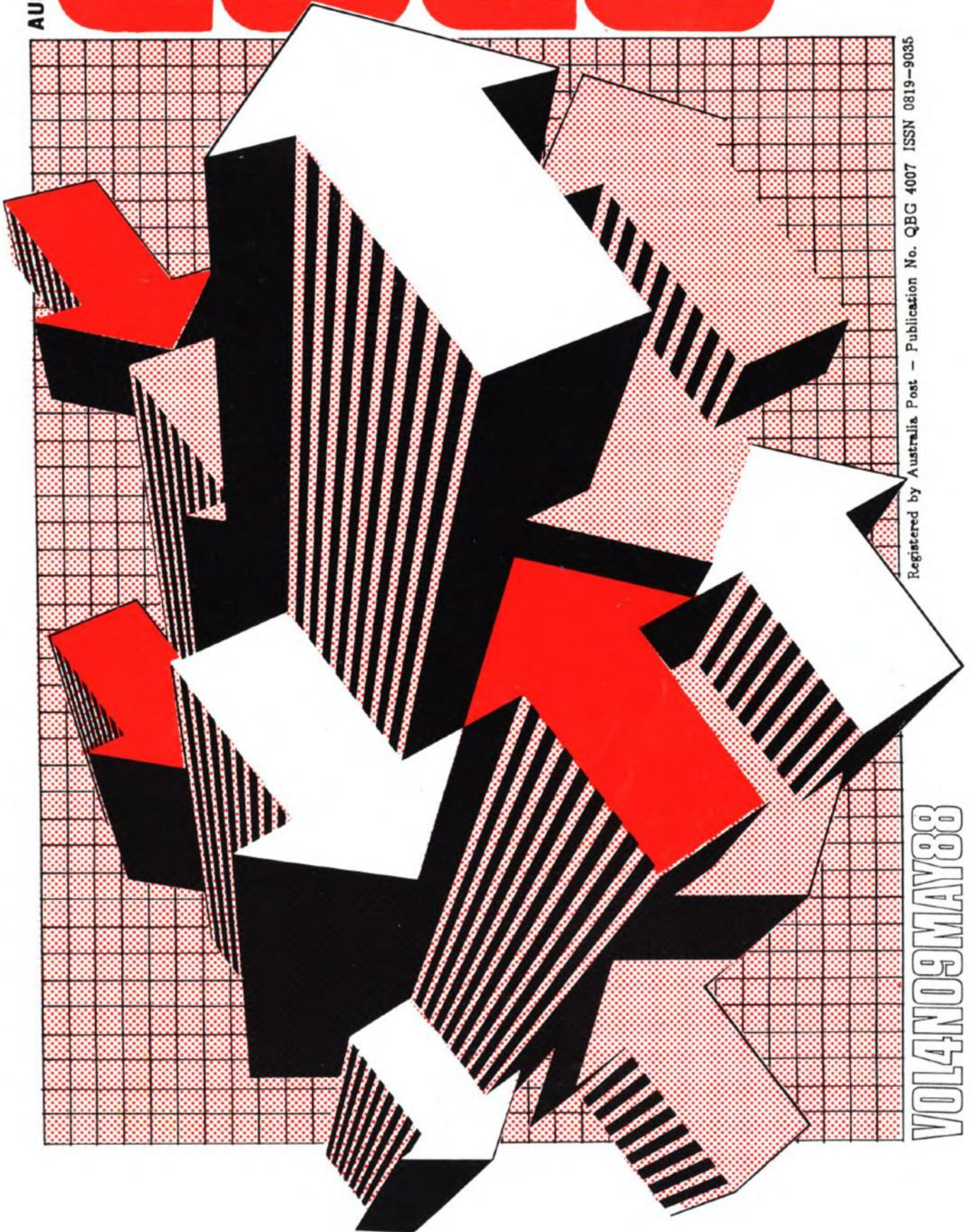


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VOL4NO9MAY88

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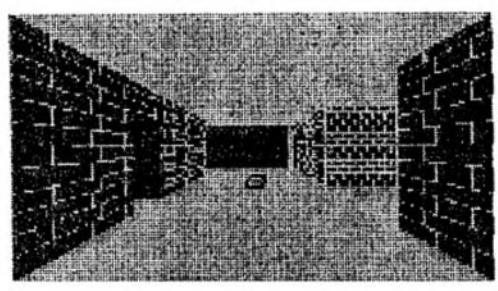
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Editor Alex. Hartmann

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SUB EDITORS

Submissions Alex. Hartmann

Forth John Redmond

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In a Nutshell

The Os-9 Edition

Last notes ...

Hello and welcome! This month, we are proud to present our 'new-format' magazine. Yes, we've changed the format of the magazine, in our ever-changing quest for variety.

As of this month, Softgold will have no more CoCo-related material in it. The magazine you want for your CoCo is CoCo Magazine.

There are also a few other changes. In the recent issues of CoCo Magazine, the tape or disk version usually complimented the magazine, ie all the programs found in CoCo could be found on the tape or disk for that month.

From now on, you'll find that the tape has MORE programs for your CoCo than the magazine has.

Which essentially means that you may get up to 3 disks every month. Also, you get more programs for your CoCo. Every magazine (including Softgold) has had an average of 15-25 programs, depending upon length of program.

Now, you could be getting up to 32 programs per month, all for your CoCo.

As well as that, you'll be getting our Computer Resource Database program, which, on it's completion, will have every type of software and hardware you can get for your Colour Computer.

If you have any complaints/compliments to make regarding the new format of the magazine, I'd like to hear from you.

This month's flavour of the month is "Os-9". There's a lot of excellent material here, all of which can be found on the CoCoOz Os-9 disk for this month.

As a special addition, we're including a program called "wisdom", submitted by Jeff Larson and developed by Rosko.

The idea is simple: type in wisdom from the Os-9 prompt and presto, the advice for the day is given. An example answer might be ...

"A gleezorp without a tornpee is like a quop without a fertsnheet (sort of)."

So there!

User Groups

Beware Warwick! We*Ye (meaning Graham and myself) are coming to visit the local User Group. If anyone is interested, or would like to know the time and place, call Trevor Knight at the local Tandy store.

What is a programmer? The following definition of a programmer may (then again, may not) be:

"A programmer is a person who passes as an exacting expert on the basis of being able to turn out, after innumerable punching, an infinite series of incomprehensible answers calculated with micrometric precisions from vague assumptions on debatable figures taken from inconclusive documents and carried out on instruments of problematical accuracy by persons of dubious reliability and questionable mentality for the avowed purpose of annoying and confounding a hopelessly defenseless group that was unfortunate enough to ask for the information in the first place."

So there!
Bye for now.

Alex

On the lighter side of things, I have perfected the Os-8 disk! (Oh no, not this again!)

Some facts and figures first. On a 35-track single sided disk, I can get up to 630 sectors free, while on a 40-track double-sided disk I can get up to 1,440 sectors free.

On a 80-track double sided

disk, I can get 2,880 sectors free, and with a 20-megabyte hard drive, I can get 76,337 sectors free.

Well, with this Os-8 disk, I can get a whopping 4,131,648 sectors free - or the capacity of a 1054 megabyte hard drive.

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LETTERS



Dear Graham,

I want to congratulate all the staff at Goldsoft for producing CoCo and Softgold magazines, however, I have a suggestion for your two magazines.

I think that \$4.50 for each magazine is a reasonable cost, but a disk subscription costs \$10.31 per month (on a 12 month subscription). I think that it is too expensive to get both subscriptions on disk, especially now that Softgold is cutting down its' CoCo content and increasing its' MS-DOS content.

How about offering people who subscribe to both magazines, the CoCo users, one disk with all the CoCo programs on it. That way they don't pay for any MS-DOS programs they don't need or want.

Christopher Dent,
Ascot Park, SA

Christopher,

Thank you for the compliment.

Many people, of course, have said the same thing to us, but unfortunately, up till now, it has been a matter of producing different magazines for different markets and those magazines having real costs associated with their production which had to be reflected in our prices to you.

Now that CoCo content is all in the one magazine, we hope you agree that CoCoOz is worth every penny of the price!

Last month, it ran to one disk, but this month it will easily fill two and some months, we will be highly surprised if it doesn't get to three.

In fact, we'd be interested in users comments on the magazine as it is now, so if you have anything good or bad to say about this month's issue, we'd appreciate hearing from you.

Graham

Dear Graham,

I have a Colour Computer 2 and a Colour Computer 3 and wish to purchase some software and hardware for them. Could you please send me a catalogue or similar and a price list on what you sell.

Jayeson Lee-Steere
Armadale, WA.

Jayeson,

Goldsoft doesn't produce a catalogue as such. The new Computer Resource Database is intended to list everything available for the CoCo, but please understand that it will be a month or two before it is fully up-to-date.

If you have trouble obtaining on this list from the nominated supplier, contact Goldsoft, and we will attempt to obtain it for you.

Graham.

Dear Graham,

If anyone is interested, Speech Systems (makers of Musica) have the "Stereo Pack" available for US\$39 + postage. US\$5 surface mail, US\$12 Airmail.

Also available is "Music Box" which is the latest version of Musica 2. This allows you to print your music file in the full width of your printer paper and not in the middle, as the previous Musica 2 did. It also has a few more whistles and bells, and all for only \$15.00.

I have to have at least five more people interested. So if you are, then give me a call on 07-8072663.

Also, if anyone is interested in starting a user group in the general Beenleigh district, I would like to hear from you as well.

David Phillips,
Eagleby, Qld

David,

That Music package is an exceptionally good one, and I'm sure others would be interested in joining with you to purchase one at that price.

I'm very excited that a User Group is being considered for the Beenleigh area - it's long overdue and I hope readers in that area will take advantage of your very generous offer.

Graham.

Dear Graham,

Please convey my admiration to the editors, etc for turning an already "good" magazine into something rapidly approaching "outstanding".

Keith. Nielsen
Forest Hill, NSW

Keith,

Thank you very much for the compliment. We really appreciate your support.
Graham.

Dear Graham

Hi, my name is Jay Hall from the Pakenham User Group. You would probably know me better as Jason Zaal, or better, Jason Hall, the user group contact.

Well, that might sound a little strange, so let me explain in six easy words: I've just had my name changed. There's a little bit of gossip for you.

It might also sound strange me being the user group contact, I mean, only being 15 years old and all. But it just so happens that I've been around the CoCo now for the past three years.

Anyway, the reason for this letter is firstly to ask you if you would change my name under the User Group contacts from Jason Hall to Jay Hall, if that is possible. Thank you.

Well, I had better get going - it's been nice talking to you.

Jay Hall,
Pakenham, VIC.

Jay,

Thanks for the information, the change will be made!
Graham.

Dear Graham,

First of all, I am over the age of fifty years, and I find it hard to remember things or learn, especially with computers and programs. So needless to say, I rely heavily on your magazines each month.

If I may, I would like to thank all you programmers out there for doing a great job, by sending in all your tips and programs - keep it up!

I would like to give a special thank-you to Mrs J Vagg who is probably at home using a 1000 computer, but still finds the time to program for the 16K, for learners and slow learners like myself.

Also, I would like to thank you and all your staff on the excellent magazines you publish - it caters for all computers and covers nearly all topics. Incidentally, if you raised the price, I would still buy it - it is worth every cent.

Last month's magazine had an article about the Melbourne Tandy shops - they were not all that good. I have only purchased from two shops but have dropped into others, either to browse or get information. I have also phoned, and in all cases, I have been given politeness and patience when being served.

The two shops I purchased from are the Sunshine and Footscray shops, so all you managers past and present, thank you.

Last, I would like to thank Mr Love (Melbourne Office) for the time and kindness in helping me with a problem.

I would appreciate it if you would read through the rest of my letter.

Four years ago, my wife and family combined, purchased a 16K CoCo and cassette. When I got it for Christmas, I thought, "What good is this for a present," ... I was not interested at all.

After two weeks I was hooked. Every spare minute I had my nose in your magazines and my fingers on the keyboard.

Since that Christmas I used a ploy with my family, like "That printer looks nice", and so on.

My birthday is the 23rd December, so both occasions are as one. I could always expect good presents.

Now I will get to the nitty-gritty and the purpose of this letter.

These are the purchases from four years back:

1. 16K CoCo & 2 tape units.
2. 64K CoCo & 1 disk unit.
3. CoCo 3 and printer.
4. Tapes/Disks/100's of magazines/Games ...

There was nothing wrong with the 16K CoCo.

The tape unit:

The keys kept breaking. All nine units I have used have been repaired or replaced. Whilst one of the units was being replaced in a three week period, my wife bought me another unit. At one time, the first unit did not work, so it went back to the workshop. The following week the second unit broke down. The manager lent me one. Three weeks later, the first unit came back. I returned one and received one. The manager received his, and said in regards to the keys, "Press lightly, like this".

Yes, it broke, so I felt a little bit better.

In the end, the manager and myself tried to work out who had what and what was a bill and what was a swap. When we parted, none of us were any wiser.

My wife informs me that I was 1 tape unit down.

64K CoCo used with tape deck: okay.

The Disk drive:

After a short period of about 2-3 months, it all started again ... the disk drive would not work ... back to the workshop. The manager tried and said, "There is something wrong here". He sent it away, and on return came labour cost with note stating, "Nothing wrong with

this unit.". If I said that the drive was in the workshop ten times, I would not be understating myself.

One time I decided to go through all my disks to sort on separate disks, the games, utilities and so on. Out of 12 disks, four were alright while the other 8 crashed. While I was on an RDO (Rotted Day Off), I made an appointment with Mr Love at the workshop.

Getting up early on the day to save time, I decided to sort out the good and the bad ones. All ran alright. Needless to say, it was of no use me going to the workshop, but I took all my gear to the shop at Footscray to be tested so I could find out what actually happened. He said everything was alright!

Now I was really getting disgruntled. What with bills and having to borrow gear from the shop.

Printer and 2 packs of printer paper:

I gave it a test run, as per manual. Result okay. Then I put it back in the box, and it is still there. I was thinking whether I should use it or not, but I was not game enough, in case it broke down.

CoCo 3:

My CoCo 3 was paid for before they had been distributed, with exception of the store model.

It blew up a week later, and I exchanged it for another one. This went on for four times.

- 1st time: chip blown. Bill \$70
- 2nd time: chip blown. Bill \$90
- 3rd time: chip blown. Bill \$177
- 4th time: still at home, waiting for the chip to blow.

The bills above were not paid because the computer had not been out of the workshop for more than three weeks.

On trip number 3, I was asked to pay \$177, and I said that this was a rip-off. But I did pay \$120, which is all that I had on me.

The first 16K and tape unit that my daughter has is still working after all this time.

One major difference between the 16K and the 64K CoCo and the CoCo 3 is that the 16K and the 64K CoCo have never been in the workshop, and have never had the disk unit attached.

You may be thinking that I have lost my two bob, still going to all this trouble, or at least my mates think so. I am beginning to think the same.

Christmas 1987 - that Tandy 1000 looks good - all in one unit as well ...

Out came the CoCo 3, used it all day, closed it down, put the program to disk - everything alright.

Started to operate and set up the CoCo 3 - my wife said to leave that until all the presents have been given out.

Out came two big boxes - I thought I had done it again: the Tandy 1000 and the monitor. But no, it was a Commodore 128 and a brand new TV unit plus disk drive unit.

I pretended I was pleased, but deep down I was not. I started with the Tandy, I liked their magazines ... dodgy about their computers though.

Anyway, I got the Commodore 128 to play games. After three days I became bored and asked my wife why she didn't get me the Tandy 1000. Her reply was that there were too many breakdowns and too many bills. I said, "Well, you can go and play games while I go back to the CoCo 3".

Results? It doesn't work, and I am back with the 64K CoCo.

I tried a program on the Commodore - I wasn't impressed at all. The manuals are complicated, whereas Tandy's are not. With 6 back issues of their magazines I found a program I may have typed in. In another magazine there is an adventure for a 16K CoCo!

I do not want my Tandy to collect dust and be forced to learn the Commodore ... somehow someone must have the say, and authority to bring this situation to a happy ending, for me.

Harry Tuplin,
SW Sunshine, VIC

Harry,

I have tried to phone you regarding your problem, and once I contact you, Tandy's head office in Sydney will also contact you.

As they say in the movies, it shouldn't happen - but it does!

I think your letter underlines the value of being involved with a good user group. Any of the problems you have experienced appear to be problems that could have been dealt with at the User Group level.

I might add, that with you, I'm very impressed by the patience of the Tandy manager you've been dealing with. He certainly deserves full credit.

Your problems can and will be resolved. Tandy have no desire to have any of their customers in the position you find yourself and I'm confident that once we can contact you, all will be set alright.

Graham



Hi, TCKKers!

Another month has come and gone, we are still here ...but only just.

Alas and woe, unless the mail starts coming in again from you lovely peoples, I'm afraid this is the last TCKK page you will see.

Yes, we've held out as long as we could but the response over the last couple of weeks has been discouraging.

From time to time, and if space permits, we'll still publish material that if it's sent to us, but until then...

Enough of the tear jerking, on with the show.

Y K I V Y Y N R A E L D B D T T E G T W
 R H W E K N G V U M Y J K A X P T F E N
 Y C N G U B F L B R U F H F L M L R G A
 K Y S Q G M P Y F X B G R N T I W R R O
 V I O L N R B T N E W V G D X M H P A Z
 B O L J I O T F N H T Z I H O V E P P X
 A N Z N L D I S K E T T E H U J X T H M
 U K T V L N X F V E M Q E M Q N N J I F
 O E J F E X K H P J C I X S G C G T C T
 R M I Y P C R E K J A N R F S C S X S C
 V U A F S W R Y D K I E E C A Q P Q J
 W C R T V K O Q V B A U P I P G C G A J
 P F O F H W A E B B O W W K C X D W K O
 L O H M E E N U G A U A C B R S E S I J
 N H F M P T M A N U S I R B M I Q X S V
 C J O U U M A C X T I V D Q S B X S T
 Y H U R N E T H T S W B C M O N I T O R
 I P E A S W J E Y I O S N Q N B I V U G
 F S O O R Q P O R E C P P X B K S J L H
 B M J J V K J L U Y S S R U Q O Z L C D

Find these words hidden in the puzzle above:

- | | | |
|------------|-------------|------------|
| ADVENTURES | BASIC | CASSETTE |
| COMPUTER | DISKETTE | EXPERIMENT |
| FUN | GAMES | GRAPHICS |
| HOMEWORK | JOYSTICK | KEYBOARD |
| LEARN | MATHEMATICS | MONITOR |
| PRINTER | SCIENCE | SPELLING |

This crossword puzzler was sent in by Sandy Tadman of Endeavour Hills, Victoria, thanks to Sandy.

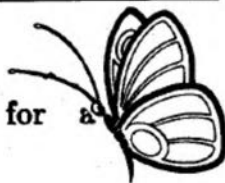
By the way, there is a program on page 23 of this mag called Wordsearch, if you can type the listing in, or get someone to do it for you, you can make up your own words and try to find them.

Daisy Chain Fun

Get a group of 4 or more of your friends together and lie them down on the floor so that each one's head rests on the next one's stomach, until you've made a circle.



If you haven't laughed for a while, try this one.



Watch what happens when the first person starts to laugh!

You get a chain reaction! The only way to stop it, is to pull them apart!

Try it in different places for even more fun. Some great places to do it include crowded railway stations, the middle of a football field when there's a match on, and in a lift on a tall building!



COM-STAT 642

GOLDLINK
#02
The Tandy Users Board
MON 07 MAR 1988 21:17
Member 352924518

ViaDn 6429821A
Tandy
Electronics

> COCO SUPERTEX RELEASE

SUPERTEX FOR THE COCO IS NOW AVAILABLE IT IS A NEW LOW COST DISK VERSION OF COCOTEX. IT HAS ALL THE FEATURES OF COCOTEX 3.1 PLUS A PAGE SEND ADRPT HAS BEEN ADDED A SAVE, LOAD AND PRINT PAGE STORE FEATURE. YES IT DOES SUPPORT VIRTAL TELESOFTWARE DOWNLOADS. THE NEW PACKAGE HAS R.R.P OF \$39.95 AND IS AVAILABLE AS AN UPGRADE FOR COCOTEX DISK USES FOR \$10 PLUS THE RETURN OF YOUR COCOTEX DISK. INCLUDES HANDBOOK AND PAP. A

3 Clubroom 5 Mhrs Msg 6 Vis Msg 28c
<< 8 8 Menu 7 Your NB 9 >>

GOLDLINK
#03
The OS9 Users Board
SAT 09 APR 1988 20:27
Member 785471270

ViaDn 6429837A
OS9

> Tony (WA) in answer to your questions

1. Use the other TERM descriptor when you make a new boot disk (IE there is a TERM-000 and a TERM-VIN, use the win version)
2. As far as I can make out of the level one and two manuals, you have to access the hardware directly to make other notes. I have half written a thing I call "bang", but it's in assembler and not finished (yet). As for connecting a Coco to a T1800, yes, get a RS232pak.

Jeff
3 Clubroom 5 Mhrs Msg 6 Vis Msg 38c
8 8 Menu 7 Your NB 9 >>

GOLDLINK
#03
The OS9 Users Board
SAT 09 APR 1988 20:33
Member 785471270

ViaDn 6429837A
OS9

> Excusest, I have a 1 Meg Coco3. Your point about it all being standard on an Aaiga sn't quite right. The Aaiga can't multi-user like a Coco3, and the multi-tasking of the Aaiga is very inefficient compared to the modules of OS9. Really though, if all you want to do is crow about your Aaiga, I suggest you go to the Comedre board instead of sickening all of us with your half-truths.

