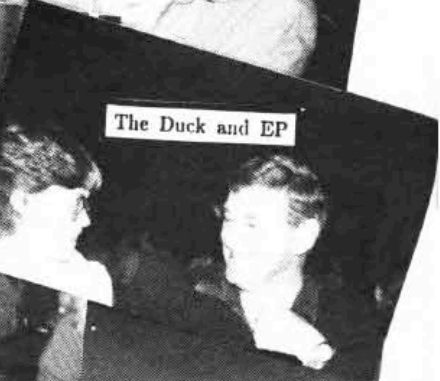
The walking dead



Now THAT's FULL!
(Is she embarrassed?)



It wasn't that funny!



The Duck and EP



Ah, these parties are tough!



I know. So there's two shots
of them!



Rick (TYO's) does his thing!



Big Eyes and the lovely Helen



Gonz & Juicy - & the head
of the M666 Phantom.



Gee he's tall!



Bubbles meditating.



Welcome to the club!
Anointing an initiate.



What a line up!

He "works" for Vintel.

Adam King, Graham & Wino!

Macaroni stopping drivers
& asking for money.

Duck with Miss Greenwood

Duck with Miss Rathag

The speech maker.

Lovely Dessip &HIM!

Two inmates of the Vintel
hospital for the mentally
suspect.

Someone eating
Chinese food.

Casey - Smiling!

Yuk!

BASIC

PART 1

by Johanna Vagg

THE MANUAL begins with PRINT, so I'll begin there too. First type:

PRINT"HELLO" and press ENTER
Then try this:
?"HELLO" and press ENTER

I know someone who had her computer (not a CoCo) for a long time before she found out that the question mark can be used instead of PRINT, so don't laugh if you already knew, just consider yourself lucky.

If you don't use a line number you will have to re-type the command every time you want the computer to print "HELLO". Try this:

10 PRINT"HELLO" Press ENTER.

Did anything happen? Type RUN and press ENTER. That didn't do much, did it? Add a line:

20 GOTO10

Then RUN and ENTER again. Press the red key (the one the littles like) when you want it to stop. If you'd like to slow it down a bit, type:

15 FOR T=1 TO 50:NEXT T

You could have used X or Y or any other variable, as long as you used the same one both times. This tells the computer to count to 50 before continuing to line 20.

The computer can count to 460 in one second! If I tell the kids to put in a counting loop, or a delay statement, they know that this is what I mean.

Experiment with different values. When you're ready, add a comma to the end of line 10.

If you don't know how to EDIT, or you have non-extended BASIC, just re-type the line.

The next step is to change the comma to a semi-colon. When you RUN that, it's a bit hard to read, isn't it? So, insert a space or two between the end of HELLO and the inverted commas.

The way I like this particular program is like this:

```
10 ?"HELLO" ";  
15 FOR T=1 TO 10:NEXT  
20 GOTO10
```

(That's with six spaces). Try it with your name. Try more or less spaces. You didn't need that 'T' after the NEXT, after all! (Some computers demand their cuppa, er, I mean T or coffee, or whatever variable you used). You could have done it this way:

```
5 A$="HELLO" "  
10 ?A$;  
15 FOR T=1 TO 10:NEXT  
20 GOTO10
```

Now change line 5 to this:

```
5 A$=CHR$(127+RND(7)*16)
```

When you've seen what this does, change line 20 to GOTO5. Then change the 127 in line 5 to 126 or 125 or 128 or...

We should be nearly ready to move on to POKES to the screen now. It's amazing what that word does to some people.. Try this program:

```
10 CLS  
20 FOR X=0 TO 511  
30 A=120+RND(7)*16  
40 POKE1024+X,A  
50 NEXT  
60 GOTO60
```

This makes the screen black, then POKES small colour blocks to the addresses 1024 to 1024+511 or 1535. 1024 is the top left corner of the screen and 1535 is the bottom right corner.

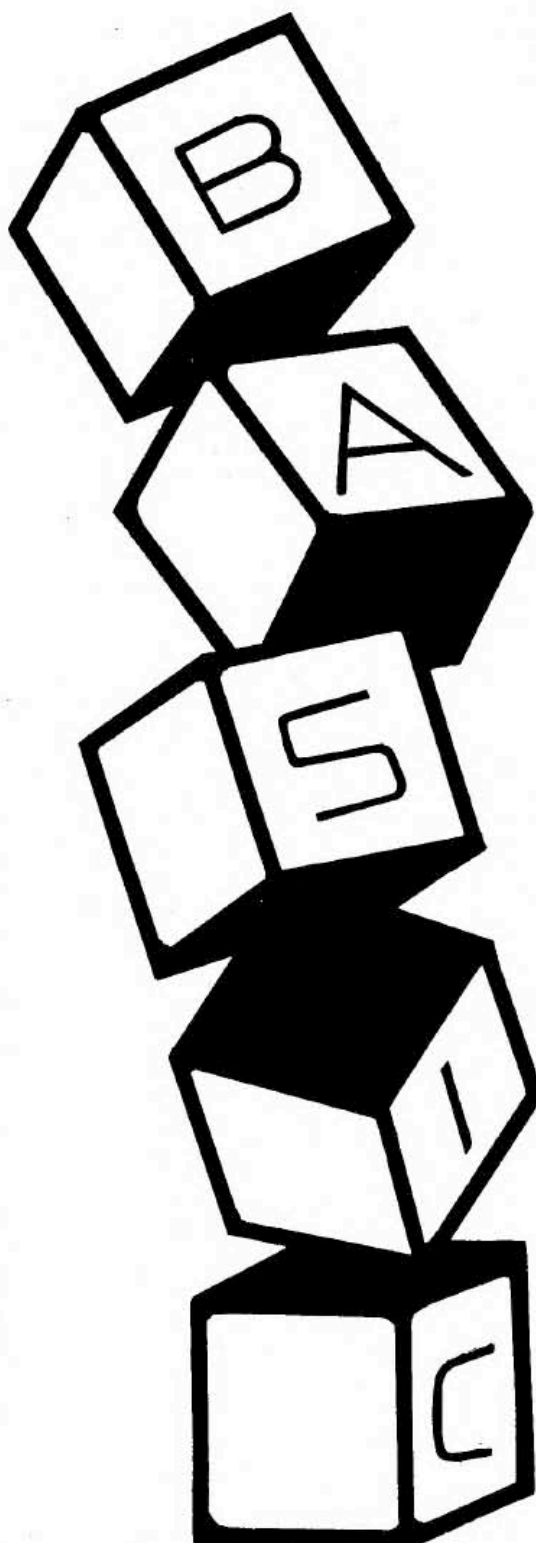
Line 60 is there to stop the program finishing. Leave it out and see what happens. If you want to see all the 'things' which you can POKE onto the screen, try this one:

```
10 CLS  
20 FOR X=0 TO 255  
30 POKE1024+X,X  
40 NEXT  
50 GOTO50
```

To see the difference between what you can PRINT and what you can POKE, add these lines:

```
50 FOR X=0 TO 223  
60 ?256+X,CHR$(X);  
70 NEXT  
80 GOTO80
```

Note the PRINT@...you can PRINT@0, through to PRINT@511,
continued on page 22



DRAGON

by Martin Eade

DRAGON IS A little graphics program I developed when I got bored. It took me a little while to do, but it was worth it. Hope you enjoy it!

The Listing:

```
0 GOTO10
1 '***** DRAGON *****
  ***** MARTIN EADE *****
3 SAVE"110A:3":END
10 PMODE4,1:PCLS5:SCREEN1,1
20 DRAW"COBM140,161;M143,165M144
,171M164,162M173,165M191,159M195
,162M210,150M191,143M195,151M185
,151M170,146M172,143M170,141M172
,138M170,136M172,132M170,128M172
,126M170,124M172,121M170,119M172
,117M170,115M172,113M168,109M170
,110M166,102M170,105M166,102
30 DRAW"M168,103M167,98M164,100M
167,98M174,95M179,100M181,96M186
,95M191,105M196,105M205,90M211,8
8M213,95M220,83M221,61M211,41M20
0,31M192,31M191,26M187,23M181,27
M182,32M187,34M172,48M162,63M156
,75M151,90;BM162,63;M161,61M162,
57M160,54M161,51M159,50"
40 DRAW"M160,48M158,47M159,45M15
8,45M159,43M156,42M152,45M148,46
M145,42M146,38M150,35M154,31M159
,31M160,36M156,42;BM150,35;M140,
30M129,27M119,31M111,40M109,23M1
10,23M119,31;BM111,40;M113,42M12
0,38M126,39M131,46M131,53M124,59
M121,63M111,63;BM124,59"
50 DRAW"M121,55M118,55M114,53M11
1,60;BM114,53;M111,51M112,47M113
,42;BM112,47;M117,44M125,44M131,
46;BM117,44;M119,48M124,48M125,4
4;BM113,62;M116,61M118,62;BM112,
47;M110,45M104,44M99,46;BM104,44
;M104,48M107,49M110,45;BM99,46;M
102,42M111,40;BM99,46;M98,48
60 DRAW"M98,50M97,50M93,55M96,60
M101,61;BM98,50;M102,50M106,54M1
11,51;BM106,54;M108,58;BM97,56;M
99,55M102,58;BM102,42;M102,35M94
,28M97,23M96,20M92,18M88,21M85,2
7M75,28M63,36M53,49M47,62M45,72M
53,67M55,75M50,80M49,84M50,83;BM
49,84;M45,85M41,91M49,101"
70 DRAW"M58,106M64,103M71,110M71
,123M72,126;BM55,75;M62,72M70,74
M73,77M76,82M73,85M70,84M69,81M7
```



16K ECB
GRAPHICS

```
3,77;BM76,82;M74,87M71,90M70,96M
63,96M57,94M55,99;BM71,90;M67,85
M57,80;BM67,85;M64,92M66,94M71,9
0;BM76,82;M80,80;M81,74M79,71M78
,70M74,74M75,76M76,76M79,73"
80 DRAW"BM79,71M79,76M76,82;BM79
,71;M71,66M66,66M59,71M55,75;BM7
9,71M83,70M86,74M81,84M79,90M76,
94;BM81,84M86,86M90,91M81,95M79,
90;BM81,95M76,100M71,110;BM91,91
M89,86M88,80M90,78M104,83;BM90,7
8M89,75M89,69M91,67M89,63M89,55M
94,50M98,46;BM91,67M109,73
90 DRAW"M112,73M113,70M117,70M11
8,72;BM112,73M118,72M126,70M131,
66M139,58M135,56;BM139,56M142,60
;BM131,66M136,75M139,86M134,81M1
31,87M130,81M129,76M126,70;BM130
,81M122,85M115,84;BM143,123M137,
121M131,124M131,116M128,111M120,
111M117,115M117,128M71,128
100 DRAW"M23,139M31,141M31,158M3
3,160M36,160M38,157M38,149M40,14
9M44,156M47,156M51,151M51,156M52
,159M54,159M56,156M56,141M113,14
1;BM56,141M43,140M51,133;BM33,13
9M39,137M40,139M36,141M33,139;BM
41,145M44,142M47,143M46,145M41,1
45;BM56,147M117,147M120,143"
110 DRAW"M122,136M120,130M117,12
8;BM117,147M119,156M122,159M126,
159M131,154M131,124;BM125,156M12
7,152M127,118M125,114;BM131,150M
133,149M135,147M138,143;BM133,14
9M139,152M145,150M148,142;BM145,
150M150,151M157,148M157,123M155,
125M151,124M151,103;BM144,171
120 DRAW"M151,171M155,177M153,18
4M150,187M135,182M123,183M106,18
```

```
9M102,185M106,185M107,176M101,17
6M102,174M109,171M122,171;BM102,
185M95,185M96,181M101,176;BM96,1
81M93,182M86,184M81,188M81,182M8
5,176M89,175M94,179M93,182;BM89,
175M91,171M109,168M127,169
130 DRAW"M131,171M131,166M126,15
9;BM109,168M93,160M82,147;BM88,1
55M80,157M73,162M65,170M64,176M7
1,171M76,166M76,164M73,162;BM71,
171M80,172M91,171;BM143,123M143,
103;BM73,162M64,162M52,168M55,16
1M61,157M64,162;BM61,157M75,147;
BM23,170M21,168M28,165M34,167
140 DRAW"M32,170M23,170;BM31,176
M35,173M49,173M45,176M57,177M60,
180M57,182M32,183M36,179M31,176"
:LINE(30,167)-(30,170),PSET:LINE
(26,166)-(26,170),PSET:LINE(28,1
66)-(28,170),PSET:LINE(37,173)-(
37,183),PSET:LINE(53,177)-(53,18
3),PSET
190 LINE(42,173)-(42,183),PSET:L
INE(40,173)-(40,183),PSET:PAINT(
35,150),0
59000 POKE65494,0
60000 GOTO60000
```


ANOTHER DEVILS ADVOCATE INSTALMENT

by Dean Hodgson

IN THIS LONG - overdue instalment the Devil turns his nasty attention to the newer Amstrad computer.

In particular, the Amstrad 6128, is roughly comparable in performance to the Colour Computer 3 and Commodore 128.

Our story begins early in 1986 when the Education Department of South Australia added the Amstrad 6128 to its list of supported school computers. This was done after a lengthy hardware review and tender situation. (The Colour Computer was not tendered, by the way, although the Tandy 1000 was.)

The Amstrad was selected because it met the listed specifications better than any of the other tendered computers.

As a result, I have been working rather a great deal with the Amstrad since February. (For those who don't know I am employed by the S.A. Ed. Dept. as both a schools' computing curriculum adviser and as a software developer/programmer.) The other programmers at work have commented repeatedly that this Amstrad machine is by far "the easiest and most powerful 8-bit micro" they have worked on and programmed.

Time for a Side Note:

In S.A., schools are free to purchase any type of computer they wish. This is different from what happens in most of the other states. It means a company with an aggressive education marketing approach could theoretically sell many computers, even if their machine is not supported by the education system.

Indeed this is how Commodore got a strong foothold in schools here back in '83. A lot of schools bought C64's then, and the computer simply had to become supported. IBM is doing the same thing successfully right now with the JX. Applied Technology has attempted it on a smaller scale with their Microbee but so far with only limited success.

The officially supported

computers are: Apple IIe/IIc, BBC Model B, Commodore 64 and now Amstrad 6128. It appears MS-DOS machines -- in the guise of the IBM JX-3 and Amstrad PC -- may be added to the supported list very soon. The support for schools comes mainly from the Angle Park Computing Centre, where I work. The Centre produces over 100 software and curriculum packages for these machines. Tandy has not attempted any sort of real marketing push to schools in South Australia and therefore has sold very few computers to schools over the years. End of Side Note.

Compared to the other machines, these programmers have worked on, the "easiest and most powerful 8-bit micro" statement is generally true.

The BBC -- while powerful in some areas -- is extremely limited in memory and development of several pieces of key software has been very difficult. The C64, while possessing a good screen display and lots of memory, is very very awkward to program (I have to resort to a lot of machine code to get it to do many of the things CoCo has built into its BASIC ROM) and rather slow ... especially disk access.

So, how does the Amstrad 6128 compare? Especially with the Colour Computer?

Side Note Two: Amstrad also has out 5 other computers -- the 464 and 664 (the same machine as the 6128 but with 64k of memory), the 8256 and 8512 word processing computers, and the latest 1512 IBM-PC compatible). My comments that follow apply to the CPC range, the 464, 664 and 6128. End Note Two.

First, the Amstrad computers are physically more integrated in design than CoCo.

The 6128 has a disk drive built into the keyboard/computer unit. The keyboard plugs into either a special colour or green-screen monitor and gets its power directly from there, avoiding the need for a separate power supply. There is thus

only one plug into the wall instead of three. And because the monitor comes with a carry handle, the Amstrad is very portable.

In the primary school classroom environment, this portability has been an enormous asset. Teachers have been able to share computers much more easily. The disk drive takes the newer 3-inch floppies (not to be mistaken with the 3-1/2 inch type a-la MacIntosh). These are encased in a hard plastic shell.

The Amstrad stores 178k per side and the disks are designed to be flipped over. These are the same disks common to the MSX computers and the SEGA machine. They are durable and easily fit into your shirt pocket. I like them.

At the back of the keyboard there is a card edge for a second disk drive. This can be either another 3-inch or a standard 5-1/4 inch drive.

Side Note 3: the Amstrad add-on 3-inch drive does connect to CoCo's disk interface. And it works!! End Note 3.

There's a volume control knob (sound comes from a speaker built into the keyboard) and a general expansion port to which you normally connect a RS-232C interface and modem.

The printer port is a standard Centronics interface and does not require any special cabling or interface.

At the side is a single Atari/Commodore style joystick socket, a Tandy DIN-type cassette interface (my CoCo CCR-81 & cable works fine), and a small earphone/speaker socket.

The Amstrad uses a Z-80A CPU.

After having programmed a great deal on a 6502, and a little on the Z-80 and 6809, my preference is the 6809. The 6502 has too small an instruction set and only three 8-bit registers to play with (A,X,Y). The Z-80 has lots of registers and register pairs for 16-bit operations, but the instruction set is enormous with funny restrictions. However, the Z-80A is very fast. It

clips along at 4 MHz, twice the speed of the new 68B09, and the Amstrad can chew through a heap of code in nothing flat.

As an example, I wrote the same BASIC program on both the Commodore 64 and Amstrad recently. The C64 version included some special machine code to emulate commands like INSTR and MID\$. Further, the C64 program was put through a BASIC compiler. And even then the uncompiled Amstrad version still ran slightly faster. I haven't written this program on CoCo, but I suspect its speed would be somewhere between the two.

Anyway, where the Amstrad is slower is in writing to the screen. You see, it doesn't have a text mode. Both the C64 and CoCo do have this mode and can display text damn fast. But the Amstrad displays everything on a hi-res graphics screen. All the text, scrolling, programming, the lot. It takes longer to draw each character in graphics mode than to bang it onto a text screen display.

The Amstrad graphics screen takes up a goodly chunk of memory as well -- 16k. Further, the method employed to display text on the screen is by no means the fastest. This is a pain in the neck for people writing word processors and other software that must quickly manipulate large chunks of screen memory, as I can tell you from first hand experience. But it is very handy for games programming.

The 6128 has 128k of RAM and 42k of ROM. The RAM is organized into two 65k banks. The first bank is used for programs and normal data and is the only bank available in the 464 and 664 machines. The 6128's second bank acts as a RAM disk and can only be accessed if you load in a special program (which luckily comes with the computer). The program includes commands for storing, fetching and searching strings. There is also a way of storing whole screens here too.

The Amstrad's 40k BASIC ROM is normally bank switched out, so it does not take up RAM. They use some tricky software control here to switch the ROM in and out as needed. There is, of course, some RAM used for a scratch-pad and a jumpblock area into the ROM. But a full 42k RAM is normally available on powerup.

The Amstrad has 3 graphics modes.

Mode 0 is a 160 x 200 dot resolution mode, displaying 20

text characters per line and 25 lines in 16 colours (from a palette of 26). The default mode, Mode 1, is a 320 x 200 dot resolution, with 40 characters and 4 colours. And Mode 2 is a 640 x 200 dot screen with an 80-column text display. You can have up to 5 full screens in memory at a time, if you use all of the second memory bank to store 4 of them. Interestingly, the video display chip is made by Motorola, the same ones who make CoCo's.

This palette colour concept is something unfamiliar to CoCo owners, at least until the CoCo 3 turned up. The Amstrad has a palette of 26 colours but the screen can only display at most 16 in Mode 0.

So, what they have is a set of commands that let you allocate which colours can be shown. They talk about putting INK colour into a PEN register and then assigning which PEN (for drawing and printing) and PAPER (for background) register to use. So to use red, you might have to first INK 3,6 (put red into pen register 3) then PEN 3 (draw with pen register 3) and PAPER 0 (background register 0). It can get confusing.

But by simply reassigning colours using the INK command, you can instantly change all the blues on the screen to whites. I've seen this done on the CoCo 3 demo program, too.

One unique feature is flashing colours. The INK command lets you specify which two colours should be alternated in a pen register and the SPEED INK specifies how fast. Great for blinking lights on alien spacecraft and the odd error message.

You can EDIT a line number like the CoCo does, but the editor is a nice screen based system. The four arrow keys move the cursor anywhere within the edited line and special DEL and CLR keys are used to delete characters. Typed characters are automatically inserted. It's a nice editor system which I abundantly prefer to the messy one used on CoCo.

Amstrad's BASIC language is very good and similar to Extended Colour Basic. It wasn't written by Microsoft but if you were to go and work on an Amstrad after having worked on a CoCo you'd find much the same, including familiar INSTR, MID\$, PRINT USING and so on.

There are, however, some interesting additional commands, and very different graphics commands.

The Amstrad's Locomotive Basic supports up to 8 screen "windows". These are rectangular text areas of the screen that can be scrolled up or down. (Amstrad BASIC supports downward scrolling.) To use a window, all you do is WINDOW #2,10,30,3,20 to set up window number two having a horizontal position of column 10 to 30 and a vertical row of 3 to 20. PRINT#2,"text" prints text to window 2.

The LOCATE command is similar to PRINT# but uses an X,Y scheme (e.g. LOCATE X,Y).

The commands X=POS(#w) and Y=VPOS(#w) return the cursor's current position in the window specified.

The SYMBOL command is used to redefine the character set. Any one of the 255 displayable characters can be reshaped with this command. Very useful.

Like the MSX computers, the Amstrad features interrupt handling in BASIC. This is an extremely powerful feature. Up to three interrupt driven "events" can be programmed to occur at once. ON ERROR GOTO is included.

What's an interrupt? The idea is to set up something the computer will automatically act on at a certain timed interval no matter where it is in a program.

CoCo makes very little use of this feature, which is a pity as the 6809 has a powerful interrupt-handling capability.

Anyway, on a computer such as the Amstrad, you can write into the program something like EVERY 100 GOSUB 3200, and every 100/50ths of a second the program will automatically jump to the subroutine at line 3200 and eventually return to wherever it left off. This is very useful for doing things like moving spaceships on the screen while scanning for keypresses and playing music at the same time. You can get some BASIC games to have nearly machine-code speed.

One of the areas where the Amstrad really bombs out badly is in the control of graphics. The display itself is quite good, but programming it is the pits.

All you have are simple commands to plot points, draw lines, fill an area and a pixel colour test. The Amstrad has no equivalent of CoCo's enormously powerful DRAW A\$ command, nor does it have CIRCLE, BOX, PCOPY, GET or PUT style commands.

The Amstrad computers support the CP/M operating system.

Even though an "older DOS",

CP/M provides all kinds of software not usually found on small 8-bit computers. For example, Amstrad users can buy dBASE II, Super Calc 2, and even WordStar. At APCC, we use Turbo-PASCAL and the new programming language C, because programs written on an Amstrad in these languages can be directly wired across to an IBM type machine (or vice versa)...and they work with little modification. I was even able to directly transfer a Commodore BASIC program to an Amstrad via modem and get it to work.

I am sure the same could be done with CoCo. I think translating programs over modem between an Amstrad and Colour Computer should be fairly straightforward.

Now, to compare with the Colour Computer, I prefer the Amstrad's centronics printer interface and its screen editor. I especially like the integrated design concept and

the small disks. But graphics programming is far far easier on CoCo, and R/S DOS is certainly simpler and more powerful than AMSDOS (not to be confused with CPM). AMSDOS, for example, does not include any type of random-access disk file commands, nor any file copy or disk copy commands. That all must be done through CPM software.

I have recently seen the new CoCo3. It looks awfully good, almost a new breed of Tandy computer.

CoCo 3 certainly has a few plusses... a 64 colour palette (Amstrad has 26) and is more expandable, up to 512k. (I believe CoCo3 has the same video display chip as the new amazing expensive Apple IIGS.)

At any rate I rather like the Amstrad. Software development is much faster on it than on a Commodore. Which computer would I buy if I was starting over again? An Amstrad 6128 or a CoCo3? A hard decision! I

think, though, I'd opt for the CoCo3 with disk and Desk-Mate 3 software. I am sure CoCo3 can duplicate on the screen anything displayable by either an Amstrad or a Commodore. The reverse is not true.

Even though I rarely work on my old Colour Computer 1 nowadays (I hardly get asked to do much on it now days) I still regard it as a pleasant machine to work with.

And with that the Devil will now go to rest permanently. These columns were intended to provide you with some insight into what some other small computers were really like and perhaps get a few backs up. I don't know if that has happened, but they were fun to write.

BASIC

from page 18

The comma is part of the SYNTAX. This program 'prints at' from 256 to 479.

As the colour blocks are the same both times, I left the last 32 of them to prevent the top line of POKES scrolling off the screen.

Now you are ready to make up some programs to 'pattern the screen', eg:

```
10 CLS
15 FOR T=1 TO 170
20 A$=CHR$(154)+CHR$(157)
+CHR$(158)
30 ?A$;
40 NEXT
50 GOTO50
```

This will PRINT A\$ 170 times. Change A\$ to anything you like... even something like this:

```
A$=CHR$(72)+CHR$(69)+CHR$(76)
+CHR$(76)+CHR$(79)+CHR$(32)
```

Then POKE a pattern.

After that bit of playing around, we should do something more serious. The computer is a calculator, so you can use it to check homework. If you want to add 123 and 456, you can type:

```
?123+456 (ENTER)
```

You can add a lot of numbers this way, but if you accidentally press ENTER after "+" instead of after a number, you'll get a ?SN ERROR and you'll have to start again. So we wrote a little program:

```
10 INPUTN:X=X+N:?:GOTO10
```

The semi-colon allows us to see up to 15 figures and running totals. To divide 456 by 12, just type:

```
?456/12 (ENTER)
```

Or in program form:

```
10 INPUTN:INPUTX:S=N/X:?:S
:GOTO10
```

Subtraction and multiplication will work too, of course. Use the asterisk for multiplication.

August 1986 CoCo has a little tables program written by my son, Richard. If you take out the REM lines, it is very short:

```
20 CLS:INPUT"UP TO WHICH
TABLE";Z
40 X=RND(Z):Y=RND(12)
50 CLS:?:@230,"WHAT IS"X"*Y
60 INPUTA
70 IF A<X*Y THEN ?"TOO
LOW":FOR T=1 TO 500:NEXT
:GOTO50
```

```
80 IF A>X*Y THEN ?"TOO
HIGH":FOR T=1 TO 500:NEXT
:GOTO50
90 ?"THAT'S IT":FOR T=1 TO
500:NEXT:GOTO40
```

That's the bare program, stripped of SOUND. SOUND will be the topic in Part 2. Note that you can do your 999 (or whatever) times tables with this if you wish.

Study line 50. The X and Y are not in inverted commas. Try line 50 this way:

```
50 CLS:?:@230,"WHAT IS X * Y"
```

or ...

```
50 CLS:?:@230,"WHAT IS "X * Y"
```

At this point I want to ask, "Have you had enough?" This question always makes me think of this story... Tom and Dick were fighting and Dick had obviously had enough. Harry asked, "Tom, can't you hear him telling you he's had enough?" Tom's reply was, "Yes, but he's such a liar, you can't believe a word he says!"

MICO NEWS

Editor Jim Rogers

My thanks this month to Chris Deacon of Padstow N.S.W. not only for the 18 programs he has just submitted but also for the careful way in which he has triple taped them to perfection and for the trouble he has taken in formatting his submissions.

A bouquet also to Scott Ferrero for his very informative series of articles which will be commencing with this issue.

I feel that an article which appeared in the January issue of our close American relative, MCUG, is well worth passing on to all our readers who may not have seen the original. It started off---- "Did you go to the show? Show? What show? Well here in Spokane Washington Nov 8 & 9 1986 there was a computer show. Several different brands of computers were strutting their stuff. To mention a few, ATARI, COMMODORE, MACINTOSH, AMEGA, TEXAS, SANYO, LASER, FRANKLIN & TANDY. Representing TANDY was CoCo 1,11,111. Oh yes the little MC10 was there and the little computer could really shine. (Have you ever seen a computer shine?). There were several different programs for the CoCos to show off their stuff, but, for some reason the most profitable attention was being paid to the Mighty MC10. Larry Haines put together several programs. When I say put together that is just what I mean he did. Have you ever wondered what it would be like if you could use all the memory that is left over after you load just your one program? Well load another and another and even more if they are small enough to fit! Fit is the key idea. At one time, at

the show, the little (?) MC10 had in its memory, all at the same time, a Biographical Chart, Personal Compatibility and a Banner Program, all of these to be output to the screen and printer. Speaking modestly, of all the Tandy machines, the MC10 was the real money-maker. It was very surprising to see the people standing and watching just what this little machine might be able to do. For whatever reason it was, much of the time the TP10 printer was connected to the computer it was oscillating. On many occasions there were requests waiting in line for their turn to be generated in this curious piece of equipment." Well users, there it is the MC10 on top again!!! This article continued on to give the method used to allow you to pack the programs into the memory of the MC10. I have given that to you under the heading "Filling the MC10 Memory"



FILLING THE MC 10 MEMORY

by Larry Haines

Most of us know just how much free memory we have left in our machine but if not we can find out very easily. When you first turn on your computer type in PRINT MEM and enter and you have the answer. Next you will have to load in each of the programs one at a time. This is so you can PRINT MEM after each and find how much area that program will take. Don't forget to mark the size down. Allowing for string and variable space now you can begin to test out your mighty MC10. Here are the steps to do the job of actually putting the programs in memory. This is only one of the ways there are to get the job done. The listing below contains the code with the explanation of the code following it.

```
CLOAD(filename): Program # 1.
PRINT PEEK(149): This is to find
the most significant byte. The
MSB is where the end of the
program is. XXX: Is the value
returned. XXX+2=YYY: This
addition of 2 is to make ample
extra room in memory. POKE
```

```
147,YYY: YYY is just what I used
to show my place. You will have
a value. CLOAD"(filename): This
is program #2. PRINT PEEK (149):
This is only if you intend to
load another program. XXX: The
MSB value. XXX+2=YYY: Same as
above. POKE 147,YYY: Only for
another program. NOTE. Do not
use the :s above, they are only
used there for separation. Do
not change any of the programs
as this could change the size.
At this point we have 2 programs
loaded in. To RUN any of the
programs all you need do is
remember the YYY values. You did
jot it down didn't you? OK now
to business. POKE 147,67: RUN
..This is the original start of
the Basic storage area. To RUN
the first program.....
POKE 147,YYY: RUN .....
This is the first value to RUN
program # 2. Continue with each
of the remainder of programs you
want to stuff and run from your
poor little computer. (Poor as
in poor rich). Until another
time keep your fingers tapping
on them there keys.
```


COMSAT



16K ECB
GAME

by Max Bettridge

SOME TIME AGO I was asked to devise something to help develop a young friend's knowledge of screen co-ordinates and at the same time I was fiddling around with developing a reasonable looking moving meteor on the PMODE 4 screen that was coloured.

So I decided to use the idea to show screen co-ordinates and try to make it interesting at the same time.

The program was originally much more than 16K, using PMODE4.5 and page flipping for effect but this defeated the purpose of ease of typing in the program. So I deleted scoring and more difficult stages. Consequently, some quality is lost during the initial graphics. I have deleted all sound commands as well to get below 16K.

Basically "Comsat", after the initial setup does a dummy scanning routine and briefly displays "contact sector co-ordinates". These must be remembered, because at the next stage, you are asked to set your mine between planet earth and the co-ordinates of the incoming meteor.

The co-ordinates are any place around the perimeter of the screen. That being up to 256 across or 192 down. So one of the co-ordinates will always be one of 0 or 192 or 256.

For interest, your right joystick fire button will detonate the mine when you believe it is close to the mine on its way to collide with the earth.

I have included a random factor in the formulae for aiming the meteor at earth so that some times it will miss.

Due to the reduction of program size the program will run immediately after each meteor is destroyed or earth is lost.