Jeff
3 Clubroom 5 Mhrs Msg 6 Vis
<< 8 8 Menu 7 Y.

GOLDLINK
#02
The Tandy Users Board
FRI 04 MAR 1988 23:01
Member 755188158

ViaDn 64298213A
Tandy
Electronics

> Please note that Software Downloads for CoCo's are available from choice 3 on page 64292.

The two test programs online at present are free.

More software will be added in the next week or so.

3 Clubroom 5 Mhrs Msg 6 Vis Msg 28c
<< 8 8 Menu 7 Your NB 9 >>

GOLDLINK
#03
The OS9 Users Board
WED 13 APR 1988 21:31
Visitor 927757758

ViaDn 6429832A
OS9

> JEFF THE ERROR NUMBERS I GET ARE 207 AND 216 I ALSO GET A WARNING ON FUNCTION OF OS9GEN AS WELL AS GETTING A BAD PATH NAME MESSAGE. HOW IS THIS POSSIBLE ON A NEWLY FORMATTED DISK. I HAVE TRIED SEVERAL DISKS TO NO AVAIL. I DON'T SEEM TO BE ABLE TO ACCESS THE 48-88 COLUMN SCREEN AS WELL. IS THIS BECAUSE I ONLY HAVE 12 BK

3 Clubroom 5 Mhrs Msg 6 Vis Msg 38c
<< 8 8 Menu 7 Your NB 9 >>

GOLDLINK
#03
The OS9 Users Board
SUN 17 APR 1988 18:16
Visitor 835489518

ViaDn 6429835A
OS9

> Has anyone found a good /T1 driver? (For those of us who don't want to use the RS-232 pack).

Also, for those of us that do, is it possible to alter /T2 (presumably) so that it supports split baud rates? (I have one of the original AVTEK MULTI MODEM, and I am getting a little frustrated at only being able to operate at 380baud on the local BBS's, or not being able to download files at 1200 baud (using XMODEM), and so I'm looking to OS9 as a possible way out.)

3 Clubroom 5 Mhrs Msg 6 Vis Msg 38c
<< 8 8 Menu 7 Your NB 9 >>

GOLDLINK
#02
The Tandy Users Board
MON 11 APR 1988 19:26
Member 785471270

ViaTv 6429821A
Tandy
Electronics

> JBEST 2 Superdex for the Coco is out now, but it's supposed to be an improved form of Cocotex. As we all know the page store function on Cocotex works well, as does the receiving and translation of characters from the serial port of the Coco. I used to have problems with line noise, but a quick modem change convinced me that was the problem I've had no line noise for months now.

Jeff
3 Clubroom 5 Mhrs Msg 6 Vis Msg 28c
<< 8 8 Menu 7 Your NB 9 >>

GOLDLINK
#02
The Tandy Users Board
THU 03 MAR 1988 23:42
Member 487126388

ViaDn 64298212A
Tandy
Electronics

> I am a new member to Goldlink . Could anyone explain the use of and how to use the PAGE SEND STRINGS using Cocotex Version 3.0 on a Color Computer 3. As you can see I have tried a couple of times on this board.

Dennis.
3 Clubroom 5 Mhrs Msg 6 Vis Msg 28c

GOLDLINK #02
 The Tandy Users Board
 SUN 18 APR 1988 18:43
 Visitor 938786858

ViaOn 6429826A
Tandy
 Electronics

> SuperTex is not as good as it is made out to be. It has some major bugs in it, and quite a few shortcomings. The most frustrating bug is it's page store function which does not work at all. Also the inability to support the RS-232 pak for those of us that possess it. Garbled characters from using the serial port make typing a chore. I could go on. I am at present working on the bugs.

Dave (W.A.)

3 Clubroom 5 Mbrs Msg 6 Viz Msg 28c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #03
 The OS9 Users Board
 TUE 12 APR 1988 21:42
 Visitor 927757758

ViaOn 6429839A
OS9

> THANKS FOR THE INFO ON CUSTOMIZING MY SYSTEM. THE ONLY PROBLEM I AM HAVING NOW IS WHEN I RUN CONFIG ALL GOES WELL UNTIL I GET TO STAGE AFTER SETTING THE CLOCK SPEED ALL I GET IS AN ERROR IN OPEN THE BOOT FILE AND OS9GEN COMMAND CRASHES THE PROCEDURE. I AM WONDERING AM I DOING SOMETHING WRONG OR IS ANYBODY HAVING THE SAME TROUBLE. IF YOU CAN HELP ME IT WOULD BE MUCH APPRECIATED.

TONY(W.A.)

3 Clubroom 5 Mbrs Msg 6 Viz Msg 38c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #03
 The OS9 Users Board
 WED 13 APR 1988 22:17
 Member 785471278

ViaOn 6429833A
OS9

> Perhaps you are changing disks before config prompts you to. Error 216 is a file not found error. This means to me that config isn't finding the file it wants. Try following the prompts, and not changing disks until it tells you to (with no errors or problems) but found it so slow that I worked out what it was doing, and started doing it myself. It's much more entertaining stuffing it up yourself.

Jeff

3 Clubroom 5 Mbrs Msg 6 Viz Msg 38c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #03
 The OS9 Users Board
 WED 13 APR 1988 19:23
 Member 785471278

ViaOn 6429831A
OS9

> Tony, please tell us EXACTLY what error number you are getting. It's a bit hard for us to help you unless we know what you are doing wrong. You can do it all without using Config. It's just a little harder. You have to do something like: ident -s os9boot (This will tell you what is in your boot file) Then if you have two drives put a blank disk in drive one, and the config disk in drive two. You can then chd module, chx /d0/os9gen what modules to use.

Jeff

3 Clubroom 5 Mbrs Msg 6 Viz Msg 38c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #02
 The Tandy Users Board
 TUE 12 APR 1988 22:08
 Visitor 927757758

ViaOn 6429829A
Tandy
 Electronics

> DAVE(WA) AS I AM A FELLOW COCO USER CAN YOU INFORM IS THERE ANY BULLETIN BOARD RUNNING IN W.A. AN WHAT IS THERE PROTOCOL SETTINGS ANY INFO WOULD BE GREATLY APPRECIATED

TONY(W.A.)

3 Clubroom 5 Mbrs Msg 6 Viz Msg 38c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #02
 The Tandy Users Board
 SUN 18 APR 1988 11:48
 Member 789813868

ViaOn 6429825A
Tandy
 Electronics

> I'm going to sneak a message in here while you aren't watching. It is about Supertex. If the new CoCo Supertex is anything like Ron's Supertex for the Amiga then you should all rush out and buy it! It would have to be the best Viatel terminal program I have seen. (Even Jeff agrees)

JBEST 2

3 Clubroom 5 Mbrs Msg 6 Viz Msg 28c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #02
 The Tandy Users Board
 TUE 12 APR 1988 22:08
 Visitor 927757758

ViaOn 6429829A
Tandy
 Electronics

> DAVE(WA) AS I AM A FELLOW COCO USER CAN YOU INFORM IS THERE ANY BULLETIN BOARD RUNNING IN W.A. AN WHAT IS THERE PROTOCOL SETTINGS ANY INFO WOULD BE GREATLY APPRECIATED

TONY(W.A.)

3 Clubroom 5 Mbrs Msg 6 Viz Msg 38c
 << 8 8 Menu 7 Your MB 9 >>

GOLDLINK #03
 The OS9 Users Board
 WED 13 APR 1988 22:48
 Member 785471278

ViaOn 6429834A
OS9

> Also, what are you doing just before you get these messages?

Jeff

3 Clubroom 5 Mbrs Msg 6 Viz Msg 38c
 << 8 8 Menu 7 Your MB 9 >>

VIEWS
 VIATEL

COCO

WITH GRAHAM MORPHETT

NEWS

Welcome To The 'New' Australian
CoCo Magazine!

As we indicated last month, this magazine is now for the users of all Tandy Colour Computers.

I know Alex has had something to say about the changes, so I won't add anything except to say that as we've been preparing it, we've been very excited to see the potential that the new format affords us in our role of information provider to the Tandy CoCo community.

This magazine can only ever be what you want it to be because we depend on you to supply the articles and programs.

And monthly, we very proudly display your latest efforts.

We want the magazine to be a showcase for you as you learn more about your computer.

Show us what YOU are learning - either in article or program form - the more you share your knowledge, the more you teach others - and strangely - yourself too.

Supertex for CoCo's (CoCo Magazine)

Supertex is the package which turns your disk driven Tandy Colour Computer into a Viatel Terminal.

It is available from us for \$39.95 - and at this price is a REAL bargain, because it not only does all that the former \$79.95 package does, but it also downloads the software we've placed on node 6423 on Viatel.

Supertex is only available from Goldsoft.

User Group News

Many thanks to the groups at both Mooroodah and at Moe/Morwell for your nice words and notes of thanks. It was our pleasure to visit with you - I hope we can do it again

Had a note from Neville Hughes

who lives at Tannymorel in Queensland.

Neville is wanting to start a group in his area and has asked about how one starts such a group.

Well, I guess the answer is different for different locations, but in the country areas, it is often beneficial to keep the group general with regard to computer type.

Place notices in your local shop windows - computer stores especially, but also in supermarkets and electronics shops.

Try to get your local Tandy store interested in your project and develop a two way conversation - as you are able to help the Tandy store, so he will help you more.

If you can write an article and get it into your local paper, that's even better.

Finally keep us posted with news and information - we're really keen to see the groups flourish and we'll keep the info in the magazine about the group so long as you continue to send it in.

Printers

You may have discerned a slight difference in print styles between this magazine and last month's.

This is because we have traded in our ever suffering Tandy DMP 130's - which I must say have been absolutely FANTASTIC, and we're now using the Panasonic KX-P1082, a printer which represents probably the best value in the current market because:

- * it prints at 160 CPS in draft mode,

- * it prints at 32 CPS in NLQ (Near Letter Quality) - this article has been printed in NLQ,

- * it has all the normal fonts - Pica, Elite, Semi Compressed, and Compressed as well as elongated and italics forms of the above, and

* it costs just \$499.00. There is even a cheaper version for \$389.00 which has all the same features but which runs a touch slower!

Look for the Panasonic ad this month for more details.

Whilst on the subject of printers, we've also got a laser printer here, which of course is the precursor to a move to Desk Top Publishing.

We produce our magazines in the current style because we believe it is valid to show you what can be achieved with computers and printers of exactly the same style as the ones you probably operate.

Using that logic, we feel it is now time to take the next step and move into DTP.

The changes will happen slowly because we're going to evaluate system components as we go, however for the eagle eyed, there are some printouts in this magazine which were done on the laser - I believe the Computer Resource Database is to be one of these.

So what are laser printers like I hear you ask.

Well, we have an impact here - it's not the top of the range, it's about half way and costs about \$4800 - expensive yes, but this one does produce a very good quality product and it is quite fast.

We've been experimenting with graphics on the Impact, and the quality in this area is especially good.

You don't have to go to quite that price to get a laser - there are lasers for well under \$3000 these days, and as with most computer componentry, the price pressure is downwards, so expect some nice printers in the next twelve months in about that pricing area.

The Computer Resource Database

We trust you will find the first installment of The Computer Resource Database of interest.

There is a lot more information on the Computer Resource Database, but because it is too large for the magazine, we put the whole thing on the monthly edition of CoCoOz - which also has the programs from each month's magazine on it.

The printout in this magazine therefore represents a summary of the info on the database.

Obviously, this is just the start. There is more next month - and more again the following month - in fact, we intend to keep the database updated with new info each month. So if you're looking for a program to do a particular job, chances are it will be listed on the database.

Please note that we produce the Computer Resource Database as a service to computer users. The information is as accurate as we can make it, but we do not take responsibility for any information shown in the database. If you happen to sell a product for the computers served by the database, then send us the info - we'll include it! And please also use our magazine to advertise your service!

Conf '88

Every year we hold a conference and this year the conference is at Koonjewarre on the Gold Coast of Queensland.

I do hope you'll make a point of being here for this one!

It's Expo time - 1st and 2nd October - and the weather is great at that time of year!

Added to this we have a whole heap of activities and tutorials planned, which should assist you in the use of your computer.

Goldlink 642 on Viatel

Goldlink is our national service for computer users on Viatel.

To connect to Viatel, you need a modem, a terminal program and a phone line.

On Goldlink's Viatel service, you can obtain assistance with computer problems, make friends and download software.

Viatel is a very worthwhile extension to your computer activities. In April they added International Telexing facilities to the system. You can already send telegrams, short letters, book plane or theatre seats and gather a wide range of other information very simply.

This Month's Specials

This month sees a continuation of last month's offer to User Group members. If you are a paid up 1988 member of a User Group - and you can prove it, then you can obtain a subscription to this magazine for just \$29.95. But be warned, this offer ends this month!

How the Big Wet Effected Us

Steve Youngberry travels from Tara in Queensland to Warwick to pick up the magazines from our printer, and then delivers them here, just so he can be the first in Australia to get one!

Last month he turned his truck into a submarine and was able to make it through lots of flooded creeks to get the magazines to us.

So a special thanks to Steve. Without his persistence April's mag would still be getting to you!

The big wet is our excuse this month too!

The photocopier cried "enough" after about five days, various staff members have been marooned at home during the rain, and it will take a little time to make up the days lost.

Springbrook Mountain, near where we will hold Conf '88 this year, in one 24 hour period received a meter of rain!

Koala Pads

The Tandy Koala Pad is currently available for a very reasonable price - \$29.95, I believe.

The Pad can be used with a number of programs including CoCoTex.

But you can have even more fun by making up programs to go with the Koala Pad.

Who knows, the Koala Pad might just be the thing you need to get you interested in say, the hardware area of computing!

Next Month

Next month we will be expanding the Computer Resource Database, and we'll have a number of articles on hardware (says he hopefully)!

Hopefully? Yes. Because of all the subjects we cover, hardware articles are the toughest for us to source. So if you've been dabbling in the innards of your CoCo, we'd especially like to hear about what you've been doing.



HEAR YE!

Conf '88 = Koonjewarra, Gold Coast, Qld = 1 & 2
October, 1988 = School Holidays = Same time as
Expo '88 = Family fun PLUS computing = live on site
= CoCo help = MS DOS Help = programming tutorials =
games contest = bush walking = something for every-
one - from family members to new users to experienced
fanatics = the place to be if you want to learn about
computers and have fun during the October holidays =
be there!

Dear Michael,
 Could you please tell me how
 to get past the gargoyle in
 RAAKA-TU. In the instructions

supplied it says that you need
 to light a poisonous candle. I
 can't find the candle.
 Andrew Haterley
 Clunes, Vic.

Dear A,
 After you pass through the
 triangular room, you'll be
 standing at the south end of the
 great central hallway. Instead
 of going east, try going north
 and exploring that part of the
 temple. You can come back later
 and tackle the gargoyle when
 you're better equipped. Oh, and
 remember, when using the candle,
 it is just as poisonous to you
 as it is to the gargoyle (hee
 hee hee).
 Mich.

More fun than
 Popcorn and
 Movies!



by
 Michael Horne

**PLAYER
 ONE**



POLTERGHOST
 Andrew Green Taree 4955

SKRAMBLE (Tom Mix)
 Andrew Green Taree 115820
 John Baker Vic. 34680

SPACE RACE (Spectrial)
 Michael Horn Gold Cat 48450

SPEED RACER (Spectrial)
 John Baker Vic. 106470

TIME BANDIT
 Andrew Green Taree 34070

WILDCATTING (Tandy)
 Colleen James 1Game 39169
 Michael Horn 1Game 36365

ZAXXON
 Andrew Green Taree 52600

MiCo Games

COMPUTER CRICKET
 Nathan Hewitt Windsor 75

COPS 'N' ROBBERS
 Jason Hardy Oakville 4771

FLIP
 Terrence Hill Oakville 1460

FLUKY FORTUNE
 Juliette Hill Oakville 31429

MAZER
 David Hill Oakville 5108

NICOMANIA
 Jeanette Hill Oakville 18700

NEIGHBOURS MASTERMIND
 Tracey Hill Buxton 560

SALE OF THE CENTURY
 Jeanette Hill Oakville 80

TYPING ATTACK
 David Hill Oakville 79936

WORM CHASE
 John Badman Richmond 12300



by
Johanna Vagg

You can write to Johanna Vagg
C/o Goldsoft Publishing
PO Box 1742
Southport, Qld. 4215.

We will pass on your letters to
her. Don't forget to include a
stamped addressed envelope if
you'd like a personal reply.

Johanna is our contact in
Forbes, and her phone number can
be found in the contacts section
of this magazine.

Dear Johanna,

Could you help me? I want to learn to program. I
know nothing about BASIC. Where do I start?

K. C.

Dear K. C.,

If you have a computer and a manual and you want
to learn to program, the logical thing to do is
work through the manual. It might not make much
sense at first, but the great thing about teaching
yourself this way is that you can take as long as
you like, go over and over what you want to know
and/or skip the bits which don't interest you.

The next step is typing in others' programs. If
they work that's fine - you get an A in accuracy.
If it doesn't work, you've probably made an ERROR.
Try to find the mistake. If you're stuck, ask
someone to help.

When you are typing programs, I suggest that you
make frequent CSAVES. Don't wait until you have a
lot of free time to key in a program ... you can
CSAVE part of a program and CLOAD it later to type
the rest of it. Always CSAVE (or SAVE on disk)
your program before you RUN it.

Sometimes strange things can happen when you RUN
a program which is not quite right, and you could
lose it. This seems to happen more frequently
with the new CoCo 3.

What do you do when you've CSAVED a program? I
hope that you check that it's on the tape and
without IO ERRORS. No, don't CLOAD it, if you
CLOAD and there is an IO ERROR, the program in
memory will be 'wiped'. Use SKIPF instead.

What if it seems to have disappeared? Try
listening to it with AUDIOON -- if it sounds
different and doesn't show up at the top of the
screen you've probably CSAVED it while you were in
the HIGH SPEED POKE. If you still have it in
memory, press RESET and reCSAVE. RESET will 'get
rid of' the HIGH SPEED POKE.

If it is not in memory then you can retrieve it
by doing 3 POKES before CLOADing:

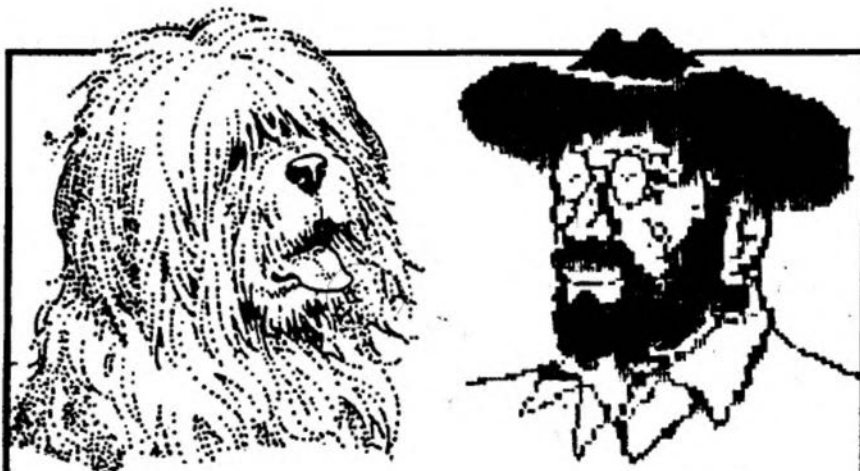
POKE143,8:POKE144,24:POKE145,5

I don't know if this applies to CoCo 3 and its
High speed POKE.

You don't HAVE to learn to program to make use
of your computer. There are programs to buy,
books of programs to type in, and of course, the
magazines CoCo and Softgold. If you intend to
type in programs it certainly helps to have some
idea how a program works: it is easier to find
mistakes that way. You can also make changes to
suit you.

That's probably the next step: changing others'
programs. Eventually you'll know how to change
them so much, that you'll be practically writing
your own.

Johanna.



FLASH BACK

by John Day

BYTES OF AN OLD DOG #3

EVERY NOW AND AGAIN, I see a program I can really get to like, only to find that the screen presentation is not up to my exacting standards, and needs cleaning up before the thing works like one expects that a program should, i.e. perfectly.

There are a lot of programmers whose work turns out like this, even though the program itself may be close to sheer genius.

Not only is it awkward to use, but a shoddy screen display reduces the confidence in the programmer. Unfortunately, the inverse of this situation is also valid.

I am acquainted with a young man whose style of programming is messy, verbose, difficult to debug, and more often than not has to be referred back to him in order that it might be altered so that it does what you paid him to make it do, but his screen display is immaculate, stylish, fast, easy to read and respond to.

He is, because of this, much sought after as a programmer. Say what you like about the stupidity of the human race, it does occur. People believe only what they see in front of their eyes, not what comes up in the LIST.

So what are the options? Well, laying out your PRINT statements with PRINT@, for a start, but the real reason for this article is to discuss the input routine options, INPUT and INKEY\$. (I would dearly LOVE to be able to discuss the GW BASIC command INKEY\$(n) also, but sadly, we don't have it on the CoGo).

However, the two commands can be manipulated to do a great number of interesting things to a screen display.

INPUT usually includes a string of characters to be displayed before the question mark, and then places the cursor in the next but one space. The operator is then expected to construct a string of characters and/or numbers together before <ENTER>ing the string.

This is extremely useful for multiple character inputs, and for multiple inputs like dates, e.g.:-

```
100 INPUT"ENTER DATE (DD,MM,YY)"  
;D,M,Y
```

This type of input is most often used when the three variables <D>ay, <M>onth and <Y>ear are processed separately.

The only untidy thing about INPUT is the question mark, and that dizzy little cursor trying to decide what colour it is.

This combination I find extremely annoying when I am using a background colour other than light green, as the action of pressing <ENTER> scribes a green slash right across the screen from the end of the input, and stays there until you program in a redrafting of the screen display.

This can sometimes take up too much space to be worth the bother, and the screen display suffers. It is also counter-productive when only one character is required by the program, but an <ENTER> needs to be added by the operator.

This is not a problem limited to the amateur field - I have seen it used in inappropriate places in some of the most expensive MS-DOS software, more's the pity.

INKEY\$ doesn't wait for an <ENTER>, but immediately checks the keyboard buffer to see if anything is there, and consequently requires a "loop and test" line:-

```
100 A$=INKEY$:IF A$=""THEN100
```

If there is no value in the keyboard buffer, the program loops through line 100 until something is pressed, whereupon it drops out of the loop onto the next line.

As there is no waiting involved, there is no cursor displayed on the screen, and the screen display is uninterrupted, and doesn't have to be "rebuilt" after the input.

The disadvantage here is two fold:- firstly if a previous entry has been an accidental double strike, there will be a "false" value in the keyboard buffer when INKEY\$ is invoked in the program, but as this is sufficient to satisfy the

continued on P 22

HELPING YOU WORK THINGS OUT

WHILE HELPING someone with an Amust printer I found that several printers have the same manual ... a rose by another name?

The Amust and BMC have exactly the same codes and apparently some others (Gemini and Epson?) have at least some of the same codes. I also discovered that when I had seen ...

```
PRINT#-2,CHR$(27);"A";
```

... it wasn't in a 'foreign language' after all; it is exactly the same as ...

```
PRINT#-2,CHR$(27)CHR$(65)
```

My DMP110 doesn't have such a code, but I tried substituting CHR\$(27)"B" for CHR\$(27)CHR\$(66), which is the code for Italics, and it works.

The Amust and BMC have 640 dots per line (80/inch) and the DMP110 has 960 dots per line (120/inch).

Some of the Tandy printers have more dots per line in condensed or compressed, but they all seem to have 960 in 'ordinary' print.

Emphasized on 'other' printers is the same as Bold on Tandy ... two dots side by side where there is normally one dot.

table one

MEANING	OTHER	TANDY
EMPHASIZED (BOLD)	(27) (69)	(27) (31)
EMPHASIZED OFF	(27) (70)	(27) (32)
ELONGATE ON	(27) (87) (1)	(27) (14)
ELONGATE OFF	(27) (87) (0)	(27) (15)
ELONGATE to end of line unless cancelled by	(14) (20)	N/A
ELITE	N/A	(27) (23)
COMPRESSED (CONDENSED)	(15)	(27) (20)
COMPRESSED OFF	(18)	
RESETS TO NORMAL		(27) (19)
ITALIC ON	(27) (52)	(27) (66)
ITALIC OFF	(27) (53)	
RESETS TO NORMAL		(27) (19)
UNDERLINE ON	(27) (45) (1)	(15)
UNDERLINE OFF	(27) (45) (0)	(14)
FORM FEED	(12)	(12)
LINE FEED	(10)	(10)
3/4 LINE FEED	(27) (48)	(27) (56)
1/2 LINE FEED		(27) (28)

Double strike is like correspondence quality. The print head makes two passes, filling in the spaces between the dots vertically.

Here is a summary of the more common codes for the 'other printers' and the Tandy:

<see table one>

The format for these codes, in BASIC, is for example:

```
PRINT#-2,CHR$(27)CHR$(45)CHR$(1)
```

... for underline on. This can also be sent as:

```
PRINT#-2,CHR$(27)"-CHR$(1)
```

Setting graphics mode on the Tandy printers is easy:

```
PRINT#-2,CHR$(18)
```

... and return with:

```
PRINT#-2,CHR$(30)
```

Setting graphics mode on the others is more complicated. On the Tandy the line feed is automatically adjusted, on the others, it is not. At this stage I can't tell you much more.

Back to the drawing board ... er, I mean printer..!



IN THIS MONTHS article I am going to show you the third and final fundamental sorting routine: The Insertion Sort.

The Insertion Sort is approximately the same size as the Selection Sort (the Insertion Sort has one more line of code) and usually executes in a time somewhere between that of a Bubble Sort and a Selection Sort.

The Insertion Sort is different from the other fundamental sorting routines as it has one FOR/NEXT loop and a conditional loop compared with two FOR/NEXT loops used in the Bubble and Selection Sort.

The logic behind the Insertion Sort is more complex than the previous sorts, however I shall try to explain it to the best of my ability.

On pass one it simply compares the first two elements of the array. If they are out of order, they are then swapped, otherwise they are left as they are. It then goes on to pass two.

On pass two, it compares the second and third elements. If they do not need swapping it will go on to pass three, otherwise it will swap them.

If a swap occurred between elements two and three it will then compare the first and second elements.

If they do not need swapping it will go on to pass three, otherwise they will be swapped and then go on to pass three.

On pass three it compares the third and fourth elements. If they do not need swapping it will go on to pass four, otherwise it will swap them. If

a swap occurred between elements three and four it will then compare the second and third elements and either swap them or go on to pass four. If elements two and three were swapped it will then compare the first two elements.

If they do not need swapping it will go on to pass four, otherwise they will be swapped and then go on to pass four.

This will continue until the number of completed passes is one less than the number of elements to sort.

If you do not understand the above explanation I shall try to explain it in a different way before I give the listing and a sample run.

What I tried to say above was that the routine will do a Bubble Sort (in reverse order) of the first n+1 elements (where 'n' is the pass number).

However when the Reverse Bubble Sort finds the first set of elements that does not need to be swapped it will stop the current pass and go on to the next pass.

If you are still confused after the two explanations above, the following listing (with full comments) of the Insertion Sort and the Sample run (with a step by step description of each process) should help.

```

10 REM Insertion Sort Routine
20 REM Load array AR with 10
   random numbers
30 REM Lines 40 to 100 are not
   actually part of the
   Insertion Sort routine but
   are used to load the array
   to be sorted
40 DIM AR(10)
50 PRINT "Unsorted Array"
60 FOR AR=1 TO 10
70 AR(AR)=RND(10)
80 PRINT USING " ##";AR(AR);
90 NEXT AR
100 PRINT

```

```

110 REM Insertion Sort routine
   starts here
120 FOR PA=1 TO 9
130 REM PA - Number of passes
   needed (One less than the
   number of elements in the
   array)
140 EL=PA
150 REM EL - The number of the
   element being sorted
160 IF AR(EL)<=AR(EL+1) THEN240
170 REM Swap elements
180 TE=AR(EL+1)
190 REM TE - Temporary storage
   (Must be used when swapping
   elements)
200 AR(EL+1)=AR(EL)
210 AR(EL)=TE
220 EL=EL-1
230 GOTO 160
240 REM Display pass number and
   the current status of the
   array
250 PRINT "Pass";PA
260 FOR EL=1 TO 10
270 PRINT USING " ##";AR(EL);
280 NEXT EL
290 PRINT
300 NEXT PA
310 REM The array is now sorted
320 END

```

A run of the above program produces something similar to the following ...

```

Unsorted Array
5 3 2 10 8 3 4 7 6 7

Pass 1
3 5 2 10 8 3 4 7 6 7

Pass 2
2 3 5 10 8 3 4 7 6 7

Pass 3
2 3 5 10 8 3 4 7 6 7

Pass 4
2 3 5 8 10 3 4 7 6 7

Pass 5
2 3 3 5 8 10 4 7 6 7

Pass 6
2 3 3 4 5 8 10 7 6 7

```

BASIC PROGRAMMING

Pass 7
2 3 3 4 5 7 8 10 6 7

Pass 8
2 3 3 4 5 6 7 8 10 7

Pass 9
2 3 3 4 5 6 7 7 8 10

In the first pass it compared elements one (with a value of five) and two (with a value of three). Because element two is less than element one they are swapped. It then goes on to the second pass.

In the second pass it compared elements two (with a value of five) and three (with a value of two). Because element three is less than element two they are swapped.

It then compares elements one (with a value of three) and two (now with a value of two). Because element two is less than element one they are swapped.

It then goes on to pass three.

In pass three it compares elements three (with a value of five) and four (with a value of ten). Because element four is greater than element three they are not swapped and it goes on to pass four.

In pass four it compares elements four (with a value of ten) and five (with a value of eight). Because element five is less than element four they are swapped.

It then compares elements three (with a value of five) and four (now with a value of eight). Because element four is greater than element three they are not swapped and it goes on to pass five.

I think you should understand the logic of the Insertion Sort by now, so I shall now show you how efficient or inefficient the code is.

The first step is to optimize the code for maximum efficiency.

To do this we must remove all the REMs by typing the following ...

```
DEL 10-30
DEL 110
DEL 130
DEL 150
DEL 170
DEL 190
DEL 240
DEL 310
```

Now we delete the lines of code that display the status of the array after each pass.

```
DEL 50
DEL 80
DEL 100
DEL ?50-290
```

Next we have to EDIT 160 and change the 250 to 300 because it is trying to jump to a deleted line.

Now that the program is fully optimized, we need to insert a timing routine.

```
100 TIMER=0
310 PRINT TIMER
```

... and finally tidy it up with a RENUM.

The finished Code should look like the following:

```
10 DIM AR(10)
20 FOR AR=1 TO 10
30 AR(AR)=RND(10)
40 NEXT AR
50 TIMER=0
60 FOR PA=1 TO 9
70 EL=PA
80 IF AR(EL)<=AR(EL+1)THEN140
90 TE=AR(EL+1)
100 AR(EL+1)=AR(EL)
110 AR(EL)=TE
120 EL=EL-1
130 GOTO 80
140 NEXT PA
150 PRINT TIMER
160 END
```

Now we have the Insertion Sort fully optimized, let's put it

through its paces. On small, completely random arrays it seems to execute around the same speed (just slightly slower) as the Selection Sort, but as larger arrays are used the time difference between the two sorting routines is very noticeable (almost 330 seconds slower on an array of 320 elements).

However, when the Insertion Sort is performed on an array (medium to large) which has a large percentage of it at the start already sorted, eg appending 10 unsorted record to the end of an array of 90 already sorted records, it can easily outperform the Selection Sort (14 seconds for the Insertion Sort and 44 seconds for the Selection Sort).

This is due to the fact that instead of a FOR/NEXT loop it uses a conditional loop which can determine if any part of an array is already sorted and then not attempt to sort it if it is not necessary.

That is all that I think I need to mention about the Insertion Sort. I hope you understand it.

This is the last of the fundamental sorting routines that I am presenting, which means the next sort routine I present will incorporate one of the three fundamental sorts ... so I hope you understand all of them.

It also means from now the sorting routines are going to get a lot faster.

PART 3

ING TECHNIQUES

by Christopher Dent

COCO

FODDER

by Johanna Vagg



PROGRAMS THAT MAY BE OF SOME BENEFIT

IN DECEMBER 1984 COCO, Graham referred to my little baby, as a bundle of "CoCo fodder" ... I prefer to use that term to describe the magazines and their contents.

Katy enjoys using the computer. She is nearly 3. We have just discovered a program from an October 1984 magazine which holds her attention for up to half an hour, depending on the number of other members of the family waiting in line! (Something to do with an up arrow!!)

Monica, 12, needed to learn the capitals of the various states of the USA ... again, we found a program in a 1984 magazine.

Some of the readers are asking for more hints and tips. I have a hot tip: buy back issues - what you what to do has probably been done before!

At CoCoConf I asked a number of people if they could tell me how to find the Start, End and Exec addresses of a machine language program LOADED from disk. Alex knew; but was busy ... we spent some time working it out on the Saturday night (thanks Michael and Ross and Co).

Since then I have found a routine to accomplish what I wanted ... in "MLDATGEN" (June 1985 CoCo) a-n-d in several other magazines dating back to 1982!

By the way, the ML doesn't even need to be LOADED.

The programmers with CoCo 3's might like to write programs which will not be suitable for CoCo 2's. Can you blame them? We learn by doing. If we don't use the special features of the CoCo 3, how are we to learn?

Those who have recently bought a CoCo 2 might benefit more from reading back issues. I would suggest that you also buy the current magazines as you may in the future own a CoCo 3 and then you will find that .IT was done before ... in 1987/88!

I only remember one magazine which was predominantly for the CoCo 3 owners, by the way. Those who have bought a CoCo 3 as their first Tandy computer would also benefit from reading back issues.

Almost every program in CoCo/Softgold will RUN on your computer.

The first issue of CoCo/MiCo 'hit the streets' in September 1984. Softgold appeared in March 1987. That means you could have over 40 magazines full of programs and hints.

That's a lot of fodder. There were also about a dozen issues of MICO, produced by Greg Wilson. A lot of programs for the MC10 will RUN if keyed in to a CoCo. If you're lucky, you might find some issues of the Australian RAINBOW.

The February 1987 one was the last. (Graham apparently cannot supply any RAINBOWS ... however, CoCo/Softgold might prove to be the pot of gold which he CAN supply.)

To those who have some RAINBOWS, my kids would recommend:

- * AMPHIBIA
- * STARLORD
- * VIC
- * DRAGON'S GOLD
- * THE TRIP
- * LURKLEY'S MANOR
- * ST GEORGE
- * 5 RAINGAMES
- * COMMANDO
- * FALCON'S LAIR
- * CAVERN COPTER

... to mention a few(?).

I would recommend the ...

- * COCOCOMPOSER (JAN 84)
- * MUSIC+ (JULY 84)
- * PIANO (JULY 86)
- * ZOOM and
- * COCODRAW (both NOV 86); and
- * PICTURE SHOW.

If you have CoCo magazines, then look for these names for games: Craig Stewart and Max Bettridge. Bob Horne and Dean Hodgson are the names in education; Tom Lehane's name comes to mind for graphics handling.

If you have a Tandy printer and you want a BIG screen dump, you'll find it in March 1987 CoCo (by Craig Stewart ... I know it works on the DMP105 and DMP200, also the TRP100, and the DMP110; and of course the DMP130. (For the DMP110, use elongate.)

Programs we have used and enjoyed include:

- * GRAFLOOK
- * LINEMASTER
- * MLDATGEN
- * PIXSAVE
- * TANGLE
- * TANK
- * DOGFIGHT
- * TANK II
- * CHOMPER
- * POBBALL
- * SPEEDTAB

Never in a magazine, only on tape:

- * ADVENT+
- * SHUTLE
- * BREAKOUT
- * FOXGESE and
- * KEYSURP.

Beginners BASIC



by Jim Rodgers

no doubt that you will want to start it off with a suitable title and you will wish to center that title in the middle of the screen.

To do this you will use the PRINT command and then add the @ key.

In your computer manual, you will find a page of SCREEN LOCATIONS somewhat in the form of a graph on which the squares will be numbered from 0 to 511.

From this chart you can select the position at which you wish to start your heading or title.

To demonstrate this, type in and RUN this program:

```
PRINT@ 230, "THE HAUNTED HOUSE"
```

... or:

```
PRINT @ 39, "THE STORY OF MY LIFE"
```

... or:

```
PRINT@ 460, "THE END"
```

If you try all of these examples you will see that you have placed these titles in various positions on the screen. Notice that there must always be a comma placed after the location number.

It is important to remember all the punctuation, the commas, colons and semi-colons when typing in programs.

If you have missed a single comma somewhere in the program or changed a plus sign to a minus or omitted some other character, your program will have BUGS in it, and to make it perform correctly, you will have to find that BUG.

It is worth stressing that in PRINTING with a comma at the end of each line, the computer will PRINT in line with 16 spaces between the items.

```
10 PRINT"GEORGE",
20 PRINT"HARRY",
30 PRINT"CHARLES",
```

When RUN this will appear as:

```
GEORGE           HARRY
CHARLES
```

If you use the semi-colon instead of the comma then the result would be:

```
GEORGEHARRYCHARLES
```

As you can see, they are all crammed together. To spread them out, remember, put a space after the word but inside the quote marks. We can vary that by even more spaces either before or after the words. But remember to put the space inside the quotes.

Many times in a printed program you will see, right after the line number, a REM. This is the REMark statement and is used only to pass on instructions or information for that program but it will not be used as part of the program.

I would hope, at this stage, that some of you will be writing and submitting your own programs.

So think up some subjects around which to write a program and go ahead.

If you have any problems, then let us know so that we can help you out with them.

THERE IS A command which will allow you to have the computer select any number at random. This command is RND and is one command which you will use in many of the programs you will write.

The RND command is used in games where you wish to turn up an unspecified number by chance and is used in such cases as a dice throwing game or selecting random numbers such as for a lotto draw.

RND is used with a number in brackets after it. That number is the limit from 1 to which you wish to go. For instance, in the Lotto (Tatts) number selection, the number would be (45) or in the Pools (38).

Thus if we type in:

```
10 PRINT RND (38)
```

and then RUN it, the computer will select any number from 1 to 38 and then PRINT it. Each time this program is RUN, it will select a number at random.

Sometimes it may repeat a number more than once.

To make the computer PRINT continuously add the line:

```
20 GOTO 10
```

The BREAK key will cancel the program and put you back to the OK prompt, but if you want to halt the program in the middle of RUNNING, hit the SHIFT and @ keys together.

Remember this method of stopping a program while it is scrolling can be very handy later when you are doing other things, such as LISTING, where you want to stop and examine some section of the program.

The SOUND command can be used with the RND command to call up random note sounds or tones.

To do this try this program:

```
10 N = RND (255)
20 SOUND N,1
30 GOTO 10
```

In this program the 255 is the range of the computer's notes and the 1 after the N is the length of time the note is held, with 1 being about 1/20th of a second.

Thus, to increase the length of the sound, we increase the size of that number. Then by GOING TO 10 we repeat with the next random sound.

When you start to write your programs, there is

PEACE



by Joy Wallace
Coco 3
GRAPHICS

P EACE WAS AN entry made by Joy Wallace to the World Peace Graphics Competition we held last year.

The Listing:

```
0 CLEAR500
1 GOTO5
2 '***** "PEACE"
3 SAVE"11:3":END'5
5 WIDTH40
10 CLS5
15 PALETTE0,4
17 LOCATE15,2:PRINT"WORLD PEACE
":LOCATE19,4:PRINT"BY":LOCATE15,
6:PRINT"JOY WALLACE"
20 LOCATE15,16:PRINT"PLEASE WAIT
"
25 FORT=1T0500:NEXTT
30 PCLEAR8
35 PMODE4,1:PCLSS
40 COLOR2
45 LINE(0,0)-(255,191),PSET,B
50 CIRCLE(128,10),20,,.5,0,.5:CIR
CLE(128,183),20,,.5,.5,0
55 CIRCLE(128,96),90
60 CIRCLE(148,96),90,,1,.27,.73:
CIRCLE(108,96),90,,1,.77,.23
65 CIRCLE(168,96),90,,1.1,.32,.6
8:CIRCLE(88,96),90,,1.1,.83,.20
70 CIRCLE(108,70),7:CIRCLE(145,7
2),7
75 CIRCLE(105,69),2:CIRCLE(110,6
9),2
80 LINE(106,73)-(110,73),PSET
85 PAINT(145,72),2,2
90 COLOR1
95 CIRCLE(142,71),2:CIRCLE(147,7
1),2:LINE(143,75)-(147,75),PSET
100 'BODY
105 COLOR 2
110 LINE(113,75)-(125,85),PSET:L
INE(140,75)-(125,85),PSET:LINE-(
125,90),PSET:LINE-(138,83),PSET:
LINE-(138,87),PSET:LINE-(152,87)
,PSET:LINE-(152,83),PSET:LINE-(1
65,90),PSET:LINE-(165,85),PSET:L
INE-(150,75),PSET
```

```
115 LINE(138,87)-(140,105),PSET:
LINE-(150,105),PSET:LINE-(152,87
),PSET:LINE(145,105)-(145,95),PS
ET
120 LINE(103,75)-(91,85),PSET:LI
NE-(91,90),PSET:LINE-(102,83),PS
ET:LINE-(98,95),PSET:LINE-(118,9
5),PSET:LINE-(112,83),PSET:LINE-
(125,90),PSET:LINE(103,95)-(106,
105),PSET,B:LINE(110,95)-(113,10
5),PSET,B
125 CIRCLE(142,106),2,,.5:CIRCLE
(148,106),2,,.5:CIRCLE(104,106).
```



```
2,,.5:CIRCLE(112,106),2,,.5
130 CIRCLE(167,87),2,,2:CIRCLE(1
24,87),2,,2:CIRCLE(90,87),2,,2
135 POKE178,104:PAINT(140,85),,2
140 POKE178,121:PAINT(108,85),,2
145 '****
150 COLOR2:CIRCLE(128,120),7
151 CIRCLE(124,157),4,,.5:CIRCLE
(132,157),4,,.5
152 CIRCLE(125,119),2:CIRCLE(130
,119),2:LINE(126,123)-(130,123),
PSET
153 CIRCLE(142,120),3,,1.5:CIRCL
```

```
E(114,120),3,,1.5
154 CIRCLE(128,108),8,,.3
155 DRAW"BM132,124M+8,-4D14M-6,-
4M+6,+26L24M+6,-26M-6,+4U14M+8,+
4
160 PMODE4,5:PCLSI
165 V3="R4D16R4E4F4R4U16R4D16G4L
4H4G4L4H4U16"
170 O3="R8F4D12G4L8H4U12E4BF4F4D
4G4H4U4E4"
175 R3="R12F4D4G4L4F8L4H4L4D4L4U
20"
180 L3="R4D16R8D4L12U20"
185 D3="R12F4D12G4L12U20BF4R4F4D
4G4L4U12"
190 P3="R12F4D4G4L8D8L4U20BF4R4D
4L4U4"
195 B3="R12D4L8D4R4D4L4D4R8D4L12
U20"
200 A5$="E4R8F4D16L4U8L8D8L4U16B
R4R8D4L8U4"
205 C3="E4R8F4L8G4D4F4R4U4R4D4G4
L8H4U12"
210 FORX=2T010STEP2
215 A3$="BM38,44;BH12":A1$="BM96,
34;BL4BU8":A2$="BM143,34;BH8":A3
$="BM199,44;BH12":A4$="BM236,44;
BH12"
220 B3$="BM40,140;BH8":B1$="BM64,
140;BH8":B2$="BM123,144;BL8BU6":
B3$="BM174,144;BL8BU6":B4$="BM22
4,140;BH8"
225 S3$="S"+STR$(X)
230 COLOR2
232 LINE(0,0)-(255,191),PSET,B
235 DRAW S3+A3$+V3+A1$+S3+O3+A2$+
R3+A3$+L3+A4$+D3
240 DRAW B3+S3+P3+B1$+E3+B2$+A5$
+B3$+C3+B4$+E3
245 NEXIX
250 WIDTH32
255 PMODE4,1:SCREEN1,1
260 FOR T=1T0350:NEXIT
265 PMODE4,5:SCREEN1,1
270 FORT=1T0350:NEXIT
275 GOTO 255
```

⊕

HINT

This poke command
lets you disable
the NEW command in
Colour Basic.