I realise that the CoCo III outdates this a little. I intend to update as soon as finances permit.

The Listing:

```
1 POKE65495,0
2 DIML$(57),A(5),B(5),C(5),E(5),
  F(5),G(5),EA(20),BO(5),BA(5)
3 GOTO 104
4 FORL=1 TO LEN(WS):P$=MID$(WS,L,
  1):IFP$=" THEN7
5 POKE178,0:LINE(X,Y-6)-(X+6,Y),
  PSET,BF:DRAW"C5"
6 DRAW"BM"+STR$(X)+"","+STR$(Y)+"
  ":"DRAWL$(ASC(P$)-33)
7 X=X+7:IFX>248 THENX=3:Y=Y+10
8 NEXT:RETURN
9 Z=90:PMODE4:SCREEN1,1:PCLS3
10 X=X+RND(2)+2:LINE(120+RND(16),
  150)-(0+X,88),PRESET:LINE(120+R
  ND(16),0)-(0+X,110),PRESET:IFX<2
  56 THEN10
11 LINE(0,150)-(256,192),PRESET,
  BF:X=20:Y=165:WS=" COMSAT BY
  MAX BETTRIDGE FOR 16K ECB
  AND RIGHT JOYSTICK
  1986":GOSUB4
12 T=0:FORX=1 TO4:FORY=1 TO7:CIRCL
  E(38+T,96),6+X,5:CIRCLE(39+T,96),
  6+X,5:T=T+30:NEXT:T=0:NEXT
13 GET(32,89)-(45,103),A,G:GET(6
  2,89)-(75,103),B,G:GET(92,89)-(1
  05,103),C,G:GET(152,89)-(165,103
  ),E,G:GET(182,89)-(195,103),F,G:
  GET(212,89)-(225,103),G,G
14 DRAW"BM10,10CONU3NL3ND3NR3":C
```

```
IRCLE(10,10),2,,.5:CIRCLE(10,10),
  3:GET(8,8)-(12,12),BO,G:CIRCLE(
  10,10),2,5,.5:GET(8,8)-(12,12),B
  A,G
```

```
15 GOTO59
16 EX=0:XE=0:MX=0:X=0:PCLS0:PORT
  =1 TO20:PSET(RND(255),RND(190)):N
  EXT:PUT(118,86)-(138,106),EA,PSE
  T
```

```
17 IFBA=0 THENPUT(M,N)-(M+4,N+4),
  BA,PRESET:BA=1:GOTO19
18 IFBA=1 THENPUT(M,N)-(M+4,N+4),
  BO,PRESET:BA=0
```

```
19 GOSUB22
20 GOSUB35
21 GOSUB40:GOTO17
22 ONMT GOTO23,26,29,32
23 C=D*(1.220/256)+.89-D*.0136
24 IFD<128 THEND=D+.38 ELSE: D=RND
  (0)
```

```
25 Z=Z+1:D=D+C:RETURN
26 C=Z*(.75/128)+.75-Z*.0136
27 IFZ>96 THENZ=Z+.36
28 D=D-1:Z=Z+C:RETURN
29 C=D*(1.090/256)+.89-D*.0136
```

```
30 IFD<128 THEND=D+.38
31 Z=Z-1:D=D+C:RETURN
32 C=Z*(.75/128)+.75-Z*.0136
33 IFZ>96 THENZ=Z-RND(0)
```

```
34 D=D+1:Z=Z+C:RETURN
35 ONMT GOTO36,37,38,39
36 IFPOINT(D+6,Z+14)>0 THEN95ELSER
  ETURN
```

```
37 IFPOINT(D,Z+7)>0 THEN95ELSER
  ETURN
38 IFPOINT(D+6,Z)>0 THEN95ELSER
  ETURN
39 IFPOINT(D+13,Z+7)>0 THEN95EL
  SERTURN
```

```
40 MX=MX+1:IFMX>160 THEN127
41 IFEX=0 THENP=PEEK(65280):IFP=1
  26 ORP=254 THENEX=1
```

```
42 IFEX=1 THENXE=XE+2:CIRCLE(M+3,
  N+3),4+XE:GOSUB44:CIRCLE(M+3,N+3
  ),4+XE,0:IFXE=10 THENEX=0:XE=0
43 GOTO49
```

```
44 ONMT GOTO45,46,47,48
```



```

45 IFPPOINT(D+6,Z+14)>OANDZ<80TH
EN127ELSERRETURN
46 IFPPOINT(D,Z+7)>OANDD<140THEN
127ELSERRETURN
47 IFPPOINT(D+6,Z)>OANDZ<110THEN
127ELSERRETURN
48 IFPPOINT(D+13,Z+7)>OANDD<100T
HEN127ELSERRETURN
49 ME=RND(6):ONME GOTO50,51,52,5
3,54,55
50 PUT(D,Z)-(13+D,14+Z),A,PRESET
: RETURN
51 PUT(D,Z)-(13+D,14+Z),R,PRESET
: RETURN
52 PUT(D,Z)-(13+D,14+Z),C,PRESET
: RETURN
53 PUT(D,Z)-(13+D,14+Z),E,PRESET
: RETURN
54 PUT(D,Z)-(13+D,14+Z),F,PRESET
: RETURN
55 PUT(D,Z)-(13+D,14+Z),G,PRESET
: RETURN
56 PMODE4:POKE179,17:PCLS
57 FORT=1TO10:CIRCLE(128,96),10+
T,0:CIRCLE(129,96),10+T,0:NEXT:C
IRCLE(128,96),10:CIRCLE(238,96),
11,0
58 GET(118,86)-(138,106),EA,G:GO
TO9
59 PMODE4:PCLS:FORT=1TO15:PSET(R
ND(250),RND(190)):NEXT:SCREEN1,1
: PUT(118,86)-(138,106),EA,PSET
60 X=117:Y=20:W$="EARTH
HOME BASE FOR THE FEDER
ATION IS IN PERIL
THE ENEMY HAS DIVE
RTED AN ASTEROID TO COLLIDE
WITH THE EARTH":GOSUB4
61 X=100:Y=150:W$="MAX BETTRIDGE
PRESENT
SATALITE DEFENCE CO
MPUTOR SIMULATION IS THIS T
HE END FOR EARTH?":GOSUB4
62 X=0:PUT SOUND DELAY HERE
63 GOSUB40:D=D+2:IFD<120THEN63EL
SE109
64 PCLS0:FORT=1TO20:PSET(RND(255
),RND(190)):NEXT:PUT(118,86)-(13
8,106),EA,PSET:FORT=1TO20:GOSUB8
5:NEXT
65 X=20:Y=20:W$="SCANNING":GOSUB
4:GOSUB89:Y=106:FORT=1TORND(20):
X=10:W$=STR$(RND(TIMER)+TIMER):G
OSUB4:Y=Y+8:IFY>146THENY=106:NEX
TELSENEXT:GOSUB89:K=0:FORT=1TO8:
GOSUB85:NEXT
66 X=20:Y=20:W$="OOOOOOOO":GOSUB
4:FORT=1TO4:GOSUB89:X=132:Y=20:W
$="CONTACT":GOSUB4:NEXT:X=132:Y=
40:W$="SECTOR COORDINATES":GOSUB4
67 H=RND(256):V=RND(192):GOSUB11
4:X=152:Y=60:W$=STR$(H)+" "+STR
$(V):GOSUB4
68 FORT=1TO1000:NEXT:X=132:Y=160
:W$="GOING TO VISUAL":GOSUB4:GOS
UB88:PCLS0:FORT=1TO20:PSET(RND(2
55),RND(190)):NEXT:M=128:N=80:PU
T(118,86)-(138,105),EA,PSET
69
70 X=1:Y=7:W$="0 64 1
28 192 255":GOSUB4
71 JA=JA+48:X=-6:Y=JA:W$=STR$(JA
):GOSUB4:IFJA<192THEN71
72 JA=0:X=30:Y=70:W$="SET MINE T
O COORDINATES":GOSUB4:X=30:W$="*
*****":GOSUB4
73 X=100:Y=185:W$="TIME LIMIT":G

```

```

OSUB4:M=128:N=96:FORT=5TO0STEP-1
:X=190:W$=STR$(T)+"*":GOSUB4
74 H=JOYSTK(0):V=JOYSTK(1)
75 IFH>32THENM=M+2
76 IFH<32THENM=M-2
77 IFV>32THENN=N+2
78 IFV<32THENN=N-2
79 P=PEEK(65280):IFP=126ORP=254T
HENLINE(M,N)-(M+3,N+3),PSET,BF:F
ORT=1TO2000:NEXT:GOTO113
80 CIRCLE(M,N),1
81 CIRCLE(M,N),1,0
82 DA=DA+1:IFDA<10THEN74
83 DA=0:NEXT
84 GOTO16
85 IFK=0THENDRAW"C0":K=1:GOTO87
86 IFK=1THENDRAW"C5":K=0
87 DRAW"BM128,96:BU20NU56BD4OND5
6BU20BR20NR56BL40L56":RETURN
88 PCLS:FORT=1TO100:POKE65497,0:
POKE65496,0:NEXT:RETURN
89 FORK=1TO1
90 FORT=1TO86STEP19:LINE(128-T,8
6-T)-(118-T,86-T),PSET:LINE(128-T,
86-T)-(118-T,86-T),PRESET:NEXT'SEC
TOR 1
91 FORT=1TO86STEP19:LINE(138+T,8
6-T)-(128+T,96),PSET:LINE(138+T,
86-T)-(128+T,96),PRESET:NEXT'SEC
TOR4
92 FORT=1TO86STEP19:LINE(128,106
+T)-(128+T,108+T),PSET:LINE(128,
106+T)-(128+T,108+T),PRESET:NEXT
93 FORT=1TO86STEP19:LINE(118-T,9
6-T)-(128-T,106+T),PSET:LINE(118-T
,96-T)-(128-T,106+T),PRESET:NEXT
94 NEXT:RETURN
95
96 A=128:B=96:C=128:D=128:E=96:F
=128
97 FORT=1TO30:R=RND(8):PUT(A+R-R
ND(10),B+R)-(A+R+RND(10),B-R),EA
,PRESET:PUT(C+R-RND(10),B+R)-(C-
R+RND(10),B-R),EA,PRESET:PUT(A+R
-RND(10),B+R)-(A+R+RND(10),B-R),
EA,AND:PUT(C+R-RND(10),D+R)-(C-R
+RND(10),B-R),EA,AND
98 PUT(D+R-RND(10),E+R)-(D-R+RND
(10),E-R),EA,PRESET:PUT(D+R-RND(
10),E+R)-(D-R+RND(10),E-R),EA,AN
D:PUT(F+R-RND(10),E+R)-(F-R+RND(
10),E-R),EA,AND
99 IFX>10ANDX<20THENCIRCLE(128,9
6),X-9,5:POKE178,3
100 X=X+.9:A=A-RND(0):B=B-RND(0)
:C=C+RND(0):D=D-RND(0):E=E+RND(0)
:F=F+RND(0)
101 NEXT:FORX=1TO40:CIRCLE(128,9
6),X,0:NEXT
102 IFIT=0THEN109
103 X=0:B=170:DRAW"S4C5":W$="PLA
NET LOST":GOSUB4:FORT=1TO1000:NE
XT:GOTO64
104 DATAU6R4D6L4,R2NR2U6LG,NR4E4
UHL2G,BUFR2EUHL2HUER2F,BR2U6NL2R2,
BUFR2EU2HL2GU3R4,BU3ER2FD2GL2HU
4ER3,E4U2L4D,BUENR2HUER2FDGFDGL
2H,BRR2EU4HL2GD2FR2E,....,BU5ER2
FDGLDBD2D,U4E2F2D2NL4D2,R3EUHEU
HL3RD3NR2D3,BE4BUHL2GD4F1R2E,R3E
U4HL2NLD6,R4UBU4UL3NLD3NR2D3
105 DATARNRU3NR2U3NLR3D,BE2RNRDN
DGLHU4ER2D,U3NU3R4NU3D3,BRRNRU6N
LR,BUNUFREU5NLR,RU6NLBD3RE2UBD5N
DH2,R4UBGL2U6NLR,U6F2E2D6,U6F4N
U4D2,BUU4ER2FD4GL2H,RNRU6NLR2FDG

```

```

L2,BUU4ER2FD4GDRBHL2H,U6R3FDGNL2
F2D,BUFR2EUHL2HUER2F,BR2U6NL2R2,
BUNU5FRERNDU5
106 DATAU3NU3FDFEUEU3,NU6E2F2U6
,UE4UBL4DF4D,BRRNRU3H2U1R4DG2,BU
5UR4DG4DRU4,....
107 FORJ=15TO57:READR$:I$(J)=R$:
NEXT
108 PMODE4:SCREEN1,1:GOTO56
109 IT=1:X=100:Y=96:W$="INSTRUCT
IONS?":GOSUB4
110 X=191:Y=96:W$=" ":GOSUB4
111 A$=INKEY$:IFA$="Y"THEN128ELS
EIFA$="N"THEN64
112 X=191:Y=96:W$="?":GOSUB4:GOT
O110
113 X=10:Y=170:W$="MINE COORDINA
TES SET AT"+STR$(M)+"*"+STR$(N)
:GOSUB4:FORT=1TO1000:NEXT:GOTO16
114
115 IFH<128ANDV<96THEN119
116 IFH<128ANDV>96THEN121
117 IFH>128ANDV<96THEN123
118 IFH>128ANDV>96THEN125
119 IFH>V THENV=0:D=H:Z=0:MT=1:R
ETURN
120 IFH<V THENH=0:D=0:Z=V:MT=4:R
ETURN
121 IFH>V THENV=192:D=H:Z=192:MT
=3:RETURN
122 IFH<V THENH=0:D=0:Z=V:MT=4:R
ETURN
123 IFH-128>V THENH=256:D=256:Z=
V:MT=2:RETURN
124 IFH-128<V THENV=0:D=H:Z=0:MT
=1:RETURN
125 IFH-128>V THENH=256:D=256:Z=
V:MT=2:RETURN
126 IFH-128<V THENV=192:D=H:Z=19
2:MT=3:RETURN
127 FORT=1TO100:G=RND(13):PUT(D,
Z)-(D+G,Z+G),A,PRESET:NEXT:MX=0:
X=10:Y=170:W$="ASTEROID DESTROYE
D":GOSUB4:GOTO64
128 PCLS:X=5:Y=10:W$="YOU MUST P
LACE YOUR SPACE MINE BETWEEN
THE ASTEROID AND PLANET EAR
TH THEN BY PRESSING THE FIRE
BUTTON YOU CAN IGNITE THE MINE"
:GOSUB4
129 W$=" IF YOU IGNITE NEAR TO
THE ASTEROID IT WILL BE DESTRO
YED WHEN REQUESTED YOU WILL U
SE THE RIGHT JOYSTK TO PLACE
THE MINE TO THE COORDINATES SU
PLIED DURING THE SIMULATION":GOS
UB4
130 X=10:Y=170:W$="PRESS ANY KEY
TO START":GOSUB4:EXEC44535:GOTO
64
131 'DEvised NOV.86 TO TEACH SCR
EEN 256/192 COORDINATES.

```


COCO MUSIC

16K ECB
MUSIC



by David Sitsky

COCO MUSIC IS a program designed for those people who want to learn music.

Once RUN, the computer will ask for the note length. Enter any length between 1 and 255.

Then you are presented with the main screen. Each of the CoCo's keys represent a note.

Keys '1' to '0' represent flats and sharps for the next row of keys, ie 'Q' to 'P', while 'A' to 'L' represent the sharps and flats for the next row, ie 'Z' to '/'.
Enjoy!

```

27 NEXT
30 CLS
32 FORI=1TO100:NEXT
35 PRINT@235,"C":SOUNDS,D
40 PRINT@236,"O":SOUNDS,D
45 PRINT@237,"C":SOUNDS,D
50 PRINT@238,"O":SOUNDS,D
55 PRINT@240,"W":SOUNDS,D
60 PRINT@241,"U":SOUNDS,D
65 PRINT@242,"S":SOUNDS,D
70 PRINT@243,"I":SOUNDS,D
75 PRINT@244,"C":SOUNDS,D
80 FORU=1TO20:SOUNDRND(255),1
85 NEXTU
90 CLS
100 PRINT:INPUT"ENTER NOTE LENG
H";L
105 IFL<1 OR L>255 THEN90
106 PLAY"L"+STR$(L)
107 PRINT@256,"make computer in
lowercase mode";
108 FORT=1TO5000:NEXT
110 CLS
120 FORX=33TO61STEP4:PRINT@X,T$;
:PRINT@X+32,T$;
121 NEXTX
125 PRINT@1,"c":PRINT@5,"d":PRIN
T@9,"e":PRINT@13,"f":PRINT@17,"g
":PRINT@21,"a":PRINT@25,"b":PRIN
T@29,"c"
126 PRINT@97,"C#":PRINT@101,"D#
":PRINT@109,"F#":PRINT@113,"G#
":PRINT@117,"A#":PRINT@125,"C#
";
130 PRINT@67,"1":PRINT@71,"2":;
PRINT@75,"3":PRINT@79,"4":PRIN
T@83,"5":PRINT@87,"6":PRINT@91
,"7":PRINT@95,"8";
135 FORX=161TO189STEP4:PRINT@X,T
$;:PRINT@X+32,T$;NEXT
136 PRINT@129,"c":PRINT@133,"d":
PRINT@137,"e":PRINT@141,"f":PRIN
T@145,"g":PRINT@149,"a":PRINT@15
3,"b":PRINT@157,"c"
137 PRINT@225,"C#":PRINT@229,"D
#":PRINT@237,"F#":PRINT@241,"G
#":PRINT@245,"A#":PRINT@253,"C
#";
138 PRINT@195,"Q":PRINT@199,"W
":PRINT@203,"E":PRINT@207,"R":;
PRINT@211,"T":PRINT@215,"Y":PR
INT@219,"U":PRINT@223,"I";
139 PRINT@481,"C#":PRINT@485,"D
#":PRINT@493,"F#":PRINT@497,"G
#":PRINT@501,"A#":PRINT@509,"C
#";

```

```

140 FORX=289TO317STEP4:PRINT@X,T
$;:PRINT@X+32,T$;
141 NEXTX
150 PRINT@257,"c":PRINT@261,"d":
PRINT@265,"e":PRINT@269,"f":PRIN
T@273,"g":PRINT@277,"a":PRINT@28
1,"b":PRINT@285,"c"
154 PRINT@353,"C#":PRINT@357,"D
#":PRINT@365,"F#":PRINT@369,"G
#":PRINT@373,"A#":PRINT@381,"C
#";
155 PRINT@323,"A":PRINT@327,"S
":PRINT@331,"D":PRINT@335,"F":;
PRINT@339,"G":PRINT@343,"H":PR
INT@347,"J":PRINT@351,"K";
156 FORX=417TO445STEP4:PRINT@X,T
$;:PRINT@X+32,T$;NEXT
157 PRINT@385,"c":PRINT@389,"d":
PRINT@393,"e":PRINT@397,"f":PRIN
T@401,"g":PRINT@405,"a":PRINT@40
9,"b":PRINT@413,"c"
158 PRINT@32,"O":PRINT@64,"1":;
PRINT@160,"O":PRINT@192,"2":PR
INT@288,"O":PRINT@320,"3":PRIN
T@416,"O":PRINT@448,"4";
159 PRINT@451,"Z":PRINT@455,"X
":PRINT@459,"C":PRINT@463,"V":;
PRINT@467,"B":PRINT@471,"N":PR
INT@475,"M":PRINT@479,"";
160 A$=INKEY$:IF A$="" THEN160
161 IF A$="1" THEN300
162 IF A$="2" THEN305
163 IF A$="3" THEN310
164 IF A$="4" THEN315
165 IF A$="5" THEN320
166 IF A$="6" THEN325
167 IF A$="7" THEN330
168 IF A$="8" THEN335
169 IF A$="!" THEN340
170 IF A$=CHR$(34) THEN345
171 IF A$="$" THEN350
172 IF A$="%" THEN355
173 IF A$="&" THEN360
174 IF A$="q" THEN365

```

The Listing:

```

1 POKE65495,0
2 GOTO10
3 SAVE"80:3":END
5 "COCO MUSIC
10 CLS
15 S=200:D=1:A$=CHR$(128):B$=CHR
$(197):C$=CHR$(202):TL$=CHR$(197
):T$=A$+A$:M$=B$+C$
20 PRINT@228,"D":SOUNDS,D:PRINT@
229,"A":SOUNDS,D:PRINT@230,"V":S
OUNDS,D:PRINT@231,"I":SOUNDS,D
21 PRINT@232,"D":SOUNDS,D
22 PRINT@234,"S":SOUNDS,D:PRINT@
235,"I":SOUNDS,D:PRINT@236,"T":S
OUNDS,D:PRINT@237,"S":SOUNDS,D:P
RINT@238,"K":SOUNDS,D
23 PRINT@239,"Y":SOUNDS,D
24 PRINT@241,"P":SOUNDS,D:PRINT@
242,"R":SOUNDS,D:PRINT@243,"E":S
OUNDS,D:PRINT@244,"S":SOUNDS,D:P
RINT@245,"E":SOUNDS,D
25 PRINT@246,"N":SOUNDS,D:PRINT@
247,"T":SOUNDS,D:PRINT@248,"S":S
OUNDS,D
26 FORU=1TO20:SOUNDRND(255),1

```



```

175 IFAS="w" THEN 370
176 IFAS="e" THEN 375
177 IFAS="r" THEN 380
178 IFAS="t" THEN 385
179 IFAS="y" THEN 390
180 IFAS="u" THEN 395
181 IFAS="i" THEN 400
182 IFAS="Q" THEN 405
183 IFAS="W" THEN 410
184 IFAS="R" THEN 415
185 IFAS="T" THEN 420
186 IFAS="Y" THEN 425
187 IFAS="a" THEN 430
188 IFAS="s" THEN 435
189 IFAS="d" THEN 440
190 IFAS="f" THEN 445
191 IFAS="g" THEN 450
192 IFAS="h" THEN 455
193 IFAS="j" THEN 460
194 IFAS="k" THEN 465
195 IFAS="A" THEN 470
196 IFAS="S" THEN 475
197 IFAS="F" THEN 480
198 IFAS="G" THEN 485
199 IFAS="H" THEN 490
200 IFAS="z" THEN 500
201 IFAS="x" THEN 505
202 IFAS="c" THEN 510
203 IFAS="v" THEN 515
204 IFAS="b" THEN 520
205 IFAS="n" THEN 525
206 IFAS="m" THEN 530
207 IFAS="," THEN 535
208 IFAS="Z" THEN 540
209 IFAS="X" THEN 545
210 IFAS="V" THEN 550
215 IFAS="B" THEN 555
220 IFAS="N" THEN 560
225 IFAS="(" THEN 565
230 IFAS="I" THEN 570
235 IFAS="K" THEN 575
240 IFAS="<" THEN 580
245 IFAS="@" THEN 100
250 IFAS="O" THEN 700
299 GOTO 160
300 PRINT@33, M$;
301 PLAY"O1C": PRINT@33, T$; : GOTO 1
60
305 PRINT@37, M$;
306 PLAY"O1D": PRINT@37, T$; : GOTO 1
60
310 PRINT@41, M$;
311 PLAY"O1E": PRINT@41, T$; : GOTO 1
60
315 PRINT@45, M$;
316 PLAY"O1F": PRINT@45, T$; : GOTO 1
60
320 PRINT@49, M$;
321 PLAY"O1G": PRINT@49, T$; : GOTO 1
60
325 PRINT@53, M$;
326 PLAY"O1A": PRINT@53, T$; : GOTO 1
60
330 PRINT@57, M$;
331 PLAY"O1B": PRINT@57, T$; : GOTO 1
60
335 PRINT@61, M$;
336 PLAY"O2C": PRINT@61, T$; : GOTO 1
60
340 PRINT@65, M$;
341 PLAY"O1C#": PRINT@65, T$; : GOTO
160
345 PRINT@69, M$;
346 PLAY"O1D#": PRINT@69, T$; : GOTO
160
350 PRINT@77, M$;
351 PLAY"O1F#": PRINT@77, T$; : GOTO
160

```

```

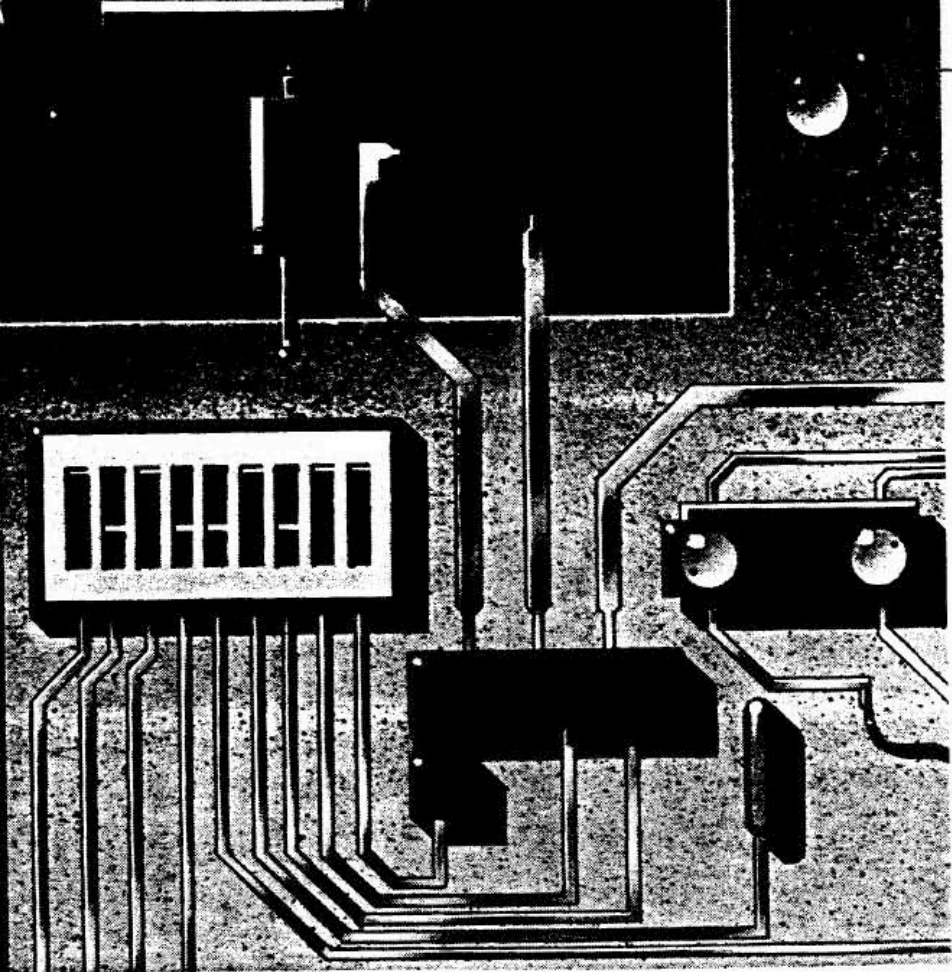
355 PRINT@81, M$;
356 PLAY"O1G#": PRINT@81, T$; : GOTO
160
360 PRINT@85, M$;
361 PLAY"O1A#": PRINT@85, T$; : GOTO
160
365 PRINT@161, M$;
366 PLAY"O2C": PRINT@161, T$; : GOTO
160
370 PRINT@165, M$;
371 PLAY"O2D": PRINT@165, T$; : GOTO
160
375 PRINT@169, M$;
376 PLAY"O2E": PRINT@169, T$; : GOTO
160
380 PRINT@173, M$;
381 PLAY"O2F": PRINT@173, T$; : GOTO
160
385 PRINT@177, M$;
386 PLAY"O2G": PRINT@177, T$; : GOTO
160
390 PRINT@181, M$;
391 PLAY"O2A": PRINT@181, T$; : GOTO
160
395 PRINT@185, M$;
396 PLAY"O2B": PRINT@185, T$; : GOTO
160
400 PRINT@189, M$;
401 PLAY"O3C": PRINT@189, T$; : GOTO
160
405 PRINT@193, M$;
406 PLAY"O2C#": PRINT@193, T$; : GOT
O160
410 PRINT@197, M$;
411 PLAY"O2D#": PRINT@197, T$; : GOT
O160
415 PRINT@205, M$;
416 PLAY"O2F#": PRINT@205, T$; : GOT
O160
420 PRINT@209, M$;
421 PLAY"O2G#": PRINT@209, T$; : GOT
O160
425 PRINT@213, M$;
426 PLAY"O2A#": PRINT@213, T$; : GOT
O160
430 PRINT@289, M$;
431 PLAY"O3C": PRINT@289, T$; : GOTO
160
435 PRINT@293, M$;
436 PLAY"O3D": PRINT@293, T$; : GOTO
160
440 PRINT@297, M$;
441 PLAY"O3E": PRINT@297, T$; : GOTO
160
445 PRINT@301, M$;
446 PLAY"O3F": PRINT@301, T$; : GOTO
160
450 PRINT@305, M$;
451 PLAY"O3G": PRINT@305, T$; : GOTO
160
455 PRINT@309, M$;
456 PLAY"O3A": PRINT@309, T$; : GOTO
160
460 PRINT@313, M$;
461 PLAY"O3B": PRINT@313, T$; : GOTO
160
465 PRINT@317, M$;
466 PLAY"O4C": PRINT@317, T$; : GOTO
160
470 PRINT@321, M$;
471 PLAY"O3C#": PRINT@321, T$; : GOT
O160
475 PRINT@325, M$;
476 PLAY"O3D#": PRINT@325, T$; : GOT
O160
480 PRINT@333, M$;
481 PLAY"O3F#": PRINT@333, T$; : GOT
O160

```

```

485 PRINT@337, M$;
486 PLAY"O3G#": PRINT@337, T$; : GOT
O160
490 PRINT@341, M$;
491 PLAY"O3A#": PRINT@341, T$; : GOT
O160
500 PRINT@417, M$;
501 PLAY"O4C": PRINT@417, T$; : GOTO
160
505 PRINT@421, M$;
506 PLAY"O4D": PRINT@421, T$; : GOTO
160
510 PRINT@425, M$;
511 PLAY"O4E": PRINT@425, T$; : GOTO
160
515 PRINT@429, M$;
516 PLAY"O4F": PRINT@429, T$; : GOTO
160
520 PRINT@433, M$;
521 PLAY"O4G": PRINT@433, T$; : GOTO
160
525 PRINT@437, M$;
526 PLAY"O4A": PRINT@437, T$; : GOTO
160
530 PRINT@441, M$;
531 PLAY"O4B": PRINT@441, T$; : GOTO
160
535 PRINT@445, M$;
536 PLAY"O5C": PRINT@445, T$; : GOTO
160
540 PRINT@449, M$;
541 PLAY"O4C#": PRINT@449, T$; : GOT
O160
545 PRINT@453, M$;
546 PLAY"O4D#": PRINT@453, T$; : GOT
O160
550 PRINT@461, M$;
551 PLAY"O4F#": PRINT@461, T$; : GOT
O160
555 PRINT@465, M$;
556 PLAY"O4G#": PRINT@465, T$; : GOT
O160
560 PRINT@469, M$;
561 PLAY"O4A#": PRINT@469, T$; : GOT
O160
565 PRINT@93, M$;
566 PLAY"O2C#": PRINT@93, T$; : GOTO
160
570 PRINT@221, M$;
571 PLAY"O3C#": PRINT@221, T$; : GOT
O160
575 PRINT@349, M$;
576 PLAY"O4C#": PRINT@349, T$; : GOT
O160
580 PRINT@477, M$;
581 PLAY"O5C#": PRINT@477, T$; : GOT
O160
600 GOTO 600
700 CLS: END

```

THE COMPUTER WORLD HARDWARE AND SOFTWARE

by Mark E. Permuter

WHAT IS THE ROLE OF MS-DOS

The first use a microcomputer gets depends on whether one is looking for a business or home computer.