64 & 32K -
POKE 32401,68

16K -
POKE 16017,68

THIS IS my newest program and one I hope will be useful to other people bar myself, so here is a little run down on '3TRIAL'.

This program was designed to display trial balances, though the full potential of it has not been reached, as I don't own a printer and therefore do not

have a clue as to how to print trial balances out.

Besides this, the program can use up to 20 accounts. But you can not be able to use any figure above and including \$1000.00.

However, it has a saving and loading feature for those who want it. I would welcome any printing feature that could be added to the program.

TRIAL BALANCE



CoCo3

Author Unknown
APPLICATION

The Listing:

```

0 POKE&HE03D,&H65:POKE&HF666,&H1
C:POKE&HF66B,&H28:POKE&HF66C,&H2
0:POKE&HF866,&H28:POKE&HF867,&H7
0:POKE&HF87F,&H1B:POKE&HF87F,&H1
C
1 GOTO10
2 'TRIAL
3 SAVE"156:1":END'BUS
10 CLEAR 5000
20 DATA 31,29,31,30,31,30,31,31,
30,31,30,31
30 DD=1:DIM M(12),V$(3),X$(20),X
(20),P(20)
40 FORM=1TO12:READ M(DD):DD=DD+1
:NEXTH
50 POKE65497,0:PALETTE RGB:PALET
TE10,12:PALETTE11,16:PALETTE12,3
6:ON BRK GOTO 690:ON ERR GOTO 70
0
60 WIDTH 80:CLS2:WIDTH 40:CLS2:L
OCATE 8,0:ATTR2,1,B,U:PRINT"COCO
3 TRIAL BALANCE MAKER":ATTR2,1
70 LOCATE1,2:INPUT"LOAD OLD TRIA
L BALANCE":YN$:IF YN$="Y" OR YN$
="N" THEN 80 ELSE 70
80 IF YN$="N" THEN 160 ELSE INPU
T" LOAD FROM (D)ISK OR (T)APE":D
T$:IF DT$="D" OR DT$="T" THEN 90
ELSE 80
90 IF DT$="D" THEN DT=1 ELSE DT=
-1
100 INPUT"FILENAME (8 CHARS)":N
$:N=LEN(N$):IF N>8 THEN 100 ELSE
110

```

```

110 N$=N$+"/BMK"
120 POKE65496,0:OPEN"I",#DT,N$
130 INPUT#DT,NM$,D$,X
140 FORT=1TOX:INPUT#DT,P(T),AM(T
),X$(T):NEXTT:CLOSE#DT
150 POKE65497,0:GOTO 360
160 LOCATE 1,2:INPUT"HOW MANY LE
DGER ACCOUNTS ";X
170 LOCATE0,3:ATTR3,1:PRINT" DAT
E OF TRIAL BALANCE":INPUT" (D
D/MM/YY)":D$
180 L=LEN(D$):LL=INSTR(D$,"/"):
190 V$=LEFT$(D$,LL-1):V0=VAL(V$)
:IF V0>31 THEN 220 ELSE V$(1)=RI
GHT$(D$,L-LL)
200 L1=INSTR(V$(1),"/"):V$(2)=LE
FT$(V$(1),L1-1):V1=VAL(V$(2)):IF
V1>12 THEN 220 ELSE V$(3)=RIGHT
$(D$,L-(LL+L1))
210 V=VAL(V$(3)):IF V>99 THEN RS
=1:GOTO 220 ELSE GOTO 240
220 IF RS=1 THEN PRINT" Sorry, t
he program only accepts dates
lower than 1999":FORT=1TO2
000:NEXTT:LOCATE0,4:PRINTSTRING$(
80," "):GOTO 170 ELSE 230
230 PRINT" Sorry, the date you h
ave given cannot possibly exis
t, please redo the date":FORT=1T
O2000:NEXTT:LOCATE0,4:PRINTSTRIN
G$(80," "):GOTO170
240 DD=V1:IF V0>M(DD) THEN 230 E
LSE 250
250 ATTR4,1:PRINT" Name to be us
ed on the Trial Balance":ATTR3,1
:INPUT " ";NM$
260 CLS:LOCATE8,0:ATTR2,1,B,U:PR
INT"COCO3 TRIAL BALANCE MAKER":
ATTR2,1

```

```

270 LOCATE1,2:PRINT"Please state
Account names:-":PRINT" in
correct order"
280 ATTR4,1:FORM=1TOX:LOCATE1,M+
3:PRINTM;:LINEINPUT"-":X$(M):NEX
TH
290 CLS:LOCATE8,0:ATTR2,1,B,U:PR
INT"COCO3 TRIAL BALANCE MAKER":
ATTR2,1
300 LOCATE0,2
310 ATTR3,1:FORT=1TOX
320 PRINT" Is ";:ATTR4,1:PRINTX$(
T):ATTR3,1:INPUT" a debit or cr
edit balance (D/C)":DC$
330 IF DC$="D" OR DC$="C" THEN 3
40 ELSE 320
340 IF DC$="D" THEN P(T)=1 ELSE
P(T)=2
350 INPUT" AMOUNT: ";AM(T):NEXTT
360 CLS:ATTR4,1:AS="TRIAL BALANC
E OF " :AS=AS+NM$:NM=LEN(AS):N=40
-NM:N=N/2:N=FIX(N):LOCATE0,0:PRI
NTAS;:ATTR2,1
370 AS="AS AT " :AS=AS+D$:NM=LEN(
AS):N=40-NM:N=N/2:N=FIX(N):LOCA
TE0,1:PRINTAS:ATTR2,1:LOCATE28,2:
PRINT"Dr":LOCATE36,2:PRINT"Cr"
380 ATTR3,1:FORT=1TOX:LOCATE2,T+
2:PRINTX$(T):IF P(T)=1 THEN LOCA
TE25,T+2:PRINTUSING"####.##";AM(
T) ELSE LOCATE33,T+2:PRINTUSING"
####.##";AM(T):
390 NEXTT
400 FORT=1TOX:IF P(T)=1 THEN F1=
F1+AM(T) ELSE IF P(T)=2 THEN F2=
F2+AM(T)
410 NEXTT
420 LOCATE24,X+3:PRINTSTRING$(16
,"-");:LOCATE24,X+4:PRINTUSING"$
####.##";F1:LOCATE32,X+4:PRINTUS
ING"$####.##";F2:LOCATE24,X+5:PR
INTSTRING$(16,"=");
430 IF F1<F2 THEN ATTR4,1,B:LOC
ATE6,X+6:PRINT"ERROR IN TRIAL BA
LANCE ENTRY":LOCATE13,X+7:PRINT"
PRESS ANY KEY":EXEC44539:GOTO 60
440 IF F1=F2 THEN ATTR4,1,B:LOCA
TE7,X+6:PRINT"TRIAL BALANCE IS S
UCCESSFUL":LOCATE13,X+7:PRINT"PRE
SS ANY KEY":EXEC44539
450 CLS2:LOCATE8,0:ATTR2,1,B,U:P
RINT"COCO3 TRIAL BALANCE MAKER";
460 LOCATE0,10:ATTR2,1,U:PRINTST
RING$(40," ");
470 F1=0:F2=0:POKE65496,0:ATTR3,
1:LOCATE 1,2:PRINT"Will You :-":
LOCATE2,3:PRINT"1) SAVE TRIAL BA
LANCE":LOCATE2,4:PRINT"2) LOAD T
RIAL BALANCE":LOCATE2,5:PRINT"3)
VIEW TRIAL BALANCE":LOCATE2,6:P
RINT"4) QUIT":ATTR4,1:LOCATE2,7:
PRINT"?";
480 AS=INKEY$:IF AS="" THEN 480:
ELSE PRINTAS:A=VAL(AS)
490 IF A<1 OR A>4 THEN 470 ELSE
ON A GOTO 500,590,680,690
500 ATTR4,1:LOCATE1,12:INPUT"SAV
E TO (D)ISK OR TO (T)APE":DT$:IF
DT$="T" OR DT$="D" THEN 510 ELS
E 500
510 IF DT$="D" THEN DT=1 ELSE DT
=-1
520 LOCATE1,13:ATTR3,1:INPUT"FIL
ENAME (8 CHRS)":N$:N=LEN(N$):IF
N>8 THEN 520 ELSE 530
530 N$=N$+"/BMK"
540 OPEN"O",#DT,N$
550 IF DT=1 THEN WRITE#1,NM$,D$,
X ELSE PRINT#-1,NM$,D$,X
560 IF DT=1 THEN FORT=1TOX:WRITE
#1,P(T),AM(T),X$(T):NEXTT ELSE F
ORT=1TOX:PRINT#-1,P(T),AM(T),X$(
T):NEXTT
570 CLOSE#DT

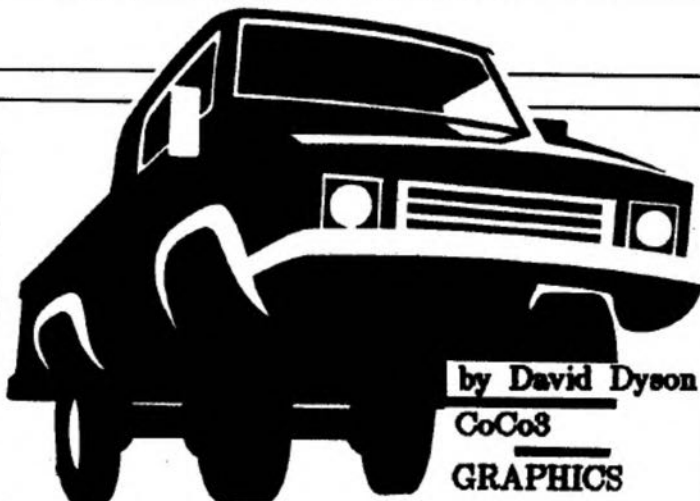
```

```

580 LOCATE0,11:PRINTSTRING$(255,
" ");:GOTO 470
590 ATTR4,1:LOCATE1,12:INPUT"LOA
D FROM (D)ISK OR (T)APE";DT$:IF
DT$="D" OR DT$="T" THEN 600 ELSE
590
600 IF DT$="D" THEN DT=1 ELSE DT
=-1
610 LOCATE1,13:ATTR3,1:INPUT"FIL
ENAME (8 CHRS)";N$:N=LEN(N$):IF
N>8 THEN 610 ELSE 620
620 N$=N$+"/BMK"
630 OPEN"1",#DT,N$
640 INPUT#DT,NM$,D$,X
650 FOR T=1 TO X:INPUT #DT,P(T),
AM(T),X$(T):NEXTT
660 CLOSE#DT
670 LOCATE8,11:PRINTSTRING$(255,
" ");:GOTO 470
680 GOTO 360
690 WIDTH 32:CLS:PALETTERGB:POKE
65496,0:END
700 IF ERLIN=130 AND ERNO=26 THE
N ATTR4,1:LOCATE7,23:PRINT"SORRY
, NO SUCH FILE EXISTS":FORT=1TO1
500:NEXTT:GOTO 60
710 IF ERLIN=640 AND ERNO=26 THE
N ATTR4,1:LOCATE7,27:PRINT"SORRY
, NO SUCH FILE EXISTS":FORT=1TO1
500:NEXTT:LOCATE7,27:PRINTSTRING
$(7," ").GOTO 450
720 IF ERNO=30 THEN ATTR4,1:LOCA
TE2,27:PRINT"SORRY, DISK HAS BEE
N WRITE PROTECTED":FORT=1TO1500:
NEXTT:LOCATE2,27:PRINTSTRING$(36
," "):GOTO 450
730 IF ERNO=28 THEN ATTR4,1:LOCA
TE7,27:PRINT"SORRY, DISK IS ALRE
ADY FULL":FORT=1TO1500:NEXTT:LOC
ATE7,27:PRINTSTRING$(27," "):GOT
O 450

```

T-TRUCK



HIS PARTICULAR truck should remind you of the ending scene where the bikie gets killed in the final scene in "Mad Max". And if you don't think like

that, then you can always see it as a pretty good picture of the front of a truck, with that touch of animation.

Not bad for an eleven year old, eh?

The Listing:

```

1 GOTO10
2 *****
3 *****BY DAVID DYSON*****
4 *****3/1/88*****
5 SAVE"145A":END'GRF
10 PALETTE9,60:PALETTE10,32:PALE
TTE11,32
11 HSCREEN2:HCLS2:PALETTE13,63:P
ALETTE14,25:PALETTE15,25
12 :HCIRCLE(0,80),20,1:HPAINT(2,
82),1,1:HCOLOR14:HLIN(0,80)-(32
0,192),PSET,BF:W$="M+12,-4M+12,+
4M+12,-4M+12,+4":HDRAW"BM252,108
C13"+W$:HDRAW"BM48,192C13"+W$:HD
RAW"BM48,180C13R4F12R20":HDRAW"B
M10,90S2"+W$:HDRAW"84"
13 HDRAW"C4BM244,148M+6,+4M+2,+4
D8M-8,+12G8M-16,+4M-4,-2M-4,-2M-
2,-4U4M+36,-28BM244,148L27M-1,-4
U4H4M-4,+1D3M-1,+3M+1,+3M-4,+6D8
F4R8M+3,-8U4M-3,-8BM220,152R8D8
14 HDRAW"BM212,176L122M-16,-4M-2
8,-12M+12,-8M+12,-2M+8,-2R24M-12
8,-8H12M-8,-12M-2,-16M+2,-16M+4,-
12M+16,-24E8M+16,-8M+8,-1M-8,+6G
4M-4,+8D24M+8,+20M+12,+24M+12,+2
0M+4,+8M+8,+4F8M-60,-8
15 HDRAW"BM46,160D4F16M+16,+8R14
4BM122,18D92BM122,18R4D98BM122,1
8R4M220,124L90BM208,148L58BM122,
152D4BR4U4D4BL4U4L20G12R72E12L20
BM196,148G28

```

```

16 HPAINT(216,152),8,4:HPAINT(19
2,164),8,4:HPAINT(95,80),1,4:HPA
INT(160,92),4,4:HPAINT(80,168),3
,4:HPAINT(108,156),8,4:HPAINT(12
8,183),7,4:HPAINT(236,152),8,4:H
PAINT(230,168),7,4
178 HDRAW"C8BM140,56R4D16R4U8R4D
8R8D4L8D8L4U8L8U20"
179 FORD=1TO30:R=RND(320):H=RND(
80)
180 IFHPOINT(R,H)=11THENHSET(R,H
,8):NEXT
190 HDRAW"BM252,80C7M+4,-8E8M+8,
-4M+8,-2M+8,-1M+8,-1R28D24L68":H
PAINT(288,72),7,7
191 PALETTE12,56
192 HDRAW"C12BM184,36E8R12E8R16M
+12,-8R20M+12,+8R12F12D8M-12,+8L
12H12L12G12L12H8L16G4L4H8"
193 HPAINT(244,32),12,12
194 FORD=1TO320STEP15:HCIRCLE(D,
190),15,15,.2,.0,.50:NEXTD
195 FOR D=1TO150:NEXTD:PALETTE9,
32:PALETTE10,63:PALETTE10,25:PAL
ETTE10,63:PALETTE15,25:PALETTE15
,63:PALETTE13,63:PALETTE13,25
196 FORD=1TO100:NEXTD:PALETTE9,6
3:PALETTE10,32:PALETTE13,63:PALE
TTE13,25:PALETTE15,63:PALETTE15,
25
197 GOTO195

```

from P 14

program, it merrily rushes off with the wrong information, which is BLOODY frustrating at times, and secondly INKEY\$ only reads one keystroke at a time.

Programming can loop it back until the input string is the desired size, and I might show you how to do that one later, as it's a bit fiddly, but the false value in the buffer is easy to clear out. What you do is to ensure that as much as possible the keyboard responses are called up by the same subroutine, thus reducing

repetition in the programming, and then clear the buffer like this:-

```

100 A$=INKEY$:A$=""
110 A$=INKEY$:IF A$=""THEN110

```

Put these two statements on separate lines, they work better and quicker that way.

Line 100 reads the buffer, nulls the variable A\$, and then drops into the loop in 110. I doubt very much if anyone will ever be able to respond to a program quickly enough to catch line 100, and even if this is suspected, the screen prompts

can always be shifted closer in action sequence to the input subroutine, and then your keyboard buffer is emptied out before the program operator inputs the required response.

It's simple thing to do, really, but I have so seldom seen it used, and as I said earlier, the screen display is what the customer sees, not the program. The screen presentation is the ONLY interface between the program and the operator.

So pay a bit more attention to it in future, willya? Please?

Woof.

Q R A R D R F A H N R O J E T L V M Y M W A H X C
 E R O Q Q T A P N N G X T Q D I Z Z T R F T S Y J Y
 W R C U S C M A J D K R
 R M H J I F R D R M U W
 A T V W K C O L V I J I
 I N F A Q G G Y F P A P R
 C Y I N O X E F T M D Q
 T O X S D P A A D U U P
 J I H Q E D D U D I F E
 A C R P L C U J B B E S A
 T T K L D A K J E M V G F S O P S A N V B C E Y K
 A R V R N Y S Y T R T E R T E D W D T X V C T C Y
 C M A J X V N G N B A P I E G G G E I C Q G G O
 H T E L O W Z B I X Z N W J X Y Z E C R B M A M L
 E E Z W E Y I R Q O S Q A F V K T L J G L O Z F
 Q S G D L F S D P M R Q U N M L P Y U L V D E B F
 M E K M V Z C T A Z F N T K I A Q V Q O E R Y V E
 X C N A D X Z U I P A I P X G U U Z I M G Z E S E
 H Q D J H S Q C E C P N G R B S O A J S Q I U W T
 L W I G C T H R B H K P U N O V H K D N K O H O O
 L N Y W P R G W I W C K M Z C G Z A V H M C T N W
 F P V R J Y R T D Z D K V K A M R I T J O V X T U
 D I S K D R I V E B C A Y R F P K O A T Z K E Z O R
 X R H S X S Z I A H N C X P K X G M A E O X O M
 B Z Z G H R K E V E S J B Y W X R S W E O K T Y K

WORDSEARCH

adapted by David Philips

32K ECB
 GAME

WORDSEARCH WAS sourced from the same magazine as Deon's program a few months ago, namely a book called Basic Computer Games.

The Listing:

```

0 GOTO10
3 SAVE"153C":END'GAM
10 ' FOR 32K ECB
20 '*****
30 '*****WORD SEARCH PUZZLE*****
40 '*****ADAPTED FOR COCO BY*****
50 '*****DAVID PHILIPS*****
60 '*****
70 CLS:PRINTTAB(10)"WORD SEARCH"
75 PRINT:PRINT" THIS PROGRAMME U
SES A SUPER HIGH SPEED POKE.
IF YOUR COCO CAN'T HACK IT TH
EN TAKE IT OUT OF LINE 460.":PR
INT:PRINT" HOWEVER, THIS WILL CO
NSIDERABLY SLOW THE PROGRAMME. "
:PRINT:PRINT
80 INPUT"DO YOU WANT INSTRUCTION
S (Y/N)";A$:IF A$<>"Y"THEN140
90 CLS:PRINT" THIS PROGRAM WILL
CREATE WORD SEARCH PUZZLES.IT T
AKES A SET OF INPUT STRINGS, PURG
ES ALL NON ALPHABETIC CHARACTE
RS AND TURNS THEM INTO A WORD SE
ARCH PUZZLE.":PRINT:PRINT" PR
ESS ANY KEY TO CONTINUE"
100 IF INKEY$=""THEN100
110 CLS:PRINT:PRINT" IF IN THE
COURSE OF MAKING THEPUZZLE THE C
OMPUTER CANNOT FIT APARTICULAR W
ORD IN ANYWHERE IT WILL STOP AN
D ASK IF YOU WANT TO START AGAIN
OR JUST DUMP THAT WORD. IF YOU
DON'T WANT TO STARTAGAIN,TYPE '
N' TO DUMP THE WORD."
120 PRINT" IF THIS HAPPENS CONTI
NUALLY, TRY USING LESS WORDS O
R LARGER DIMENSIONS IN THE PUZZ
LE.":PRINT:PRINT" PRESS ANY K
EY TO CONTINUE"
130 IF INKEY$=""THEN130
140 CLS:CLEAR3000:INPUT"DO YOU W
ANT A SOLUTION PRINTOUT";X$:
150 DEF FNA(Z)=INT(RND(0)*Z+1)
160 PRINT"WHAT IS YOUR PRINTER B
AUD RATE?":PRINT:INPUT"1)50 2)75
3)110 4)150 5)300 6)600 7)1
200 8)1800 9)2000 10)2400 1
1)3600 12)4800 13)7200 14)9600 1
5)SOMETHING ELSE?";Q
170 IF Q<1 OR Q>15 THEN PRINT"PL
EASE ANSWER 1 TO 15 ONLY":SOUND1
00,5:GOTO160
180 ON Q GOSUB 980,990,1000,1010
,1020,1030,1040,1050,1060,1070,1
080,1090,1100,1110,1120
190 INPUT"HOW MANY COLUMNS DOES
YOUR PRINTER HAVE";TW
200 PRINT TAB(6)"WHAT IS PUZZLE
WIDTH?":PRINT TAB(7)TW/2;"COLUMN

```

FIND THESE HIDDEN WORDS IN THE PUZZLE:

BAUDRATE DATA MONITOR	BYTE DISK MOUSE	CASSETTE DISKDRIVE PRINTER	COMPATIBLE JOYSTICK PROGRAM	CRASH MODEM
-----------------------------	-----------------------	----------------------------------	-----------------------------------	----------------

```

S MAX.":INPUTW:MD=W:IF W>1 AND
W*2<=TW THEN220 ELSE 210
210 PRINT"THAT WILL NOT FIT IN";
TW;" COLUMNS.":SOUND100,5:GOTO20
0
220 INPUT" LENGTH (MIN.5)";L:IF
L>=5 THEN MD=L ELSE220
230 INPUT"HOW MANY WORDS IN THE
PUZZLE";M:IF M>=2 THEN250
240 PRINT"THESE MUST BE AT LEAST
2 WORDS.":SOUND100,5:GOTO230
250 PRINT:DIM A$(L,W),W$(M):DIM
W(M,3),DXY(8,2),DD(28)
260 PRINT"ENTER TITLE FOR PUZZLE
":PRINT(""; TW;"CHARACTERS MAX.
"):INPUTX$:
270 PRINT"NOW ENTER A WORD AT EA
CH PROMPT.":PRINT" TO REDO THE
LAST WORD, TYPE A HYPHEN (-).TO
END WHEN YOU RUN OUTA WORDS USE
A FULL STOP (.):FORI=1TO M
280 INPUT T$:IF T$="-" THEN I=I-
1:B=B-1:PRINT"REDO ";W$(I);"...
":GOTO280
290 IFT$="."THEN M=I-1:GOTO470
300 IF LEN(T$)=0 THEN PRINT"INPU
T ERROR; REDO.":GOTO280
310 J=1
320 T$=MID$(T$,J,1):IF T$>="a"
AND T$<="z" THEN370 ELSE IF TE
$<"A"OR T$>"Z" THEN340
330 T$=LEFT$(T$,J-1)+CHR$(ASC(MI
D$(T$,J,1))+32)+RIGHT$(T$, (LEN(T
$)-J):GOTO370
340 IFJ=LEN(T$)THEN T$=LEFT$(T$,
J-1):GOTO380
350 IFJ=1THEN T$=RIGHT$(T$,LEN(T
$)-1):J=J-1:GOTO370
360 T$=LEFT$(T$,J-1)+RIGHT$(T$,L
EN(T$)-J):J=J-1
370 J=J+1:IFJ<=LEN(T$)THEN320
380 PRINT"-";T$;"-"
390 IF LEN(T$)<MD THEN410
400 PRINT"THAT'S TOO LONG. TRY A
NOTHER ONE":GOTO280
410 FOR IZ=1 TO I-1:IF W$(IZ)>>T
$ THEN NEXT:GOTO430
420 PRINT" YOU HAVE THAT WORD A
LREADY TRY A DIFFERENT ONE:
":GOTO280
430 W$(I)=T$:NEXT:PRINT"THAT'S I
T...";M;"WORDS."
440 PRINT:PRINT"PLEASE WAI

```

```

T WHILE I AM THINKING":FOR X=1TO
1000:NEXT:PRINT:PRINT:PRINT" DON
'T GO 'WAY, WILL YOU....."
450 PRINT:PRINT"IF PUZZLE IS LAR
GE AND HAS A LOTOF WORDS IN IT T
HIS MAY TAKE A WHILE.PERHAPS YO
U'D LIKE A CUP OF COFFEE WHILE
YOU WAIT."
460 FORX=1TO10000:NEXT:POKE65497
,0
470 FORI=1TO M-1:FORJ=I+1TOM
480 IF LEN(W$(I))<LEN(W$(J))THEN
HZ$=W$(I):W$(I)=W$(J):W$(J)=HZ$
:NEXTJ,1
490 FORI=1TO8:READ DXY(I,1),DXY(
I,2):NEXT
500 FOR I=1TO28:READ DD(I):NEXT
510 DATA 0,1,1,1,1,0,1,-1,0,-1,-1
,-1,-1,0,-1,1
520 DATA 2,4,6,8,2,4,6,8,2,4,6,8,
2,4,6,8,2,4,6,8,2,4,6,8,1,3,5,7
530 FORI=1TO M:LN=LEN(W$(I)):NT=
0
540 SD=DD(FNA(28)):SX=FNA(W):X1=
SX+(LN-1)*DXY(SD,1):IF X1<1 OR X
1>W THEN540
550 SY=FNA(L):X1=SY+(LN-1)*DXY(S
D,2):IFX1<1 ORX1>L THEN540
560 NT=NT+1:IF NT<>W*L*2 THEN600
570 PRINT"COULDN'T FIT ";W$(I)
;" IN THE PUZZLE.":PRINT"DO YO
U WANT TO START AGAIN? Y/N?
580 A$=INKEY$:IFA$=""THEN580 ELS
E IF A$="Y"THEN530 ELSE 590
590 W$(I)=":GOTO650
600 J=SY:K=SX:FOR P=1 TO LN
610 IF LEN(A$(J,K))AND A$(J,K)<>
MID$(W$(I),P,1)THEN540
620 J=J+DXY(SD,2):K=K+DXY(SD,1):
NEXT:J=SY:K=SX
630 FOR P=1TO LN:A$(J,K)=MID$(W$(
I),P,1):J=J+DXY(SD,2):K=K+DXY(S
D,1):NEXT
640 W(I,1)=SX:W(I,2)=SY:W(I,3)=S
D
650 NEXT I:FORI=1TO L:FORJ=1TO W
660 IF A$(I,J)=""THEN A$(I,J)=CH
R$(RND(26)+96):NEXTJ,I
670 FORI=1TO M-1:FORJ=I+1TOM
680 IFW$(I)<W$(J)THEN700
690 HZ$=W$(I):W$(I)=W$(J):W$(J)=
HZ$:FORK=1TO3:HZ=W(I,K):W(I,K)=W
(J,K):W(J,K)=HZ:NEXTK

```

DATA BASE

by Gary Usher
CoCo3

BUSINESS APPLICATION

THIS IS a database program originally written for tape by Paul Humphreys and adjusted by Graham Morphet for the CoCo 2 from "The Best of CoCoOz #4: Business".

I have modified this program to run on the CoCo 3 in an 80 text screen format and to also run off disk.

In line 15, there is a poke to set the printer baud rate at 2400. Speed pokes have been entered throughout the program and can be deleted if required.

Hope this Program is of some use.

The Listing:

```
1 ****AD6**19/2/84**DATA BASE**A  
DJ 9/4**BY PAUL HUMPHREYS AND AD  
JUSTED BY GRAHAM MORPHETT** 3/88  
MODIFIED TO 80 TEXT SCREEN AND  
DISK BY GARY USHER  
2 CLS :WIDTH 80:CLS1:ATTR3,2  
15 CLEAR0:POKE41988,164:POKE4198  
9,21:POKE150,18  
20 CLEAR2000:DIM A$(6,250):'ON E  
RR GOTO 1500  
25 GOSUB 1520  
30 CLS:LOCATE28,2:PRINT"INPUT DA  
TE: DATE MONTH":LOCATE40,4:  
PRINT:LINEINPUTDA$:LOCATE50,4:P  
RINT:LINEINPUTM$:  
40 T=I:N=0:M=0:CLS6:ATTR3,2:CLS:  
LOCATE32,1:PRINT"MAILING LIST";  
50 LOCATE33,3:PRINT; DA$. ";MN  
$. 1988."  
60 LOCATE10,5:PRINT" 1) LOAD FIL  
ES FROM DISK":LOCATE10,6:PRINT"  
2) SAVE FILES TO DISK":LOCATE10,  
7:PRINT" 3) INPUT NEW CUSTOMERS"  
:LOCATE10,8:PRINT" 4) CHANGE OR  
SEARCH FOR NAMES":LOCATE10,9:PRI  
NT" 5) PRINT OPTIONS"  
65 LOCATE10,10:PRINT" 6) CREATE  
HOLE OR ERASE":LOCATE10,11:PRINT  
" 7) EXIT"
```

```
700 NEXTJ,I:POKE65496,0:INPUT"HO  
W MANY COPIES DO YOU WANT";N  
710 PRINT"FOR EACH COPY PRESS en  
ter TO BEGIN PRINTING.....":F  
OR C=1 TO N:INPUT"PRESS enter";A  
$  
720 CLS:PRINT@236,"printing":PRI  
NT:PRINT:PRINT"if printer stops  
during printoutdont not touch.it  
will restart byitself."  
730 GOSUB740:NEXT:GOTO910  
740 T=(TW-2*W)/2:PRINT#-2:PRINT#  
-2:PRINT#-2,TAB((TW-LEN(XY$))/2)  
;XY$:PRINT#-2:PRINT#-2:FOR J=1TO  
L:PRINT#-2,TAB(T);:FOR K=1TO W  
750 IF A$(J,K)="."THEN PRINT#-2,  
". ";:GOTO780  
760 IF A$(J,K)=" " THEN A$(J,K)=C  
HR$(RND(26)+96)  
770 PRINT#-2,CHR$(ASC(A$(J,K))-3  
2);" ";  
780 NEXT:PRINT#-2:NEXT:PRINT#-2  
790 PRINT#-2,"FIND THESE HIDDEN  
WORDS IN THE PUZZLE:":PRINT#-2,"  
"  
800 FORJ=1TO M:IF LEN(W$(J))=0 T  
HEN900  
810 X=1:R$=W$(J)  
820 WR$=MID$(R$,X,1):IF ASC(WR$)  
<=90 THEN 870  
830 R$=LEFT$(R$,X-1)+CHR$(ASC(MI  
D$(R$,X,1))-32)+RIGHT$(R$,LEN(R  
$)-X):GOTO870  
840 IFX=LEN(R$) THEN R$=LEFT$(R$  
,X-1):GOTO880  
850 IFX=1 THEN R$=RIGHT$(R$,LEN(  
R$)-1):X=X-1:GOTO870  
860 R$=LEFT$(R$,X-1)+RIGHT$(R$,L  
EN(R$)-X):X=X-1  
870 X=X+1:IFX=LEN(R$) THEN820  
880 PRINT#-2,R$,  
890 CT=CT+1:IF CT=>TW/16 THEN PR  
INT#-2:CT=0  
900 NEXT:FORX=1TO4:PRINT#-2:NEXT  
:RETURN  
910 IF X$="Y"THEN920 ELSE INPUT"  
ANOTHER PUZZLE Y/N";P$:IFP$="Y" T  
HEN RUN210 ELSE END  
920 FORI=1TO L:FORJ=1TO W:A$(I,J)=  
".":NEXTJ,I:FORI=1TOM  
930 LN=LEN(W$(I)):J=W(I,2):K=W(I  
,1):FORP=1TOLN  
940 A$(J,K)=MID$(W$(I),P,1)  
950 J=J+DXY(W(I,3),2):K=K+DXY(W(  
I,3),1):NEXTP,I  
960 X$="HERE IS THE ANSWER KEY:  
":GOSUB740  
970 PRINT#-2:INPUT"ANOTHER PUZZL  
E Y/N";P$:IFP$="Y"THEN RUN210 EL  
SE END  
980 POKE149,4:POKE150,88:RETURN  
990 POKE149,2:POKE150,227:RETURN  
1000 POKE149,1:POKE150,246:RETUR  
N  
1010 POKE149,0:POKE150,110:RETUR  
N  
1020 POKE149,0:POKE150,180:RETUR  
N  
1030 POKE149,0:POKE150,87:RETURN  
1040 POKE149,0:POKE150,41:RETURN  
1050 POKE149,0:POKE150,25:RETURN  
1060 POKE149,0:POKE150,23:RETURN  
1070 POKE149,0:POKE150,18:RETURN  
1080 POKE149,0:POKE150,10:RETURN  
1090 POKE149,0:POKE150,7:RETURN  
1100 POKE149,0:POKE150,3:RETURN  
1110 POKE149,0:POKE150,1:RETURN  
1120 PRINT"IF YOU ARE SURE IT'S  
NOT ONE OF THESE THEN CONSULT YO  
UR PRINTER MANUAL FOR THE CORREC  
T BAUD RATEAND THE NECESSARY PO  
TES.":STOP:RETURN
```

```
70 LOCATE42,14:PRINT"AVAILABLE M  
EMORY";:LOCATE60,14:PRINT MEM;  
80 LOCATE34,18:PRINT"INPUT OPTIO  
N";  
85 INPUT AT  
90 ON AT GOTO 115,205,280,325,43  
0,750,1510  
100 GOTO40  
110 '****DISK CONTROL*****  
*****  
115 GOSUB 1530:CLS4:ATTR3,2  
120 CLS:LOCATE24,12:PRINT"INSERT  
DATA DISK";:LOCATE21,22:PRINT"P  
RESS <ENTER> TO CONTINUE";:INPUT  
AT$  
130 B=1  
140 CLS:LOCATE24,12:PRINT"GROUP  
# FILE TO INPUT";:INPUT X$:OPEN  
"I",#-1,X$  
150 INPUT #-1,T  
160 IF EOF(-1) THEN 200  
170 FOR I=1 TO 6:INPUT#1,A$(I,B)  
:NEXTI  
180 B=B+1  
190 GOTO 160  
200 CLOSE #1:SOUND40,40:GOSUB 15  
20:GOTO 40  
205 GOSUB 1530:CLS4:ATTR3,2  
210 CLS:LOCATE24,12:PRINT"INSERT  
DATA DISK";:LOCATE21,22:PRINT"P  
RESS <ENTER> TO CONTINUE";:INPUT  
AT$  
220 CLS:LOCATE21,12:PRINT"GROUP  
# FILE LABEL";:INPUT M$  
230 CLS:LOCATE28,12:PRINT"NOW SA  
VING GROUP FILE ";M$;  
240 OPEN "O",#1,M$  
250 PRINT #1,T  
260 FOR I=1 TO T:FOR J=1 TO 6:PR  
INT#-1,A$(J,I):NEXTJ:NEXTI  
270 CLOSE #1:SOUND200,40:GOSUB 1  
520:GOTO 40  
280 '****INPUT MODE*****  
285 FORI=1TO250  
290 IFA$(1,I)<>" "THEN310 ELSECLS  
:LOCATE30,2:PRINT"ADD NAMES";:LO  
CATE30,3:PRINT"PRESS 'XX' TO BRE  
AK";:SOUND130,1:LOCATE20,6:PRINT  
;:LINEINPUT" ACCOUNT No ";A$(1  
,1):IFA$(1,I)="XX"THENA$(1,I)=" "  
:GOTO40  
300 LOCATE10,10:LINEINPUT"CUSTOM  
ER ";A$(2,1):LINEINPUT  
" NO & STREET ";A$(  
3,1):LINEINPUT" SUBURB,STA  
TE,P/CODE. ";A$(4,1):LINEINPUT"  
PHONE ";A$(5  
,1):LINEINPUT" NAMES  
";A$(6,1)  
310 NEXTI:GOTO40  
320 '****SEARCH MODE*****  
325 CLS6:ATTR3,2  
330 CLS:LOCATE29,2:PRINT"SEARCH  
OR CHANGE MODE";  
340 LOCATE10,7:PRINT"INPUT ACCOU  
NT No ";:LOCATE10,10:PRINT"PRESS  
<A> FOR ALL ACCOUNTS";:LOCATE29  
,20:PRINT"PRESS ENTER TO RETURN"  
;:LOCATE28,7:PRINT;:INPUTAT$:IFA  
T$=""THEN40  
350 IF#=#="A"THENI=1:GOTO380  
360 FORI=1TO250:IFAS(1,I)=AT$THE  
N380  
370 NEXTI:GOTO40  
380 CLS6:ATTR3,2:CLS:LOCATE28,1:  
PRINT" CHANGE OR ERASE :- ":LO  
CATE28,2:PRINT"PRESS 'XX' TO EXI  
T"  
385 PRINT:PRINT:FORJ=1TO6:PRINTJ  
;A$(J,1):NEXTJ  
390 LOCATE10,14:PRINT"PRESS <EN  
TER> FOR NEXT ACCOUNT":LOCATE10,1  
5:PRINT"PRESS <R> FOR PREVIOUS A  
CCOUNT":LOCATE10,16:PRINT"PRESS
```

```

'EX' TO EXCHANGE POSITION:LOCAT
E58,1:PRINT"FILE NO";I
395 LOCATE10,20:PRINT;:INPUT"ITE
M TO CHANGE";Z8
400 IFZ8="XX"THEN40 ELSEIFZ8="EX
"THEN410 ELSEIFZ8="M"THEN730 ELSE
IFZ8="R"THEN740 ELSELOCATE10,22:
PRINT"PRESS <ENTER> TO ERASE";:L
OCATE10,18:PRINT;:Z=VAL(Z8):INPU
T"NEW VALUE";A9(Z,I):GOTO380
410 INPUT" FILE TO MOVE
TO";I1:FORJ=1TO6:D8=A9(J,I1):A9
(J,I1)=A9(J,I):A9(J,I)=D8:NEXTJ:
GOTO380
420 *****PRINT OPTIO
NS*****
430 CLS5:ATTR3,2:CLS:LOCATE35,2:
PRINT"PRINT MENU";:LOCATE20,8:PR
INT"(1) SCREEN SUMMARY:LOCATE20
,10:PRINT"(2) PRINT LABELS:LOCA
TE20,12:PRINT"(3) PRINT LIST:LO
CATE20,14:PRINT"(4) PRINT ENVELO
PEB:LOCATE20,16:PRINT"(5) PRINT
LIST BY P/CODE"
433 LOCATE30,23:PRINT"<ENTER> FO
R MAIN MENU"
435 LOCATE32,19:PRINT"ENTER OPTI
ON";:INPUTAT:ON AT GOTO500,460,5
60,1070,1400
440 GOTO40
450 *****PRINT LABELS*****
460 PRINT#-2,CHR$(27)"N";:FOR I=
1 TO T STEP 2:FORJ=2TO5:PRINT #
-2,TAB(1)A9(J,I);TAB(35)A9(J,I+1)
:NEXTJ
470 GOSUB690:NEXT I
480 GOTO430
490 *****SCREEN SUMMARY*****
500 C=0:CLS:FORI=1TO250:IFA$(1,I)
)="THEN540
510 IFC=0 THEN SCREEN0,0:CLS:LOC
ATE10,2:PRINT" NUMBER";:LOCATE38
,2:PRINT"COMPANY"
520 PRINTTAB(13)A9(1,I);TAB(24)L
EFT$(A9(2,I),16)
530 C=C+1:IFC=14THENLINEINPUT"
PRESS <ENTER> TO CONTINUE";D8:C
=0
540 NEXTI:GOTO430
550 *****PRINT LIST*****
560 CLS:PRINT:PRINT" SET UP PR
INTER":PRINT:INPUT" HEADER :-"
;X8
570 C=0:GOSUB700
580 PRINT#-2,CHR$(27)"E";TAB(66)
DA9" ";MN$, 1988."
590 FORI=1TOT STEP 3:FORJ=1TO6:P
RINT#-2,LEFT$(A9(J,I),31);TAB(32)
)" "LEFT$(A9(J,I+1),31);TAB(64)"
"LEFT$(A9(J,I+2),31)
600 NEXTJ
610 PRINT#-2,""
620 C=C+7:IFC=56THENC=0:GOSUB68
0:GOSUB700
630 NEXTI
640 GOTO40
650 *****GOSUBS*****
*****
680 FORW=1TO7:PRINT#-2,"":NEXTW:
RETURN
690 FORW=1TO2:PRINT#-2,"":NEXT:R
ETURN
700 RETURN
720 CLS:PRINT:PRINT" NOT YET
AVAILABLE":SOUND5,60:GOTO40
730 I=I+1:GOTO380
740 I=I-1:GOTO380
745 CLS:CLS8:ATTR3,2:CLS:LOCATE2
0,2:PRINT"CREATE HOLE OR ERASE"
750 CLS8:ATTR3,2:CLS:LOCATE25,2:
PRINT"CREATE HOLE OR ERASE"
755 LOCATE12,6:PRINT"OPTIONS :-"
760 LOCATE20,8:PRINT" (1) ERASE
":LOCATE20,10:PRINT" (2)CREATE
HOLE"
770 PRINT:PRINTTAB(39):INPUTAT
780 ON AT GOTO 790,870
790 LOCATE23,14:PRINT;:INPUT"
MEMBERSHIP NO TO ERASE ";Z9
800 FORI=1TO250
810 IFZ9=A9(1,I)THEN830
820 NEXTI:GOTO40
830 D=I:FOR I=D TO 249:FOR J=1TO
6
840 A9(J,I)=A9(J,I+1)
850 NEXTJ,I:GOTO40
860 *****CREATE HOL
E*****
870 CLS:LOCATE32,2:PRINT"CREATE
HOLE"
880 LOCATE28,4:PRINT"PRESS 'XX'
TO EXIT"
910 LOCATE10,10:PRINT;:INPUT"A/C
WHERE HOLE REQUIRED";A1$
920 IFA1$="XX"THEN40
1000 FORI=1TO250
1010 IFA$(1,I)=A1$THEN1030
1020 NEXTI:GOTO870
1030 M=I:FORI=250 TO M STEP-1:CL
S:LOCATE50,22:PRINT I;:FORJ=1TO6
1040 A9(J,I)=A9(J,I-1)
1050 IFI=M THENA9(J,I)="
1060 NEXTJ,I:GOTO40
1070 ' *****ENVELOPES
*****
1080 CLS:LOCATE26,2:PRINT"ENVELO
PE PRINTER";
1090 LOCATE10,5:PRINT;:INPUT"DO
YOU REQUIRE ALL OR PARTIAL PR
INT (A/P)";D8:IFD8="P" THEN 110
0 ELSE IFD8="A" THEN 1190 ELSE 1
080
1100 FORI=1TO250
1110 IFA$(1,I)="THEN1130
1120 CLS:LOCATE10,5:PRINT"ENVELO
PE PRINTER";:LOCATE10,7:PRINTLEF
T$(A9(2,I),15):INPUT"ENVELOPE RE
QUIRED (Y/N)";D9:IFD9="Y"THENMID
$(A9(1,I),2,1)="
1130 NEXTI
1140 CLS0:FORI=1TO250
1150 'IFMID$(A9(1,I),2,1)=" TH
EN GOSUB1240
1160 NEXTI:LOCATE32,12:PRINT;:IN
PUT"RUN AGAIN? (Y/N)";D9:IFD9="Y
"THENGOTO1140
1170 FORI=1TO250:IFMID$(A9(1,I),
2,1)=" THEN MID$(A9(1,I),2,1)=
"0"
1180 NEXTI:GOTO40
1190 FORI=1TO250
1200 IFA$(1,I)="THEN1220
1205 CLS:LOCATE10,5:PRINT"NOW PR
INTING ";A9(2,I)
1210 GOSUB1240
1220 NEXTI
1230 GOTO40
1240 ***** ENVELOPE PRINT *
*****
1300 GOSUB1360
1310 FORJ=2TO4:PRINT#-2,CHR$(27)
"E";TAB(33)A9(J,I):NEXTJ
1320 IFM=0THENS=5 ELSE IFM=1THEN
S=6
1330 GOSUB1360:FORN=1TOS:PRINT#-
2,"":NEXTN:LOCATE28,12:PRINT"PRE
SS <ENTER> TO CONTINUE";:LINEINP
UTD8
1340 IFS=5THENM=1 ELSE IFS=6THEN
M=0
1350 RETURN
1360 FORN=1TO6:PRINT#-2,"":NEXT:
RETURN
1400 *****SEPARATE BY P/CODE
*****
1410 CLS:GOSUB1490
1420 LOCATE0,6:PRINT;:INPUT"INPU
T LOWEST P/CODE REQUIRED ";P1
1430 PRINT:INPUT"INPUT HIGHEST R