One of the major concerns of business today is office automation through the acquisition of one or more microcomputers or terminals. Both the size of this investment and the risk of acquiring an

inappropriate system can be minimized with the help of outside computer consultants. They are more likely to know the market than an in-house systems analyst. One must be cautious, all persons are prone to bias including any professional.

One could buy, lease, or use an outside computing service. These services are often performed economically by freelancers, or consulting firms and may be the best answer for many businesses. If you decide to buy or lease without extensive knowledge about your computer hardware or software needs, only luck will give you the most productive solution.

IBM is the standard in microcomputer hardware, although using IBM may not be the best answer. Besides excessive cost,

IBM microcomputers compare poorly with many of the imitators on the market.

There are two kinds of imitators on the market; the brand name computers (the low cost Tandy, Epson, and Panasonic, as well as the high priced Compaq) and the no-name clones. The imitators vary in hardware and software compatibility.

You are likely to get a brand name if you lease a computer. When a business leases a computer system it may get a tax break. One may decide that leasing is cost efficient, but it may not be the most productive considering software compatibility and processing speed. One may want to lease just a printer. That field is expanding and obsolescence is much faster in peripherals.

In many seasonal and small businesses an outside service may be cheaper, than buying a computer system.

THE MARKET PLACE

There is a lot of over priced software and hardware in the marketplace. Many sales

In most cases this article when stating prices, will refer to Canadian dollars.

people look for the biggest sale they think they can manage. Whether you need software or hardware, a sales person can frequently mislead you because they are not likely to know your office system needs. (The microcomputer, software, and various peripherals when put together are called a "system".)

Look very closely at advertisements. They tend to state what you will get when you buy a computer system, but NOT what you will have to buy to make it complete.

When you contact a computer seller, consider this: the seller may not have the type of system that will really suit your needs and therefore may tell you that what you want is unreliable. For example, I spoke with two stores that said that turbo clones were unreliable because you couldn't slow them down to the IBM 4.77 Mhz (see explanation further on in this article). This was false. There are many turbo clones available that will switch speeds by a toggle switch. Some turbo clones are better than brand name equipment. Frequently, a store will not give accurate information because it does not carry a particular kind of equipment or can't make a profit on it.

One can go shopping from store to store asking the same simple technological questions and get different answers from sales people. Software prices will also vary from store to store. A good consultant can cut through this garbage.

How much time or money does this waste? An outside, self-employed consultant usually is not as biased in the kind of system you need as a computer store. There are always exceptions, but this is usually the situation. You can buy a microcomputer with a hard disk for \$2100 on a no-name XT compatible or clone (prices may vary in different countries). Why pay up to \$2000 more on a brand name? (In this article the terms compatible or clone are similar except that compatible is a measure of levels of similarity - in theory, a clone will run the same disks and programs and the only difference is speed, price, or quality.) Some clones of the IBM-XT are clearly superior in reliability, speed (sometimes 2 or 3 times IBM's processing time), and warranties. The IBM microcomputers have a 90 day warranty, while some clones offer 6 months or a year.

For long distance travel or hard to get to locations, you may be expected to pay an outside consultant for that as well. This is true for any professional.

MICROCOMPUTER TECHNOLOGY...

AN OVERVIEW

Here is an overview of most of the microcomputers available in the North American market. It has some technical terminology, but anyone considering the buying of a microcomputer should read this overview.

Though technical in nature, I encourage all readers who are likely to have contact with computers in the near future to read on. It won't hurt and may even help to save you some money.

Specs do NOT tell all the story about any computer. The consideration of software availability, hardware upgradability, and various related expenses need a closer assessment.

MICROCOMPUTERS... WHAT ARE THEY TALKING ABOUT

There are the data lines on the Bus (the amount of lines sending data signals that the chips, input/output [I/O], and expansion boards are capable of using), the bits in a word a CPU (central processing unit) has, the direct memory access available to that chip as opposed to bank-switching capabilities (bank-switching is a much slower process), the MHz (the megahertz) which is related to a timing crystal that determines the CPU's speed, and the rest of motherboard's speed as well.

The data lines on a "bus" determine the rate of transfer of information signals that a microcomputer is able to send or receive. The more lines and the faster the clock speed (MHz), the greater the speed at which the monitor, disk drives, keyboard, and other peripherals can optimally operate.

The concept of standardization is important in the operating system (OS) people and businesses use. The most common OS (not necessarily the easiest, most powerful, or user friendly) is the PC-Dos 2.1 or

MS-Dos which has various versions some of which are almost completely compatible with PC-Dos. PC-Dos 3.2 is the latest Dos as of this writing. PC-Dos 3.2 and its equivalents are usually found on the IBM-AT, XT, and related clones.

The PC-Dos or MS-Dos are the standard OS in the microcomputer industry. Frequently, I write reviews on much of the software devised for this industry standard.

Many clones use the reliable Phoenix Bios, or a special Turbo Bios which is used on the switchable clock speed compatible systems.

The motherboard design (the motherboard is the main internal board containing the CPU, the expansion slots, I/O circuitry, rom chips (read only memory), and co-processor chips) is extremely important.

(Note: the newest IBM XT may not be fully compatible with some Ashton Tate (Dbase III and Framework are 2 of their more well known programs) software)

PC-Dos 2.1 (and the later versions) uses a 16 bit chip that is either the 8088 or the 8088-2 (the -2 is necessary for a faster MHz clock speed, also called turbo speeds...the 8088 runs at 4.77 and the 8088-2 can run at 4.77, 6, 7, or 8MHz). It is capable of a direct memory accessing of 1 megabyte although the PC-Dos OS accesses only 640K. Software is usually more efficient at faster speeds, except the few that only run at 4.77 MHz.

The previous standard OS was CPM. The CPM OS uses an 8 bit chip which is capable of directly accessing 64K on either the 8080 or 280 chip. If you hear of a 280 CPU machine with 256k it is using the bank switching system. This machine is not as powerful as an 8088 based machine. Complex operations really slow it down.

The Apple IIe (and the older II plus) or Commodore 64 both use 8 bit technology based on the 6502 or 6510 chips. When they have 128k or more in the machine, it is not direct memory, but switching between 2 or more banks of memory.

The Coco I had the option of 64K direct memory access. The Coco III can access (through memory management type architecture) 512K and with it's OS-9 system it can do some multitasking. Being based on an 8 bit CPU with semi-open architecture, this is basically a very sophisticated home microcomputer system. Because

of the availability of hard disks, the Coco III could be used in some limited business applications and it has a potential of virtual memory mode especially when adding a 68020 board.

The new Apple IIGS will be a 16 bit system with 8 bit data lines. It will operate at about 2.8 MHz capable of directly accessing 16 megabytes. The old Apple IIe and plus can be upgraded to this new machine. It has a slow processing design, but it is an open architecture concept as opposed to the Macintosh, which has been closed.

The Commodore PC-10 is a high priced IBM compatible compared to the Tandy 1000, both of which use the Phoenix Bios and are equally powerful. The PC-10 has more expansion slots which are more hardware compatible for future upgrades.

The Compaq desktop uses an 8086 which also has a 16 bit CPU. The 8086 has an advantage over the 8088. The 8086 allows a 16 line data Bus. This allows for faster I/O and memory accessing. Still, it only has a potential of 1 megabyte direct memory accessing. The Olivetti M24 also uses an 8086 CPU, but it is not as compatible. Some PC software will not run properly on the M24.

The Sanyo MBC 775 and 885 are also high priced IBM compatibles. The Sanyo MBC 550 is not very compatible with the standard MS-Dos.

The Apple Macintosh uses a 68000 which has 32 bit registers, but it only has 16 Bus lines. The same is true of the Atari 1040st and the Amiga by Commodore. These machines could (in theory) access 16 Mg (megabytes). They are only limited by design not by the power of the CPU. They are also limited by the number of Bus lines which affects their potential I/O speed. The 68020 can use 32 data Bus lines and is a 32 bit CPU. There is a possibility that the Apple Macintosh will be upgraded to a 68020.

No matter how many bits a CPU has, it operates fastest at an equal number of Bus lines. Unfortunately, the 8088 and other CPU's are limited in the number of data lines they can handle. This simplifies the wiring, but is misleading in the true power of the processing speed.

The Tandy 3000, IBM AT, Sanyo MBC 990, and the AT compatibles all use the 80286

(16/24 bit "word" size) which is faster than the 8086. All are capable of multiple tasking and processing. They use the same operating systems of MS-Dos or PC-Dos at a faster and more complex level for running several terminals or operations. There are 16 lines on the data Bus. They also can use some version of Unix, but that OS has not been standardized.

Already, the 80386 a true 32 bit CPU with 32 data lines on its Bus, has been developed by Compaq. Why their expansion bus has only one slot with a 32 bit data line is beyond me. Already there are competitors that have several 32 bit expansion slots. The Compaq (in my opinion) probably is over priced, but price lowering competition will soon be on the market. It can run 16 terminals with 1 megabyte each.

There are already expansion cards for PC/XT clones that upgrade it to an AT (the "286" cards) that may even be faster than the AT. The "386" expansion cards are already available with extra expansion slots that are either 16 or 32 bit data lines. These cards can access 24 megabytes or more. This is another example of how open architecture machines are less likely to become obsolete.

WHAT DO YOU REALLY NEED?

If a system you want to buy runs as fast as you want it to for the software you need, now and the next 2 years, then it is all you need. The less common the OS you are using, the harder it may be to find the appropriate software for your home or business needs. The more 3rd party support a computer has (outside manufacturers of hardware or software), the greater the hardware and software potential it will likely have in the future.

Expandable equipment (open architecture as opposed to closed) that will not become obsolete, is usually the best choice of purchase.

Always check how open the machine is for expansion. If a machine doesn't have between 6-8 expansion slots to begin with then you will notice it later. For example, the XT and clones now have expansion boards with 68020 CPU boards with 2-4 Mg. Intel has an Above Board 2mg of memory for the XT and compatibles. Even the Apple IIe

is expandable because of its open architecture, but I feel that it is too expensive when compared to the no-name XT clones or even the Coco III which is more powerful than the Apple IIe or II+.

All 16 bit CPU micros or higher are capable of multitasking if the software is made for it.

In a non-business setting never spend more than \$400 on a whole computer system (such as a C64 or the more powerful Tandy Coco I or III) with perhaps another \$400 on a printer.

In most business situations, you need at least a 16 bit microcomputer, if not a more sophisticated machine for various complex business situations.

When looking at any system consider both the hardware costs and software costs for all your computer uses.

One need not keep up with the others 'on the block'. Status is not important, just your particular needs.

PRINTERS

In any computer system, printouts of either what one is programming, or various software applications is almost always essential. Because of this, the following section on printers is the logical next step.

Printers are an essential part of any wordprocessing, personal and business needs. Printers are usually bought separate from a computer system unless you buy a "package deal".

TYPES OF PRINTERS

The world of printers has expanded at an extremely rapid pace in the last few years. There are pluses and minuses when considering any printer for your computer. The types of printers usually used with microcomputers are of two types. Impact printers and non-impact printers are the basic types. In the impact category there are various types of dot matrix printers, expensive band printers, and daisy wheel printers. Today, most nonimpact printers are laser based. There is some software that will make near letter quality print by combining some of the various fonts available on most of the dot matrix machines. A dot matrix printer will make graphs, pictures, and readable text. The amount of print wire pins on the print head, how close together the pins are, and the

amount of passes (a pass is the movement from one side of the sheet to the other when a line of text is written by the printhead) are related to print quality.

Most wordprocessing packages are somewhat compatible with the major printer brands. The leaders in the industry coding standards are Epson, IBM, Toshiba and Okidata. In North America, most of the printers for the IBM follow the Epson codes. The main difference between the IBM printer and the Epson is that some special screen characters used on the IBM PC/XT work only on the IBM printer. Many dot matrix printers have the option of the IBM screen characters usually by an added ROM chip. Each printer has a CPU for directing the print head in relation to the instructions sent from the computer. For example, the Epson RX-80 had a master central processing unit (CPU) called the 7810. Most of the interfaces are parallel standard but can be converted to serial if one so chooses. A Cable may cost up to \$40 in Canada to connect the computer to the printer.

Frequently, printers don't print as fast as a company claims. Printers have different upkeep costs based on the life of the printhead, how long the ribbon and or cartridge ribbon lasts as well as replacement costs for various parts that wear out. Impact printers are largely mechanical and therefore tend to need more servicing. Guarantees usually vary between 90 days and 2 years.

Examine the manual of any printer you consider buying. Look for an appendix that has all the control codes briefly explained. Be wary of manuals with less than 50 pages. If the manufacturer hasn't bothered with detailed and simple explanations as well as a good appendix then probably the printer hasn't had much care put into it either.

Most of the dot matrix printers sold today, have switches for NLQ (near letter quality) on an easy-to-reach outside panel. The estimated life of the printhead is just as important as the length of the guarantee. Make sure that the tractor feeds (tractor feeds are more common, but for special applications single sheet feeding is available usually at higher prices) are adjustable in width.

When a printer is running at NLQ speed, figure about one-fourth or one-fifth of the draft speed of the printer.

Print buffers allow the computer to do other work. 32K or more is worthwhile when printing less than 15 pages. Frequently, it is cheaper to get a separate print buffer that handles 128K than adding an optional 64K inside your new printer.

On microcomputers with 16 bit or larger CPU's and more than 380K RAM it is possible to set up a software print spooler in the computer itself.

If you manage to see the Roland, Epson, or Gemini manuals and look at them closely, you will see what I consider to be good manuals.

The daisy wheel printer will give text the look of a good typewriter, but it can't produce graphics.

Laser printers look almost like a typewriter in text mode and can also produce graphics. Present day Lasers (at the time of this writing) have a need for frequent servicing. Besides being very expensive, they are soon to be replaced by higher grade Laser printers before the end of 1987.

Much of the so-called desktop publishing from Laser printers is not of the highest quality one is usually lead to believe. Even though they have a fast print output, I do not suggest buying a laser printer until the new ones come out later on this year.

COMPUTERS AND WORD PROCESSING

Businesses and individuals tend to use data base management, spreadsheet, communications, and word processing applications when using their computers at the start. Home users will use games and then use word processing after tiring of the games. Since word processing (WP) is one of the more common uses for both home and business computers, the rest of this article is devoted to that subject.

Many people have asked me what kind of wordprocessing software is best. Generally, one starts small in learning about computers and their functions, frequently the choice of software is difficult. Frequently people have asked me what kinds of wordprocessing software they might need to use on their new PC/XT/AT (and their compatibles) or computers in general.

HOW TO DETERMINE WHAT KIND OF WORD PROCESSOR YOU NEED

There are some questions a buyer for wordprocessor (WP) software might ask themselves...here are some suggestions. Will the word processor (WP) be used for simple memos or documents with many pages? You can take notes with the program Sidekick, (this is an IBM compatible software package) but it is not a dedicated WP. A dedicated WP can fulfill the needs of a business for memos and long documents. A Serious writer of manuscripts or even several pages needs a number of basic capacities for a wide variety of efficiently handled needs.

A WP should be easy to learn for a novice and efficiently quick for one who is experienced.

Before you go shopping make a list of your needs for the present and imagine what you will be needing a year into the future.

Will you want to easily transfer the files via a modem? Several packages have a WP with 2 or 3 other functions like a spreadsheet, database or communications. Usually these are not as powerful as a dedicated WP. This multiple function software is usually referred to as an integrated package. The various sections may be called modules.

It should include or be compatible with a spelling checker. We all make typos even if one is the best of spellers. Spelling checkers usually operate by indicating what words you have in a particular document that are not in its dictionary. Possibly you may get suggestions or on some checkers it will highlight words that are apparently incorrect while you are editing. Try to get a checker that has an option for you to add to its dictionary. This option can be valuable for frequently used names or special terminology.

Commands should be available with a maximum of 3 keystrokes...otherwise the program gets both cumbersome and frustrating.

What you see on the screen should be what you get on the printout and this should be while in editing mode so that it is easy to correct. Having a help menu on or off the editing

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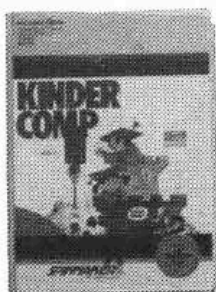
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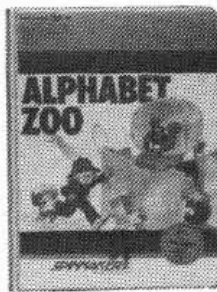
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E. 19.95 Reg 34.95



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C. Alphabet Zoo encourages children to associate letters of the alphabet with the sounds they represent in 2 exciting maze games. 26-3170

D. You must take control of The Reactoid in order to contain the atoms and radiation released as a result of a fusion reactor meltdown. 26-3092

E. Taxi. A team oriented game in which the responsibility of earning a fare is shared. You drive anywhere from New York to Shanghai. 26-2509

F. Children learn to analyse the things they see with Ernie's Magic Shapes by matching shapes and recognizing similarities and nuances. 26-2524

Star Trap is a dynamic maze game where the challenge is to trap a shooting star by blocking the paths and using special maze gates. 19.95 | Reg 34.95. 26-2510

* Some may need recorder and/or joysticks.

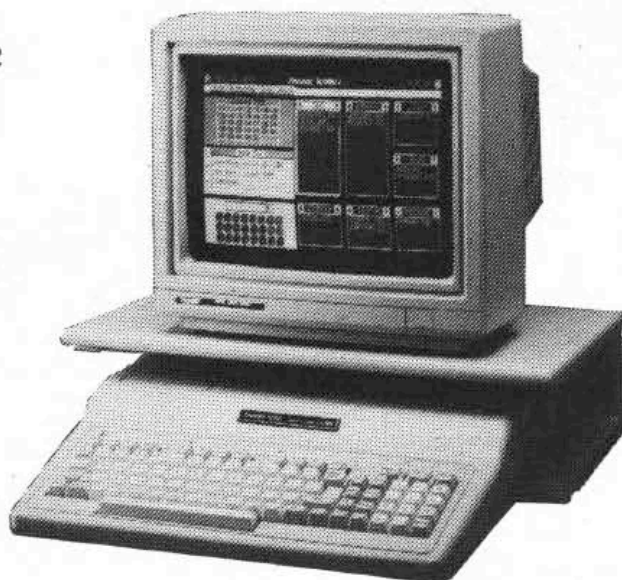
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screen as you choose with only a few key commands is a definite plus. When you no longer need the help menus, removing it gives you more screen workspace.

Global search-find-replace is on most decent WP. Instant page, line, and sentence number should also be available for quick access to various parts of a document.

Cut and paste or block move-copy-delete should be a simple process with only a few key commands.

Quickly and easily reformatting paragraphs, many pages or the whole document is also something to consider.

A good WP should be capable of many fonts. Some of them include italics, enlarged, condensed, underline, double strike, and many others. A good WP can embed these codes within the document...some actually display how this will look on the screen as the printer would show it. Those familiar with Telewriter for the CoCo know that it can mix fonts while saving the embedded commands in the document. This saves time when printing a document at a later time.

How important is file compatibility between files of several kinds of software packages to create integrated reports or summaries with spreadsheets, mailing lists, inventory, or graphs? Wordstar 3.3 has some file compatibility, but offers only a few printer controls. The new Wordstar 4.0 (arriving in Canada before the end of February 87) is supposed to have all of these options including many printer controls...this could be reviewed in a month or two if I'm requested.

A choice of automatic overwrite or insert mode is also reasonable to expect in a good WP. Usually some sort of on-off or toggle command switch is the most efficient and simple. This should be listed in editing mode on a status line. Wordstar certainly does this.

Macro functions are frequently useful for they allow the user to automate (by a 2 or 3 key command) often repeated phrases and functions. This ability to redefine the function keys to suit personal taste is found in more sophisticated WP.

A shared split screen of windows showing parts of other documents or parts of the same document, with the ability to transfer between them, is found in more recent WP and that is also very useful.

Multiple and chain printing of several files is worthwhile

in a WP. Boiler plate or standard document format as in a form letter or legal document (saved and retrieved at any time from disk) is necessary for most business uses.

WHAT TO LOOK FOR IN DOCUMENTATION

1. A Quick reference one-sided look-up sheet or card. This card or sheet should have all the command codes for easy reference.

2. The documentation should be easy to read. It should be easy to open to a page while you are trying out a particular task...friendly binding.

3. How to quickly have the program up and running with little setup time...basic editing, saving to disk, and printouts. The sooner you are using the software the more likely you will continue to use it in the future.

4. There should be a tutorial with 1 or 2 examples for every feature or command...again friendly binding.

5. How to easily install and in the future to reinstall (you may want variations of format, printouts, and more complexity easily available for all its features as you progress) the WP to do whatever activities are appropriate for your needs.

6. If the WP can do Macros, then this should be in a section that easily explains some of the features and variations that can be set up and saved for use now or later with both its strengths and limitations.

FINAL COMMENTS

As one can see, the computer market is vast, confusing, and lacking in standardization. If one has a home computer, as many readers of Softgold most likely do, then it is reasonable to have an overview of the future directions of home and business computing.

Many readers may be business persons that are considering the process of computerizing. The costs of any investment should be investigated in relation to the resulting productivity. Hopefully this article has given some insight into some of the aspects relating to this

process. Topics such as hard disks, efficient memory usage, creative computing, artificial intelligence, and programming, contain a wide variety of information that could not be included in this article. The attempt to squeeze in an overview of the industry and some future directions may be the best introduction to this rapidly expanding field of inquiry.

Those who wish to contact this writer-consultant can do so either through the publisher of this magazine or by phoning (PLEASE...ONLY PHONE WHEN CONSIDERING SPECIFIC BUSINESS TRANSACTIONS WITH M.P. CONSULTANTS) Canada (416)493-0514 and asking for Mark.

Future articles are possible depending on the Softgold Editor, the readership response, and myself.

I hope that this brief overview will help many readers in areas they wish to better understand. Since so many books are written on computers, the depth of detail must be limited in a single article.

Frequently, books neglect the approach of this article. Also, a magazine is capable of keeping its readership abreast of the most recent developments, which is hardly possible in books that are published. This is especially true in a changing industry such as computers.

May the readership of Softgold continue in its interest and enjoyment of this unique technological field.

Mr. Perlmuter is a technical writer, software reviewer, and computer consultant. He has consulted for various concerns including the international telecommunications trade show...Citex 87. His writings are published on a monthly basis, and he has appeared in several publications.

CONCENTRATION

MC-10

by Chris Deacon

This is a game for one to four players. The object of the game is to get as many pairs as possible. To turn a card just type in the card number. If the number is less than 10 press ENTER after typing in the number. If two cards match the player has another try. If the cards do not match the turn goes to the next player. The game ends when all the cards have been used and the player with the highest score wins. You will note that as the card is turned it is marked J-Jack, C-Clubs etc.

The Listing CONCENTR:

```
0 REM          CONCENTRATION
  BY CHRIS DEACON
1 REM
40 CLS2:PRINT@164,"NUMBER OF PLA
YERS 1 TO 4";
50 A$=INKEY$:IF A$<"1" OR A$>"4"
  THEN 50
60 NM=VAL(A$):GOSUB400
61 J=496-NM*4/2
65 FOR I=1 TO NM:LP(1)=J:J=J+5:PRIN
T@LP(1)-31,CHR$(48+1):NEXT
67 REM*****
140 FOR PL=1 TO NM:PRINT@396,"PLAYE
R"PL;
141 GOSUB150:D(1)=0:D(2)=0
```

```
143 IF MID$(C$(X),1,1)=MID$(C$(Y
),1,1) THEN GOSUB340:GOTO141
145 GOSUB275:NEXT:GOTO140
147 REM*****
150 FOR C=1 TO 2
155 B$=""
160 A$=INKEY$:B$=B$+A$
165 IF LEN(B$)>2 THEN 160
170 A=VAL(B$):IF A<10R=52 THEN 190
175 IF C$(A)="" THEN 190
176 D(C)=A:IF D(2)=D(1) THEN 190
177 GOSUB200:NEXT:X=D(1):Y=D(2)
180 FORDE=1 TO 600:NEXTDE:RETURN
190 SOUND155,2:GOTO155
195 REM*****
200 P=A(A):FOR Q=1 TO 2
205 PRINT@P,MID$(C$(A),Q,1);
210 P=P+32:NEXT:P=A(A):RETURN
215 REM*****
275 R=X:GOSUB280:R=Y
280 C$=MID$(STR$(R),2)
290 FOR I=1 TO LEN(C$)
300 C1=ASC(MID$(C$,I,1))
310 POKEL+R(1)+I*32,C1
320 IF R<10 THEN POKEL+R(2),32
330 NEXT:RETURN
335 REM*****
340 C$(X)="" :C$(Y)="" :Q=A(X)
350 PRINT@P," ";:PRINT@P+32," ";
:PRINT@Q," ";:PRINT@Q+32," ";
360 SC(PL)=SC(PL)+1
370 PRINT@LP(PL),SC(PL):GO=GO+1
372 IF GO<26 THEN RETURN
373 REM*****
374 PRINT@396," ";:PRIN
T@232,"ANOTHER GAME Y/N";
380 A$=INKEY$:IF A$="Y" THEN RUN
385 IFA$="N" THEN PRINT@0,"":END
```

```
387 GOTO 380
388 REM*****
400 CLS0:DIMR(52),C$(52):U=1
410 FOR J=4 TO 292 STEP 96
420 FOR I=0 TO 25 STEP 2
430 A(U)=J+1:U=U+1:NEXT:NEXT
435 REM*****
436 REM MOSES/OAKFORD SHUFFLE
440 FOR I=1 TO 52:READC$(I):NEXT
450 FORZ=52 TO 1 STEP-1:L=RND(2):K$
=C$(L):C$(L)=C$(Z):C$(Z)=K$:NEXT
465 REM*****
470 L=16352:M=16416:FORX=1 TO 52
480 C$=MID$(STR$(X),2)
490 FOR I=1 TO LEN(C$)
500 C1=ASC(MID$(C$,I,1))
510 POKEL+R(1)+I*32,C1
520 IF X<10 THEN POKEL+R(2),32
530 NEXT:NEXT:RETURN
535 REM*****
800 DATA AS,2S,3S,4S,5S,6S,7S,8S
,9S,TS,JS,QS,KS
810 DATA AH,2H,3H,4H,5H,6H,7H,8H
,9H,TH,JH,QH,KH
820 DATA AD,2D,3D,4D,5D,6D,7D,8D
,9D,TD,JD,QD,KD
830 DATA AC,2C,3C,4C,5C,6C,7C,8C
,9C,TC,JC,QC,KC
```

SET GRID

MC-10

by Chris Deacon

This is a 64 x 32 set grid for the 105 printer. The program mixes both the normal and graphics modes and takes time to print out the grid on the printer. The best idea is to run off one copy and then run some copies on a photocopier. This is an idea I have not tried. Beware! it will not print out on a TP10 printer.

The Listing SET GRID:

```
0 REM          64X32 SET GRID
  BY CHRIS DEACON
1 REM          105 PRINTER PROGRAM
2 REM
10 O=3:U=3
20 LPRINTCHR$(27);CHR$(29);CHR$(
27);CHR$(56)
40 FOR I=0 TO 63
50 IF I<10 THEN LPRINTTAB(U)"0";
:GOTO70
```

```
60 LPRINTTAB(U)MID$(STR$(I),2,1)
70 U=U+2:NEXT:LPRINTCHR$(15)
80 FOR I=0 TO 63
90 LPRINTTAB(O)RIGHT$(STR$(I),1)
100 O=O+2:NEXT:LPRINT" "
110 FOR T=0 TO 31
120 LPRINTMID$(STR$(T),2):LPRIN
T@2" "
130 FOR I=0 TO 63:LPRINTCHR$(245
);" ";:NEXT:LPRINT"1":NEXT
140 LPRINTCHR$(27);CHR$(19);CHR$(
14);CHR$(27);CHR$(54):END
145 REM*****
146 REM PRINTER CODES EXPLAINED
150 REM CHR$(27);CHR$(20)=133
CHARACTERS PER LINE
155 REM CHR$(27);CHR$(56)=3/4
FORWARD LINE FEED
160 REM CHR$(15)=UNDERLINING
165 REM*****
170 REM CHR$(27);CHR$(19)=NORMAL
80 CHARACTERS PER LINE
175 REM CHR$(27);CHR$(54)=FULL
FORWARD LINE FEED
180 REMCHR$(14)=ENDS UNDERLINING
```

Hint...

Timer - Australian Context

The use of the TIMER function can give a result in seconds, making it suitable to time operator response. Australia uses 50Hz Mains frequency, whereas in the U.S.A., 60Hz is used.

BASIC programs written for the American market use the (TIMER/60) function to approximate seconds. If this formula is used in Australian computers, slower times than normal will result.

You must convert the formula to (TIMER/50) to suit.

Kevin Gowan

INVADER MATHS

McWORD

MC-10

MC-10

by Bob Schecter

5723649



by Gregory Dennis

Here is a program I wrote for the MC10 which I hope may be of assistance to the young ones learning their maths.

You must answer 10 multiplication tests to compute the size of the laser grid needed to protect the city. There are full instructions included within the listing.

The Listing INVAMATH:

```
0 CLS:PRINT"invader maths"
1 PRINT"YOU HAVE FOURTY SECONDS
TO ANSWER TEN MULTIPLICATION SUM
S";
2 PRINT" THAT WILL COMPUTE THE S
IZE OF THE LASER GRID NEEDED TO
STOP THE LASER OF THE INVADER AB
OVE THE CITY";
3 PRINT" IF YOU ANSWER 4 OR LESS
WRONG THE COMPUTER WILL MANAGE
TO COMPUTE THE ONES YOU GOT WRO
NG";
4 PRINT" BUT IF YOU RUN OUT OF T
IME OR YOU ANSWER 5 OR MORE WRO
G THE CITY WILL BE DESTROYED"
5 INPUT"ENTER YOUR SKILL LEVEL (
1-5) ";A
6 IF A=1 THEN F=5:S=5
7 IF A=2 THEN F=8:S=8
8 IF A=3 THEN F=10:S=10
9 IF A=4 THEN F=12:S=12
10 IF A=5 THEN F=15:S=15
11 IF A>5 OR A<1 THEN 5
12 CLS
20 PRINT@13,CHR$(140);CHR$(140);
30 PRINT@44,CHR$(128);CHR$(128);
CHR$(177);CHR$(128)
40 PRINT@77,CHR$(128);CHR$(128)
50 PRINT@108,CHR$(136);" ";CHR$(
132)
60 PRINT@384,CHR$(140);CHR$(140)
;CHR$(140);CHR$(140);CHR$(140);"
";CHR$(140);CHR$(140);" ";CHR
$(128);CHR$(128);" ";
61 PRINTCHR$(140);CHR$(140);CHR$(
140);CHR$(140);" ";CHR$(133);"
";CHR$(140);CHR$(140);CHR$(140);
CHR$(140);" ";CHR$(140)
70 PRINT@416,CHR$(140);CHR$(140)
;CHR$(140);CHR$(140);CHR$(140);"
";CHR$(128);CHR$(168);CHR$(168)
;CHR$(128);" ";
71 PRINTCHR$(196);CHR$(200);" ";
CHR$(138);CHR$(150);CHR$(150);CH
R$(128);CHR$(128);CHR$(128);CHR$(
128);
72 PRINTCHR$(140);CHR$(140);CHR$(
140);CHR$(140);" ";CHR$(163);C
HR$(163);CHR$(163)
80 PRINTCHR$(128);CHR$(128);CHR$(
128);CHR$(128);CHR$(128);" ";CH
R$(128);" ";CHR$(128);CHR$(128);
" ";CHR$(128);CHR$(128);" ";
81 PRINTCHR$(128);CHR$(128);CHR$(
128);CHR$(128);CHR$(128);" ";CH
R$(128);CHR$(128);CHR$(128);CHR$(
128);CHR$(128);" ";
82 PRINTCHR$(128);CHR$(128);CHR$(
128)
100 C=0:E=0
110 FOR L=1 TO 10
120 O=RNDC(F)
130 T=RNDC(S)
131 IF T=1 OR O=1 THEN 120
140 PRINT@48,0;"X";T;"=";
141 SUM=0*T
142 A$=INKEY$:IFA$=""THEN E=E+1:G
OTO 142
143 IF E>4313 THEN GOTO 1000
145 INPUT AN
151 IF SUM=AN THEN PRINT@80,"RIG
HT!";SOUND 10,4
152 IF SUM<AN THEN PRINT@80,"WR
ONG!";SOUND10,4:SOUND5,4:C=C+1
153 IF C=5 THEN 1000
160 NEXT L
170 CLS:PRINT" YOU SAVED THE CIT
Y"
171 PRINT" YOU ARE A HERO":FO
R T= 1 TO 30:SOUND T,1:NEXTT
172 FOR L=1 TO 4000:NEXT L
173 GOTO 2030
1000 FOR T=139 TO 447 STEP 32
1010 FOR Y= 0 TO 1
1020 PRINT@T,CHR$(128);CHR$(128)
;CHR$(128);CHR$(128);CHR$(128);C
HR$(128)
1030 SOUND RND(128);1
1040 NEXT Y
1050 NEXT T
1060 CLS(0)
1070 FOR T= 1 TO 100
1080 X=RNDC(63)
1090 Y=RNDC(31)
1100 C=RNDC(8)
1110 SET(X,Y,C)
1120 NEXT T
1130 PRINT@205,"BANG"
2000 FOR T=1 TO 4000:NEXTT
2010 CLS
2020 PRINT"THE CITY WAS DESTROYE
D"
2030 PRINT:PRINT:INPUT"DO YOU WA
NT TO PLAY AGAIN (Y/N) ";A$
2040 IF A$="Y" OR A$="YES" THEN
RUN
2050 IF A$="N"OR A$="NO" THEN PR
INT"BYE FOR NOW":END
2060 GOTO 2030
3000 REM INVADER MATHS BY GREG D
ENNIS 1986
```

I have just recently received my copy of the MCWORD 2 word processor together with the manual of instruction for the MC10 from Bob Schecter and Mike Fahy in the USA.