```

```

EQUIRED - (PUT SAME NO IF ONL
Y ONE NEEDED) "P2
1435 PRINT:INPUT"AREA OR GROUP B
EING PRINTED "P3
1440 CLS:GOSUB1490:LOCATE10,10:P
RINT"SORT RANGE";P1; TO ";P2;
1445 LOCATE10,16:PRINT#8;
1450 C=0:TT=0:FORI=1TOT
1452 IFA$(1,I)="THEN1460
1455 P3=LEN(A9(4,I)):P4=VAL(MID8
(A9(4,I),P3-4,4)):IFP4=P1THEN G
OSUB1462
1460 NEXTI:GOTO430
1462 IFP4<P2THEN GOSUB1470
1464 RETURN
1470 IFC=0THEN GOSUB700
1475 FORJ=1TO6:PRINT#-2,TAB(TT)L
EFT$(A9(J,I),31):NEXTJ:C=C+7:TT=
TT+32:PRINT#-2,"":IFTT=96THENTT=
0:GOTO1480
1476 PRINT#-2,CHR$(27)"r";:GOSUB
680:PRINT#-2,CHR$(27)"f";
1480 IFC=168THEN GOSUB680:C=0
1485 RETURN
1490 LOCATE28,2:PRINT"P/CODE BOR
T";:RETURN
1500 GOTO 40:'ERROR HANDLING ROU
TINE
1510 CLS:END
1520 POKE65497,0:RETURN
1530 POKE65496,0:RETURN

```



**COMPUTER
USER
HANDBOOK**

Rule #37:

If you are tired of feeling like a drip when it comes to your computer...try contacting your local user group, details are at the back section of this magazine.

**COME IN OUT OF THE
WET!**

DESIGNED THIS graphics program out of a fit of boredom. So I got my brother to teach me the Basic language, especially in the way of graphics.

Then I set out to draw the windmill outside my window. It is set at night, with a few hills in the background.

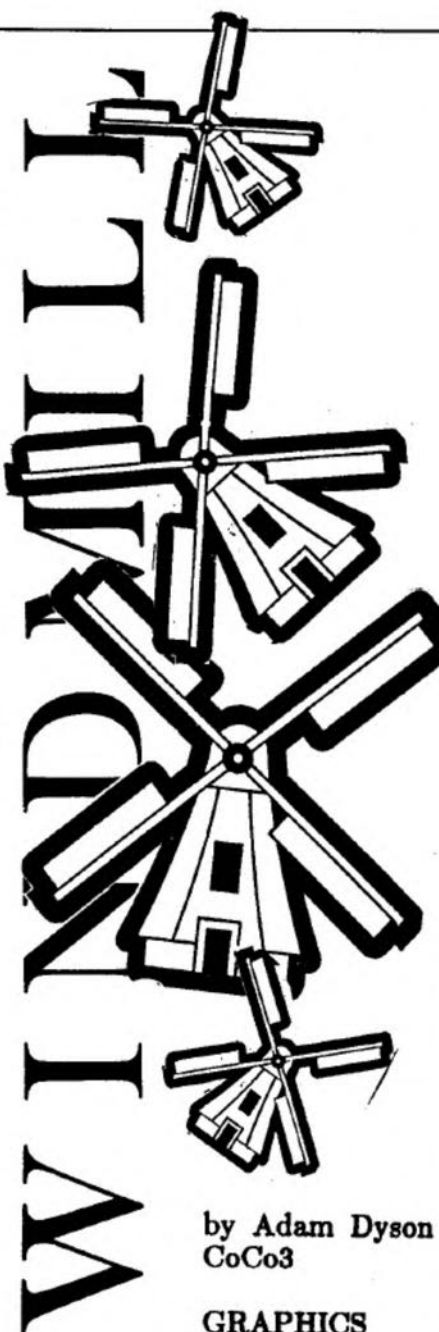
This is my first program, and I am only 11.

The Listing:

```

0 GOTO9
1 'WIND MILL
2 'BY ADAM DYSON      4/1/88
3 SAVE"115D:3":END'5
9 PALETTE10,34
10 HSCREEN2:HCLS1:HCOLOR8
11 HDRAW"BM28,140U68BR12D12G12D
28R32U28H12U12BL4H4E4F4G4BR4R16F
12R32U32L32G12L16U8E12U32L32D32F
12D8L16H12L20D32R20E12R16BR8R8F8
D68L44"
12 HDRAW"BM52,4D36BM116,60L36BM5
2,116U32BM0,60R24
13 HLINE(0,140)-(320,140),PSET
14 HDRAW"BM44,140M-8,+56BR28M-8,
-52":HPAINT(52,48),7,8
15 M$="M+16,+4M+16,-4BL32BD4"
16 FOR D=4TO36STEP4:HDRAW"BM36,"
+STR$(D)+"C8"+M$:NEXT
17 M$="M-4,+16M+4,+16BR4BU32"
18 FOR D=116TO84STEP-4:HDRAW"BM"
+STR$(D)+"",44C8"+M$:NEXT
19 M$="M+16,-4M+16,+4BL32BU4"
20 FOR D=116TO88STEP-4:HDRAW"BM36
"+STR$(D)+"C8"+M$:NEXT
21 M$="M+4,+16M-4,+16BR4BU32"
22 FOR D=0TO20STEP4:HDRAW"BM"+STR
$(D)+"",44"+M$:NEXT
23 HPAINT(128,170),0,8:HPAINT(10
,170),0,8
24 HDRAW"BM44,140U20R12D20BW72,8
8R36D52U32L36BF4R8D8L8NU8BD4BR8R
12ND16L12ND16BE12R8D8L8U8"
25 HDRAW"BM72,80R56D40L4U36NL52D
36L12D4NR4D4NR4D4NR4D4NR4D4R24U4
NL4U4NL4U4NL4U4NL4U4L8U12R108U4L
108"
26 HDRAW"BM236,140U48R84BM224,10
4E36R20ND8U12NG4E12R28BM284,56R1
6D8L16U8BM304,56R16D8L16U8"
27 PALETTE9,56
28 HPAINT(284,116),9,8
29 FOR D=1TO46STEP2:HLINE(236,93+
D)-(320,93+D),PSET:NEXT
30 HCOLOR8:HLINE(252,100)-(268,1
24),PSET,BF:HLINE(252,126)-(268,
130),PSET,BF:HPAINT(92,100),3,8:
HPAINT(88,116),9,8
31 HPAINT(260,84),3,8
32 HPAINT(32,100),4,8
33 HDRAW"C8BM0,116M+28,-4BM128,1
12M+54,+4M+54,-4BM108,112R16"

```



by Adam Dyson
CoCo3

GRAPHICS

```

34 HPAINT(176,132),10,8:HPAINT(1
2,132),10,8:HPAINT(116,116),10,8
:HPAINT(44,192),8,8
35 HPAINT(0,0),8,8:HPAINT(180,0)
,8,8:HPAINT(0,92),8,8:HPAINT(116
,92),8,8:HPAINT(180,112),8,8:HPA
INT(232,104),8,8
36 HCIRCLE(256,32),15,4:HPAINT(2
56,32),4,4
37 FORK=1TO60
39 X=RND(320):Y=RND(130)
40 IFHPOINT(X,Y)=8THENSET(X,Y,4
)
41 NEXT
42 HPAINT(120,132),9,8:HPAINT(12
6,104),9,8:HPAINT(172,106),9,8
43 HCOLOR8:HPRINT(10,23),"THE WI
ND MILL... BY ADAM D."
44 GOTO44

```

CoCo2 + printer UTILITY

Directory Printer

by Christopher Dent

MY PROGRAM DOES a very simple, but effective job; it prints the directory of your disk, including a title, chosen by you.

Just type 'RUN' and press <enter>.

The Listing:

```

0 GOTO10
3 SAVE"134A:3":END'7
10 REM DIRECTORY PRINTER
20 REM BY CHRISTOPHER DENT
30 REM 04/02/88
40 CLS:CLBAR1500:DIM F$(72):LINE
INPUT "Enter Disk Name :";M$
50 PRINT "Insert Disk and Press
Any Key":EXEC 44539
60 FORS=3TO11:DSK1$=0,17,S,AS(1),
AS(2):FORH=1TO2:FORA=0TO3:F$=MID
$(AS(H),A*32+1,8)+"."+MID$(AS(H)
,A*32+9,3)
70 IF LEFT$(F$,1)=CHR$(0)THEN 16
0
80 IF LEFT$(F$,1)=CHR$(255) THEN
S=12:GOTO 160
90 F=F+1:F$(F)=F$:EL=F-1
100 IF F$(EL)<=F$(EL+1) THEN 160
110 T$=F$(EL+1)
120 F$(EL+1)=F$(EL)
130 F$(EL)=T$
140 EL=EL-1
150 GOTO 100
160 NEXT A,H,S
170 PRINT #2,TAB(40-LEN(M$)/2);
M$:PRINT#-2
180 FOR A=1 TO F:PRINT #2,USING
" % % ";F$(A);:NE
XTA:PRINT#-2
190 END

```

OZ CoCo3 GRAPHICS

BICENTENNIAL

BICENTENNIAL

ARY

by D and A Bourne

OUR PROGRAM features the Bicentennial Logo, in full colour, possible only on the CoCo 3 with its range of colours.

This is our entry into the graphics competition - we hope you like it.

```

1 '**AUSTRALIAN - BICENTENNIAL**
***** BY D & A BOURNE *****
***** JAN. 1987 *****
2 GOTO10
3 SAVE"135A:3":END'5
4 ' FOR COCO 3
5 ' 3BICENT
10 CLS
20 GOSUB410
30 POKE&HFF9A,63
40 PALETTE0,63:PALETTE1,16
50 PALETTE2,54
60 HLINE(100,27)-(170,27),PSET
70 HLINE-(213,60),PSET:HLINE-(23
6,2),PSET
80 HLINE-(275,100),PSET:HLINE-(2
39,189),PSET
90 HLINE-(132,115),PSET:HLINE-(1
09,172),PSET
100 HLINE-(59,123),PSET
110 HLINE-(100,27),PSET
120 HLINE(109,172)-(170,27),PSET
130 HLINE(213,60)-(176,144),PSET
140 HLINE(119,27)-(72,136),PSET
150 HLINE(124,27)-(76,140),PSET
160 HLINE(131,27)-(80,145),PSET
170 HLINE(148,27)-(93,156),PSET
180 HLINE(172,29)-(135,117),PSET
190 HLINE(246,27)-(191,156),PSET
200 HLINE(248,32)-(194,159),PSET
210 HLINE(211,58)-(173,144),PSET
220 HLINE(252,42)-(200,163),PSET
230 HLINE(260,66)-(214,171),PSET
240 HPAINT(105,30)
250 PALETTE2,54
260 HPAINT(126,30),2,1

```

```

270 PALETTE0,63
280 HPAINT(146,30),0,1
290 HPAINT(156,30)
300 HPAINT(191,60)
310 HPAINT(247,40),2,1
320 HPAINT(240,30)
330 HPAINT(250,60),0,1
340 HPAINT(236,180)
350 HPRINT(2,0),"AUSTRALIAN - BI
CENTENNIAL"
360 HPRINT(2,1),"-----"
-----"

```

```

370 HPRINT(8,23),"1788 - 1988"
380 PLAY" T303CF002A03CFFFAFAGFEFL2
GL3CL4PC02AF03CCCAGFEDC"
390 PLAY" V20T303CDEFDC02AA03CDFB
-AL2GL4CDEFDC4FFGL4AL4FL4GL4EL4
F"
400 GOTO430
410 HSCREEN2:POKE&HFF9A,63
420 POKE65497,0:PALETTECMP:RETUR
N
430 POKE65496,0:GOTO430

```



TRAFFIC LIGHTS

by Duncan
Bourne
CoCo3
GRAPHICS

TRAFFIC LIGHTS IS a program for the CoCo 3. It is an early experiment into the colours and graphics of the CoCo 3.

The Listing:

```

0 GOTO10
1 '*** TRAFFIC LIGHT
2 '*** DUNCAN BOURNE
3 SAVE"38:3":END'5
10 CLS:CMP
15 ON BRK GOTO540
20 HSCREEN2:HCLS
30 POKE65497,0
40 PALETTE1,3

```

```

50 'DRAW LIGHTS
60 HCIRCLE(160,42),10,1
70 PALETTE2,35
80 HPAINT(165,40),7,1
90 HCIRCLE(160,60),10,1
100 HPAINT(165,55),8,1
110 HCIRCLE(160,78),10,1
120 HPAINT(160,74),8,1
130 HLINE(148,30)-(172,86),PSET,
B
140 HPAINT(150,32),8,1
150 HLINE(160,86)-(160,160),PSET
160 HCIRCLE(160,160),3
170 HPAINT(160,160),8,1
180 'DRAW BUILDINGS AND STREETS
190 HLINE(0,180)-(185,180),PSET
200 HLINE(185,180)-(225,0),PSET
210 HLINE(0,140)-(140,140),PSET
220 HLINE(140,140)-(140,0),PSET
230 HLINE(140,140)-(152,86),PSET
240 HLINE(163,30)-(170,0),PSET
250 HLINE(250,180)-(280,0),PSET
260 HLINE(250,180)-(320,180),PSE
T
270 HLINE(305,140)-(320,0),PSET
280 HLINE(305,140)-(320,140),PSE
T
290 HLINE(0,70)-(140,70),PSET
300 HLINE(140,70)-(150,40),PSET
310 HLINE(30,95)-(50,140),PSET,B
320 HLINE(60,90)-(130,130),PSET,
B
330 HLINE(0,10)-(50,60),PSET,B
340 HSET(45,120,8)
350 HLINE(70,10)-(130,60),PSET,B
360 HPAINT(0,72),4,1
370 HPAINT(142,72),4,1
380 HPAINT(0,0),4,1
390 HPAINT(0,72),4,1
400 HPRINT(8,10),"PHARMACY"
410 HPAINT(140,0),4,1
420 HPAINT(310,138),4,1
430 HPAINT(0,185),5,1
440 'CHANGE LIGHTS
450 HPAINT(165,40),8,1
460 PALETTE2,52
470 HPAINT(160,55),2,1
480 FORX=1TO1000:NEXT X
490 HPAINT(155,55),8,1
500 HPAINT(160,78),0,1
510 FORX=1TO500:NEXTX
520 HPAINT(160,78),8,1
530 GOTO80
540 POKE65496,0:END

```

by D Philips and R Lee
32K ECB

GAME

The Listing:

```
0 GOTO10
3 SAVE"153":END'GAM
10 '*****
20 '*****COLOR CROSSFIRE*****
30 '*****COPYRIGHT BY*****
40 '*****RICHARD LEE*****
50 '*****AND*****
60 '*****DAVID PHILIPS*****
70 '*****FEB '88*****
80 '*****
90 GOSUB230:GOTO1000
100 'instructions
110 CLS:PRINT:PRINT" PLAYING THE
    GAME IS JUST LIKE NOUGHTS & C
    ROSSES - 3 IN A ROW VERTICALLY,
    HORIZONTALLY OR DIAGONALLY
    - AND YOU WIN!! JUST CORRECT
    LY ANSWER A QUESTION TO SCORE.":
    PRINT
```

```
230 CLS:L=161:PRINT@160,CHR$(19
1);:PRINT@191,CHR$(191);:Ps="C O
L O R C R O S S F I R E":B=L
+LEN(Ps)
240 PRINT@294,"INSTRUCTIONS yES/
nO";
250 PRINT@448,"richard";:PRINT@4
82,"lee";:PRINT@474,"david";:PRI
NT@505,"philip";:POKE 1535,19
260 F=B:FOR T=L TO L+LEN(Ps)/2:P
RINT@T,CHR$(191);:F=F-1:PRINT@F,
CHR$(191);:NEXT:FOR T=1TO300:NEX
T:FOR X=1TO LEN(Ps)/2:PRINT@L+LE
N(Ps)/2+1-X-1,MID$(Ps,LEN(Ps)/2+
1-X,X*2);:NEXT:FOR T=1TO500:NEXT
270 AS=INKEYS:IF AS="Y" THEN PRI
NT@240,AS;:GOTO110 ELSE IF AS="N
" THEN PRINT@240,AS;:RETURN ELSE
280 PRINT@483,"PRESS ANY KEY TO
CONTINUE";:EXEC44539:RETURN
1000 CLS:PRINT@42,"PLEASE WAIT"
```

CROSSFIRE

CLOUR CROSSFIRE is a program for a tape-based CoCo and needs 32k ECB to run as it uses almost all available memory. That is why I had to make a second program for the instructions.

XFIRED is for disk-based CoCo's. This version differs in that the instructions are included in the program, using FILES.

The disk version should run on 32k ECB + one disk drive - I'm not sure as I don't possess such an animal. It will, however, run on 64k and can also be used with a cassette-based system, but it is important that you save the files over and over on one tape.

The next program, called CXP DATA, will generate the data files required to run the DISK version, which, by the way, is a big program as well.

Finally, the last of the CROSSFIRE programs is the actual data statements which were created with CXP DATA, you can see it all works. If it doesn't, I'll scream!!

Now about the program. I can hear you wondering what is it and what does it do? Well Colour Crossfire was my idea.

I decided I wanted to write a computer version of the TV show CROSSFIRE, which in itself is an updated version of a TV show called TIC TAC DOUGH.

Hosted, if memory serves me correctly, by Terry Dear, produced at TCN 9 Sydney in the 1960's.

```
120 PRINT"TO SELECT A CATAGORY,
MOVE THE CURSOR WITH THE ARROWS
AND PRESS<enter> WHEN IT IS ON
THE ONE YOU WANT."
```

```
130 GOSUB280
```

```
140 CLS:PRINT:PRINT" IF YOU ARE
AT THE TOP AND WANT TO BE AT TH
E BOTTOM, PRESS THE UP ARROW AN
D THE CURSOR WILL WRAP AROUND
THE SCREEN."
```

```
150 PRINT:PRINT" THE SAME APPLI
S SIDE TO SIDE. THIS MEANS YOU
ARE NEVER MORE THAN 2 MOVES FR
OM YOUR OBJECT."
```

```
160 GOSUB280
```

```
170 CLS:PRINT:PRINT" IF YOU WANT
TO ABANDON A GAME BECAUSE IT
IS HEADING FOR A STALEMATE,
PRESS <?> TO END THE GAME.":
PRINT
```

```
180 PRINT" THIS WILL ALSO HAPPEN
IF ALL 9 SQUARES ARE FILLED AN
D THERE IS NO WINNER.":PRINT
```

```
190 GOSUB280
```

```
200 CLS:PRINT"WHEN ANSWERING YOU
R QUESTION YOU HAVE ONLY 30 S
ECONDS. SO DON'T TAKE TOO
LONG OR YOU WILL RUN OUTA TIME
.IF YOU DON'T KNOW THE ANSWER, P
RESS <enter> TO PASS."
```

```
210 PRINT"IF YOU GIVE THE RIGHT
ANSWER BUTSPELL IT WRONG, YOU VI
LL NOT BE CREDITED WITH A WIN. T
HIS PROGRAMME HAS NO MARGI
N FOR THINKING OF ERROR. SORRY,
BUT THAT'STHE WAY THE SILICON CH
IP PULSES!":PRINT
```

```
220 PRINT TAB(12)"have fun":GOSU
B280:RETURN
```

```
:::PRINT@106,"NOW LOADING";:PRINT
@226,"C O L O R C R O S S F I R
E";:PRINT@323,"WHEN THE OK PROM
PT APPEARS";:PRINT@388,"TYPE >RU
N< & PRESS ENTER";:CLOAD"XFIRE"
```

The Listing:

```
10 '*****
20 '*****COLOR CROSSFIRE BY*****
30 'DAVID PHILIPS & RICHARD LEE
40 '*****FEB 1988*****
50 '*****
60 '*****MAIN PROGRAM*****
70 '*****
80 GOSUB1030
90 PCLEAR8: CLEAR1000: PNODE3, 1: PC
LS2: PNODE3, 5: PCLS2: DIM CR(12, 12)
, CP(12, 12): GOSUB1120
100 POKE 279, PEEK(275)
110 DRAW"BM2, 2C4R8D8L8#8U8F8"
120 GET(0, 0)-(12, 12), CR, G
130 PCLF?
140 CO$="S12XC1$;XO1$;XL1$;XO1$;
XR1$;"
150 CR$="S12XC1$;XR1$;XO1$;XS1$;
XS1$;XF1$;X11$;XR1$;XB1$;"
160 X$="H16B8F16E16F8G16F16G8H16
G16H8E16"
170 PNODE3, 1: DRAW"BM56, 50C3XC0$;
BM6, 100C3XCR$;S4"
180 R=10: GOSUB1070
190 PNODE3, 5: PCLS2: LINE(0, 0)-(25
5, 191), PSET, B: 'border
```

```

200 LINE(83,0)-(87,191),PSET,BF:
LINE(171,0)-(175,191),PSET,BF:'v
  lines
210 LINE(0,62)-(255,66),PSET,BF:
LINE(0,128)-(255,132),PSET,BF:'h
  lines
220 GOSUB1100
230 PMODE3,1:SCREEN1,0:C$="" :C=0
:PL=PL+1:IF PL=3 THEN PL=1
240 FOR X=0TO128STEP64:FOR Y=0TO
255STEP86
250 IF PPOINT(Y,X)=1 THEN C$=C$+
"*":GOTO300:'check for occupied
square
260 C=RND(10):IF C$(C)="" THEN 2
60
270 C$=C$+RIGHT$(STR$(C-1),1)
280 DRAW"C3BM"+STR$(Y)+"",+STR$(
X)+C$(C)
290 C$(C)=""
300 NEXT Y,X:GOSUB 1380
310 FOR T=1TO5:PMODE3,5:SCREEN1,
0:FOR X=1TO100:NEXT:PMODE3,1:SCR
EEN1,0:FOR X=1TO100:NEXT X,T
320 PX=36:PY=24
330 GET(PX,PY)-(PX+12,PY+12),CP,
G
340 FOR T=1TO100:NEXT
350 PUT(PX,PY)-(PX+12,PY+12),CR,
PSET
360 FOR T=1TO100:NEXT
370 PUT(PX,PY)-(PX+12,PY+12),CP,
PSET
380 A$=INKEY$:IF A$="" THEN 330
390 IF A$="?" THEN 800
400 IF A$=CHR$(94) THEN PY=PY-64
410 IF A$=CHR$(10) THEN PY=PY+64
420 IF A$=CHR$(8) THEN PX=PX-86
430 IF A$=CHR$(9) THEN PX=PX+86
440 IF PX>208 THEN PX=36 ELSE IF
PX<36 THEN PX=208 ELSE IF PY>15
2 THEN PY=24 ELSE IF PY<24 THEN
PY=152
450 IF A$<>CHR$(13) THEN 330
460 P=(INT(PX/86)+1)+INT(PY/64)*
3
470 IF MID$(C$,P,1)="" THEN 330
480 C=VAL(MID$(C$,P,1))+1
490 ON C GOSUB 1490,1610,1730,18
50,1970,2090,2210,2330,2450,2570
500 CLS:PRINT"PLAYER ";PL;" YOUR
CATEGORY IS:":PRINT$:PRINT
510 M=RND(12):IF M$(C)<>"" THEN
FOR X=1TO LEN(M$(C)):IF M=VAL(MI
D$(M$(C),X,1))+1 THEN 510 ELSE N
EXT
520 M$(C)=M$(C)+RIGHT$(STR$(M-1)
,1)
530 PRINT Q$(M):ANS="" :TIMER=0
540 IF TIMER/50>30 THEN GOSUB102
0:GOSUB 1100:GOTO 230
550 A$=INKEY$:IF A$=CHR$(13) THEN
590
560 IF A$=CHR$(8) AND ANS="" THE
N 540
570 IF A$=CHR$(8) THEN ANS=LEFT$(
ANS,LEN(ANS)-1):PRINT@288,ANS:G
OTO540
580 IF A$="" THEN 540 ELSE ANS=A
N$+A$:PRINT@288,ANS:GOTO540
590 IF ANS<>A$(M) THEN SOUND 10,
5:SOUND1,5:PRINT"SORRY! WRONG AN

```

```

SWER":PRINT"CORRECT ANSWER IS:":
PRINT:PRINT A$(M):PRINT:GOSUB108
0:GOSUB1100:GOTO230
600 FORX=200TO250 STEP5:SOUND X,
1:NEXT:GOSUB1100
610 IF PL=1 THEN DRAW"BM"+STR$(P
X-5)+"",+STR$(PY+10)+"C1XX$":PA
INT(PX+9,PY),3,1 ELSE FORX=1TO8:
CIRCLE(PX+5,PY+10),27-X,3:NEXT
620 PSET(PX-36,PY-24,1)
630 ON PL GOSUB 860,850
640 GOSUB1080:GOSUB1090:GOTO230
650 GOTO650
660 RETURN
670 'win routine
680 FOR T=1TO10:SCREEN1,1:GOSUB7
90:SCREEN1,0:GOSUB790:NEXT
690 PMODE3,5:PCLS2
700 IF PL=1 THEN DRAW"BM104,96C3
S12XX$":PAINT(128,96),3,3
710 IF PL=2 THEN CIRCLE(128,96),
96,3:CIRCLE(128,96),76,3:PAINT(1
28,5),3,3
720 R=20:GOSUB1070
730 CLS0
740 PRINT@195,"PLAY":PRINT@227,
"AGAIN":PRINT@217,"OR":PRINT@2
49,"END":PRINT@490,"PRESS p / e
";
750 POKE 1224,167:POKE 1244,167:
GOSUB790:POKE 1224,173:POKE 1244
,173:GOSUB790:POKE1224,174:POKE1
244,174:GOSUB790:POKE1224,171:PO
KE1244,171:GOSUB790
760 A$=INKEY$:IF A$="" THEN 750
770 IF A$="P" THEN CLS:RUN
780 IF A$="E" THEN CLS:END ELSE
750
790 FOR X=1TO75:NEXT:RETURN
800 CLS7
810 PRINT@234,"ARE YOU SURE":PR
INT@257,"YOU WANT TO ABANDON THI
S GAME?";
820 A$=INKEY$:IF A$="" THEN 820
830 IF A$="Y" THEN 730 ELSE SCREE
N1,0:GOTO330
840 'scoring and check for win
850 O(P)=1:GOSUB870:GOSUB940:RET
URN
860 X(P)=1:GOSUB870:GOSUB940:RET
URN
870 W$=""12345678914725836915935
7"
880 FOR X=1TO24STEP3
890 IF PL=2 THEN 920
900 IF X(VAL(MID$(W$,X,1)))+X(V
AL(MID$(W$,X+1,1)))+X(VAL(MID$(
W$,X+2,1)))=3 THEN 680 ELSE NEX
T
910 RETURN
920 IF O(VAL(MID$(W$,X,1)))+O(V
AL(MID$(W$,X+1,1)))+O(VAL(MID$(
W$,X+2,1)))=3 THEN 680 ELSE NEX
T
930 RETURN
940 ST=0:FOR X=1TO9
950 ST=ST+X(X)
960 ST=ST+O(X)
970 NEXT
980 IF ST=9 THEN CLS0 ELSE RETUR
N
990 PRINT@69,"stalemate nobody

```

```

win$":POKE1102,33:POKE1103,32:P
OKE1110,32
1000 FOR X=1TO1000:NEXT:GOTO 740
1010 ' miscellaneous routines
1020 SOUND1,5:PRINT"SORRY! YOU'R
E OUT OF TIME":PRINT"THE ANSWER
WAS:":PRINTA$(M):GOSUB1080:RETU
RN
1030 CLS5:L=161:PRINT@160,CHR$(1
91);:PRINT@191,CHR$(191);:P$="C
O L O R   C R O S S F I R E":B=
L+LEN(P$)
1040 PRINT@448,"richard":PRINT@
482,"lee":PRINT@474,"david":PR
INT@505,"philip":POKE1535,19
1050 F=B:FOR T=L TO L+LEN(P$)/2:
PRINT@T,CHR$(191);:F=F-1:PRINT@F
,CHR$(191);:NEXT:FOR T=1TO300:NE
XT:FOR X=1TO LEN(P$)/2:PRINT@L+L
EN(P$)/2+1-X-1,MID$(P$,LEN(P$)/2
+1-X,X*2);:NEXT:FOR T=1TO500:NEX
T
1060 PRINT@228,"PRESS ANY KEY TO
PLAY":A$=INKEY$:IF A$="" THEN105
0 ELSE RETURN
1070 FOR X=1TO R:PMODE3,5:SCREEN
1,0:SOUND RND(50)+100,2:PMODE3,1
:SCREEN1,0:SOUND RND(50)+100,1:N
EXT:RETURN
1080 PRINT@483,"PRESS ANY KEY TO
CONTINUE":EXEC44539:RETURN
1090 FOR X=1TO4:PCOPY X TO X+4:N
EXT:RETURN
1100 FOR X=1TO4:PCOPY X+4 TO X:N
EXT:RETURN
1110 ' string definations
1120 A1$="BR2BD1D6U4NR5U2E1R3F1D
6BR2BU7"
1130 B1$="BR2ND7R4F1D1G1NL4F1D2G
1NL4BR1BR2BU7"
1140 C1$="BR2BD1D5F1R3E1U1BU3U1H
1L3G1BD6BR5BR2BU7"
1150 D1$="BR2D7R4E1U5H1L4BD7BR5B
R2BU7"
1160 E1$="BR2NR5D3NR4D4R5BR2BU7"
1170 F1$="BR2NR5D3NR4D4R5BR2BU7
"
1180 G1$="BR2BD1D5F1R3E1U2NL2BU2
U1H1L3G1BD6BR5BR2BU7"
1190 H1$="BR2D7U4R5NU3D4BR2BU7"
1200 I1$="BR2R4L2D7L2R4BR1BR2BU7
"
1210 J1$="BR2BD5D1F1R3E1U6BD7BR2
BU7"
1220 K1$="BR2D7U4R3E2NU1G2F2D2BR
2BU7"
1230 L1$="BR2D7R5BR2BU7"
1240 M1$="BR2ND7R2F2ND1E2R2D7BR1
BR2BU7"
1250 N1$="BF2D1ND6F5D1NU7BR2BU7"
1260 O1$="BR2BD1D5F1R3E1U5H1L3G1
BD6BR5BR2BU7"
1270 P1$="BR2ND7R4F1D2G1L4BD3BR5
BR2BU7"
1280 Q1$="BR2BD1D5F1R3E1U5H1L3G1
D4BR3F2BR2BU7"
1290 R1$="BR2ND7R4F1D1G1NL4BL3F4
BR2BU7"
1300 S1$="BR2BD1D1F1R3F1D2G1L3H1
BU5E1R3F1BD6BR2BU7"
1310 T1$="BR2R4L2D7BR3BR2BU7"
1320 U1$="BR2D6F1R3E1U6BD7BR2BU7

```

"

1330 V1\$="BR2D5F2E2U5BD7BR1BR1BU7"

1340 W1\$="BR2D7R3NU5R4U7BR2"

1350 X1\$="BR2D1F5D1BL5U1E5U1BD7BR2BU7"

1360 Y1\$="BR2D2F2ND3E2U2BD7BR1BR2BU7"

1370 Z1\$="BR2R5D1Q5D1R5BR2BU7"

1380 C\$(1)="BM+11,20XG1\$;XE1\$;XN1\$;XE1\$;XR1\$;XA1\$;XL1\$;BM-72,12XK1\$;XN1\$;XO1\$;XV1\$;BR2D7R4BU7BR3NR4D3NR2D4NR4BR6BU7XD1\$;XG1\$;BR2NR4D3NR2D4NR4":'GENERAL KNOWLEDG B

1390 C\$(2)="BM+2,26XG1\$;XE1\$;XO1\$;XG1\$;XR1\$;XA1\$;XP1\$;XH1\$;XY1\$;":'GEOGRAPHY

1400 C\$(3)="BM+10,26XH1\$;XI1\$;XS1\$;XT1\$;XO1\$;XR1\$;XY1\$;":'HISTORY

1410 C\$(4)="BM+18,26XN1\$;XU1\$;XS1\$;XI1\$;XC1\$;":'MUSIC

1420 C\$(5)="BM+10,20XL1\$;BL2XI1\$;BL2XT1\$;XE1\$;XR1\$;XA1\$;XR1\$;XY1\$;BM-76,12"+RIGHT\$(C\$(1),78):'LITERARY KNOWLEDGE

1430 C\$(6)="BM+8,26XT1\$;XV1\$;BR1ONG7BR2XF1\$;XI1\$;XL1\$;XM1\$;":'TV & FILM

1440 C\$(7)="BM+16,26XP1\$;XE1\$;XO1\$;XP1\$;XL1\$;XE1\$;":'PEOPLE

1450 C\$(8)="BM+2,26XA1\$;XU1\$;XS1\$;XT1\$;XR1\$;XA1\$;XL1\$;XI1\$;XA1\$;":'AUSTRALIA

1460 C\$(9)="BM+10,26XS1\$;XC1\$;XI1\$;XE1\$;XN1\$;XC1\$;XE1\$;":'SCIENCE

1470 C\$(10)="BM+30,20XP1\$;XO1\$;XT1\$;BM-32,12XL1\$;XU1\$;XC1\$;XK1\$;":'POT LUCK

1480 RETURN

1490 T\$="general knowledge"

1500 Q\$(1)="WHICH COUNTRY LANDED THE FIRST MAN ON THE MOON. USA OR RUSSIA?":A\$(1)="USA"

1510 Q\$(2)="WHO WAS KNOWN AS 'THE LADY WITH THE LAMP'?":A\$(2)="FLORENCE NIGHTINGALE"

1520 Q\$(3)="IN WHAT CITY IS THE AUSTRALIAN GRAND PRIX HELD?":A\$(3)="ADELAIDE"

1530 Q\$(4)="THE GIANT PANDA BEAR IS NOT A BEAR AT ALL, IT IS A SLOTH. WHAT OTHER 'BEAR' IS NOT A BEAR?":A\$(4)="KOALA"

1540 Q\$(5)="HOW OLD IS AN OCTOGONARIAN? >NUMBERS ONLY<":A\$(5)="80"

1550 Q\$(6)="IN WHICH STATE OF THE USA IS CAPE CARNAVERAL?":A\$(6)="FLORIDA"

1560 Q\$(7)="WHO PIONEERED TELEVISION? (SURNAME ONLY)":A\$(7)="BAIRD"

1570 Q\$(8)="IN WHAT CITY IS RED SQUARE?":A\$(8)="MOSCOW"

1580 Q\$(9)="WHO LIVES IN THE VATICAN?":A\$(9)="THE POPE"

1590 Q\$(10)="WHAT IS THE COMMON NAME FOR THE BEUBONIC PLAGUE?":A\$(10)="BLACK DEATH"

1600 RETURN

1610 T\$="geography"

1620 Q\$(1)="WHAT COUNTRY LIES ACROSS THE MEKONG RIVER FROM THAILAND?":A\$(1)="LAOS"

1630 Q\$(2)="WHAT IS THE NAME OF THE LARGEST ISLAND IN THE WORLD?":A\$(2)="AUSTRALIA"

1640 Q\$(3)="WHAT COUNTRY LIES APPROXIMATELY 30 DEGREES EAST OF MELBOURNE?":A\$(3)="NEW ZEALAND"

1650 Q\$(4)="WHAT IS THE GEOGRAPHIC TERM FOR A CHAIN OF ISLANDS?":A\$(4)="RETTO"

1660 Q\$(5)="WHAT IS A TELUK?":A\$(5)="A BAY"

1670 Q\$(6)="LONGITUDE IS MEASURED IN DEGREES EAST AND WEST OF ...?":A\$(6)="GREENWICH"

1680 Q\$(7)="IN WHAT MOUNTAIN RANGE IS MOUNT EVEREST?":A\$(7)="HIMALAYAS"

1690 Q\$(8)="WHICH COUNTRY USES MURARA ATTOLTO TEST IT'S NUCLEAR DEVICES?":A\$(8)="FRANCE"

1700 Q\$(9)="WHAT IS THE NAME GIVEN TO THE AREA OF GENERALLY LIGHT WINDS & CALM SEAS JUST NORTH OF THE EQUATOR?":A\$(9)="THE DOLDRUMS"

1710 Q\$(10)="THE DREADED CAPE HORNS IS AT THE BOTTOM OF WHICH CONTINENT.... STH. AMERICA OR AFRICA?":A\$(10)="STH. AMERICA"

1720 RETURN

1730 T\$="history"

1740 Q\$(1)="IN WHAT YEAR DID KING JOHN SIGN THE MAGNA CARTA?":A\$(1)="1215"

1750 Q\$(2)="IN WHAT YEAR DID THE MONARCHY OF HAWAII END?":A\$(2)="1893"

1760 Q\$(3)="WHO LANDED AT SHARK BAY IN WEST AUSTRALIA IN 1616?":A\$(3)="DIRCK HARTOG"

1770 Q\$(4)="ON WHICH JAPANESE CITY WAS THE FIRST ATOMIC BOMB DROPPED?":A\$(4)="HIROSHIMA"

1780 Q\$(5)="WHICH LOCOMOTIVE WON THE FAMOUS 'RAINHILL TRIALS' IN 1829?":A\$(5)="ROCKET"

1790 Q\$(6)="IN 1948 AN INTERNATIONAL SPEED RECORD OF 200KM/H WAS SET. WHAT BY?":A\$(6)="A HELICOPTER"

1800 Q\$(7)="WHO, IN 1443, PROVED THE EARTH WAS NOT THE CENTRE OF THE UNIVERSE? (SURNAME)":A\$(7)="COPERNICUS"

1810 Q\$(8)="WHICH GENERAL WAS KILLED IN THE BATTLE OF LITTLE BIG HORN?":A\$(8)="CUSTER"

1820 Q\$(9)="WHICH SUPPOSEDLY UNSINKABLE SHIPWAS IN THE ATLANTIC OCEAN ON IT'S MAIDEN VOYAGE?":A\$(9)="TITANIC"

1830 Q\$(10)="WHO WAS THE FIRST (KNOWN) MAN ON THE MOON? (BOTH NAMES)":A\$(10)="NEIL ARMSTRONG"

1840 RETURN

1850 T\$="music"

1860 Q\$(1)="WHAT IS THE NAME GIVEN TO THE HORIZONTAL LINES ON WHICH MUSIC IS WRITTEN?":A\$(1)="THE STAVE"

1870 Q\$(2)="WHAT IS THE HIGHEST PITCHED FEMALE SINGING VOICE?":A\$(2)="SOPRANO"

1880 Q\$(3)="WHAT NOTES (IN ALPHABETIC ORDER) COMPRISE AN F# (SHARP) CHORD?":A\$(3)="A#C#F#"

1890 Q\$(4)="WHAT IS THE MEANING OF THE SMALL LOWERCASE B SYMBOL THAT APPEARS BESIDE SOME NOTES IN A PRIZE OF MUSIC?":A\$(4)="FLAT"

1900 Q\$(5)="WHAT IS THE LARGEST MEMBER OF THE STRING INSTRUMENTS?":A\$(5)="DOUBLE BASS"

1910 Q\$(6)="HOW MANY NATURAL NOTES ARE THEREIN AN OCTAVE?":A\$(6)="7"

1920 Q\$(7)="WHAT MUSICAL TERM MEANS GRADUALLY SOFTER AND SWEETER?":A\$(7)="RADDOLCENDO"

1930 Q\$(8)="HOW MANY NOTES IN A QUINTUPLET?":A\$(8)="5"

1940 Q\$(9)="THREE NOTES PLAYED IN THE TIME OF TWO IS A ...?":A\$(9)="TRIPLET"

1950 Q\$(10)="WHO COMPOSED THE WELLS KNOWN 'TOCCATA IN D MINOR'? (SURNAME)":A\$(10)="BACH"

1960 RETURN

1970 T\$="literary"+CHR\$(128)+"knowledge"

1980 Q\$(1)="WHO WROTE 'THORN BIRDS'?":A\$(1)="COLLEEN MCCULLOCH"

1990 Q\$(2)="WHAT NATIONALITY WAS AUTHOR AND PLAYWRIGHT GEORGE BERNARD SHAW?":A\$(2)="IRISH"

2000 Q\$(3)="WHO WROTE THE TRAGEDY OEDIPUS TYRANNUS?":A\$(3)="SOFOCLES"

2010 Q\$(4)="WHAT IS THE NAME OF THE WORK BY LONGFELLOW THAT COMMEMORATES THE EXPULSION OF THE FIRST SETTLERS FROM NOVA SCOTIA?":A\$(4)="EVANGELINE"