Being impatient and not overbright, I had to insert the cassette in the recorder and try it out immediately without reference to the manual. Consequently, being as thick as a brick, I was soon in trouble.

Then common sense prevailed and I went to the manual, to the quick start page, and then things started to fall into place.

Showing a great deal of self control, I stopped and read the manual properly, particularly the tutorial section, and found that there was really nothing to it. I could operate MCWORD 2 as a word processor!!

This program, coupled with the MC10 really puts the little machine up there with the big ones in a class of its own. There are a number of commands to learn but as the word processor is used these become automatic.

The cursor control is complete and EDIT commands allow very fast deletion or insertion of text. Scrolling is allowed up or down and sideways with a 1 to 9 speed control.

Text can be SAVED to tape and reloaded in a smooth manner as is the text formatting.

At this early stage of my experimentation I find that it is a most simple and most effective word processor and there would still be a great many features which I have yet to discover.

The program has been written in 100% 6803 M/L and the smoothness of operation of the whole of the functions can only be described by personal application.

Warranty and Backup are are fully provided and will be completely covered by

Bob Schecter
RD #1 Box 127A
Cherry Valley
NY 13320 USA

PUBLIC DOMAIN SOFTWARE

(The opinions expressed in this article are not those of the publishers of this magazine.)

Hi my name is John Archer and I would like to explain the concept of Public Domain and User Supported Software.

This Software is often referred to as Free Software. This is not strictly true, as in fact, donations are asked for this software - but, I am getting ahead of myself!

Due to the fact that software prices are continually rising, and in some cases getting out of hand, for example one Computer Aided Design package that runs on the IBM PC/XT now costs \$20,000!

Now I agree that a computer is only as good as the Software that runs on it, however, to pay \$1500 for the computer and \$20,000 for 1 program to run on it, seems to me to be a little out of whack.

To be fair, not all of the price is added on by the shop where you buy your software. Some of it comes from the programmer(s); some of it comes from the software house they sell it to; some of it comes from the people who sub-contract from the software house to supply other software houses; some of it comes from the development and implementation of copy protection methods; some of it comes from the government (who take a slice from everything, including the computer); some of it comes from various middlemen (which interact in all of the above processes); not forgetting of course the advertising campaign to get potential buyers interested and last but not

least, some of it comes from the shop or salesman where you buy your software.

So all in all, the price you pay for your software has to pay an awful lot of people, and all these people have their own expenses to cover as well as having to make enough profit to actually make some money to live on.

The people that started Public Domain realised that while the software started as a well priced item, usually worth the amount that the programmer was asking, the end price when the software had travelled through the system was much too high. The question now was to look at where best the system could be streamlined so that the software would go through less processes to reach its end destination.

The next obvious step was to look at taking out the processes in the system that could be left out. These would be:

Software House - but an alternative required Middle men - they never were really needed.

Copy Protection - its expensive and only inconveniences the real user.

Advertising - Where most of the costs come from.

Shop/Salesman - Are they required at all times?

Looking at the above list of criteria, with the exception of Copy Protection, all of the above can be deleted simply by getting an alternative method of distribution.

The method that was selected was to give the software away free of charge and let the software sell itself. This was achieved by distributing the

software through the Bulletin Board Systems and Public Domain copy houses (with strict rulings on prices).

This method created a few problems of its own as well as leaving one of the original problems still unaddressed.

In fact there were three problems still to be adequately resolved:

Copy Protection - Its expensive and only inconveniences the real user.

Payment - How to receive it.

Manuals - How to supply them.

In turn these were solved by:

Copy Protection - remove it entirely. As copy protection only inconveniences the real and honest user of a program. The ones that copy protection is supposed to stop, it never does, so why go to the expense? (Bull! G.)

Payment - Due to the distribution method, ask the honest user for a donation, if they think the software is worth it. (Ha! G.)

Manuals - Put the instructions for the program on the disk with the program (maybe in a shortened version) and include the price of a bound manual (the same sort that you receive with normal marketed software) within the recommended price or donation.

So to sum all the above up, you can see that public domain and user supported software is not cheap and nasty software, it is a whole new concept on how to supply software to the people who would buy it anyway. Only at a better price!

However like all systems, it has its flaws.

Some of the programs that
continued on page 43

COME TO at Bundeena



Conf '87 this year is to be held at the Uniting Church's campsite in Bundeena NSW.

This is a particularly pretty area of Sydney, situated on the northern tip of the Royal National Park, in Port Hacking.

The water views are fabulous, and the bushwalks are amongst the best in Australia.

Not that you'll have anytime during conference for these things, because as usual, the conference will be jam packed with all sorts of things to see and do!

The big news this year will obviously be the growing use of OS-9 Level 2 on the CoCo 3's; and Conf '87 will be the definitive place to see this excellent system.

By that time initial users will have had time to sort the system out and create some really interesting stuff.

But it is not just OS-9 that is of interest this year.

With the release of the new T1000 EX and SX, interest in these machines has never been higher. We'll have a number of these computers at the conference, as well as their big brothers, the T3000 series, which we'll be putting through their paces.

We've had continuing interest in some of the more diverse subjects covered in the magazine at past conferences, so again this year we'll have tutorials on hardware mods and on Forth.

There'll be Basic Basic and Advanced Basic courses, and an Assembly Language tutorial as well.

Other computers will be discussed, principally the 68000 series of computers, and of course, we'll be showing Goldlink 642 on Viatel - and Videotex in general.

Conference is a place to meet old friends, to meet the people behind the names in the magazine, to learn a lot of new

information, to see the latest Tandy equipment.

We hope you'll come. We're sure you'll be glad you did. But please hurry your booking, because accommodation (which is not obligatory) and places at the conference, are both limited by the size of the centre.

The cost is increased over previous years due entirely to the fact that we are doing it in Sydney which is a good deal more expensive than the Gold Coast!

On the other hand, many of you will save by not having the additional travelling expenses associated with getting to the Gold Coast.

We aim to make the conference a family affair, and the location is a good one for people with families who are less interested in computers, but who would still like to be with dad or mum for the weekend.

The family can take a ferry trip, go for bush walks, or just laze on the beach, whilst you do your thing at the conference.

CONF '87

na N.S.W.

CONF '87

Rates

Accommodated (1) \$87.00

Family of 2, + \$68.00 = \$155.00

Additional family members \$52.00 ea

Includes supper Friday evening, breakfast
lunch and dinner on Saturday and breakfast
and lunch on Sunday plus all accommodation.

Non Accommodated Rates

	One day	Two Days
One person	\$40.00	\$58.00
Sat Evening Meal	\$12.00	\$12.00
	=====	=====
	\$52.00	\$70.00

Additional family \$31.50 \$45.50 /person
Includes morning / afternoon tea and lunch.

\$20.00 deposit required with booking;
final payment to be made by 15th July 1987.

LOCATION:-

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Bundeena NSW

DATE:- 8th & 9th August, 1987

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We can only accept a limited number of
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top weekend of FUN, FRIENDSHIP and
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SPEAK UP!:- Now is your chance to
suggest your ideas for any tutorials we
may not have mentioned. (participants
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Tutorials likely to attend:

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Signature:

The Morning News



32K ECB
EDUCATION

by Dean Hodgson

REMEMBER THE infamous "morning talks" at school? The time when you had (or wanted) to get up in front and tell all the kids your latest news? This program -- "The Morning News" -- is a new twist on that idea.

In addition to the traditional morning talks, or instead of them, kids can now type into the computer their news item. And when all the day's news has been typed in, it can be printed out.

Morning News (MN) was first written on a Commodore 64. It then translated it onto an Amstrad and finally to the Colour Computer.

The program is a good example of what I call a worthwhile piece of software without the icing. The screen display is actually quite dull. But the program does something useful. It is very popular amongst teachers and children, especially the lower grades.

What the program does is allow children to enter up to 6 screen lines of news. MN can hold as many as 30 different news items (roughly a class size).

The program requires Extended Colour Basic, and is mainly intended for use on a computer set up within the classroom. With some careful planning it could be used on a network as well, provided the satellites had ECB. MN might also have some use at home.

Teachers have used MN as an additional classroom "news" outlet, as an introduction to

word processing for young children, as a means of reporting on sports events and many other things. The program's actual use will depend on how you want to use it.

If there is no printer attached to your classroom computer, the data can be saved to disk or tape then reloaded into a machine that does have a printer.

HOW TO USE THE PROGRAM

The program first starts with a simple title screen, pauses, then shows the menu.

There are only five options shown on the menu:

- 1 - WRITE
- 2 - PRINT
- 3 - SAVE
- 4 - LOAD
- 5 - END

What they do is fairly clear from the word shown. In addition, there is also a special teacher option not shown and discussed later.

WRITE

This is the guts of the program.

You are first shown a list of numbers from 1 to 30. Each represents a "news storage box" into which your news item can be stored. Type the number you want to use then press Enter.

Next, type in your first name and press Enter again.

You can now type in your news item.

This part is actually a mini text-editor and has been used by some teachers as a vehicle for introducing children to word processing. There is no word wrap feature (extremely difficult to add this into a BASIC program), but what is written is printed out EXACTLY how it appears on the screen.

Things written can be edited.

The LEFT ARROW key will backspace and rub out the character appearing to the left of the cursor. This is normal.

The cursor can be moved anywhere within the 6-line block by holding down a SHIFT key and pressing an ARROW key at the same time. If the cursor gets to the top left or bottom right corner it will wrap around to the opposite corner. It will not do this if you are typing, however.

There is no typeover. Typed letters are automatically inserted into a line -- e.g. letters to the right are pushed right and the typed letter put in. This prevents children from accidentally typing over top of something. They have to deliberately erase mistakes.

Unfortunately, the older Colour Computers do not have built in a lower case text display. Therefore, lower case letters are shown as reverse upper case (light green on dark green background). Upper case is available normally...by holding down SHIFT and pressing the

letter. If you have a newer CoCo, you may be able to modify the program to get a true lower case.

There are two ways to erase letters.

Pressing the LEFT ARROW will cause a backspace and all the characters from the cursor right to move left. (Remember there is no word wrap so text will not move from one line to another.)

The other is to put the cursor directly over the character you want to erase, and to press the CLEAR key clearing out the character. Text will move left to tidy up the line.

Finally, the ENTER key will cause the cursor to jump down to the start of the next line.

When the news item has been typed in, you have to hold down SHIFT and press CLEAR to get back to the menu.

If you select the WRITE option again, you will see your name listed next to the storage box number you picked. This indicates there is news in that box. You can select the same number again if you want to make changes to your news.

ESCAPE

One very important feature of educational & most computer software should be a mechanism where you can escape from something. Say, you pressed 4 for LOAD when you really wanted to SAVE.

In MN the CLEAR key acts as the Escape key and in most cases will get you back to the menu. You can also get back by not typing anything and pressing ENTER.

PRINT

"Morning News" will test to see if a printer is attached and if so will print out all the news items in the file.

News is printed in double-width size letters with true lower case replacing the reverse uppers shown on the screen.

The printer setup employed to get double width is that used by Epson and Epson compatible printers. If you are using a Tandy printer, you will have to change the code in line 560. To trigger double width, change it to read `A1$=CHR$(31)` and to switch double width off, change the other to `A0$=CHR$(30)`.

SAVE

You can save either to tape or disk.

There is no prompt for saving

to tape, so make sure the tape and recorder are ready before pressing ENTER after the filename.

For disk, do not type an extension to the filename. MN uses the .NWS extension.

You can get a disk directory displayed by typing DIR when asked for the filename.

Pressing the CLEAR key will return you to the menu.

Note that only those storage boxes having news items will be saved. If there are blanks between numbers, they are not saved.

The disk file is in ASCII contains two variables for each news item: `NM$(x)` the name and `MW$(x)` the news item (192 bytes long).

LOAD

Load is similar to SAVE with the same options.

If disk is selected the Load option tests to see if the file asked for is actually on the disk. This is done by looking at the disk directory and setting the variable FLAG.

END

This simply clears the screen and quits. The program issues a `PCLEAR1` at the start so if you intend to load another program you may have to reset this.

TEACHER OPTION

Not shown on the menu is a special option available by pressing * (that is SHIFT :).

This option is only for Colour Computers with disk drives. It displays the disk directory and allows any file to be erased. You must type in the full filename to erase, including the extension.

PROGRAMMING NOTES

Lines 10-95 are special subroutines I have developed. Feel free to pinch and use these in your own programs, including publishing them in CoCoOz. (If you do, please give an acknowledgement of their source.)

Here's a brief description:

10 INKEY\$ A\$. Blinks cursor. Waits for keypress.

15 INKEY\$ A\$. No cursor. Waits for keypress.

20 INPUT/EDIT I\$. This is a powerful string variable editing procedure. It allows you to specify the maximum size a user

is allowed to input then allows the user to both type in and even edit their text. To use the routine set LX equal to the maximum allowed length then `GOSUB 20`. The result comes back in variable I\$.

In addition, if you put a variable into I\$, set LX and call `GOSUB 21`, it will display the variable and allow you to edit it.

Editing controls are nearly the same as the editor in Morning News. Hold SHIFT and press an arrow to move the cursor. LEFT ARROW on its own backspaces. SHIFT & CLEAR delete the character under the cursor and CLEAR on its own acts as an escape character. There is no typeover. Characters are inserted. Pressing ENTER terminates the routine.

30 PRINTER ON-LINE TEST. Sets variable PT=0 if on-line. To use simply `GOSUB 30` then IF PT THEN printer not ready.

35 Bad keypress sound. Used by subroutine 20.

40 PRINT A\$ IN CENTRE OF CURRENT LINE.

50 LOCATE CURSOR AT COORDINATE X,Y. Returns P9 as cursor `PRINT@` position. To use set X=0 to 31 and Y=0 to 15 then `GOSUB 50`.

52 RETURN CURSOR POSITION IN X AND Y. Opposite of subroutine 50. P9 is screen position in the `PRINT@` system.

55 RETURN CURSOR POSITION. Returns P9 as screen position (`PRINT@` scale), PX as cursor's location in memory and CX as screen code of character under cursor.

60 PRESS SPACEBAR TO CONTINUE subroutine.

70 CLEAR TEXT WINDOW. Another useful routine. This one lets you clear out a rectangular block on the text screen to a specified colour. To use set P1 as the `PRINT@` coordinate of the upper left corner of the box and P2 as the lower right corner. Set variable CX equal to the colour you want the box cleared then `GOSUB 70`.

80 YES/NO INPUT. Used when a Yes/No input is required. Returns Y or N in variable I\$.

82 Y/N input. Similar to 80 but does not need an ENTER press to continue.


```

90 FILE EXISTS TEST. This
routine tests to see if filename
IS is on a disk. If it is, it
sets FLAG=0.
If not FLAG=-1. IS must be 12
characters long with the last
three being the extension. Do
not include the full stop. Pad
with blank spaces if necessary
(see routine at 7000 for
example).
100 MENU

230 WRITE TEXT (CALLS 5000 &
700)

520 PRINTOUT TEXT

660 QUIT

```

```

700 EDIT TEXT SUBROUTINE
(CALLS 800)

800 INSERT TEXT INTO STRING
SUBROUTINE

1000 INITIALIZE PROGRAM
Note line 1025. This contains
the name of the program. If you
want another name (like "The
Yankalilla Daily News") then
change this line. Make sure the
name is less than 31 characters
long. This line was included
like this for this purpose.

2000 SAVE NEWS AS A FILE
DV is device number. -1 is
cassette and 1 is disk.

```

```

3000 LOAD NEWS FILE
Note FILE EXISTS test
(GOSUB7000) for disk.

5000 DISPLAY STORAGE BOXES
SUBROUTINE

6000 ERASE FILES FROM DISK

7000 FILE EXISTS TEST
SUBROUTINE. (CALLS 90)

60000 SAVE PROGRAM TO DISK.
I usually include 60000 in
most of my programs as it makes
saving to disk easier. All I
have to do is GOTO60000 at any
time.

```

The Listing:

```

1 GOTO61000
2 '***** NEWSTIME *****
   **** DEAN HODGSON *****
3 SAVE"138:3":END
9 ' === INKEY$ A$ =====
10 GOSUB55:A$="":IFCX=128 THENPO
KEPX,96
11 IO=0:POKEPX,(NOT(PEEK(PX))AND
64)OR(NOT(64) AND PEEK(PX))
12 IO=IO+1:A$=INKEY$:IFAS<>"THE
NPOKEPX,CX:PLAY"T25505C":RETURN
13 IFIO<12THEN12 ELSE11
14 ' === INKEY$ A$ NO CURSOR =
15 AS=INKEY$:IFAS=""THEN15 ELSE
RETURN
19 ' === EDIT VARIABLE IS ===
20 IS=""
21 PRINTIS:GOSUB55:PP=1:P9=P9-L
EN(IS):PRINTP9,,:PQ=P9:E9$=CHR$
(CX):IFE9$=CHR$(96)THENE9$=""
22 GOSUB10:IFAS=CHR$(13)ORAS=CHR
$(12)THENRETURN
23 IFAS=CHR$(8)THENIFLEN(IS)<10R
PP=1THENGOSUB35:GOTO22 ELSE PRI
NT@P9-1,MID$(IS,PP):E9$:PRINT@P
9-1,,:IS=LEFT$(IS,PP-2)+MID$(IS,
PP):PP=PP-1:GOTO22
24 IFAS=""THENIFLEN(IS)<10RPP>L
EN(IS)THENGOSUB35:GOTO22 ELSEPRI
NT@P9,MID$(IS,PP+1):E9$:PRINT@P
9,,:IS=LEFT$(IS,PP-1)+MID$(IS,PP
+1):GOTO22
25 IFAS="" THENIFPP<33THENGOSUB3
5:GOTO22 ELSEPP=PP-32:P9=P9-32:P
RINT@P9,,:GOTO22
26 IFAS="{ "THENIFPP>LEN(IS)-31TH
ENGOSUB35:GOTO22 ELSEP9=P9+32:PP
=PP+32:PRINT@P9,,:GOTO22
27 IFAS=CHR$(21)THENIFPP=1THENGOS
UB35:GOTO22 ELSEPP=PP-1:P9=P9-1
:PRINT@P9,,:GOTO22
28 IFAS="|"THENIFPP>LEN(IS)THENG
OSUB35:GOTO22 ELSEP9=P9+1:PP=PP+
1:PRINT@P9,,:GOTO22
29 IFAS<" "ORLEN(IS)>LX THENGOS
UB35:GOTO22 ELSE PRINTAS,MID$(IS
,PP),:PRINT@P9+1,,:IS=LEFT$(IS,P
P-1)+AS+MID$(IS,PP):PP=PP+1:GOTO
22
30 PT=PEEK(&HFF22)AND 1:RETURN:
PRINTER ONLINE TEST. PT=0 IF O
N LINE
34 ' === BAD KEYPRESS SOUND ==

```

```

35 PLAY"T255L2V3003CDEFG":RETURN
39 ' === CENTRE A$ =====
40 GOSUB55:PRINT@((INT((32-LEN(A$
))/2)+INT(P9/32)*32),A$):RETURN
49 ' === LOCATE X,Y =====
50 P9=X+Y*32:PRINT@P9,,:RETURN
51 ' === X,Y FROM ?@ =====
52 Y=INT(P9/32):X=P9-Y*32:RETURN
54 ' === GET CURSOR LOCATION ==
55 PX=PEEK(136)*256+PEEK(137):P9
=PX-1024:CX=PEEK(PX):RETURN
59 ' === PRESS SPACEBAR =====
60 PRINT"PRESS SPACEBAR TO CONTI
NUH"
61 IFINKEY$<>" "THEN61ELSE RETUR
N
69 ' === CLEAR WINDOW =====
70 P9=P1:GOSUB52:X9=X:Y9=Y:P9=P2
:GOSUB52:X8=X:Y8=Y:CX=16*CX+127:
IFCX=127THENCX=128
71 PRINT@P1,,:X=X9:LX=X8-X9+1:FO
RY=Y9 TO Y8:GOSUB50:PRINTSTRING$
(LX,CX):NEXTY:RETURN
79 ' === YES/NO INPUT =====
80 LX=3:GOSUB20:IS=LEFT$(IS,1):I
FINSTR("YNyn",IS)THENRETURN ELSE
PRINT@PQ," "":PRINT@PQ,,:GOTO8
0
81 POKE282,255:GOSUB55:GOSUB10:I
FA$<>"Y"ANDAS<>"N"THEN81 ELSEPRI
NTAS:RETURN
89 ' === TEST FOR DISK FILE ==
90 X=3
91 DSK1$ 0,17,X,A$,B$:N=0:C$=A$+
LEFT$(B$,127)
92 N$=MID$(C$,N+32+1,11):IFN$=IS
THENFLAG=0:RETURN
93 N=N+1:IFN<8THEN92
94 X=X+1:IFX<12THEN91
95 FLAG=-1:RETURN
99 ' === MAIN MENU =====
100 CLS4
120 X=0:Y=2:GOSUB50:A$=NN$:GOSUB
40
130 Y=4:GOSUB50:A$="choices":GOS
UB40
135 X=11
140 Y=6:GOSUB50:PRINT"1 - WRITE"
;
150 Y=7:GOSUB50:PRINT"2 - PRINT"
;
160 Y=8:GOSUB50:PRINT"3 - SAVE "
;
162 Y=9:GOSUB50:PRINT"4 - LOAD "
;
165 Y=10:GOSUB50:PRINT"5 - END

```

```

";
170 Y=13:GOSUB50:A$="PLEASE PRES
S (1-5)":GOSUB40
180 GOSUB15
185 IFAS=""*THEN6000
190 ON VAL(A$) GOTO240,530,2000,
3000,660
200 GOTO180
230 ' === WRITE NEWS =====
240 GOSUB5000:IFAS=CHR$(12)THEN1
00
250 CLS:POKE282,255:PRINT@96,"WH
AT IS YOUR NAME?":PRINT"JUST PRE
SS enter [F OK.":PRINT@160,,:LX=
19:IS=NN$(C):GOSUB21:IFIS=""OR A
$=CHR$(12)THEN100
260 X$=IS:TT$="NEWS ITEM BY "+X$
:AT=TT$
270 CLS0:Y=1:X=0:GOSUB50:GOSUB40
280 Y=4:GOSUB50:PRINT" PLEASE TY
PE IN YOUR NEWS ITEM"
290 PRINT@192,STRING$(32,175);
300 PRINT@416,STRING$(32,175);
310 AS="PRESS shift+clear WHEN F
INISHED":GOSUB40
315 PRINT@224,STRING$(192,32);
320 IS=NN$(C)
330 GOSUB 700
340 IFIS="" AND KX=C THEN KX=KX-
1:X$=""
350 NN$(C)=IS:NN$(C)=X$
360 GOTO100
520 ' === PRINT OUT =====
530 CLS
532 GOSUB30:IF PT THENPRINT"PRIN
TER NOT READY.":PRINT:GOSUB60:GO
TO100
535 PRINT"WHAT IS TODAY'S DATE?"
:PRINT:LX=20:GOSUB20:IFA$=CHR$(1
2)ORIS=""THEN100ELSEDT$=IS
536 CLS
540 X=0:Y=6:GOSUB50:A$="PRINTING
":GOSUB40
560 A1$=CHR$(27)+CHR$(87)+CHR$(1
):REM EPSON DOUBLE WIDTH COMMAND
. USE A1$=CHR$(31) FOR TANDY LP
7 & DMP-100 PRINTERS
565 A0$=CHR$(27)+CHR$(87)+CHR$(0
):REM EPSON DOUBLE WIDTH OFF COM
MAND. USE A1$=CHR$(30) FOR TAND
Y PRINTERS
570 PRINT#-2,A1$:NN$
580 PRINT#-2,"for ";DT$
590 FOR I=1 TO KX:IFNM$(I)=""ORN
M$(I)=STRING$(192,32)THEN630
600 PRINT#-2,A0$:STRING$(80,"=")

```



```

610 PRINT#-2,A1$;:FORK=1TO6:PRIN
T#-2,MID$(NWS(1),K*32-31,32):NEX
TK
620 PRINT#-2,"Reporter; ";NM$(1)
;A0$:PRINT#-2
630 NEXTI
640 PRINT#-2,A0$;STRING$(80,"")
650 PRINT#-2
655 GOTO100
659 ' === ENDING =====
660 CLS:PRINT"ARE YOU SURE? ";:G
OSUB81:IFAS="Y" THENEXECO
670 GOTO100
699 ' === EDIT NEWS ITEM =====
700 POKE282,0:PRINT224,I$;
705 P9=224:PRINT224,;:FORI=1TO6
:IFIS<>"" THENAS(I)=MID$(I$,I*32-
31,32) ELSE AS(I)=STRING$(32,32)
706 NEXT
710 PRINTP9,;:GOSUB52:Y=Y-6:X=X
+1:GOSUB10:IFAS="" THENIS="":FOR
I=1TO6:IS=I$+AS(I):NEXT:POKE282,
255:RETURN
712 IFAS$=" " AND(INSTR("[]"+CHR
$(21)+CHR$(8)+"\ "+CHR$(12),AS$)=0
) THEN GOSUB800:GOTO710
715 IFAS=CHR$(12) THENAS(Y)=LEFTS
(AS(Y),X-1)+MID$(AS(Y),X+1)+" ":
PRINTMID$(AS(Y),X);:PRINTP9,;:G
OTO710
720 IFAS=CHR$(8) ANDX>1 THENAS(Y)
=LEFT$(AS(Y),X-2)+MID$(AS(Y),X)+
" ":P9=P9-1:PRINTP9,MID$(AS(Y),
X-1);:GOTO710
725 IFAS=CHR$(8) THENAS=CHR$(21)
730 IFAS$=" " ANDY<1 THENP9=P9-32:G
OTO710
735 IFAS$="[" ANDY<6 THENP9=P9+32:G
OTO710
740 IFAS=CHR$(21) THENIFP9>224TH
ENP9=P9-1:GOTO710 ELSE P9=415:GO
TO710
750 IFAS$="]" THEN IF P9<415 THEN
P9=P9+1:GOTO710 ELSE P9=224:GOTO
710
762 IFAS=CHR$(13) ANDY<6 THENX=0:Y
=Y+7:GOSUB50
770 GOTO710
799 ' === INSERT CHARACTER =====
800 IFX=32 THENMID$(AS(Y),X,1)=AS
:PRINTAS;:GOTO830
810 IFX=1 THENAS(Y)=AS+LEFT$(AS(Y
),31):PRINTAS(Y);:GOTO830
820 AS(Y)=LEFT$(AS(Y),X-1)+AS+MI
D$(AS(Y),X,32-X):PRINTMID$(AS(Y)
,X);
830 IFP9=415 THENGOSUB35:RETURN

```

```

840 P9=P9+1:RETURN
999 ' ==== INITIALIZE =====
1000 CLS3
1010 CLEAR8000
1020 DIM NM$(30),NWS(30),AS(6):K
X=0
1025 NN$="THE MORNING NEWS"
1030 X=0:Y=5:GOSUB50:AS=NN$:GOSU
B40
1040 Y=10:GOSUB50:AS$="BY DEAN HO
DGSON":GOSUB40
1050 Y=Y+1:GOSUB50:AS$=" JANUARY,
1987 ":GOSUB40
1060 FORI=OTO2000:NEXT
1070 GOTO100
1999 ' === SAVE DATA =====
2000 CLS:IFKX<1 THENPRINT"THERE I
S NO NEWS TO SAVE.":GOSUB2500:GO
TO100
2010 GOSUB2600
2012 CLS
2015 PRINT"FILENAME FOR SAVING?"
2016 LX=8:GOSUB20:IFIS$="" ORAS$=CH
R$(12) THEN100
2017 IFINSTR(".",IS) OR INSTR("
",IS) OR INSTR("/",IS) OR INSTR(
",",IS) THEN PRINT"*BAD FILENAME
. TRY AGAIN*":GOTO2015
2018 IFIS$="DIR" THENCLS:DIR:PRINT
STRING$(31,45):GOTO2015
2020 IF DV=1 THEN IS=I$+"NWS":V
ERIFYON
2040 OPEN"O",#DV,I$
2050 I=1
2060 IFNM$(I)="" THEN2080
2070 PRINT#DV,NM$(I):PRINT#DV,NW
$(I)
2080 IFI<KX THENI=I+1:GOTO2060
2090 CLOSE:GOTO100
2500 PRINT:GOSUB60:RETURN
2599 ' === SELECT TAPE OR DISK
2600 PRINT"TAPE OR disk? ";
2610 GOSUB10:IFAS<>"T" ANDAS<>"D"
THEN2610
2620 IFAS$="T" THENDV=-1 ELSE DV=1
2630 RETURN
2999 ' === LOAD NEWS =====
3000 CLS:GOSUB2600
3010 CLS
3012 PRINT"FILENAME TO LOAD:"
3015 LX=8:GOSUB20:IFIS$="" ORAS$=CH
R$(12) THEN100
3017 IFINSTR(".",IS) OR INSTR("
",IS) OR INSTR("/",IS) OR INSTR(
",",IS) THEN PRINT"*BAD FILENAME
. TRY AGAIN*":GOTO3012
3018 IFIS$="DIR" THENCLS:DIR:PRINT

```

```

STRING$(31,45):GOTO3012
3019 FORI=OTO30:NWS(I)=""NM$(I)
=""NEXT
3020 GOSUB7000:IFFLAG THEN100
3030 IF DV=1 THEN IS=I$+"NWS"
3040 OPEN"O",#DV,I$
3045 I=0
3050 IF EOF(DV) THEN 3080
3060 I=I+1
3070 LINEINPUT#DV,NM$(I):LINEINP
UT#DV,NWS(I)
3075 IFI<30 THEN3050
3080 KX=I
3090 CLOSE:GOTO100
4999 ' === STORAGE BOXES =====
5000 CLS7
5010 X=0:FORY=OTO14
5020 GOSUB50:PRINT Y+1,TAB(5);
5030 PRINTLEFT$(NM$(Y+1),10);
5040 NEXT
5050 X=16:FORY=OTO14:I=Y+16
5060 GOSUB50:PRINTI,TAB(20);
5070 PRINTLEFT$(NM$(I),10);
5080 NEXT
5090 Y=15:X=0:GOSUB50:PRINT"USE
WHICH STORAGE BOX? ";
5100 LX=2:GOSUB20:IFIS$="" ORAS$=CH
R$(12) THENRETURN
5110 C=VAL(I$):IFC<1 OR C>30 THE
N GOSUB35:PRINTSTRING$(LEN(I$),8
);:GOTO 5100
5115 IFC>KX THENKX=C
5120 RETURN
5999 ' === ERASE DISK FILES ==
6000 CLS:DIR:PRINTSTRING$(31,45)
6010 PRINT"ERASE WHICH FILE?":PR
INT"PRESS clear FOR MENU."
6020 LX=12:GOSUB20:IFIS$="" ORAS$=C
HR$(12) THEN100
6030 KILL I$:GOTO6000
6999 ' === TEST FOR FILE =====
7000 IFDV<0 THENFLAG=0:RETURN ELS
E F$=I$:IS=I$+STRING$(8-LEN(I$),
32)+"NWS"
7005 GOSUB90:IFFLAG=0 THENI$=F$:
RETURN
7010 PRINT:PRINT"file not found.
":PRINT:GOSUB60:RETURN
59999 STOP:' ==== SAVE PROGRAM =
====
60000 PRINT"SAVING NEWS TIME":VE
RIFYON:SAVE"NEWSTIME.BAS":END
61000 PCLEAR2:GOTO1000

```

PUBLIC DOMAIN SOFTWARE

from page 37

appear on the system are first programming attempts that have no use or value to anyone apart from the person who wrote them! This is unfortunate but to my mind is well worth the extra trouble for all the added advantages of the system.

What are those advantages? Well, good quality software at realistic prices, a try before

you buy concept of software, a large amount of software that I can use on my own machine.

If I then pay the recommended price for the software, I usually get a bound manual and support that is every bit as good as any software that I could pay \$1000 and up for, but I only pay a tenth of the price or less.

Also a few of the Public Domain and User Supported libraries are now pre-sorting all of the programs into useable disks and taking out all of the garbage programs, so that what you get is good quality software to look at.

One of these is Quality Computer Services, Public Domain Dept of 21 Severnlea st, Murarrie 4172, who have an excellent range of this software. If you are at all interested in the concept I would strongly suggest you give them a call or write to the address above and ask for the latest offerings. Until the next time I put electricity to paper, bye for now.

CATTLE BARON

32k ECB
SIMULATION



by John Day

The Listing:

CATTLE BARON IS A thirty two square board game I originally wrote on and for my MC-10. It was published in the MiCo section of Australian Co-Co in Vol.1 No.9, May, 1985, along with my unfortunately necessarily lengthy description of the program and I have, due to pressure of those around me, just finished converting it to run on CoCo.

Apart from the game being interesting, the program itself as a skeleton for ANY board game which uses squares around it, and random "chance" cards, has a great deal of promise.

When I wrote the original, I was all fired up with enthusiasm!

Naturally, when the feedback I asked for in the original publication totalled a big fat silence, I lost the greater part of that enthusiasm, and have not completed even one of these projects, so perhaps someone else might like to take up that cause.

Anyway, have fun with Cattle Baron!

```

1 'TOKENS AMENDED EXCEPT STOCK
  SALE GRAPHICS 1049-1089
2 GOTO10
3 SAVE"180:3":END
4 '
5 ' CATTLE BARON, A BOARD
6 ' GAME WRITTEN BY JOHN DAY
7 ' MAR,1985. COPYRIGHT(C)
8 ' 1985. JOHN S DAY.
9 ' SPREAD IT ROUND, FOLKS!
  *****
10 CLS0:CLER500
20 FORX=0TO32:PRINT@X,"$":NEXT
30 FORX=63TO447STEP32:PRINT@X,"$
  $":NEXT
40 FORX=448TO479:PRINT@X,"$":NE
  XT
45 PRINT@106,STRING$(12,140);
50 PRINT@138,"CATTLE BARON";
60 PRINT@170,STRING$(12,131);
80 PRINT@257,"A GAME FOR TWO TO
  SIX PLAYERS";
90 FOR D=1TO2000:NEXT:GOSUB9210:
  SOUND200,1
100 PRINT@96,"$":PRINT@127,"$$":
  PRINT@159,"$$":PRINT@191,"$$":;P
  RINT@256,"$":PRINT@287,"$$";
110 PRINT@197,"";:INPUT"HOW MANY
  PLAYERS";N
120 IF N<2ORN>6THENPRINT@97,"OOP
  S! TRY THAT AGAIN!";:GOTO110
130 CLS2:PRINT"AND THE NAME OF -
  "
140 FOR P=1TO N
150 PRINT"PLAYER NO. "P:;INPUT P
  $(P)
160 NEXT
165 CLS:PRINT:PRINT"    RIGHT, PA
  STORALISTS, YOUR    PROPERTIE
  S ARE AS FOLLOWS    *****
  *****
170 PRINT:FOR P=1TO N
180 ON P GOTO190,200,210,220,230
  ,240
190 F$(P)="NULLA BORE":GOTO250
200 F$(P)="MOULE HILL":GOTO250
210 F$(P)="FLAT PLAINS":GOTO250
220 F$(P)="UNDULA DOWNS":GOTO250
230 F$(P)="DRY CREEK":GOTO250
240 F$(P)="BUFFALO BOG"
250 PRINT"    "P$(P),F$(P)
260 NEXT
270 FORP=1TO N:CA(P)=20000:HE(P)
  =3000:PP(P)=1:NEXT
280 PRINT@384,"    I'LL KEEP TABS
  ON EVERYTHING,    SO LET'S PLAY!
  <PRESS A KEY>"
290 IF INKEY$=""THEN290
295 GOTO500
300 SCUND240,1
310 PRINT@33,"PICK A NUMBER -";
320 R=RND(10)
330 PRINT@65,R;
340 IF INKEY$=""THEN320
350 SCUND200,1
360 PP(P)=PP(P)+R
365 IFPP(P)>32THENPP(P)=PP(P)-32
  :GOSUB1900:GOTO500
370 IF PP(P)>21THEN390
380 ON PP(P)GOSUB2000,2200,2300,
  2400,2500,2600,2700,2800,2900,30
  00,3100,3200,3300,3400,3500,3600
  ,3700,3800,3900,4000,4100
385 GOTO500
390 ON PP(P)-21GOSUB4200,4300,44
  00,4500,4600,4700,4800,4900,5000
  ,5100,5200
500 P=P+1:IF N<2THEN700ELSE IFP>
  N THEN P=1
510 CLS2:PRINTP$(P)",    OF    "F$(
  P)
530 IFCA(P)<1THEN GOSUB1300:GOTO
  300
  
```



```

550 IFHE(P)>9999 AND CA(P)>1 AND
  MB(P)<1THEN700
560 IF HE(P)<0THENHE(P)=0
570 GOTO300
700 FOR S=1TO10:SOUND240,1:NEXT
710 CLS2:PRINT@32,"          EN
D OF GAME"
720 PRINT@96," HERE ARE THE FINA
L FIGURES: -"
725 PRINT@448,P$(P)" OF "F$(P)"
WON!!"
730 PRINT@128,"":FOR P=1TO N
740 PRINTP$(P)" OF "F$(P)
750 PRINT"CASH - $"CA(P)". HERD"
HE(P)".
770 NEXT
780 IF INKEY$=""THEN780
790 END
800 CLS4:PRINT@32," "P$(P)", YOU
'RE BANKRUPT!!"
810 PRINT@96," YOU ARE NOW OUT O
F THE GAME!!"
820 P$(P)=""F$(P)=""
830 N=N-1
840 GOSUB11000:GOTO500
900 CLS:PRINTTAB(9)"STOCK SALE":
PRINT:PRINTP$(P)" OF "F$(P)
):PRINT"CASH $"CA(P)"HERD"HE(P):
PRINTSB(P)"STUD BULLS"
910 PRINT"ARE YOU: -",,"BUYING <
B>","SELLING <S>","PASSING <P>
"
1000 IF LD(P)=1THEN CLS4:PRINT@4
3,"STOCK SALE";:PRINT@224,"
YOU'RE PASSING!!":SOUND1,20:R
ETURN
1010 S$=INKEY$:IF S$=""THEN1010
1020 IF S$<>"S"AND S$<>"B"AND S$<
>"P"THEN PRINT"OOPS! TRY THAT AG
AIN!":GOTO1010
1025 IF S$="P"THEN RETURN
1030 IF S$="S"THEN SL=1
1035 INPUT"HOW MANY HEAD OF CATT
LE";HH
1040 IF SL=1AND HH>HE(P)THEN SOU
ND1,2:PRINT" YOU DON'T HAVE THAT
MANY!":GOTO1035
1045 CLS2:PRINT@8,"WHAT AM I BID
?";
1050 PRINT@384,H$;
1090 FOR X=1TO15
1100 Y=32*RND(9)+32:SP=30+RND(20)
:BP=20+RND(20)
1110 IF SL=1THEN PRINT@Y+RND(20)
,"$SP;:GOTO1130
1120 PRINT@Y+RND(20),"$BP;
1130 SOUND RND(15)*10,1
1140 NEXT
1150 PRINT@192,"",,"":PRINT@236,
"SOLD!!",," TO THE MAN WITH THE
HAT, FOR "
1160 IF SL=0THENPRINTTAB(8)"$BP
"PER HEAD!!",,"":GOTO1180
1170 PRINTTAB(8)"$SP"PER HEAD!!"
..""
1180 IF SL=0THEN1220
1190 CA(P)=CA(P)+(SP*HH)-50:HE(P)
=HE(P)-HH
1200 GOTO1250
1220 CA(P)=CA(P)-(BP*HH)-50:HE(P)
=HE(P)+HH
1250 PRINT@384," "P$(P)"'S CASH
NOW $"CA(P)," AND A HERD OF"HE(P)
)
1255 SL=0
1260 GOSUB11000:RETURN
1300 IF CA(P)<-50000THEN800

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```

1305 PRINT@96," YOUR ACCOUNT IS
OVERDRAWN, AND YOU WILL NEED A
MORTGAGE OF AT LEAST $"ABS(CA(P)
))"TO CONTINUE."
1310 PRINT" INTEREST IS A MERE 1
0% SIMPLE, AND PAYMENTS ARE WIT
HDRAWN AT THE ANNUAL AUDIT IN
TEN EASY INSTALMENTS."
1320 INPUT" HOW MANY THOUSAND DO
LLARS WILL YOU NEED.";NN
1340 IFNN>50THENPRINT" F$(P)" I
SN'T WORTH THAT MUCH. TRY A LOW
ER AMOUNT!":GOTO1320
1350 MO(P)=MB(P)+NN*1100:MB(P)=M
O(P):MP(P)=10:CA(P)=CA(P)+(NN*10
00)
1355 IFMO(P)>55000THENPRINT" YOU
TRIED TO BORROW TOO MUCH!":FORX
=1TO10:SOUND240,1:NEXT:GOTO800
1360 PRINT" YOUR CASH IS NOW $"C
A(P)
1370 GOSUB11000:CLS2:RETURN
1900 IFLD(P)=0THEN2000
1910 LD(P)=0
1920 CLS5:PRINT@33," YOU ARE N
OW OUT OF DROUGHT";
1930 PRINT@129," YOU MAY NOW TRY
AND MAKE UP ";:PRINT@161,"
LOST GROUND ";
1940 GOSUB11000
2000 POKE359,57:SCREEN0,1:CLS3:P
RINT" YEARLING SALE CHEQUE - "P$
(P)
2010 PRINT@128,"***RURAL BANK OF
QUEENSMANIA***"
2020 PRINT:PRINT" PAY....."P$(
P):PRINT@213,"..OR BEARER THE SU
M OF.....$";
2025 S=SB(P)/10
2030 IFS>0THEN PRINT HE(P)*(S+.2
)*25:GOTO2040
2035 PRINT HE(P)*5
2040 PRINT:PRINT" ....
.THOMAS MORPH."
2050 PRINT" FOR ELDER
,MORPH&CO."
2055 PRINT ASC(P$(P))+1638400">>
# 359:57-49151:64"
2060 IFSB(P)=0THEN2075
2070 CA(P)=CA(P)+(HE(P)*(S+.2)*2
5):CA(P)=INT(CA(P)):GOTO2080
2075 CA(P)=INT(CA(P)+(HE(P)*5))
2080 GOSUB11000:POKE359,126:CLS
2100 IFMB(P)>1THEN CA(P)=CA(P)-(
MO(P)/10):MB(P)=MB(P)-(MO(P)/10)
:MP(P)=MP(P)-1
2110 PRINT@32,"ANNUAL AUDIT FOR
"F$(P)," STATION"
2120 PRINT:PRINT"CASH HOLDINGS -
","$CA(P)
2130 PRINT"HERD SIZE -","HE(P)
2140 PRINT"STUD BULLS -","SB(P)
)
2145 IF MP(P)<1THENMO(P)=0
2150 PRINT:PRINT"MORTGAGE -","$M
O(P)
2160 PRINT"BALANCE -","$MB(P)
2170 IFMB(P)-CA(P)-(HE(P)*40)>1T
HEN800
2180 GOSUB11000:RETURN
2200 CLS3:PRINT@101,"WINDMILL MA
INTENANCE";:PRINT@160,"";
2210 PRINT" DUE TO YOUR NEGLECT
OF THEM IN THE PAST, SOME OF
YOUR MILLS ARE IN NEED OF MAINT
ENANCE."
2220 PRINT:PRINT" THIS HAS NOW C

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OST YOU $1000!"
2230 CA(P)=CA(P)-1000
2240 GOSUB11000:RETURN
2299 ' STOCK SALE
2300 GOSUB900:RETURN
2400 CLS2:PRINT@39,"DOG FENCE RE
PAIRS";
2410 PRINT@96," AS PART OF YOUR
PASTORAL LEASE YOU ARE OBLIGED
TO MAINTAIN YOUR PART OF THE
LONGEST FENCE"
2420 PRINT" IN THE WORLD, (APART
FROM THE GREAT WALL OF CHINA)
, AND THAT HAS JUST COST YOU $1
500."
2430 CA(P)=CA(P)-1500
2440 GOSUB11000:RETURN
2500 CLS2:PRINT@43,"STUD BULL";
2505 IFSS(1)=1THENPRINT@237,"SOL
D";:GOTO2590
2510 PRINT@96," DUE TO A STROKE
OF GOOD LUCK, YOU HAVE THE UNI
QUE OPTION TO BUY THE MAGNIFIC
ENT STUD BULL",
2520 PRINT@229,CHR$(34)"MUSCA DO
MESTICA III"CHR$(34)"!";
2530 PRINT@288,"FOR THE MISERABL
E SUM OF $2000"
2540 PRINT" ARE YOU INTERESTED?
<Y> OR <N>"
2550 S$=INKEY$:IF S$=""THEN2550
2560 IFSS<>"Y"THEN2590
2570 CA(P)=CA(P)-2000:SB(P)=SB(P)
)+1
2575 SS(1)=1
2580 CLS2:PRINT@96:PRINT:PRINT"
OK. HE'S YOURS. BUT WATCH OUT
FOR HIS TERRIBLE TEMPER!!!!"
2585 PRINT:PRINT
2590 GOSUB11000:RETURN
2600 CLS7:PRINT@37,"CATTLE TICK
TREATMENT";
2610 PRINT@96," THAT SCRUB BULL
YOU MISSED OUT LAST YEAR HAS IN
FESTED YOUR WHOLE HERD WITH
TICK, WHICH IS"
2620 PRINT" GOING TO COST YOU FI
FTY CENTS A HEAD TO ERADICATE. B
ETTER GET HIM NEXT TIME YOU'RE
OUT THERE, "P$(P)"!";
2630 CA(P)=CA(P)-INT(HE(P)/2)
2640 GOSUB11000:RETURN
2700 CLS7:PRINT@44,"SHOW DAY";
2710 PRINT@96," YOU HAVE DECIDED
TO GIVE IT ALL A REST AND F
LY OVER TO MT. MISERY FOR THE A
NNUAL SHOW,"
2720 PRINT" AND- IF THE BEER IS N
ICE AND COLD, WE MAY NOT SEE
YOU FOR A WEEK OR MORE!"
2730 PRINT@320," HAVE A G
OOD TIME!"
2750 GOSUB11000:RETURN
2799 ' STOCK SALE
2800 GOSUB900:RETURN
2810 GOSUB1000:RETURN
2900 CLS8:PRINT@44,"BUSHFIRE!";
2905 IFFF(P)=1THENPRINT@96," BUT
YOU PUT IT OUT BEFORE YOU LOS
T ANYTHING!":GOSUB11000:RETURN
2910 PRINT@96," LIGHTNING WITHOU
T RAIN IS THE THING MOST FEARE
D IN THE OUTBACK. IT STAR
TED THE WORST"
2920 PRINT" FIRE IN YOUR HISTORY
.IT KILLED 15% OF YOUR STOCK,AN
D DESTROYED MORE THAN TWENTY MIL

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ES OF THE"
 2930 PRINT" DOG FENCE. THIS WILL
 HAVE TO BE REPLACED IMMEDIAT
 ELY, OR DINGOS WILL GET WHAT
 IS LEFT OF YOUR STOCK."
 2940 PRINT@416," THAT LOT COS
 T YOU \$3000."
 2950 HE(P)=INT(HE(P)*.85):CA(P)=
 CA(P)-3000
 2960 GOSUB11000:RETURN
 2999 ':-POT LUCK
 3000 GOSUB6000:RETURN
 3100 CLS3:PRINT@42,"FLOOD DAMAGE
 ";
 3110 PRINT@96," HEAVY RAINS IN Q
 Ueensland HAVE FLOODED YOUR SEA
 SONAL CREEKS AND WASHED AWAY
 A GREAT DEAL "
 3120 PRINT" OF VITAL ROADWAYS. I
 T HAS COST YOU \$3,000 TO REPLAC
 E IT ALL."
 3130 PRINT@416," YOU LOST NO STO
 CK, HOWEVER."
 3140 CA(P)=CA(P)-3000
 3150 GOSUB11000:RETURN
 3199 ' STOCK SALE
 3200 GOSUB900:RETURN
 3300 CLS2:PRINT@43,"STUD BULL";
 3305 IFSS(2)=1THENPRINT@237,"SOL
 D";GOTO3390
 3310 PRINT@96," AND NOW THE OPPO
 RTUNITY OF A LIFETIME LAYS IT
 SELF BEFORE YOU - THE OPPORT
 UNITY TO BE"
 3320 PRINT" THE PROUD OWNER
 OF"
 3330 PRINT@256," WILTSHIRE
 TAURUS II"
 3340 PRINT@320," FOR THE BARGAIN
 PRICE OF \$2000"
 3350 PRINT" ARE YOU INTERESTED?
 <Y> OR <N>"
 3360 SS=INKEY\$:IF SS=""THEN3360
 3370 IF SS<>"Y"THEN3390
 3380 CA(P)=CA(P)-2000:SB(P)=SB(P
)+1:SS(2)=1
 3385 CLS2:PRINT@96:PRINT:PRINT"O
 K. HE'S YOURS, BUT WATCH OUT F
 OR THOSE SELF SHARPENING HORNS!"
 :PRINT:PRINT
 3390 GOSUB11000:RETURN
 3399 ':-POT LUCK
 3400 GOSUB6000:RETURN
 3500 CLS6:PRINT@39,"ERADICATE RA
 BBITS";
 3510 PRINT@96," THEY'VE DONE IT
 AGAIN. OVER IN THE TEN-MILE PAD
 DOCK, THEY ARE A REAL INFESTATI
 ON. GET RID OF"
 3520 PRINT" THE LITTLE ROTTERS R
 IGH T AWAY!":PRINT@320," AND THAT
 ONLY COST YOU \$500."
 3530 CA(P)=CA(P)-500
 3540 GOSUB11000:RETURN
 3599 ' STOCK SALE
 3600 GOSUB900:RETURN
 3700 CLS4:PRINT@41,"LOCAL DROUGH
 T";
 3710 PRINT@96," THIS IS THE THIR
 D YEAR WITHOUT RAIN, AND YOU MU
 ST NOW MAKE A DEVASTATING DECI
 SION. YOU NOW"
 3720 PRINT" HAVE TO TRUCK half Y
 OUR STOCK SOUTH, AT A COST OF
 \$5 A HEAD TO AN OVERSUPPLIED M
 ARKET. YOU"
 3730 PRINT" ONLY REALIZED \$30 A

HEAD FOR THEM, AND CANNOT RES
 TOCK UNTIL OUT OF THE DROUGHT."
 3750 CA(P)=CA(P)+(INT(HE(P)/2)*2
 5):HE(P)=INT(HE(P)/2):LD(P)=1
 3760 GOSUB11000:RETURN
 3799 ':-POT LUCK
 3800 GOSUB6000:RETURN
 3899 ' STOCK SALE
 3900 REM900:RETURN
 4000 CLS8:PRINT@41,"DRENCH CATT
 L E";
 4010 PRINT@96," EVERY YEAR THE S
 AME - DRENCH THE FLAMING COWS
 . AND IT COSTS 50 CENTS A HEAD,
 AS WELL AS"
 4020 PRINT" HAVING TO ROUND THEM
 UP,FEED THEM IN THE YARDS, C
 HASE THEM BACK OUT AGAIN. AND
 THE DUST!!"
 4030 PRINT" SOMETIMES I WISH I W
 AS A CITY BLOKE OR A FLAMING S
 AILOR OR SOMETHING....."
 4040 CA(P)=CA(P)-(HE(P)/2)
 4050 GOSUB11000:RETURN
 4100 CLS2:PRINT@43,"STUD BULL";
 4105 IFSS(3)=1THENPRINT@237,"SOL
 D";GOTO4190
 4110 PRINT@96," 'E MIGHT LOOK LI
 KE A BIT OF A SCRUBBER, BUT YO
 U ORTA SEE 'IM WORK! GOT 110% C
 ALVING OUT OF"
 4120 PRINT" 'IM THE OTHER SEASON
 , AND SOLD THE LOT FOR A PRETTY
 PENNY, I CAN TELL YER."
 4130 PRINT" BUT I'M PREPARED TO
 LET 'IM GO FER \$2000 TER YOU. I
 NTERESTED? <Y> OR <N>"
 4140 SS=INKEY\$:IF SS=""THEN4140
 4150 IF SS<>"Y"THEN4190
 4160 CA(P)=CA(P)-2000:SB(P)=SB(P
)+1:SS(3)=1
 4170 CLS2:PRINT@96:PRINT:PRINT"O
 RRITE! HE'S YOURS, BUT WATCH 'IM
 - 'E LIKES DONKEYS, TOO!":PRI
 NT:PRINT
 4190 GOSUB11000:RETURN
 4199 ':-POT LUCK
 4200 GOSUB6000:RETURN
 4299 ' STOCK SALE
 4300 GOSUB900:RETURN
 4400 CLS3:PRINT@43,"LOCAL RAIN";
 4410 PRINT@96," IT'S ALWAYS WELC
 OME, AND MORE SO IN THE OUTBAC
 K. THE GRASS GROWS HIGH AND T
 HE CATTLE GET FAT, AND BREED."
 4420 PRINT" YOUR RAIN HAS INCREA
 SED YOUR STOCK BY 500 HEAD, I
 NCLUDING THOSE WHO SURVIVED T
 HE DROUGHT."
 4430 PRINT@352,"IF YOU WERE IN D
 ROUGHT, YOU ARE NOT ANY MORE, "P
 \$(P)" !"
 4440 HE(P)=HE(P)+500:LD(P)=0
 4450 GOSUB11000:RETURN
 4500 CLS6:PRINT@44,"BULL DIES";
 4510 PRINT@96," DUE TO OVERWORK,
 AND A LESS THAN ADEQUATE DI
 ET, YOUR BEST STUD BULL HAS DI
 ED."
 4520 PRINT:PRINT" VET'S FEES WER
 E \$50, BUT YOU GOT THAT FOR T
 HE CARCASE FROM THE KNACKER, S
 O YOU'RE SQUARE"
 4525 IFIS(P)=1THENPRINT" THERE,
 AND YOUR INSURANCE IS PAID OU
 T ALSO.":IS(P)=0:CA(P)=CA(P)+200
 0:GOTO4540

4530 PRINT" THERE, BUT IF YOU DI
 DN'T OWN A STUD BULL, THE OWN
 ER OF THE BULL YOU BORROWED WA
 NTS \$2000"
 4540 IFSP(P)<1THEN CA(P)=CA(P)-2
 000:GOTO4560
 4550 SB(P)=SB(P)-1
 4560 GOSUB11000:RETURN
 4599 ' STOCK SALE
 4600 GOSUB900:RETURN
 4699 ':-POT LUCK
 4700 GOSUB6000:RETURN
 4800 CLS8:PRINT@39,"APPLY FERTIL
 IZER";
 4810 PRINT@96," YOUR PASTURES, V
 HAT THERE IS OF THEM IN THIS
 COUNTRY, WON'T SURVIVE WITHOUT
 SOME HELP, SO"
 4820 PRINT" SUPER SPREADING IS T
 HE ORDER OF THE DAY, TO THE TUNE
 OF \$500."
 4830 PRINT@288," SO COUGH U
 P, MISER!!"
 4840 CA(P)=CA(P)-500
 4850 GOSUB11000:RETURN
 4900 CLS2:PRINT@43,"STUD BULL";
 4905 IFSS(4)=1THENPRINT@237,"SOL
 D";GOTO4990
 4910 PRINT@96," A THOROUGHLY GOO
 D ANIMAL, SIR, WELL WORTHY OF Y
 OUR CONSIDER- ATION, IF I MIGH
 T SAY SO. I DO"
 4920 PRINT" RECOMMEND THAT YOU
 TAKE A GOOD LOOK AT THE RATHER L
 OW PRICE BEING ASKED FOR IT A
 S WELL.I'M"
 4930 PRINT" SURE WE CAN COME TO
 SOME SORT OF ARRANGMENT WITH T
 HE VENDOR. SHALL WE OFFER \$2000
 ON YOUR BEHALF? <Y> OR <N>
 4940 SS=INKEY\$:IF SS=""THEN4940
 4950 IF SS<>"Y"THEN4990
 4960 CA(P)=CA(P)-2000:SB(P)=SB(P
)+1:SS(4)=1
 4970 CLS2:PRINT@96:PRINT:PRINT"
 THANK YOU, SIR. WE'LL PUT THE
 FEE ON YOUR ACCOUNT.":PRINT:PRIN
 T
 4990 GOSUB11000:RETURN
 5000 CLS8:PRINT@43,"ROUND-UP!";
 5010 PRINT@96," THE BUSIEST TIME
 OF YEAR, AND THE MOST EXCITIN
 G. FINDING THE"
 5020 PRINT" CATTLE IN THE SCRUB
 - BRANDING AND MARKING. DUST, N
 OISE AND EXCITEMENT EVERYWHER
 E!"
 5030 PRINT@288," AND YOU HAVE TO
 PAY FOR IT; AT THE RATE OF A D
 OLLAR A HEAD!"
 5040 CA(P)=CA(P)-HE
 5050 GOSUB11000:RETURN
 5099 ' STOCK SALE
 5100 GOSUB900:RETURN
 5199 ':-POT LUCK
 5200 GOSUB6000:RETURN
 6000 CLS
 6010 FORX=1TO10
 6020 PRINT@RND(12)*32+RND(20),"P
 OT LUCK":SOUNDRND(20)*10,1:NEXT
 6030 CLS7:PRINT@32," \$\$\$\$\$\$\$\$
 POT LUCK \$\$\$\$\$\$\$\$"
 6040 R=RND(20)
 6050 IF R>10THEN6070
 6060 ON R GOSUB7100,7200,7300,74
 00,7500,7600,7700,7800,7900,8000
 6065 GOTO7000


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6070 ON R-10GOSUB8100,8200,8300,
8400,8500,8600,8700,8800,8900,90
00
7000 RETURN
7100 PRINT@96," SPRING DRI
ES UP"
7110 PRINT:PRINT" ONE OF YOUR SP
RINGS HAS DRIED UP, AND YOU HA
VE LOST 20 HEAD IN THE MUD."
7120 HE(P)=HE(P)-20
7130 GOSUB11000:RETURN
7200 PRINT@96," STRAY
BULL"
7210 PRINT:PRINT" MURPHY'S STUD
BULL HAS BEEN IN YOUR 50-MILE P
ADDOCK FOR MORE THAN A YEAR, A
ND YOU HAVE 50"
7220 PRINT" MORE CATTLE THAN YOU
THOUGHT!!"
7230 HE(P)=HE(P)+50
7240 GOSUB11000:RETURN
7300 PRINT@96," FIRE FIGHTIN
G EQUIPMENT"
7310 PRINT:PRINT" YOU HAVE PURCH
ASED SOME FIRE FIGHTING EQUIP
MENT WHICH WILL ENABLE YOU TO
STOP THE GREAT"
7320 PRINT" DEVASTATION OF A BUS
HFIRE."
7330 PRINT" THIS REMAINS WITH YO
U FOR THE WHOLE OF THE GAME."
7340 FF(P)=1:CA(P)=CA(P)-500
7350 PRINT@384," IT COST YOU $50
0, THOUGH!"
7360 GOSUB11000:RETURN
7400 PRINT@96," INCOME
TAX"
7410 PRINT:PRINT" THE TAXATION O
FFICE HAS CAUGHT UP WITH YOU AT
LAST. YOU OWE 10% OF YOUR CA
SH HOLDINGS, AND"
7420 PRINT" $1 PER HEAD OF CATT
LE, WHICH HAS BEEN PAINLESSLY(
?) REMOVED FROM YOUR COFFERS AS
YOU READ THIS AWFUL NOTE!"
7425 CA(P)=INT(CA(P)*.9)-HE(P)
7430 GOSUB11000:RETURN
7500 PRINT@96," PLANE C
RASH"
7510 PRINT:PRINT" YOU HAVE PRANG
ED YOUR CESSNA, AND THE REPAIR
BILLS FOR YOU AND THE PLANE
HAVE SET YOU A"
7520 PRINT" COOL $2,000 BACK. BE
MORE CARE- FUL IN FUTURE!"
7530 CA(P)=CA(P)-2000
7540 GOSUB11000:RETURN
7600 PRINT@96," YOU HAVE WON THE
COVETED SOIL CONSERVATION TRO
PHY, AND WILL BENEFIT BY YOUR
ACTIONS AS"
7610 PRINT" MUCH AS THE $1,000 P
RIZE."
7620 CA(P)=CA(P)+1000
7630 GOSUB11000:RETURN
7700 PRINT@96," FROM SALE OF HIG
H QUALITY STUD COWS TO THAT NEW
COCKY OVER ON THE FAR SIDE
OF THE DESERT"
7710 PRINT" YOU RECEIVE $600."
7720 CA(P)=CA(P)+600
7730 GOSUB11000:RETURN
7800 PRINT@96," FOR AGISTING STO
CK FROM THE TERRITORY DURING
THEIR DROUGHT YOU RECEIVE $600
."
7810 CA(P)=CA(P)+600

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7820 GOSUB11000:RETURN
7900 PRINT@96," GOOD SPRING RAIN
S HAVE MADE THE YEAR FLY!":PRINT
"MOVE ON TO "CHR$(34)"YEARLING S
ALE"CHR$(34)"!"
7905 PP(P)=1
7910 GOSUB11000:GOSUB1900:RETURN
8000 PRINT@96," YOUR STOCKYARDS
ARE A DISGRACE AND MUST BE REPL
ACED BEFORE NEXT MUSTER - AN
D IF YOU HAVE"
8010 PRINT" MORE THAN 3000 CATT
LE, THEY WILL COST YOU $2000.
IF NOT, THEN YOU ONLY NEED T
O SPEND $1000."
8030 IFHE(P)>3000THENCA(P)=CA(P)
-2000:GOTO8050
8040 CA(P)=CA(P)-1000
8050 GOSUB11000:RETURN
8100 PRINT@96," DUE TO GOOD MANA
GEMENT, YOUR AVERAGE CARCASE
WEIGHT HAS INCREASED, AND Y
OU HAVE JUST"
8110 PRINT" RECEIVED AN UNEXPECT
ED BONUS CHEQUE FOR $1,000!"
8120 CA(P)=CA(P)+1000
8130 GOSUB11000:RETURN
8200 PRINT@96," THIS IS AN INSUR
ANCE POLICY FOR ONE STUD BUL
L. IF YOUR BULL TURNS UP HIS TOE
S, YOU WILL"
8210 PRINT" RECEIVE $2000 COMPEN
SATION FROM THE BEAUT INSURANCE
COMPANY."
8220 IS(P)=1
8230 GOSUB11000:RETURN
8300 PRINT@96," THERE IS A SPECI
AL STOCK SALE ON TODAY JUST DO
WN THE ROAD. HOP ON DOWN AND
SEE WHAT YOU CAN PICK UP."
8310 GOSUB11000
8320 PP(P)=31:GOSUB900:RETURN
8400 GOTO7400
8500 PRINT@96," BRUCELLOSIS HAS
INFECTED YOUR HERD, AND YOU HA
VE LOST MOST OF LAST YEAR'S C
ALVES. YOUR"
8510 PRINT" HERD HAS BEEN QUITE
LITERALLY DECIMATED, UNLESS YO
U HAVE A BRUCELLOSIS ACCREDIT
ATION. IN"
8520 PRINT" THAT CASE, YOU ARE NO
T AFFECTED"
8530 IFBR(P)=1THEN8550
8540 HE(P)=INT(HE(P)*.9)
8550 GOSUB11000:RETURN
8600 PRINT@96," BRUCELLOSIS ACCR
EDITATION HAS FINALLY BEEN GIV
EN TO YOUR HERD, WHICH MAKE
S ALL THE WORK"
8610 PRINT" YOU HAVE DONE IN THE
PAST TEN YEARS WORTH WHILE."
8620 PRINT" YOU KEEP THIS PROTEC
TION FOR THE WHOLE OF THE GAM
E."
8630 BR(P)=1
8640 GOSUB11000:RETURN
8700 PRINT@96," YOUR PASTORAL LE
ASE HAS JUST HAD TO BE RENEWE
D, AND THE STAMP DUTY ON TH
E DOCUMENT HAS"
8710 PRINT" COST YOU $500.", " B
UT YOUR TENURE IS SECURE FOR A
NOTHER 40 YEARS!"
8720 CA(P)=CA(P)-500
8730 GOSUB11000:RETURN
8800 PRINT@96," DUE TO DESTRUCTI

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ON OF SOME OF YOUR FENCING BY
THAT MINING COMPANY, YOU REC
EIVE $800 IN COMPENSATION."
8810 CA(P)=CA(P)+800
8820 GOSUB11000:RETURN
8900 PRINT@96," GENERAL
DROUGHT"
8910 PRINT" DESPITE MANY WARNING
S, YOU HAVE DESECRATED A SACRED
SITE WITH A DUNNY, WHICH HAS IND
UCED THE"
8920 PRINT" HARANGA TRIBE TO PLU
NGE THE WHOLE AREA INTO DROU
GHT. EVERY PLAYER IS NOW IN DRO
UGHT."
8925 PRINT@352," AREN'T YOU THE
POPULAR ONE?!"
8930 FORX=1TON
8940 HE(X)=INT(HE(X)/2):CA(X)=CA
(X)+(HE(X)*25):LD(X)=1
8950 NEXT
8960 GOSUB11000:RETURN
9000 PRINT@96," GENERAL
RAIN"
9010 PRINT" DUE TO YOUR INFLUENC
E WITH THE HARANGA TRIBE, AND T
HE DECAY OF CYCLONE "CHR$(34)
"HUEY"CHR$(34)", THERE HAS"
9020 PRINT" BEEN GOOD GENERAL RA
IN IN ALL AREAS. NO PLAYER IS
NOW IN DROUGHT. GOOD WORK,
"Ps(P)"!"
9030 FORX=1TON
9040 LD(X)=0:NEXT
9050 GOSUB11000:RETURN
9210 FOR L=1TO61
9220 READ X,Y
9230 HS=H$+STRING$(X,Y)
9240 NEXT
9250 RETURN
9300 DATA1,128,1,145,1,147,1,146
,22,128,2,147,4,128
9310 DATA1,148,1,156,1,159,1,156
,1,152,1,128,1,147,2,159,1,147,6
,128,2,147,7,128,1,156,1,157,1,1
58,1,156,2,128,1,147
9320 DATA5,159,2,128,1,149,1,154
,6,128,1,156,1,157,1,158,1,156,1
,128,1,147,2,159,1,147,2,128,1,1
49,1,154,2,128,1,156,1,157
9330 DATA5,159,1,128,4,159,1,145
,1,151,1,159,1,155,1,146,4,159,1
,128,1,147,1,151,1,155,1,147,1,1
28,4,159,1,128
11000 PRINT@448," PRESS A KEY
TO CONTINUE"
11010 IF INKEY$=""THEN11010
11020 RETURN
12000 :-THAT'S ALL, FOLKS!

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BIBLIOGRAPHY FILES

by Jack Finnen
EDUCATION

THIS IS THE third (and mercifully the last) program I have to submit which relates to the administration of a school library.

It attempts to provide a back-up for either the school library staff or the class teacher in their efforts to assist students to find specific information from the resources found in the library.

The traditional card catalogue arranged alphabetically is basically a nineteenth century invention which has been refined over the years. While this refinement has produced a system which works fairly well it does require a degree of practice and expertise by the customer to use it efficiently.

We find constantly that both teaching staff and students need help when looking for specific topics. There is no need to worry about the books which cover say, WORLD WAR 1. The card catalogue provides a number and all books at that number would help. However, this topic may be found elsewhere on the shelves in books described under general subjects such as WAR or TWENTIETH CENTURY. Indeed, these books with less detail on the topic often suit younger students' needs more closely.

This program provides the facility to take some of these more general texts, and assign any topics which are thought to be useful. A large file can thus be built up, providing a means of 'cataloguing' these resources so that the information needed by students is more readily available. Retrieval is by keyword.

An example of this would be a file of 'theme' books. We have a file of about 200 books in each, examples of which are poetry, drama and prose on a number of themes. Each record contains the author, title, Dewey number and several themes (up to about 25 for a single book). To satisfy the query, "ave ya gotta poem about sport?" from a budding researcher simply enter the keyword 'sport' and elect to get

the answer on the screen or on a printer.

PROGRAM NOTES.

The heart of this program is a simple routine (lines 245 - 295) which utilizes the INSTR command. In fact, you could take out these few lines and attach them to your favourite database if you prefer. I first developed the routine as an addition to a database I was using because the sort routine was too slow.

INSTR demonstrates just how fast this little machine can be. It is precisely this speed which makes this method attractive for librarians. If you want to see just how fast, omit the delay loop in line 290. You won't be able to read each entry as it's found but you will be impressed.

For those who wish to modify the program the following information may help.

Lines 10 - 15. Clear memory and dimension arrays. This may need to be varied for different types of files to reflect the average size of each record. The idea is to eventually have as large a file as your machine can handle.

Lines 115 - 175. Printer routine including the 'INSTR' search in lines 145 to 160 and the output format in lines 165 to 175.

Lines 215 - 240. SAVE routine. In this version the program names the file BIBLIOG each SAVE. This was done to help the 'customers' run the system with a minimum of fuss. You may like to change this especially for disk.

Lines 245 - 295. The main string search loop with the delay loop at 290. You may prefer to omit it.

Lines 300 - 340. LOAD routines. Here again, the program supplies a file name.

There are REMS in the program to identify the start of the other routines.

The main variables used:-

- A\$ - subject or topic.
- B\$ - author.
- C\$ - title.
- D\$ - Dewey number.

When the program is RUN the user is asked to format the output and then to indicate Tape or Disk. These responses control the program until you elect to reRUN it or to END.

The input routine allows for a string of 250 characters in the topic field. This is managed by leaving this amount of space before the bottom of the screen. When you reach this point you should stop inputting topics. If you should require more topics reserve the remainder for a second record.

To check if a topic is covered simply input the word, preferably in singular or short form. For example an input of CHILD would find topics such as CHILDHOOD, CHILDREN, CHILDISH or even CHILDLESS.

Finally, I have submitted this and two other programs in the hope that small school libraries, in particular, may gain some benefit from them. The three programs will run on a \$299 (less tax) machine with a tape recorder attached. A disk drive would be an advantage but you could live without it and thus be able to afford a "library" computer. The three programs:- a catalogue card printer, an overdue list file and this one between them take care of the major areas of school library administration. A general database added to this group would be a bonus which could be put to valuable use.

The Listing:

```
1 '*****BIBLIOGRAPHY FILE*****
* *****
* ***** FOR TAPE OR DISK *****
* *****
2 GOTO10
3 SAVE"71:3":END
10 CLEAR15000
15 DIMA$(200),B$(200),C$(200),D$(200)
20 SCREEN0,1:POKE359,57:REM***TITLE SCREEN***
25 CLS:PRINT@12,"library ":PRINT@41,"bibliography"
30 FOR X=1167TO1168:READA:POKEA,A:NEXTX
35 FOR X=1194TO1204:READB:POKEB,B:NEXTX
40 FOR X=1259TO1267:READC:POKEC,C:NEXTX
45 FOR X=6TO294STEP32:PRINT@X,CHR$(230):NEXTX
50 FOR Y=25TO313STEP32:PRINT@Y,CHR$(230):NEXTY
55 FORZ=326TO345:PRINT@Z,CHR$(230):NEXTZ
60 FOR X=1TO1500:NEXT
65 CLS3:PRINT@38,"DO YOU WANT TO SEE:- ";PRINT@70,"1) AUTH+TITLE ";PRINT@102,"2) AU
TH+TITLE+NO. ";PRINT@134,"
```

```
3) AUTH+TITLE+NO.+SUBJ.";;REM***
FORMAT OUTPUT***
70 PRINT@198,"(1 - 3)
";
75 INPUT O:IFO<10R O>3THEN65
80 CLS:PRINT:PRINT:PRINT:PRINT"ARE FILES ON TAPE OR DISK (T/D)";
81 W$=INKEY$:IFW$=""THEN81ELSEIFW$="T"ORW$="t"THEN AA=-1ELSEIFW$="D"ORW$="d"THEN AA=1ELSE81
85 CLS(4):PRINT@67,"DO YOU WANT TO ";PRINT@99,"1) SEARCH FILE ";PRINT@131,"2) LOAD A FILE ";PRINT@163,"3) LIST SEARCH TO PRINT";REM***MAIN MENU***
90 PRINT@195,"4) INPUT A NEW FILE ";PRINT@227,"5) SAVE A FILE ";PRINT@259,"6) ADD TO A FILE ";PRINT@291,"7) DELETE A FILE ";PRINT@323,"8) END THE PROGRAM
";
95 PRINT@355," (1 - 8)
";
100 INPUT M
105 IF M<10R M>8 THEN 85
110 ON M GOTO 245, 300, 115,180, 215,185,345,410
115 CLS:PRINT@198,"PRESS ANY KEY ";PRINT@258,"WHEN PRINTER IS READY";REM***PRINTER ROUTINE WITH INSTR SEARCH***
120 W$=INKEY$:IF W$=""THEN120ELSE125 D=PEEK(&HFF22):IF D/2=INT(D/2)THEN 135ELSE IFD/2<>INT(D/2)THEN PRINT@419,"...printer not on line...";PRINT:PRINT:PRINT:PRESS <ENTER> WHEN READY";
130 W$=INKEY$:IF W$=""THEN130ELSE IF W$=CHR$(13)THEN135ELSE130
135 CLS:INPUT"WHAT SUBJECT DO YOU WANT.....";Q$
140 PRINT#-2,TAB(10)"BOOKS ON THE THEME....";Q$
145 FOR N=1TO Y
150 R=INSTR(A$(N),Q$)
155 IF R<>0 THEN 165 ELSE IF R=0 THEN160
160 NEXTN:GOTO85
165 IF O=1THEN PRINT#-2,N;TAB(3)B$(N);TAB(25)C$(N)ELSE IF O=2THEN PRINT#-2,N;TAB(3)B$(N);TAB(25)C$(N);TAB(68)D$(N)ELSE IF O=3GOSUB175
170 GOTO160
175 PRINT#-2,N;TAB(3)B$(N);TAB(25)C$(N);TAB(68)D$(N):PRINT#-2,A$(N):RETURN
180 Y=Y+1:REM***INPUT NEW FILES***
185 CLS3
190 PRINT@0," INPUT/ADD IT EMS":PRINT@32," TYPE <XX> TO FINISH FILE":PRINT@96,STRING$(32,230)
195 PRINT@138,"RECORD NO. ";Y:PRINT:PRINT:PRINT
200 INPUT"subjects";A$(Y):IF A$(Y)="XXX"THEN 85
205 INPUT"author";B$(Y):INPUT"title";C$(Y):INPUT"number";D$(Y)
210 Y=Y+1:GOTO185
215 CLS:PRINT"IS TAPE READY FOR A SAVE? (Y/N)"
220 W$=INKEY$:IFW$<>"Y"THEN 220ELSE225
```

```
225 CLS:PRINT@263,"SAVING BIBLIOG":FIS="BIBLIOG"
230 OPEN "O",#AA,FIS
235 FORX=1TOY-1:PRINT#AA,A$(X),B$(X),C$(X),D$(X):NEXTX
240 CLOSE #AA:GOTO85
245 CLS:POKE65495,0:S=0:INPUT"WHAT TOPIC DO YOU WANT.....";Q$
250 FOR N=1TO Y
255 R=INSTR(A$(N),Q$)
260 IF R<>0 THEN GOSUB 280 ELSE IF R=0 THEN 265
265 NEXT N
270 POKE65494,0:PRINTS;"BOOKS FOUND:m=MENU:p=PRINTER";
275 W$=INKEY$:IF W$=""THEN275ELSE IF W$="M" THEN85ELSEIFW$="P"THEN115ELSE275
280 S=S+1
285 IF O=1THENPRINT B$(N)+"**"+C$(N)ELSE IF O=2THEN PRINT B$(N)+"**"+C$(N)+"**"+D$(N)ELSE IF O=3 THEN PRINT B$(N)+"**"+C$(N)+"**"+D$(N)+"**"+A$(N)
290 FOR X=1TO1000:NEXT
295 RETURN
300 CLS
305 FIS="BIBLIOG"
310 PRINT @ 72,"LOADING BIBLIOG"
;
315 OPEN "I",#AA,FIS
320 Y=1
325 IF EOF(-1) THEN340
330 INPUT#AA,A$(Y),B$(Y),C$(Y),D$(Y)
335 Y=Y+1:GOTO 325
340 CLOSE#AA:GOTO85
345 CLS:PRINT@8,"DELETE A RECORD";REM***DELETE A RECORD***
350 PRINT STRING$(32,230);:INPUT"author";R$
355 FOR N=1TO Y
360 T=INSTR(B$(N),R$)
365 IF T<>0THEN GOSUB380ELSE IF T=0THEN370
370 NEXTN
375 GOTO390
380 PRINT N;+B$(N)+"**"+C$(N)+"**"+D$(N)
385 RETURN
390 INPUT"TO DELETE ENTER REC.NO. ";N
395 CLS:A$(N)=A$(N-N):B$(N)=B$(N-N):C$(N)=C$(N-N):D$(N)=D$(N-N):FORX=1TO75:PRINT@137,"RECORD DELETED":NEXTX
400 FORX=N TO Y:A$(X)=A$(X+1):B$(X)=B$(X+1):C$(X)=C$(X+1):D$(X)=D$(X+1):NEXT X:Y=Y-1
405 GOTO85
410 CLS4:PRINT@100,"TO RUN ANOTHER SEARCH ";PRINT@164,"WAIT FOR THE SCREEN TO ";PRINT@228,"CLEAR AND THEN TYPE RUN ***";PRINT@292,"REMEMBER TO LOAD THE ";PRINT@356,"CORRECT FILE ";REM***END ROUTINE***
415 FOR X=1TO 4000:NEXT
420 CLS:END
425 DATA 2,25
430 DATA 10,1,3,11,143,6,9,14,14,5,14
435 DATA 40,3,41,143,143,49,57,5,6,54
○
```


FRACTION

GAME

$$\frac{3}{4} \quad \frac{5}{12} \quad \frac{7}{8} \quad \frac{8}{9}$$


32K ECB
Education

by Bob Horne

THE FRACTION GAME is used as a follow up to the previous programs. Because my Year Fives do not do multiplication or division of fractions, this is the last of the fractions programs. This program of course, could be made into a separate program to cover this.

I found that response from the keyboard was very poor so I have made use of the joystick instead.

As you successfully complete each example, the rate of descent of the aliens increases. After 10 successful missions, you go on to the next level and the rate of descent alters accordingly.

If you fire at the wrong answers, the alien gets annoyed and returns your fire. Your rocket can absorb only one of these hits - the second time this happens, your rocket explodes and you are shown the correct answer. Also, if the alien gets too low, it will fire at and destroy your rocket. After two of your rockets have been destroyed, the game is over.

The reasoning here is that you cannot just guess the answer - you may fluke a few correct answers, but other users will eventually score much higher.

The Listing:

```
0 GOTO10
1 REM*****
2 REM*      FRACTION      *
3 REM*      GAME        *
4 REM*      BY          *
5 REM*      BOB HORNE   *
6 REM*****
7 SAVE"87B:3":END
10 CLEAR4: CLEAR500
20 DIMC$,CH$(29),NU$(9),R(10),RD
(10),FR(58),A1(58),A2(58),A3(58),
A4(58):CLS:PRINT@200,"FRACTION
INVADERS.":PRINT@271,"BY":PRIN
```

```
T@331,"BOB HORNE.":SCREEN0,1
30 FORZ=0TO9:READNU$(Z):NEXTZ:FO
RZ=1TO29:READCH$(Z):NEXTZ:PS="L1
6T16P16":P1$="T12V31O3CEGO4L2CO3
L4GO4L2C":P2$="L6T6P6":P3$="T3OL
100O1V3OCFDEGV22ABGFDEV14CGADFE
V7CFDEGV1ADCGEFB"
40 A=RND(-TIMER):COLOR1,4:PMODE1
,1:PCLS:DRAW"BM2,14UE2F2DUH2UR2U
7F2D3L2U6H2G2D6L2U3E2D7R2":GET(0
,0)-(10,18),R,G:PCLS
50 CIRCLE(35,42),26,4,.8:CIRCLE(
15,17),10,3,.7:CIRCLE(55,17),10,
3,.7:PAINT(15,17),3,3:PAINT(55,1
7),3,3:CIRCLE(16,17),3,1,1.4:CI
RCL(54,17),3,1,1.4:DRAW"BM22,58D
9L9U4L2DM48,58D9R9U4R2D"
60 PAINT(35,42),2,4:DRAW"S4C2BM3
5,23U8L8NU4ND2R16NU4D2":DRAW"C2B
M23,27H5L2F5":DRAW"BM47,27E5R2G5
70 GET(3,0)-(66,66),FR,G
80 HS=0:SC=0:YS=0:IN=1:NU=0:GOSU
B2180:GOTO1350
89 REM*****DRAW NUMBERS*****
90 DRAW"S=S;C=C1;BM"+STR$(X1)+"
,"+STR$(Y1)
100 FORZ=1TO LEN(C$)
110 F1=ASC(MID$(C$,Z,1))-48
120 DRAWNU$(F1)
130 NEXTZ:RETURN
139 REM*****DRAW LETTERS*****
140 DRAW"S=S;C=C1;BM"+STR$(X1)+"
,"+STR$(Y1)
150 FORZ=1TO LEN(C$)
160 F1=ASC(MID$(C$,Z,1))-63
170 IF F1=-31 THEN DRAWCH$(1) EL
SEDRAWCH$(F1)
180 NEXTZ:Y1=Y1+Y2:RETURN
189 REM*****DRAW FRACTION*****
190 A5$=STR$(A5):B1$=STR$(B2):A5
$=RIGHT$(A5$,LEN(A5$)-1):B1$=RIG
HT$(B1$,LEN(B1$)-1):L5=LEN(A5$):
L6=LEN(B1$)
200 IF L5=L6 THEN A7=X:B6=X ELSE
IF L5=1 AND L6=2 THEN A7=X+6:B6
=X ELSE IF L5=2 AND L6=1 THEN A7
=X:B6=X+6
210 DRAW"C=C1;":IF K<>0 THEN220
ELSEX1=A7:C3=A5$:GOSUB90
220 IF L5=2 AND L6=1 THEN LINE(A
7,Y1+13)-(A7+16,Y1+13),PSET ELSE
LINE(B6,Y1+13)-(B6+16*8,Y1+13),
PSET
230 X1=B6:Y1=Y1+16:C3=B1$:GOSUB9
0:Y1=Y1-7:RETURN
239 REM**CHECK FOR LOWEST TERMS*
```

```
240 B1=A:B2=A:D2=B:GOSUB260:RETU
RN
250 E1=C:B2=C:D2=D:GOSUB260:RETU
RN
260 FORZ=B1 TO2STEP-1
270 IF B2/Z=INT(B2/Z) AND D2/Z=I
NT(D2/Z) THEN CD=CD/Z:B2=B2/Z
280 NEXTZ:RETURN
289 REM*****GENERATE SUM*****
290 IF TD=7 THEN TC=RND(6) ELSE
IF TD=14 THEN TC=RND(6)+6 ELSE I
F TD=7 THEN TC=TD-1 ELSETC=TD
300 ON TC GOTO810,880,950,1030,1
110,1220,310,440,580,380,520,700
308 REM**SUBTRACTION STARTS**
309 REM**LIKE DENOM. NO REGROUP*
310 B=RND(19)+1:A=RND(B-1):IF A<
2 THEN310 ELSE C=RND(A-1):D=B:CD
=B
320 GOSUB240:IF CD<>B THEN310
330 GOSUB250:IF CD<>D THEN310
340 IF RND(2)=1 THEN350 ELSE360
350 G=RND(8)+1:H=RND(G-1):I=G-H:
IF I<1 THEN350 ELSE370
360 G=0:H=0:I=0
370 E=A-C:F=B:GOTO1330
379 REM**LIKE DENOM. REGROUPING*
380 G=RND(8)+1:H=RND(G-1):I=G-H:
IF I<2 THEN380
390 B=RND(19)+1:C=RND(B-1):A=RND
(C-1):D=B:IF A<1 THEN390
400 IF A/B-C/D=>0 THEN390
410 CD=B:GOSUB240:IF B<>CD THEN3
90
420 GOSUB250:IF D<>CD THEN390
430 I=I-1:E=A+B-C:F=B:GOTO1330
439 REM*****1 DENOM A FACTOR OF
THE OTHER, NO REGROUPING*****
440 B=RND(8)+1:A=RND(B-1):IF A=1
THEN440 ELSE D=B*(RND(4)+1):C=R
ND(D-1)
450 IF A/B-C/D=<0 THEN440
460 CD=B:GOSUB240:IF CD<>B THEN4
40
470 CD=D:GOSUB250:IF CD<>D THEN4
40
480 IF RND(2)=1 THEN490 ELSE500
490 G=RND(8)+1:H=RND(G-1):I=G-H:
IF I<1 THEN490 ELSE510
500 G=0:H=0:I=0
510 E=A/D/B-C:F=CD:GOTO1330
519 REM*****1 DENOM A FACTOR OF
THE OTHER, WITH REGROUPING*****
520 G=RND(8)+1:H=RND(G-1):I=G-H:
IF I<2 THEN520
530 B=RND(8)+1:A=RND(B-1):IF A=1
```



```

THEN530 ELSE D=B*(RND(4)+1):C=R
ND(D-1)
540 IF A/B-C/D=>0 THEN530
550 CD=B:GOSUB240:IF CD<>B THEN5
30
560 CD=D:GOSUB250:IF CD<>D THEN5
30
570 I=I-1:E=D/B*A+CD-C:F=CD:GOTO
1330
579 REM*****UNLIKE DENOMINATORS
NO REGROUPING*****
580 B=RND(9)+1:A=RND(B-1):D=RND(
9)+1:C=RND(D-1)
590 IF B/D=INT(B/D) OR D/B=INT(D
/B) THEN580
600 IF A/B-C/D=<0 THEN580
610 CD=B:GOSUB240:IF CD<>B THEN5
80
620 CD=D:GOSUB250:IF CD<>D THEN5
80
630 IF B<D THEN B1=B:B2=B:D2=D B
LSE IF D<B THEN B1=D:B2=D:D2=B
640 CD=B*D:GOSUB260
650 IF CD>50 THEN530
660 IF RND(2)=1 THEN670 ELSE680
670 G=RND(8)+1:H=RND(G-1):I=G-H:
IF I<1 THEN670 ELSE690
680 G=0:H=0:I=0
690 E=(CD/B*A)-(CD/D*C):F=CD:GOT
O1330
699 REM*****UNLIKE DENOMINATORS
WITH REGROUPING*****
700 G=RND(8)+1:H=RND(G-1):I=G-H:
IF I<2 THEN700
710 D=RND(9)+1:C=RND(D-1):B=RND(
C-1):A=RND(B-1)
720 IF A<1 THEN710
730 IF D/B=INT(D/B) THEN710
740 IF A/B-C/D=>0 THEN710
750 CD=B:GOSUB240:IF CD<>B THEN7
10
760 CD=D:GOSUB250:IF CD<>D THEN7
10
770 IF B<D THEN B1=B:B2=B:D2=D B
LSE IF D<B THEN B1=D:B2=D:D2=B
780 CD=B*D:GOSUB260
790 IF CD>50 THEN710
800 I=I-1:E=(CD/B*A)+CD-CD/D*C:F
=CD:GOTO1330
808 REM*****ADDITION STARTS****
809 REM***LIKE DENOM. ANSWER<1**
810 B=RND(19)+1:A=RND(B-1):C=RND
(B-1):D=B:IF A/B+C/D=>1 THEN810
820 CD=B:GOSUB240:IF CD<>B THEN8
10
830 CD=D:GOSUB250:IF CD<>D THEN8
10
840 IF RND(2)=1 THEN850 ELSE860
850 G=RND(5):H=RND(4):I=G+H:GOTO
870
860 G=0:H=0:I=0
870 E=A+C:F=B:GOTO1330
879 REM***LIKE DENOM. ANSWER>1**
880 B=RND(19)+1:A=RND(B-1):C=RND
(B-1):D=B:IF A/B+C/D=<1 THEN880
890 CD=B:GOSUB240:IF CD<>B THEN8
80
900 CD=D:GOSUB250:IF CD<>D THEN8
80
910 IF RND(2)=1 THEN920 ELSE930
920 G=RND(5):H=RND(4):I=G+H:GOTO
940
930 G=0:H=0:I=0
940 I=I+1:E=A+C-B:F=B:GOTO1330
949 REM*****1 DENOM. A FACTOR OF
THE OTHER, ANSWER<1*****
950 B=RND(5)+1:A=RND(B-1):D=B*(R
ND(4)+1):C=RND(D-1)

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```

960 IF A/B+C/D=>1 THEN950
970 CD=B:GOSUB240:IF CD<>B THEN9
50
980 CD=D:GOSUB250:IF CD<>D THEN9
50
990 IF RND(2)=1 THEN1000 ELSE101
0
1000 G=RND(5):H=RND(4):I=G+H:GOT
O1020
1010 G=0:H=0:I=0
1020 E=D/B*A+C:F=D:GOTO1330
1029 REM*****1 DENOM. A FACTOR
OF THE OTHER, ANSWER>1*****
1030 B=RND(5)+1:A=RND(B-1):D=B*(
RND(4)+1):C=RND(D-1)
1040 IF A/B+C/D=<1 THEN1030
1050 CD=B:GOSUB240:IF CD<>B THEN
1030
1060 CD=D:GOSUB250:IF CD<>D THEN
1030
1070 IF RND(2)=1 THEN1080 ELSE10
90
1080 G=RND(4):H=RND(4):I=G+H:GOT
O1100
1090 G=0:H=0:I=0
1100 I=I+1:E=D/B*A+C-D:F=D:GOTO1
330
1109 REM*****UNLIKE DENOMS.
ANSWER<1*****
1110 B=RND(9)+1:A=RND(B-1):D=RND
(9)+1:C=RND(D-1)
1120 IF B/D=INT(B/D) OR D/B=INT(
D/B) THEN1110
1130 IF A/B+C/D=>1 THEN1110
1140 CD=B:GOSUB240:IF CD<>B THEN
1110
1150 CD=D:GOSUB250:IF CD<>D THEN
1110
1160 IF B<D THENB1=B:B2=B:D2=D B
LSE IF D<B THEN B1=D:B2=D:D2=B
1170 CD=B*D:GOSUB260:IF CD>50 TH
EN1110
1180 IF RND(2)=1 THEN1190 ELSE12
00
1190 G=RND(5):H=RND(4):I=G+H:GOT
O1210
1200 G=0:H=0:I=0
1210 E=CD/B*A+CD/D*C:F=CD:GOTO13
30
1219 REM*****UNLIKE DENOMS.
ANSWER>1*****
1220 B=RND(9)+1:A=RND(B-1):D=RND
(9)+1:C=RND(D-1)
1230 IF B/D=INT(B/D) OR D/B=INT(
D/B) THEN1220
1240 IF A/B+C/D=<1 THEN1220
1250 CD=B:GOSUB250:IF CD<>B THEN
1220
1260 CD=D:GOSUB250:IF CD<>D THEN
1220
1270 IF B<D THEN B1=B:B2=B:D2=D
ELSE IF D<B THEN B1=D:B2=D:D2=B
1280 CD=B*D:GOSUB260:IF CD>50 TH
EN1220
1290 IF RND(2)=1 THEN1300 ELSE13
10
1300 G=RND(4):H=RND(4):I=G+H:GOT
O1320
1310 G=0:H=0:I=0
1320 I=I+1:E=(CD/B*A+CD/D*C)-CD:
F=CD
1330 IF TC<7 THENS$="+" ELSE S$=
"-"
1340 RETURN
1349 REM*****INSTRUCTIONS*****
1350 PMODE1,1:PCLS:SCREEN1,0:S=8
:X1=0:Y1=10:C1=6:Y2=12:C$="USE T
HE RIGHT JOYSTICK TO":GOSUB140:C

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```

$="MOVE THE ROCKET ACROSS":GOSUB
140
1360 C$="THE SCREEN":GOSUB140:Y1
=Y1+10:C$="PRESS THE FIRE BUTTON
WHEN":GOSUB140:C$="THE ROCKET I
S UNDER THE":GOSUB140
1370 C$="RIGHT ANSWER":GOSUB140:
Y1=Y1+10:C$="PRESS THE FIREBUTTO
N NOW":GOSUB140:C$="TO START THE
GAME":GOSUB140:Y2=0
1380 P=PEEK(65280)
1390 IF P<>254 AND P<>126 THEN13
80
1400 NU=NU+1:PMODE1,3:PCLS:SCREE
N1,0:X1=20:Y1=90:C1=3:C$="JUST A
MOMENT PLEASE":GOSUB140:GOSUB29
0
1409 REM***PUT SUM ON SCREEN***
1410 PMODE1,1:PCLS:COLOR4,1:S=8:
LINE(72,155)-(183,191),PSET,B:LI
NE(0,155)-(255,155),PSET
1420 X1=0:Y1=157:C1=3:C$="SCORE"
:GOSUB140:X1=186:Y1=157:C$="HIGH
":GOSUB140
1430 YS$=STR$(YS):YS$=RIGHT$(YS$
,LEN(YS$)-1):C1=4:X1=0:Y1=169:C$
=YS$:GOSUB90:HS$=STR$(HS):HS$=RI
GHT$(HS$,LEN(HS$)-1):X1=186:Y1=1
69:C$=HS$:GOSUB90
1440 DRAW"C3":LINE(0,179)-(71,17
9),PSET:LINE(183,179)-(255,179),
PSET:NU$=STR$(NU):NU$=RIGHT$(NU$
,LEN(NU$)-1):X1=0:Y1=182:C1=2:C$
="EX":GOSUB140:X1=30:C$=NU$:GOSU
B90
1450 TD$=STR$(TD):TD$=RIGHT$(TD$
,LEN(TD$)-1):X1=186:C$="LEVEL":G
OSUB140:X1=240:C$=TD$:GOSUB90
1460 GS$=STR$(G):GS$=RIGHT$(GS$
,LEN(GS$)-1):X1=0:Y1=182:C1=2:C$
=GS$:GOSUB140:X1=30:C$=GS$:GOSU
B90
1470 IF G=0 AND B<10 THEN X1=X1+
23
1480 IF G=0 AND B>9 THEN X1=X1+1
8
1490 IF G<>0 AND B<10 THEN X1=X1
+10
1500 IF G=0 AND D>9 THEN X1=X1-4
1510 IF G<>0 AND D>9 THEN X1=X1-
4
1520 IF G<>0 AND B>9 THEN X1=X1+
4
1530 IF G=0 THEN1550
1540 Y1=167:C1=4:S=12:C$=G$:GOSU
B90:S=8:X1=X1+14
1550 X=X1:Y1=160:A5=A:B2=B:GOSUB
190:X1=X1+L6*10+5:DRAW"BM"+STR$(
X1)+","+STR$(Y1):IF S$="+" THEN
DRAWCH$(28) ELSE DRAWCH$(29)
1560 X1=X1+16:IF H=0 THEN1580
1570 Y1=167:S=12:C$=H$:GOSUB90:S
=8:X1=X1+15
1580 X=X1:Y1=160:A5=C:B2=D:GOSUB
190
1590 FORZ=1TO4:PUT((Z-1)*64,0)-((
Z-1)*64+63,66),FR,PSET:NEXTZ
1600 IF I=0 THEN1650
1610 IF I<>0 AND F>9 THEN X2=14
ELSE X2=20
1620 Y1=36:C1=1:S=12:FORZ1=1TO4
1630 X1=(Z1-1)*64+X2:C$=I$:GOSUB
90
1640 NEXTZ1
1650 IF I=0 AND F<10 THEN X2=30
1660 IF I=0 AND F>9 THEN X2=24
1670 IF I<>0 AND F<10 THENX1=20:
X2=34

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```

1680 IF I<0 AND F>9 THENX1=16:X
2=28
1690 C1=1:S=8:R=RND(4):FORZ1=1TO
4:X=(Z1-1)*64+X2:Y1=30
1700 IF Z1=R THEN A5=E:B2=F:GOSU
B190:GOTO1730
1710 A5=RND(F-1):IF A5=E THEN171
0
1720 B2=F:GOSUB190
1730 NEXTZ1
1740 GET(0,0)-(63,66),A1,G:GET(6
4,0)-(127,66),A2,G:GET(128,0)-(1
91,66),A3,G:GET(192,0)-(255,66),
A4,G
1750 FORT=1TO4:J(T)=0:NEXTT:FB=0
1760 RP=28:RK=1:PUT(RP,138)-(RP+
10,153),R,PSET:PMODE1,1:SCREEN1,
0
1769 REM*****LOOP STARTS*****
1770 PK=65280:IF PEEK(PK)=254 OR
PEEK(PK)=126 THEN1830
1780 JK=JOYSTK(0):IF JK=0 THEN18
00 ELSE IF JK=63 THEN1810
1790 GOTO1890
1799 REM*****MOVE ROCKET*****
1800 IF RP>28 THEN LINE(RP,138)-
(RP+10,153),PSET,BF:RP=RP+64:R
K=RK-1:GOTO1820 ELSE1820
1810 IF RP<219 THEN LINE(RP,138)
-(RP+10,153),PSET,BF:RP=RP+64:
RK=RK+1
1820 PLAY"L20T2003V31AGGA":PUT(R
P,138)-(RP+10,153),R,PSET:GOTO18
90
1829 REM*****BUTTON PRESSED*****
1830 IF RK=R THEN1850
1840 DRAW"C3":FB=FB+1:FORT=J(RK)
+69 TO135STEP6:LINE(RP+5,T)-(RP+
5,T+2),PSET:NEXTT:FORT=J(RK)+69
TO 135STEP6:LINE(RP+5,T)-(RP+5,T
+2),PSET:NEXTT:IF FB<2 THEN189
0 ELSE1970
1850 PLAYP3$:R1=(RK-1)*64+28:FOR
T=134TO J(RK)+64STEP-2:PUT(R1,T)
-(R1+10,T+18),R,PSET:NEXTT
1860 FORT=1TO16:GET(R1,J(RK)+66)
-(R1+10,J(RK)+84),RD,G:PUT(R1,J(
RK)+64)-(R1+10,J(RK)+82),RD,PSET
:NEXTT:FORT=1TO30:SCREEN1,1:SCRE
EN1,0:NEXTT
1870 FORT=1TO27STEP2:CIRCLE(R1+5
,J(RK)+37),T,3:NEXTT:PLAY"L18002
V5FFGEEFDDV20ECCDBBACBO1V31GGFE
EDFFECDBBCCDBAAGABBAV6AACBCDG
EFAACBA":FORT=4TO1STEP-1:FORT1=1
TO27STEP2:CIRCLE(R1+5,J(RK)+37),
T1,T:NEXTT1,T
1880 GOTO2010
1889 REM*****MOVE AN ALIEN*****
1890 CT=CT+1:M=RND(4):J(M)=J(M)+
IN:PCOPY1TO3:PCOPY2TO4:PMODE1,3:
ON M GOTO1900,1910,1920,1930
1900 PUT(0,J(M))-(63,J(M)+66),A1
,PSET:GOTO1940
1910 PUT(64,J(M))-(127,J(M)+66),
A2,PSET:GOTO1940
1920 PUT(128,J(M))-(191,J(M)+66),
A3,PSET:GOTO1940
1930 PUT(192,J(M))-(255,J(M)+66),
A4,PSET
1940 PMODE1,1:PCOPY3TO1:PCOPY4TO
2:PLAY"L255T255V3102ABC03EDE"
1950 IF J(M)>65 THENFORT=4TO1ST
EP-1:DRAW"C-T":LINE((M-1)*64+31
,J(M)+66)-((RK-1)*64+32,146),PSE
T:PLAY"L255T1001ABCDEF02GEACD":N
EXTT:GOTO1970
1960 GOTO1770

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1969 REM*ALIEN TOO LOW, 2ND. TRY
1970 HT=HT+1:FORT=1TO30:SCREEN1,
1:SCREEN1,0:NEXTT:FORT=1TO9STEP2
:CIRCLE((RK-1)*64+32,146),T,3:NE
XTT:PLAY"L180T1002V5FFGEEFDDV20E
CCDBBACBO1V31GGFEEDFFECDBBCCDDC
BAADGABBAV6AACBCDGEFAACBA"
1980 FORT=4TO1STEP-1:FORT1=1TO9S
TEP2:CIRCLE((RK-1)*64+32,146),T1
,T:NEXTT1,T
1990 FORT=1TO6:PCOPY1TO3:PCOPY2T
O4:SP=(R-1)*64:PMODE1,3:GET(SP,J
(R))-(SP+63,J(R)+66),A1,G:PUT(SP
,J(R))-(SP+63,J(R)+66),A1,PSET
:PMODE1,1:PCOPY3TO1:PCOPY4TO2:PL
AY"L255T255V3102ABCDEF03EDFGAB"
:NEXTT
2000 SC=0:GOTO2100
2009 REM*****ANSWER WAS RIGHT****
2010 SC=200-(CT*5)+TD*10+IN*10:IF
SC<0 THEN SC=0
2020 YS=YS+SC:YS$=STR$(YS):YS$=R
IGHT$(YS$,LEN(YS$)-1):LINE(0,169
)-(70,177),PSET,BF:X1=0:Y1=169
:C1=4:C$=YS$:GOSUB90
2030 IF FL=1 AND YS>HS THEN HS=
YS:HS$=STR$(HS):HS$=RIGHT$(HS$,L
EN(HS$)-1):LINE(186,169)-(255,17
7),PSET,BF:X1=186:Y1=169:C1=4:
C$=HS$:GOSUB90:PLAYP1$
2040 FORT=1TO500:NEXTT
2050 CT=0:IN=IN+1:IF IN<>11 THEN
2100 ELSE IN=1:TD=TD+1:PMODE1,3:
SCREEN1,0:PCLS:X1=90:Y1=80:C1=RN
D(3)+1:C$="TERRIFIC":GOSUB140:X1
=53:Y1=100:C$="NOW TRY LEVEL":GO
SUB140
2060 IF TY=1 AND TD=>7 THEN TD=7
ELSE IF TY=2 AND TD=>14 THEN TD
=14
2070 TD$=STR$(TD):TD$=RIGHT$(TD$
,LEN(TD$)-1):X1=193:C$=TD$:GOSUB
90
2080 IF TD=7 OR TD=14 THEN X1=24
:Y1=120:C$="THIS WILL BE A MIXTU
RE":GOSUB140
2090 FORT=1TO1500:NEXTT
2100 IF HT=2 THEN2110 ELSE1400
2110 PCLS:X1=40:Y1=80:C1=4:S=16:
C$="GAME OVER":GOSUB140
2120 IF YS>HS THEN HS=YS
2130 X1=20:Y1=120:C1=2:S=8:C$="Y
OUR SCORE":GOSUB140:X1=130:C$=YS
$:GOSUB90
2140 X1=20:Y1=140:C1=3:C$="HIGH
SCORE":GOSUB140:X1=130:HS$=STR$(
HS):HS$=RIGHT$(HS$,LEN(HS$)-1):C
$=HS$:GOSUB90
2150 X1=20:Y1=160:C1=4:C$="NEXT
PLAYER PRESS ENTER":GOSUB140:IN$
=INKEY$
2160 IN$=INKEY$:IF IN$<>CHR$(13)
THEN2160
2170 FL=1:SC=0:YS=0:IN=1:CT=0:HT
=0:NU=0:GOSUB2340:GOTO1350
2179 REM*****WHICH TYPES?*****
2180 X=128:CLS:PRINT@0,STRING$(3
,X)"which"CHR$(X)"kind"CHR$(X)"w
ould"CHR$(X)"you"CHR$(X)"like"ST
RING$(4,X):POKE1052,46
2190 POKE1216,49:PRINT@193,") AD
DITION":POKE1280,50:PRINT@257,")
SUBTRACTION":PRINT@480,STRING
$(2,X)"please"CHR$(X)"type"CHR$(
X)"a"CHR$(X)"number"STRING$(3,X)
"to"STRING$(4,X):
2200 POKE1505,42:POKE1527,49:POK
E1532,50:POKE1533,46:POKE1535,32

```

```

:IN$=INKEY$
2210 IN$=INKEY$:IF IN$="" THENPO
KE1534,106:PLAYP2$:POKE1534,42:P
LAYP2$:GOTO2210 ELSEIF ASC(IN$)<
49 OR ASC(IN$)>50 THEN2210
2220 TY=VAL(IN$):PRINT@192,STRIN
G$(32,32):PRINT@256,STRING$(32,
32);
2230 IF TY=2 THEN2290
2240 POKE1056,49:PRINT@33,") LIK
E DENOMINATORS - FRACTION ADDITI
ON LESS THAN 1":POKE1120,50:PRI
NT@97,")SAME AS 1 - FRACTION ADD
ITION GREATER THAN 1":POKE1184,
51:PRINT@161,")ONE DENOMINATOR A
FACTOR OF THE OTHER - FRACTIO
N ADDITION LESS THAN 1."
2250 POKE1280,52:PRINT@257,")SAM
E AS 3 - FRACTION ADDITION GREAT
ER THAN 1":POKE1344,53:PRINT@32
1,")UNLIKE DENOMINATORS - FRACTI
ONADDITION LESS THAN 1."
2260 POKE1408,54:PRINT@385,")SAM
E AS 5 - FRACTION ADDITION GREAT
ER THAN 1":POKE1472,55:PRINT@44
9,") A MIXTURE OF THE ABOVE":PO
KE1532,55
2270 IN$=INKEY$:IF IN$="" THENPO
KE1534,106:PLAYP2$:POKE1534,42:P
LAYP2$:GOTO2270 ELSE IF ASC(IN$)
<49 OR ASC(IN$)>55 THEN2270
2280 TB=VAL(IN$):GOTO2340
2290 POKE1056,49:PRINT@33,")LIKE
DENOMINATORS - NO REGROU
PING":POKE1120,50:PRINT@97,")ON
E DENOMINATOR A FACTOR OF THE
OTHER - NO REGROUPING":POKE118
4,51:PRINT@162,")UNLIKE DENOMINA
TORS - NO REGROUPING."
2300 POKE1248,52:PRINT@225,")LIK
E DENOMINATOR - REGROUPING":POK
E1280,53:PRINT@257,")ONE DENOMIN
ATOR A FACTOR OF THE OTHER - R
EGROUPING."
2310 POKE1344,54:PRINT@321,")UNL
IKE DENOMINATORS - REGRO
UPING":POKE1408,55:PRINT@385,")
A MIXTURE OF THE ABOVE":POKE153
2,55:IN$=INKEY$
2320 IN$=INKEY$:IF IN$="" THENPO
KE1534,106:PLAYP2$:POKE1534,42:P
LAYP2$:GOTO2320 ELSE IF ASC(IN$)
<49 OR ASC(IN$)>55 THEN2320
2330 TA=VAL(IN$)
2340 CLS:IF TY=2 THEN TD=TA+7 EL
SETD=TB
2350 RETURN
2359 REM*****CHARACTER DATA*****
2360 DATAD4R3U4L3BR5, BR2ND4BR2, R
3D2L3D2R3BU4BR2, R3D2NL3D2L3BU4BR
5, D2R2NU2ND2R3BU2BR2, NR3D2R3D2L3B
U4BR5, NR3D4R3U2L3BU2BR5, R3DG3BE4
BR, D4R3U2NL3U2L3BR5, D2BD2R3U2NL3
U2L3BR5
2370 DATA BR4, ND4R3D2NL3D2BU4BR2,
D4R2EHL2EHL2BR5, D4R3BU4L3BR5, D4
R2EU2HL2BR5, D2NR2D2R3BU4L3BR5, NR
3D2NR2D2BE4BR, NR3D4R3U2LBE2BR, D2
ND2R3D2U4BR2, R2L4LR2BR2BU4, BD3D
R3U4BR2, D4U2RNF2E2BR2
2380 DATAD4R3BU4BR2, ND4F2E2ND4BR
2, ND4F3DU4BR2, D4R3U4L3BR5, ND4R3D
2L3BR5BU2, D4R2NHNFU4L3BR5, ND4R3
D2L3RF2BR2BU4, NR3D2R3D2L3BR5BU4,
R2LD4BR3BU4, D4R3U4BR2, D2F2E2U2BR
2, D4E2F2U4BR2, F4BL4E4BR2, F2ND2E2
BR, R3DG3R3BU4BR
2390 DATABD2R2NR2NU2D2BU4BR2, BD2
R4BU2BR

```


FLIP



ANOTHER NASTY gambling game designed to encourage you gamblers to lose your money on the toss of a coin.

The Listing FLIP:

MC-10

by David Hill

```
1 REM*****
2 REM**      FLIP      **
3 REM**  OCTOBER/86  **
4 REM**BY DAVID J. HILL **
5 REM**    AGE-15    **
6 REM*****
19 GOT08999
20 INPUT"DO YOU WISH TO CONTINUE
  PLAY";Q$
21 IFQ$="Y"THEN23
22 IFQ$="N"THENCLS:GOTO50
23 CLS:X=RND(2)
24 INPUT"DO YOU WANT HEADS-1 OR
  TAILS-2";C
25 IFC<>XTHEN28
26 IFC=XTHEN29
28 PRINT452,"YOU LOSE!!";GOSUB
30:GOTO20
29 PRINT452,"YOU WIN!!!";GOSUB
40:GOTO20
30 S=S-20:GOTO60
40 S=S+50:GOTO60
50 GOSUB60:GOSUB60:GOSUB60:GOSUB
60:GOTO61
60 SOUND100,5:SOUND100,5:SOUND13
0,5:SOUND170,5:RETURN
61 CLS:PRINT270,"YOUR":PRINT29
8,"SCORE WAS:";S
62 INPUT"ANOTHER GO";AG$
63 IFAG$="Y"THENRUN19
64 IFAG$="N"THENCLS:END
8999 CLS0
9000 FORB=0T063:SET(B,0,3):NEXTB
  :FORB=0T031:SET(63,B,3):NEXTB:FO
  RB=0T031:SET(0,B,3):NEXTB:FORB=0
  1063:SET(B,31,3):NEXTB
9001 SET(1,1,3):SET(2,2,3):SET(3
  ,3,3):SET(4,4,3):SET(5,5,3):SET(
  6,6,3):SET(1,30,3):SET(2,29,3):S
  ET(3,28,3):SET(4,27,3)
9002 SET(5,26,3):SET(6,25,3):SET
  (62,1,3):SET(61,2,3):SET(60,3,3)
  :SET(59,4,3):SET(58,5,3):SET(57,
  6,3):SET(62,30,3):SET(61,29,3)
9003 SET(60,28,3):SET(59,27,3):S
  ET(58,26,3):SET(57,25,3):FORB=7T
  056:SET(B,7,3):NEXTB:FORB=7T024:
  SET(6,6,3):SET(B,3):NEXTB
9004 FORB=7T024:SET(7,B,3):NEXTB
  :FORB=7T056:SET(B,24,3):NEXTB
9005 FORR=2T05:SET(13,R,4):NEXT
  :SET(14,2,4):SET(14,5,4):FORR=3T
  04:SET(15,R,4):NEXT
9006 FORR=2T05:SET(17,R,4):NEXT
  :FORR=2T05:SET(19,R,4):NEXT:SET
  (18,2,4):SET(18,4,4):FORR=2T04:S
  ET(21,R,4):NEXT
9007 FORR=2T04:SET(23,R,4):NEXT
  :SET(22,5,4):FORR=25T027:SET(R,2
  ,4):NEXT:FORR=25T027:SET(R,5,4)
  :NEXT:SET(26,3,4):SET(26,4,4)
9008 FORR=2T05:SET(29,R,4):NEXT
  :SET(30,2,4):SET(30,5,4):SET(30,
  5,4):SET(31,3,4):SET(31,4,4)
9009 FORR=2T05:SET(35,R,4):NEXT
  :FORR=3T04:SET(36,R,4):NEXT:FOR
  R=2T05:SET(37,R,4):NEXT:FORR=39
  T041:SET(R,2,4):NEXT
```

```
9010 FORR=39T041:SET(R,5,4):NEXT
  R:FORR=3T04:SET(40,R,4):NEXT:FO
  RR=2T05:SET(43,R,4):NEXT:FORR=4
  3T045:SET(R,5,4):NEXT
9011 FORR=2T05:SET(47,R,4):NEXT
  :FORR=47T049:SET(R,5,4):NEXT
9012 FORR=15T017:SET(R,26,4):NE
  TR:FORR=19T021:SET(R,26,4):NEXT
  :FORR=23T025:SET(R,26,4):NEXT:F
  ORR=27T029:SET(R,26,4):NEXT
9013 FORR=31T033:SET(R,26,4):NE
  TR:FORR=35T037:SET(R,26,4):NEXT
  :FORR=39T041:SET(R,26,4):NEXT:F
  ORR=43T045:SET(R,26,4):NEXT
9014 SET(15,27,4):SET(17,27,4):S
  ET(19,27,4):SET(21,27,4):FORR=23
  T025:SET(R,27,4):NEXT:SET(27,27
  ,4)
9015 FORR=31T033:SET(R,27,4):NE
  TR:SET(35,27,4):SET(37,27,4):SET
  (40,27,4):SET(43,27,4):FORR=15T0
  17:SET(R,28,4):NEXT
9016 SET(19,28,4):SET(20,28,4):S
  ET(23,28,4):SET(29,28,4):SET(31,
  28,4):SET(35,28,4):SET(37,28,4)
  :SET(40,28,4):SET(45,28,4)
9017 SET(15,29,4):SET(19,29,4):S
  ET(21,29,4):FORR=23T025:SET(R,29
  ,4):NEXT:FORR=27T029:SET(R,29,4
  )
```

```
:NEXT
9018 FORR=31T033:SET(R,29,4):NE
  TR:SET(35,29,4):SET(37,29,4):SET
  (40,29,4):FORR=43T045:SET(R,29,4
  )NEXT:SET(47,29,4)
9019 SET(49,29,4):SET(51,29,4):S
  ET(53,29,4):SET(55,29,4):SET(57,
  29,4):FORR=0T0100:NEXT
9020 SOUND250,20
9021 FORR=20T024:SET(R,9,3):NE
  TR:FORR=9T019:SET(20,R,3):NEXT:S
  ET(21,13,3):SET(22,13,3):FORR=9T
  019:SET(26,R,3):NEXT
9022 FORR=26T030:SET(R,19,3):NE
  TR:FORR=32T036:SET(R,9,3):NEXT:
  FORR=9T019:SET(34,R,3):NEXT:FOR
  R=32T036:SET(R,19,3):NEXT
9023 FORR=38T042:SET(R,9,3):NE
  TR:FORR=9T019:SET(38,R,3):NEXT:F
  ORR=9T013:SET(42,R,3):NEXT:FORR
  =38T042:SET(R,13,3):NEXT
9025 FORL=9T054:SET(L,21,7):NE
  XT:L:FORL=9T054:SET(L,22,7):NE
  XT:L
9026 GOSUB60:GOTO23
```

DRAW

MC-10

by Chris Deacon

A very worth while small program if for no other reason than to watch the great variety of graphic colour patterns displayed automatically pressing "A". All instructions are given in the listing but the program starts off with a blank screen.

The Listing DRAW:

```
0 REM  PATTERN DRAW BY
      CHRIS DEACON
1 REM
2 REM TO DRAW USE THESE KEYS
  <YBHTUVN> AND KEYS
  <1 TO 9> TO CHANGE COLOUR
3 REM PRESS THE SPACEBAR FOR
  DRAW AND ERASE MODES IF YOU
```

```
PRESS <A> THEN THE COMPUTER
  WILL DRAW IT'S OWN PATTERNS
5 REM*****
10 CLS0:X=30:Y=14
20 A$=INKEY$:IF A$="" THEN 20
30 L=-1*(A$="A"):OHL=1GOSUB40,10
  0:GOTO20
40 V=VAL(A$):C=-C*(V=0)-V*(V=0)AN
  DV(9):A=ASC(A$)
50 R=-R*(A<32)-1*(A=32ANDR=0):
  IF R=1 THEN RESET(X,Y):RESET(X1,
  Y):RESET(X,Y1):RESET(X1,Y1)
60 X=X+(A=710RA=840RA=86)ANDX=0)
  :-(A=720RA=850RA=78)ANDX(64):
  X=X-64*(X(0)-(X(63)):X1=63-X
  70 Y=Y+(A=890RA=840RA=85)ANDY=0)
  :-(A=660RA=860RA=78)ANDY(32):
  Y=Y-32*(Y(0)-(Y(31)):Y1=31-Y
80 SET(X,Y,C):SET(X1,Y,C):SET(X,
  Y1,C):SET(X1,Y1,C):RETURN
90 REM*****
100 CLS0:FORI=1T030
110 A=ASC(MID$("YGHBTUVN",RND(8)
  ,1)):FORT=1TORND(20):GOSUB60
120 NEXTT:C=RND(8):NEXTI
130 FORT=1T02000:NEXTT:GOTO100
```


COMPUTER SHOPPING

16K ECB + optional printer

I ORIGINALLY MADE this so my family could have an electronic shopping list.

At first I only had the 'A', 'B' and 'C' option, but then I added options 'D' and 'E', and now it's a huge program!

The program's main part is a data file maker. Then there's a print out option, a search option, a screen look-at option, a list-out option and an end option.

The Listing:

```
0 GOTO10
1 '***** COMPUTER SHOPPING ***
  **** ANDREW THRELFALL *****
3 SAVE"187B:3":END
10 CLS:PRINT "COMPUTER SHOPPING
  LIST PROGRAM"
20 PRINT "WOULD YOU LIKE TO...."
30 PRINT "A. CHECK TO SEE IF SPE
  CIFIED ITEM IS ON THE LIST"
40 PRINT "B.WRITE A SHOPPING LIS
  T FILE"
50 PRINT "C.END"
60 PRINT "D.LIST THE FILE SHOPPI
  NG LIST"
70 PRINT "E.LIST THE SHOPPING LI
  ST ON PRINTER"
80 AS=INKEYS:IF AS="" THEN 80
90 IF AS<>"A" AND AS<>"B" AND AS
  <>"C" AND AS<>"D" AND AS<>"E"THE
  N PRINT "INVALID COMMAND":GOTO20
100 IF AS="A" OR AS="D" THEN 'D
  O NOTHING
110 IF AS="B" THEN 310
120 IF AS="C" THEN END
130 IF AS="D" THEN 160
```

```
140 IF AS="E" THEN 160
150 INPUT "WHAT ITEM ON THE LIST
  DO YOU WANT TO SEARCH FOR";CS
160 CLS:INPUT "POSITION TAPE--PR
  ESS PLAY.PRESS <ENTER> WHEN READ
  Y";CX$
170 OPEN "I",-1,"SHOPPING LIST"
180 IF EOF(-1) THEN 250
190 INPUT #-1,X$
200 IF AS="D" THEN 220
210 IF X$=CS THEN PRINT C$" FOUN
  D ON TAPE":CLOSE#-1:M=1:FOR TT=0
  TO 5000:NEXTTT:CLS:GOTO20
220 IF AS="D" THEN PRINT X$
230 IF AS="E" THEN PRINT #-2,X$
240 GOTO 180
250 CLOSE #-1
260 IF AS="D" THEN 290
270 IF AS="E" THEN 290
280 IF M=0 THEN PRINT C$" NOT ON
  TAPE":FOR EE=0 TO 5000:NEXTEE:C
  LS:GOTO20
290 IF AS="D" THEN FOR TT=0 TO 5
  000:NEXTTT:CLS:GOTO 20
300 IF AS="E" THEN FOR B=0 TO 50
  00:NEXTB:CLS:GOTO 20
310 CLS:INPUT "POSITION TAPE--PR
  ESS PLAY AND RECORD.PRESS <ENTER
  > WHEN READY";DH$
320 OPEN "O",-1,"SHOPPING LIST"
330 CLS:PRINT "INPUT YOUR ITEMS.
  TYPE <ST> WHEN FINISHED."
340 INPUT "ITEM";V$
350 IF V$="ST" THEN 380
360 PRINT #-1,V$
370 GOTO 330
380 CLOSE #-1
390 CLS:GOTO20
```

by Andrew Threlfall

LOTTO

by Andrew Threlfall
16K ECB + optional printer
APPLICATION

L OTTO IS A SMALL program to compute and print out random lotto numbers on your printer. Although made for the NSW lottery system, I'm sure it can be modified to suit other states.

The Listing:

```
0' GOTO10
1 '***** LOTTO *****
  ***** ANDREW THRELFALL *****
3 SAVE"187A:3":END
10 CLS
20 DIM N(6)
30 PRINT "THINKING"
40 FOR H=1 TO 6
```

```
50 N(H)=RND(40)
60 IF H=1 THEN 160
70 IF H<6 THEN 90
80 IF N(H)=N(5) THEN 50 ELSE GOT
  O100
90 IF H<5 THEN GOTO 110
100 IF N(H)=N(4) THEN 50 ELSE GO
  TO 120
110 IF H<4 THEN GOTO 130
120 IF N(H)=N(3) THEN GOTO 50 EL
  SE GOTO 140
130 IF H<3 THEN GOTO 150
140 IF N(H)=N(2) THEN GOTO 50 EL
  SE 160
150 IF N(H)=N(1) THEN GOTO 50 EL
  SE REM
160 NEXT H
170 FOR V=1 TO 6
180 PRINT "NUMBER ";V;" IS ";N(V
  )
190 NEXT V
200 INPUT "WANT TO PRINT IT";L$
210 IF L$="NO" THEN END
220 FOR B=1 TO 6
230 PRINT #-2,"NUMBER ";B;" IS "
  ;N(B)
240 NEXT B
```

○

Printer Test

by Allan Thompson
16K ECB
UTILITY

P RINTER TEST tests the DMP 100 and its serial / parallel interface settings. I had a problem and wrote this to test each adjustment I made.

To use it simply enter the baud rate and the poke when asked to. You should of course alter the interface setting also.

Have fun with it anyway.

The Listing:

```
1 '**printer/interface test**
  by allan thompson
2 GOTO4
3 SAVE"100C:3":END
4 GOSUB50:CLS
10 CLS:POKE359,57:SCREEN0,1:PRIN
  T:PRINT
20 INPUT"BAUDRATE";BD:SOUND200,1
25 INPUT"ENTER POKE150,#. [PK]";P
  K:SOUND200,1
26 POKE 150,PK:PRINT"POKE150,";P
  K:PRINT"THIS IS BAUD";BD:PRINT#-
  2,"THIS IS BAUD ";BD:PRINT:PRINT
  #-2:REM *** the test ***
40 PRINT#-2,"ABCDEFGHIJKLMNOPQRSTUVWXYZ
  TUVWXYzabcdefghijklmnopqrstuvwxy
  z1234567890 COMPLETED":PRINT
  "***COMPLETED**":SOUND180,9:SOUN
  D200,2:POKE359,126:END
50 CLS:PRINT@97,"THIS PROGRAM TE
  STS THE DMP100":PRINTTAB(4)" AND
  IT'S SERIAL/PARALLEL":PRINTTAB(
  4)"INTERFACE SETTINGS. I HAD A":
  PRINTTAB(4)"PROBLEM AND WROTE TH
  IS TO":PRINTTAB(4)"TEST EACH ADJ
  USTMENT I MADE."
51 GOSUB100:CLS:PRINT@97,"TO USE
  IT SIMPLY ENTER THE":PRINTTAB(4
  )"BAUD RATE AND THE POKE WHEN":P
  RINTTAB(4)"ASKED TO.":PRINTTAB(4
  )"YOU SHOULD OF COURSE ALTER":PR
  INTTAB(4)"THE INTERFACE SETTING
  ALSO.":PRINTTAB(36)"HAVE FUN WIT
  H IT ANYWAY."
52 PRINTTAB(36)"COMPLIMENTS ALLA
  N THOMPSON"
100 FORI=1TO7000:NEXT:RETURN
101 END
```

○

THE CREATION of SPACE

16K ECB

GRAPHICS

by Andrew Threlfall

THE CREATION OF SPACE is a graphics shortie we recently received. Although it can be the centerpoint of controversy for some religious and ethnic groups, it shows one of the supported theories on the creation of space, ie the Big Bang theory.

Whatever the theory really is, it is very good work for an eight-year old. Congrats!

The Listing:

```
0 GOTO10
1 '** THE CREATION OF SPACE ****
  ***** ANDREW THRELFALL *****
3 SAVE"187:3":END
10 PRINT "THE CREATION OF SPACE"
20 PRINT "BY ANDREW THRELFALL"
30 FOR MM=0 TO 2001:NEXTMM
40 PMODE 4
50 PCLS
60 SCREEN 1,1
70 CIRCLE (123,80),5
80 FOR VW=0 TO 1000:NEXTVW
90 SCREEN 0,0:CLS
100 CLS0
110 PRINT @ 270,"bang!!!!!!!!!!!!!!
!!!!!!"
120 SOUND 255,1
130 SOUND 255,1
140 FOR FF=0 TO 1000:NEXTFF
150 SCREEN 1,1
160 PMODE 3
170 PCLS 3
180 CIRCLE (123,80),10
190 FOR Y=80 TO 0 STEP-10
200 LINE (123,80)-(0,Y),PSET
```

```
210 NEXTY
220 FOR T=80 TO 0 STEP -10
230 LINE (123,80)-(T,190),PSET
240 NEXTT
250 FOR P=123TO 0 STEP-10
260 FOR Q=190 TO 80 STEP-10
270 LINE (123,80)-(P,Q),PSET
280 NEXTQ
290 NEXTP
300 FOR B=255 TO 80 STEP-10
310 FOR A=80 TO 0 STEP-10
320 LINE (123,80)-(B,A),PSET
330 NEXT A:NEXT B
340 FOR X=123 TO 0 STEP-10
350 FOR Z=80 TO 0 STEP-10
360 LINE (123,80)-(X,Z),PSET
370 NEXT Z:NEXTX
380 FOR C=255 TO 125 STEP-10
390 FOR D=190 TO 80 STEP -10
400 LINE (123,80)-(C,D),PSET
410 NEXTD
420 NEXT C
430 FOR XX=0 TO 2000:NEXTXX
440 FOR MM=0 TO 50
450 PCLS (RND(8))
460 SOUND RND(255),1
470 NEXTMM
480 FOR S=0 TO 100:NEXTS
490 SCREEN 1,1
500 PCLS 7
510 FOR GG=0 TO 200 STEP 2
520 CIRCLE (GG,123),40
530 PCLS
540 NEXTGG
550 PCLS
560 FOR TT=0 TO 200 STEP 2
570 CIRCLE (TT,123),25
580 PCLS
590 NEXTTT
600 PCLS
610 FOR BB=0 TO 200 STEP 2
620 CIRCLE (BB,123),17
630 PCLS
```

```
640 NEXTBB
650 PCLS
660 FOR WW=0 TO 200 STEP 2
670 CIRCLE (WW,123),15
680 PCLS
690 NEXTWW
700 PCLS
710 FOR ZX=0 TO 200 STEP 2
720 CIRCLE (ZX,123),13
730 PCLS
740 NEXTZX
750 FOR DD=0 TO 200 STEP 2
760 CIRCLE (DD,123),10
770 PCLS
780 NEXTDD
790 FOR VV=0 TO 200 STEP 2
800 CIRCLE (VV,100),7
810 PCLS
820 NEXTVV
830 PCLS
840 FOR AA=0 TO 200 STEP 2
850 CIRCLE (AA,100),40
860 NEXT AA
870 PCLS
880 FOR XP=0 TO 200 STEP 2
890 CIRCLE (XP,90),40
900 NEXTXP
910 PMODE4
920 PCLS
930 SCREEN 1,1
940 CIRCLE (123,80),29
950 CIRCLE (0,56),15
960 CIRCLE (50,10),10
970 CIRCLE (80,200),30
980 CIRCLE (12,79),4
990 PSET (5,30,7)
1000 PSET (100,63,3)
1010 PSET (28,9,8)
1020 FOR X=0 TO 2000:NEXTX
```

○

SPACE SHIP

by Joy Wallace

16K ECB
GRAPHICS

SPACE SHIP IS A small graphics quickie. Very basically it shows a space craft forming in the center of the screen with smaller space ships developing on the sides of the screen.

The Listing:

```
0 GOTO5
1 '***** SPACE SHIP *****
  ***** JOY WALLACE *****
3 SAVE"169A:3":END
4 ' SET UP SCREEN
5 PMODE4,1:SCREEN1,1:PCLS1
6 COLOR2
9 ' LARGE SPACE SHIP
10 CIRCLE(128,96),60,,.5
11 FORR=1TO20STEP4:' R=RADIUS
12 CIRCLE(128,65),R,,.5,.45,.1
13 NEXTR
14 ' LINES ACROSS CENTRE
```

```
15 FORX=70TO185STEP5
20 LINE(X,90)-(X,100),PSET
25 NEXTX
27 LINE(70,90)-(185,100),PSET,B
30 LINE(90,120)-(80,135),PSET:LI
NE(166,120)-(176,135),PSET
32 LINE(93,120)-(80,135),PSET:LI
NE(163,120)-(176,135),PSET
35 PAINT(128,85),2,2:PAINT(128,1
05),2,2:'PAINT(128,70),2,2
40 FORX=20 TO 29STEP3
45 LINE(X,20)-(70,70),PSET:NEXTX
50 FORX=226TO235STEP3:LINE(X,20)
-(185,70),PSET:NEXTX
54 ' SMALL SHIPS
55 FORX=10TO255STEP25:FORZ=0TO25
5 STEP25
60 CIRCLE(X,180),10,,.5:LINE(Z,1
80)-(Z+20,180),PSET
62 CIRCLE(X,10),10,,.5:LINE(Z,10
)-(Z+20,10),PSET
65 NEXTZ:NEXTX
100 GOTO 100
```

○

THE IDEAL COMPUTER

I WAS ASKED by Graham to write an article, explaining in detail what my idea's were of the the ideal computer.

I decided to give two ideas, one realistic view and one unrealistic, but first the realistic view.

(1) Memory, one megabyte on board; access time 40 ns.

(2) EPROM standard 256k bytes; access time 40 ns.

(3) EPROM RS232 (for handshaking) 64k bytes 40 ns.

(4) Master CPU 68020, Clock => 10 Megahertz.

(5) CPU's on board 68020, 68000, 68008.

(6) 8 octave 16 voice stereo, speech/music synthesizer.

(7) Disk Operation System in EPROM with access to DSDD or SSDD 80 or 40 track DOS access speeds at >= 20K baud for 5 1/4 drives and >= 96K baud access for 3 1/2 drives.

(8) A full length stroke, heavy touch, alpha/numeric professional keyboard.

(9) Colour graphics up to 640*400 pixels, with 64 colours available in the highest resolution mode and a palette of 4096 colours in any mode.

(10) Basic (by Microsoft in the Tandy tradition) and macro assembler both in EPROM.

(11) One 3 1/2 and one 5 1/4 drives as standard equipment expandable to two 3 1/2 and one

5 1/4 drives.

(12) A stereo colour monitor to suit.

(13) I/O ... communications RS232, Centronics parallel port, two sound output ports (left and right channels), a mouse port, two joystick ports, a cartridge port, RGB video output port, composite video output port, digitizer input port, disk drive I/O port (5 1/4), universal hard drive port, a light pen input port, a 10 amp 250 volt output control port and a memory expansion port expandable to 20 megabytes of RAM.

(14) All of this for less than \$4000.

Now what I would really consider the ideal computer (will not be in production for about another 50 years yet) as follows:

(1) Memory 1000 megabytes on board RAM access time 100 pico seconds.

(2) 10 megabytes ROM; access time 100 pico seconds.

(3) No keyboard, voice recognition in any language, computer or standard human.

(4) Complete I/O for all or any external device's.

(5) Program storage on laser controlled crystal memory (all disk drives obsolete, .1 cubic meter of Crystal memory holds 2 to the power of 27 bytes of

storage).

(6) Size physical ... twice that of a CoCo except crystal storage.

(7) CPU's: 512 bit read/write and internal operation, clock speed @ 100 megahertz.

(8) Sound 12 octaves and 256 voices stereo, response 10 hz to 20K hz +/- 1dbm and noise and hum and spurious @ -100 Dbm.

(9) Graphics maximum resolution 65536*65536 pixels, 65536 colours in maximum resolution and a palette of 1048576 colours.

(10) A colour monitor to suit.

(11) Cost 10 percent of the customers gross annual income, regardless of income.

(12) for the moment however, a Cray XMP or Cray II in a case the size of a CoCo and at the same price as a CoCo would do eh, HA, HA.

Now you ask what would you do with such a computer?

Well you could design starships, cures for incurable diseases, calculate how to travel in hyperspace, antigravity devices, radio teleportation, how to stop aging in humans, weather control and maybe just maybe peace, just to mention a few, you could play space invaders or pacman, perhaps you could even link all the these super CoCo's together to find the meaning of life which everyone knows is 42!

by Les Thurbon

PASCAL, MICE, AND ME

by Barry Cawley

Well here we are well into 1987! My but how time flies. It seems like just yesterday we just started 1986. I believe when time goes this quickly it is a sign of age.

In the last 6 months I have changed from Basic as my main programming language to Pascal, which rather than being an interpretive language as is Basic, Pascal is a compiled language.

I can hear you now groaning about the time spent sitting waiting for the compiler to compile.

Not any more! Take a look at Turbo Pascal from Borland. My but that little baby compiles fast! To give you an example, a 200 line program compiled under Turbo Pascal would take somewhere in the region of 20 seconds to compile, or even less depending on the content of the source code!

I hardly use Basic for anything now, simply because I find it to slow for most of the things that I really want to do.

An example of this speed difference can be seen in the program "Mouse Sketch" which ran so fast initially that a delay of 200 had to be inserted when changing the colours, just so the colours could be seen! (If you do not believe me, take out the delay and hold down the middle button of your mouse!)



PRINTFILE

by Barry Cawley

This program will print out files that match any wild card specifications (as per DOS) one after another on the default drive until all matches are found.

The program will also start a new page for each file as well as putting a title line at the top of the first page in double width characters (on Epson compatible printers only). Hope you enjoy this program.

```
type
  Char12arr = array(1..12) of Char;
  String20  = string(20);
  RegType   = record
    ax, bx, cx, dx, bp, si, di, ds, es, flags: integer;
  end;

var
  y, s, k, m, t, ch : integer;
  SaveReg            : RegType;
  Error              : integer;
  Regds              : RegType;
  DTA                : array(1..43) of Byte;
  Mask               : Char12arr;
  NamR               : String20;
  FName              : array(1..128) of string(20);
  textfile : text;
  scratch  : string(128);

procedure printfile;
begin
  write('Printing File : ');
  writeln(scratch);
  assign (Textfile, scratch);
  ($I-)
  reset (Textfile);
  ($I+)
  if ioresult <> 0 then
    Writeln('Cannot find ', Scratch)
  else
    begin
      Writeln(lst,
        Writeln(lst,
          Writeln(lst,
            While not eof(Textfile) do begin
              readln(Textfile, Scratch);
              Writeln(lst, scratch);
            end;
            Write(lst, #12);
          end;
          close(textfile);
        end;

(start procedure Printfile)
(inform user what is going on)

(Assign file name to variable )
(Turn off I/O error checking)
(Put file pointer to start of file)
(Turn on I/O error checking)
(If file not found )
(Inform user file not found)
(Otherwise)
(print title of file at top of page)
-----');
', scratch);
-----');
(Do until end of file reached)
(read a line from file)
(write that line to printer)
(end of Do while)
(File is finished, So add a form feed)
(end otherwise loop)
(close file)
(end procedure)
```


MOUSE SKETCH

by Barry Cawley

M sketch is a fun program which allows you to draw anything you like on the Hi-res screen with the mouse.

The drawing is accomplished by holding down the left button then by pressing the middle button. The right button changes the colour of the hi-res screen can be changed.

Therefore to run this program properly, a three button mouse is required and your mouse driver must be pre loaded before running the program.

```
program MouseSketch;
```

```
{
```

```
    This program shows how to read a three button Mouse.  
    and also is a simple drawing program.
```

```
    ***WARNING***
```

```
    Be sure that you have loaded the mouse driver (by  
    running MOUSE.COM) before executing this program.
```

```
}
```

```
($I graph.p)
```

```
type
```

```
    RegPack =
```

```
    record
```

```
        AX,BX,CX,DX,BP,SI,DI,DS,ES,Flags : Integer;
```

```
    end;
```

```
var
```

```
    OldX,OldY,X,Y : Integer;
```

```
    M1,M2,M3,M4,clr : Integer;
```

```
    RegPak : RegPack;
```

```
procedure Mouse(var M1,M2,M3,M4 : Integer);
```

```
var
```

```
    Regs : RegPack;
```

```
begin
```

```
    with Regs do begin
```

```
        AX := M1;
```

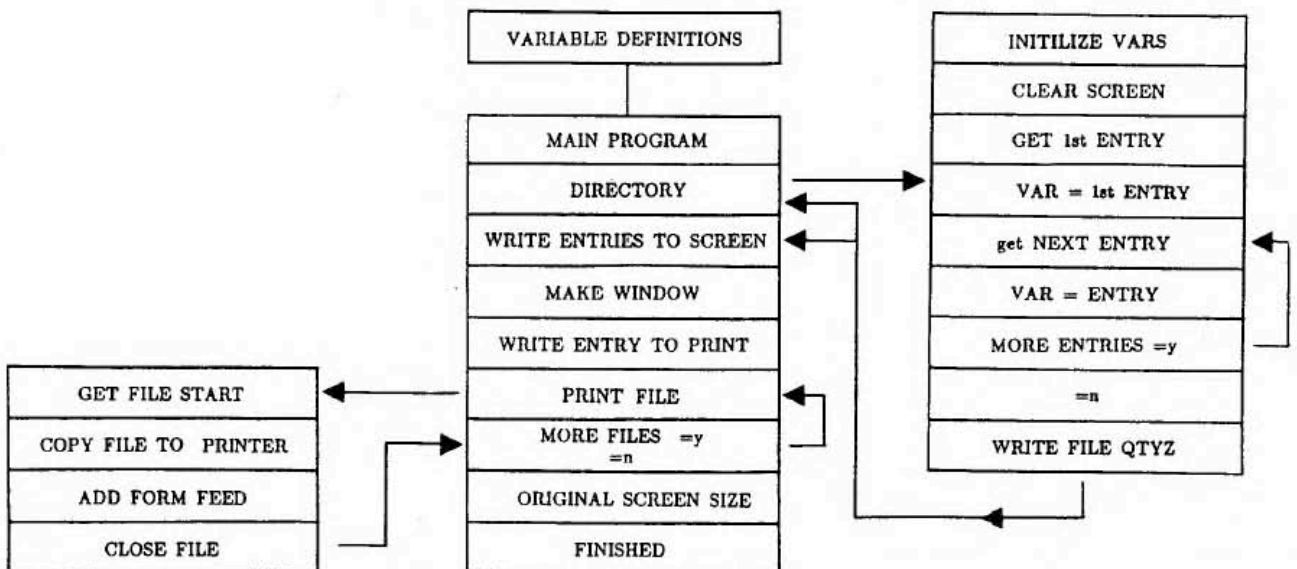
```
        ( Set up ax,bx,cx,dx for interrupt )
```

```
        BX := M2;
```

```
        CX := M3;
```

```
        DX := M4
```

FLOW CHART OF PROGRAM PRINT FILES FOR NEW USERS/PROGRAMMERS




```

end;
Intr(51,Regs);          ( Trip interrupt 51 )
with Regs do begin
  M1 := AX;
  M2 := BX;
  M3 := CX;
  M4 := DX
end
end; ( of proc Mouse )

begin ( main body of program MouseSketch )
  M1 := 0;
  M2 := 0;
  M3 := 0;
  M4 := 0;
  HiRes;                  ( Choose graphics mode and color )
  HiResColor(Yellow);
  graphwindow(1,1,640,180);
  draw(1,179,640,179,1);
  M1 := 0;                ( Initialize mouse driver )
  Mouse(M1,M2,M3,M4);
  M1 := 1;                ( Turn on Mouse cursor )
  Mouse(M1,M2,M3,M4);
  OldX := 0;
  OldY := 0;
  gotoxy(1,25);   Write('Left button = draw   Middle button = Change colour   Right button = F1
11');
  while not KeyPressed do begin  ( Exit mouse when any key pressed )
    M1 := 3;
    Mouse(M1,M2,M3,M4);
    if M2=1 then begin
      M1 := 2;
      Mouse(M1,M2,M3,M4);
      Draw(OldX,OldY,M3,M4,1); ( Draw if button pushed )
      M1 := 1;
      Mouse(M1,M2,M3,M4);
      m2:=0;
    end
    else if m2=2 then begin
      M1 := 2;
      Mouse(M1,M2,M3,M4);
      FillShape(M3,M4,1,1); ( Draw if button pushed )
      M1 := 1;
      Mouse(M1,M2,M3,M4);
      m2:=0;
    end
    else if m2=4 then begin
      delay(200);  (add delay so that colours can be seen)
      clr:=clr+1;
      if clr>15 then clr:=1;
      hirescolor(clr);
    end;
    OldX := M3;
    OldY := M4
  end
end. ( of program MouseSketch )

(Program to print out files, defined by parameters given at prompt)

```



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\$20 A Box

IN BRIEF

Here's What's Happening

InterTAN News

Tandy was at the PC '87 show on stand 405 on the international level.

To say we "wow'ed" them, is an understatement!

In fact many times during each of the days we were there, we had the bulk of the show visitors at our stand.

The reasons are clear.

Firstly we had both the new Tandy 1000 EX and the new Tandy 1000 SX on show.

At their price, these computers are scene stealers anyway!

The we had two different office networking systems, CTC showing their new database off, Blaxland Computer Services showing OS-9 Level 2 and of course Glodsoft showing Goldlink on Viatel.

Little wonder then that the

PC '87 show goes down in InterTan's history as the most successful we've ever held!

OS-9 Level 2 could well be in your stores soon.

As Graham will no doubt tell you in another part of this magazine, level 2 has been acclaimed by serious computer users as THE system for the latter part of this decade.

You will be impressed both by the speed and by the system's ability, when working in a CoCo 3, to run two or more programs at once without any apparent time loss.

The DMP 106 is now available.

This printer - as the DMP 105 - was the best value printer available in Australia.

Now we've made it compatible with our Tandy 1000 series

computers, as well as the CoCo!

See it at your local store this month!

Finally, we've just released the latest Tandy Computer Catalogue.

Long overdue, I'm sure you'll all appreciate this one! There is something in there for ANY computer user, so rush into your Tandy Store and grab one now!

That's it for this month, but watch this space because we have some MORE exciting news coming up very soon!

Ken Allan
Computer Buyer
InterTan (Aust) Pty Ltd

Don't Buy It — Rent It!

Tech Rentals is a new firm specialising in the rental of technical equipment.

They have a very broad range of equipment available including modems, IBM computers, Apple Computers, Tape Readers, TV Test equipment, many differing forms of test equipment, Scanners and Word Processors.

We recently had cause to try out their service when a modem was needed urgently here, and we found them to be very fast to respond to our needs.

Tech Rentals have offices in most states, Head Office being 55 Blaxland Rd., Ryde, NSW. 2112, phone 02 808 3055.

IBM/PC AT Compiler

Intel have released a C language compiler for use with IBM PC and AT compatible computers running 3.0 DOS or later.

The full C language with all the latest enhancements has been

implemented and object code is produced which is compatible with other Intel 80386 languages.

More info can be obtained by contacting Intel Australia Pty Ltd 200 Pacific Highway, Crows Nest, NSW 2065.

Now You can Communicate by Radio!

GFS Electronics (17 McKean Rd., Mitcham, Vic. 3132), have just released the Advanced Block Exchange Compelled Sequence Protocol (ABECS) software for the CPU 100 intelligent radio data modem.

This software provides very high data throughput whilst maintaining full error correction!

The range of additional options is truly staggering, so we suggest you contact GFS Electronics should you need to know more.

AutoCAD Enhancement Released

AutoPlan has just been released as an enhancement for AutoCAD.

AutoPlan uses a single command to draw walls and corners, as cavity, block or solid. It has a full list of BHP steel specs, its can simulate iron or wood lace, and will allow the user to print out in any scale.

AutoPLAN also has a fast draw command, it will produce detailed elevations, and it can produce bills of quantity for estimating purposes.

AutoCAD & AutoPlan are available for the Tandy 1000 and Tandy 3000 series of computers.

PC Write Revised

Many home and business users of the T1000, who use PC Write will be pleased to learn that Version 2.7 has just been released.

The new version has a 45,000 word spelling checker which

checks as the word is typed. There is also a mail merge function and support for 300+ printers, including laser printers.

PC Write 2.7 can also generate indexes.

This latest version is available from Personal Computer Software, 68 Alfred St. Milsons Point NSW 2061.

The Data Spectrum Story

Data Spectrum sells a broad range of goodies for computer users.

Items include breakout boxes, patching boxes, pulse monitors, jumper boxes, testers, footrests, printer stands, cables, RS 232 ABCDE boxes, cleaning kits, disks and disk boxes.

For information phone Ray Cartwright on (07) 44 6746

Want a Discount?

Quality Computer Services is offering a 10% discount on a range of software from dBase to Symphony, from Lotus 123 to Crosstalk. Call them now on (07) 390 7946 for a list or more details.

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MARTHA's Trading Post

Some of you computer derros have accumulated so much junk in the past few years, you are becoming a menace to society and a health hazard to your cat.

This is your chance to get rid of those unwanted bits of equipment.

Place your ad here and I'll leave it on till your steam operated modem or whatever gets sold, or I get sick of the sight of your ad.

Martha

Wanted: A 3D program which rotates a defined object through 3 planes. Must be ML or fast Basic for CoCo 64K Disk ECB.

Colin Gawn 089 52 9537

Wanted: Multipac interface. John Poxon 07 208 7820

For Sale: Color Computer 2, 64K. CCR 81 Tape recorder, all books including programs and graphics books. 2 Joysticks. Color Scriptsit word processor, Dungeons of Daggorath on ROM. Taped programs from Rainbow & CoCo.

\$400.00

John Hockley 02 684 1184

For Sale: One PC-2 Pocket Computer (Sharp PC-1500 compatible). One PC-2 Dual cassette interface/printer/plotter. One 4K memory expansion pak. 10 software packages, all originals. One artificial leather carry case. Pens & paper for the printer. All necessary manuals & cables inc "Getting Started".

\$300.00

Brett Hooker 07 395 1794

For Sale: CGP 115 Graphic Plotter. Less than 60 hours work with manual, spare paper & pens & all hardware.

\$220.00

Rory Doyle 03 758 2671

For Sale: Tandy acoustic modem with power supply, \$50.00. Tandy CGP 115 Color graphics plotter just overhauled with pens, paper and manual, \$150.00. Genuine Tandy hard disk controller. Needs OS-9 Version 2, \$200. OS-9 with version 2.00 upgrade, TS EDIT, TRS Copy & all manuals, \$75.00

Brian Coombes 03 551 7462

For Sale: Tandy Color Computer 2, 64K ECB, perfect condition, in original box.

\$299.00

Neil Evans 03 584 7296

WHAT'S ON THE BEST OF CoCoOz

Best of CoCoOz #1. EDUCATION

ROADQUIZ ROB WEBB
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 MASTERMIND GRAHAM JORDAN
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 ANESTHESIA MIKE MARTYN
 YAHTZEE KEVIN GOWAN
 OREGON TRAIL DEAN HODGSON
 BATTLESHIP CHRIS SIMPSON
 ADVENTURE + STUART RAYNER
 ANDROMEDIA MAX BETTRIDGE
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 RAMIEST TOM DYKEMA
 PRINT SORT PAUL HUMPHRIES
 BEAUTY BOB THOMPSON
 DATAGEN ROBIN BROWN
 PCOPY BRIAN DOUGAN
 FASTEXT OZ-WIZ
 MONITOR + BRIAN FERGUSON
 COPYDIR THOMAS SZULCHA
 LABELLER FRED BISSELLING
 SPEED CONTROL PAUL HUMPHRIES
 2BC WARREN WARNE
 CREAT-A-TITLE BRIAN FERGUSON
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 LABELLER GORDON BENTZEN
 DIR MORRIS SINGER
 HI ALEX. HARTMANN

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 PERSMAN PAUL HUMPHRIES
 (Personal Finance Management)
 BANKSTAT BARRY HATTAM
 (Annual & Store Statement)
 CCS GRAHAM MORPHEIT
 (tape; Sales Invoicing)
 INSURE ROY VANDERSTEEK
 (Analyse Home Contents)
 COCOFILE BRIAN DOUGAN
 (tape; database)
 DPMS PAUL HUMPHRIES
 (disk; Disk Program Management Sys)
 DATABASE PAUL HUMPHRIES
 (tape; THE tape database)
 RESTACC DUNG LY
 (tape; Restaurant Accounts)
 SPDSHEET GRAHAM MORPHEIT
 (disk; 22 column spreadsheet)
 PRSPDSHT GRAHAM MORPHEIT
 (disk; prints out "SPDSHEET")
 ACS3 GREG WILSON
 (disk; Multi disk database)

Best of CoCoOz #5 ADVENTURES

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 MATCHER ?
 LETTERS JACK FINNEN
 BABYSIT JOHANNA VAGG
 SPELLING JOHANNA VAGG
 SPEEDTAB DEAN HODGSON
 10 FACES JOHANNA VAGG

Please Note : Some of the
 programs on Best of Cocooz # 3
 and #4 will not work on the
 Coco 3.

Best of CoCoOz #7 GRAPHICS

LIL'COCO ANDREW WHITE
 THE ROOM HERMANN FREDRIKSON
 BACK STREET JOY WALLACE
 LOCO MIKE D'ESTERRE
 COCO ART SANDY MCGREGOR
 KANGA JOHANNA VAGG
 THE BOAT SANDY MCGREGOR
 SAD COCO P. BOLLE
 TOWER C.A. SYMS
 WINDY DAY SARAH LAV
 SAILING STEVE YOUNGBERRY
 OUTHUSE STEVE YOUNGBERRY
 SMURF JOHANNA VAGG
 SUNSTATE STEVE YOUNGBERRY
 HELICOPTER ANDREW WHITE
 MARTHA ANDREW WHITE
 BAD MOON STEVE YOUNGBERRY
 MCC JOY WALLACE
 EAGLE ?
 BLASTER PAUL YOULD
 FOGHORN PAUL STEVENSON

Best of CoCoOz #8 16K GAMES

ALIEN STUART SANDERS
 QWERL DARRELL BERRY
 SHOOTOUT CRAIG STEWART
 SHUTTLE CRAIG STEWART
 FROG DARREN OTTERTY
 FROGRACE TOM LEHANE
 KIMMAT TOM LEHANE
 GRANDPRI DOUG GREY
 WATER WARS JUSTIN LIPTON
 CATERPILLER JUSTIN LIPTON
 DETECTIVE VAL STEPHENSON
 BREAKOUT WHY/BILT

Best of CoCoOz #9 32K GAMES

TRIOMINO BOB DELBOURGO
 MATCHEM CHARLES BARTLETT
 GO BOB DELBOURGO
 NARZOD MAX BETTRIDGE
 CHOMPER MAX BETTRIDGE
 POPBALL MAX BETTRIDGE
 LUDO WHY/BILT
 SABRE ANDREW SIMPSON
 MOVEABOUT KEVIN GOWAN
 JIGSAW JAMES REDMOND
 LABYRINTH JAMES REDMOND
 TANK CRAIG STEWART

Best of CoCoOz #10 Education II

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 DRIVERS TEST ANDREW SIMPSON
 SALE JUSTIN LIPTON
 TABLES PAT KERMODE
 OPALTON IAN CLARKE
 CAPITAL LETTERS BOB HORNE
 TEST MATCH JEFF SHEN
 SENTENCE ENDINGS BOB HORNE
 ESCAPE DEAN HODGSON
 RAILMATH BOB HORNE
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Best of CoCoOz #11 Education III This is a DISK only issue!

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CoCoConnection: \$206.00 ()
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Access Goldlink #642# on Viatel with a 1200/75
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Magazines, Tapes & Disks

Australian CoCo (Advanced Programs for your CoCo):

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1 Month \$ 4.50 ()	1 Month \$ 16.50 ()

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# 2 - Games 32K:	()	()
# 3 - Utilities:	()	()
# 4 - Business:	()	()
# 5 - Adventure:	()	()
# 6 - Preschool:	()	()
# 7 - Graphics:	()	()
# 8 - Games 16K:	()	()
# 9 - Games 32K:	()	()
#10 - Education:	()	()
#11 - Education:	-	()

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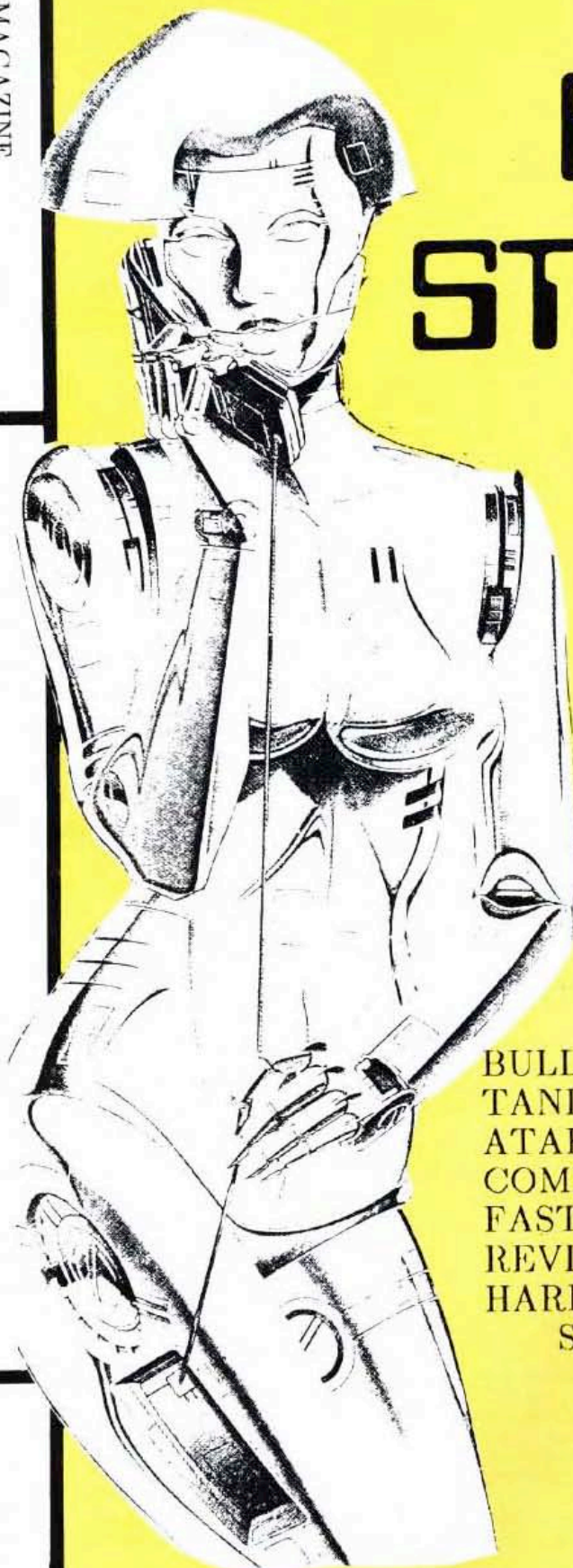
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