2020 Q\$(5)="IN THE OWL AND THE PUSSYCAT WHAT ELSE BESIDES MONEY WAS WRAPPED UP IN A FIVE POUND NOTE?":A\$(5)="HONEY"

2030 Q\$(6)="WHO WROTE 'WHEN EIGHT BELLS TOLL'?":A\$(6)="ALLISTAIR MCCLEAN"

2040 Q\$(7)="THE NOVEL BY CHARLES DICKENS ABOUT THE FRENCH REVOLUTION IS?":A\$(7)="A TALE OF TWO CITIES"

2050 Q\$(8)="WHO SAID 'THE GENIUS OF POETRY MUST WORK OUT IT'S OWN SALVATION IN A MAN'?":A\$(8)="JOHN KEATS"

2060 Q\$(9)="SEASON OF MIST AND MELLOW FRUIT-FULLNESS, CLOSE-BOSOM FRIEND OF THE MATURING SUN' ARE THE FIRST LINES OF WHAT POEM BY JOHN KEATS?":A\$(9)="TO AUTUMN"

2070 Q\$(10)="IN THE NOVEL 'THE PRINCE OF MISS JEAN ERODIE' WHAT IS THE NAME OF THE SCHOOL AT WHICH SHE TEACHES?":A\$(10)="THE MARCIA BLAINE SCHOOL"

2080 RETURN
 2090 T\$="tv"+CHR\$(128)+"and"+CHR\$(128)+"film"
 2100 Q\$(1)="WHO IS THE ALIEN FROM MELMAC?":A\$(1)="ALF"
 2110 Q\$(2)="WHO WAS FRED ASTAIRE'S DANCING PARTNER IN NEARLY ALL HIS MOVIES?":A\$(2)="GINGER ROGER"
 2120 Q\$(3)="WHAT DOES *M*A*S*H* STAND FOR?":A\$(3)="MOBILE ARMY SURGICAL HOSPITAL"
 2130 Q\$(4)="NAME THE ACTOR WHO PLAYS THE TRANVESTITE IN *M*A*S*H*":A\$(4)="JAMIE FARR"
 2140 Q\$(5)="WHO IS TELEVISION'S MR. MOVIES?":A\$(5)="BILL COLLINS"
 2150 Q\$(6)="WHO IS OLIVER HARDY'S PARTNER? (BOTH NAMES)":A\$(6)="STANLEY LAUREL"
 2160 Q\$(7)="IN THE FILMS 'THE 3 STOOGES' THERE WERE ACTUALLY 5. ONLY 3 EVER APPEARED AT ONE TIME. AND 2 OF CURLY WHO WAS THE OTHER 5TH 'STOOGES'?":A\$(7)="SHEMP"
 2170 Q\$(8)="WHO SAYS 'I'M GONNA GET THAT WASCAWY WABBIT'?":A\$(8)="ELMER FUDD"
 2180 Q\$(9)="IN 'EVERY WHICH WAY BUT LOOSE' WHO CRAPPED IN THE COPS CAR?":A\$(9)="CLYDE"
 2190 Q\$(10)="IN WHICH MOVIE DOES CLINT EASTWOOD SAY 'THIS IS A FORTY FOUR MAGNUM. THE MOST POWERFUL HANDGUN IN THE WORLD. AT THIS DISTANCE IT WILL BLEND YOUR HEAD CLEAN OFF. DO YOU FEEL LUCKY?':":A\$(10)="MAGNUM FORCE"
 2200 RETURN
 2210 T\$="people"
 2220 Q\$(1)="WHO WAS THE ONLY AUSTRALIAN PRIME MINISTER TO BE SACKED BY THE GOVERNOR GENERAL?":A\$(1)="GOUGH WHITLAM"
 2230 Q\$(2)="WHO IS THE PRIME MINISTER OF NEW ZEALAND?":A\$(2)="DAVID LONGI"
 2240 Q\$(3)="AUSTRALIA CELEBRATES THE 'QUEENSBIRTHDAY' IN JUNE. IT IS NOT HER BIRTHDAY BUT IS ACTUALLY HER GRANDFATHER'S. WHICH KING WAS HE?(NAME & ROMAN NUMERALS)":A\$(3)="GEORGE V"
 2250 Q\$(4)="WHICH FORMER AUSTRALIAN PRIME MINISTER WAS AT ONE TIME A TRAINDRIVER?":A\$(4)="BEN CHIFLEY"
 2260 Q\$(5)="WHO IS THE PRIME MINISTER OF ENGLAND?":A\$(5)="MARGARET THATCHER"
 2270 Q\$(6)="OF WHICH COUNTRY IS/WAS HIROHITO THE EMPEROR, CHINA OR JAPAN?":A\$(6)="JAPAN"
 2280 Q\$(7)="WHO WAS BEHEADED BY QUEEN ELIZABETH I ALLEGEDLY FOR PLOTTING?":A\$(7)="MARY QUEEN OF SCOTS"
 2290 Q\$(8)="WHO WAS THE MAID OF ORLEANS?":A\$(8)="JOAN OF ARC"

2300 Q\$(9)="WHO WAS THE PRESIDENT OF EGYPT THAT RECEIVED THE NOBEL PEACE PRIZE?":A\$(9)="ANWAR SEDAT"
 2310 Q\$(10)="WHICH BLACK AMERICAN CIVIL RIGHTS LEADER WHO WAS AS MURDERED WAS EULOGIZED IN A SONG ALSO ABOUT TWO OTHER CIVIL RIGHTS LEADERS, JOHN F. KENNEDY AND ABRAHAM LINCOLN?":A\$(10)="MARTIN LUTHER KING"
 2320 RETURN
 2330 T\$="australia"
 2340 Q\$(1)="PRIOR TO CANBERRA, WHERE WAS THE CAPITAL CITY OF AUSTRALIA?":A\$(1)="MELBOURNE"
 2350 Q\$(2)="WHAT IS THE HIGHEST MOUNTAIN IN AUSTRALIA? (MT.)":A\$(2)="KOSCIUSKO"
 2360 Q\$(3)="IN WHICH STATE IS THE MOST EASTERLY POINT OF AUSTRALIA. VICTORIA, QUEENSLAND OR NSW?":A\$(3)="NSW"
 2370 Q\$(4)="IN WHICH STATE IS LAKE EYRE?":A\$(4)="SOUTH AUSTRALIA"
 2380 Q\$(5)="IN WHICH STATE/TERRITORY IS CANBERRA?":A\$(5)="AUSTRALIAN CAPITAL TERRITORY"
 2390 Q\$(6)="IN WHICH CITY IS THE CAPTAIN COOK MEMORIAL WATERJET?":A\$(6)="CANBERRA"
 2400 Q\$(7)="WHAT IS THE NAME OF THE LARGE REDISH BROWN MONOLITH FOUND IN CENTRAL AUSTRALIA?":A\$(7)="AYERS ROCK"
 2410 Q\$(8)="WHAT WAS THE NAME OF THE CYCLOPETHAT WIPED OUT DARWIN IN 1974?":A\$(8)="TRACY"
 2420 Q\$(9)="WHICH STATE HAS THE SHORTEST COASTLINE?":A\$(9)="VICTORIA"
 2430 Q\$(10)="WHAT IS THE PRIME MINISTER'S OFFICIAL RESIDENCE?":A\$(10)="THE LODGE"
 2440 RETURN
 2450 T\$="science"
 2460 Q\$(1)="WHAT SUBSTANCE WAS DISCOVERED BY MARIE CURIE?":A\$(1)="RADIUM"
 2470 Q\$(2)="WHAT IS HYDROCYANIC ACID?":A\$(2)="CYANIDE"
 2480 Q\$(3)="WHAT IS THE PROPER NAME FOR THE DRUG CALLED 'TRUTH SERUM'?":A\$(3)="SODIUM PENTATHOL"
 2490 Q\$(4)="WHAT IS THE FORMULA FOR SULPHURIC ACID?":A\$(4)="H2SO4"
 2500 Q\$(5)="WHAT IS THE COMMON NAME FOR THE SUBSTANCE THE FORMULA FOR WHICH IS NaCl?":A\$(5)="SALT"
 2510 Q\$(6)="WHAT IS THE NAME OF THE INNERMOST PART OF AN ATOM?":A\$(6)="NUCLEUS"
 2520 Q\$(7)="WHAT IS OBTAINED BY ADDING THE NUMBER OF PROTONS AND NEUTRONS IN AN ATOM? (3 WORDS)":A\$(7)="IT'S ATOMIC WEIGHT"
 2530 Q\$(8)="WHAT IS THE MILKY WAY?":A\$(8)="A GALAXY OF STARS"
 2540 Q\$(9)="WHAT IS THE DIFFERENCE BETWEEN THE FORMULA FOR CARBON MONOXIDE AND CARBON DIOXIDE?":A\$(9)="ONE OXYGEN ATOM"
 2550 Q\$(10)="WHAT IS THE CLOSEST PLANET TO THE SUN?":A\$(10)="MERCURY"
 2560 RETURN
 2570 T\$="pot"+CHR\$(128)+"luck"
 2580 C=RND(10):ON C GOSUB 1500,1620,1740,1860,1980,2100,2220,2340,2460
 2590 RETURN

The Listing:
 0 GOTO 10
 3 SAVE "153A":END 'GAM
 10 '#####
 20 '#####COLOR CROSSFIRE#####
 30 'RICHARD LEE & DAVID PHILIPS
 40 '#####DISK VERSION#####
 50 '#####FEB 1988#####
 60 '#####MIN 32K ECB#####
 70 '#####
 80 GOSUB 1220
 90 PCLEAR8: CLEAR5000: PMODE3,1: PCLS2: PMODE3,5: PCLS2: DIK CR(12,12), CP(12,12), C\$(12), M\$(15), A\$(15), Q\$(15): GOSUB 1320
 100 POKE 279, PERK(275)
 110 IF PERK(118)=14 THEN OP=1 ELSE OP=-1
 120 DRAW'BM2,2C4R8D8L8N8E8U8F8"
 130 GET(0,0)-(12,12),CR,G
 140 PCLS2
 150 CO\$="S12XC1\$:XO1\$:XL1\$:XO1\$:XR1\$:"
 160 CR\$="S12XC1\$:XR1\$:XO1\$:XS1\$:XS1\$:XF1\$:X11\$:XR1\$:XE1\$:"
 170 I\$="H16E8F16E16F8G16F16G8H16G16H8R16"
 180 PMODE3,1: DRAW'BM56,50C3XC0\$:BM6,100C3XCR\$:S4"
 190 R=10: GOSUB 1270
 200 PMODE3,5: PCLS2: LINE(0,0)-(255,191), PSET,B:'border
 210 LINE(83,0)-(87,191), PSET,BF: LINE(171,0)-(175,191), PSET,BF:'v lines
 220 LINE(0,62)-(255,66), PSET,BF: LINE(0,128)-(255,132), PSET,BF:'h lines
 230 GOSUB 1300
 240 PMODE3,1: SCREEN 1,0: C\$="" : C=0 : PL=PL+1: IF PL=3 THEN PL=1
 250 FOR Y=0 TO 128 STEP 64: FOR Z=0 TO 255 STEP 86
 260 IF PPOINT(Z,Y)=1 THEN C\$=C\$+"*": GOTO 310: 'check for X or 0
 270 C=RND(12): IF C\$(C)="" THEN Z=70
 280 C\$=C\$+RIGHT\$(STR\$(C-1),1)
 290 DRAW'C3BM'+STR\$(Z)+'+',+STR\$(Y)+C\$(C)
 300 C\$(C)=""
 310 NEXT Z,Y

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320 GOSUB1580
330 FOR T=1TO5:PMODE3,5:SCREEN1,
0:FOR X=1TO100:NEXT:PMODE3,1:SCR
EEN1,0:FOR X=1TO100:NEXT X,T
340 PX=36:PY=24
350 GET(PX,PY)-(PX+12,PY+12),CP,
G
360 FOR T=1TO100:NEXT
370 PUT(PX,PY)-(PX+12,PY+12),CR,
PSET
380 FOR T=1TO100:NEXT
390 PUT(PX,PY)-(PX+12,PY+12),CP,
PSET
400 AS=INKEY$:IF AS="" THEN 350
410 IF AS="?" THEN 1010
420 IF AS=CHR$(94) THEN PY=PY-64
430 IF AS=CHR$(10) THEN PY=PY+64
440 IF AS=CHR$(8) THEN PX=PX-86
450 IF AS=CHR$(9) THEN PX=PX+86
460 IF PX>208 THEN PX=36 ELSE IF
PX<36 THEN PX=208 ELSE IF PY>15
2 THEN PY=24 ELSE IF PY<24 THEN
PY=152
470 IF AS<>CHR$(13) THEN 350
480 P=(INT(PX/86)+1)+INT(PY/64)*
3
490 IF MID$(C$,P,1)="" THEN 350
500 C=VAL(MID$(C$,P,1))+1
510 ZZ=C:IF C=12 THEN C=RND(11):
CLS:PRINT"PLAYER";PL;"YOUR CATEG
ORY IS:":PRINT"pot"+CHR$(128)+"1
uck":ON C GOSUB1710,1720,1730,17
40,1750,1760,1770,1780,1790,1800
,1810:GOSUB530:GOTO600
520 ON C GOSUB1710,1720,1730,174
0,1750,1760,1770,1780,1790,1800,
1810
530 OPEN "I",#OP,IS
540 IF EOF(OP) THEN 580
550 INPUT#OP,IS
560 FOR X=1TO15
570 INPUT#OP,Q$(X):INPUT#OP,AS(X
):NEXT
580 CLOSE:IFZZ=12 THEN RETURN
590 CLS:PRINT"PLAYER";PL;"YOUR C
ATEGORY IS:":PRINT IS
600 M=RND(15)
610 IF M$(C)<>"" THEN FOR X=1TO
LEN(M$(C)):IF M=VAL(MID$(M$(C),X
,1))+1 THEN 600 ELSE NEXT
620 M$(C)=M$(C)+RIGHT$(STR$(M-1)
,1)
630 PRINT Q$(M):ANS="":TIMER=0
640 IF TIMER/50>30 THEN GOSUB1210
:GOSUB 1300:GOTO 240
650 AS=INKEY$:IF AS=CHR$(13) THEN
690
660 IF AS=CHR$(8) AND ANS="" THE
N 640
670 IF AS=CHR$(8) THEN ANS=LEFT$(
ANS,LEN(ANS)-1):PRINT@160,ANS:G
OTO640
680 IF AS="" THEN 640 ELSE ANS=A
NS+AS:PRINT@160,ANS:GOTO640
690 IF ANS<>AS(M) THEN SOUND 10,
5:SOUND1,5:PRINT"SORRY! WRONG AN
SWER":PRINT"CORRECT ANSWER IS:":
PRINT:PRINT AS(M):PRINT:GOSUB128
0:GOSUB1300:GOTO240
700 FORX=200TO255 STEP5:SOUND X,
1:NEXT:GOSUB1300
710 IF PL=1 THEN DRAW"BM"+STR$(P

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X-5)+", "+STR$(PY+10)+"C1XX$":PA
INT(PX+9,PY),3,1 ELSE FORX=1TO8:
CIRCLE(PX+5,PY+10),27-X,3:NEXT
720 PSET(PX-36,PY-24,1)
730 ON PL GOSUB 1050,1060
740 GOSUB1280:GOSUB1290:GOTO240
750 GOTO750
760 'instructions
770 CLS:PRINT TAB(8)"COLOR CROSS
FIRE":PRINT:PRINT" PLAYING THE G
AME IS JUST LIKE NOUGHTS AND C
ROSSES. THREE IN A ROW VERTICA
LY,HORIZONTALLY OR DIAGONALLY
AND YOU WIN!":PRINT:PRINT" JUS
T CORRECTLY ANSWER A SIMPLE QUE
STION TO SCORE.":PRINT
780 PRINT" THE COMPUTER WILL KNO
W WHEN THIS OCCURS AND WILL
CREDIT THE WINNER ACCORDINGL
Y.":GOSUB1280
790 PRINT" TO SELECT A CATAGORY,
MOVE THE CURSOR WITH THE ARROW
S AND PRESS <ENTER> WHEN IT
IS OVER THE ONE YOU WANT."
800 PRINT:PRINT" IF YOU ARE AT T
HE TOP AND WANT TO BE AT THE BO
TTOM, PRESS THE UP ARROW AND TH
E CURSOR WILL WRAP AROUND THE
SCREEN. THIS ALSO WORKS FOR
SIDE TO SIDE. THIS MEANS YOU
WILL NEVER BE MORE THAN TWO M
OVES FROM YOUR OBJECT."
810 GOSUB1280
820 PRINT" IF YOU WANT TO ABANDO
N A GAME BECAUSE IT IS HEADING
FOR A STALEMATE, PRESS <?>
AND THE COMPUTER WILL END THE
GAME ACCORDINGLY.":PRINT
830 PRINT" THIS WILL ALSO HAPPEN
IF ALL NINE SQUARES ARE FILL
ED AND THERE IS NO WINNER.":
PRINT
840 GOSUB1280
850 CLS:PRINT" DON'T TAKE TOO LO
NG ANSWERING QUESTIONS. YOU HA
VE ONLY 30 SECONDS. OTHERWIS
E YOU WILL BE WRONG BY BEING OU
TA TIME!":PRINT
860 PRINT" WATCH YOUR SPELLING T
OO AS THE PROGRAM HAS NO MARGIN
FOR THIS KIND OF ERROR.":PRINT
" SORRY. BUT THAT'S THE WAY THE
MICROCHIPS CRUMBLE!":PRINT:PRI
NT TAB(12)"have fun";
870 GOSUB1280:RETURN
880 'win routine
890 FOR T=1TO10:SCREEN1,1:GOSUB1
000:SCREEN1,0:GOSUB1000:NEXT
900 PMODE3,5:PCLS2
910 IF PL=1 THEN DRAW"BM104,96C3
S12XX$":PAINT(128,96),3,3
920 IF PL=0 THEN CIRCLE(128,96),
96,3:CIRCLE(128,96),76,3:PAINT(1
28,5),3,3
930 R=20:GOSUB1270
940 CLS0
950 PRINT@195,"PLAY":PRINT@227,
"AGAIN":PRINT@217,"OR":PRINT@2
49,"END":PRINT@490,"PRESS p / e
";
960 POKE 1224,167:POKE 1244,167:
GOSUB1000:POKE 1224,173:POKE 124

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4,173:GOSUB1000:POKE1224,174:POK
E1244,174:GOSUB1000:POKE1224,171
:POKE1244,171:GOSUB1000
970 AS=INKEY$:IF AS="" THEN 960
980 IF AS="P" THEN CLS:RUN
990 IF AS="E" THEN CLS:END ELSE
960
1000 FOR X=1TO75:NEXT:RETURN
1010 CLS7
1020 PRINT@234,"ARE YOU SURE";:P
RINT@257,"YOU WANT TO ABANDON TH
IS GAME?";
1030 IF INKEY$="Y" THEN 940 ELSE
350
1040 'scoring and check for win
1050 X(P)=1:GOSUB1070:RETURN
1060 O(P)=1:GOSUB1070:RETURN
1070 WIS="1234567891472583691593
57"
1080 FOR X=1TO24STEP3
1090 IF PL=2 THEN 1120
1100 IF X(VAL(MID$(WIS,X,1)))+X(
VAL(MID$(WIS,X+1,1)))+X(VAL(MID$(
WIS,X+2,1)))=3 THEN 890 ELSE NE
XT
1110 GOTO 1130
1120 IF O(VAL(MID$(WIS,X,1)))+O(
VAL(MID$(WIS,X+1,1)))+O(VAL(MID$(
WIS,X+2,1)))=3 THEN 890 ELSE NE
XT
1130 ST=0:FOR X=1TO9
1140 ST=ST+X(X)
1150 ST=ST+O(X)
1160 NEXT
1170 IF ST=9 THEN CLS0 ELSE RETU
RN
1180 PRINT@69,"stalemate nobody
wins":POKE1102,33:POKE1103,32:
POKE1110,32
1190 FOR X=1TO1000:NEXT:GOTO 950
1200 ' miscellaneous routines
1210 SOUND1,5:PRINT"SORRY! YOU'R
E OUT OF TIME":PRINT"THE ANSWER
WAS:-":PRINTAS(M):GOSUB1280:RETU
RN
1220 CLS:L=161:PRINT@160,CHR$(1
91);:PRINT@191,CHR$(191);:P$="C
O L O R C R O S S F I R E":B=
L+LEN(P$)
1230 PRINT@294,"INSTRUCTIONS yes
/no";
1240 PRINT@448,"richard":PRINT@
482,"lee":PRINT@474,"david":PR
INT@505,"philip":POKE 1535,19
1250 F=B:FOR T=L TO L+LEN(P$)/2:
PRINT@T,CHR$(191);:F=F-1:PRINT@F
,CHR$(191);:NEXT:FOR T=1TO300:NE
XT:FOR X=1TO LEN(P$)/2:PRINT@L+L
EN(P$)/2+1-X-1,MID$(P$,LEN(P$)/2
+1-X,X*2);:NEXT:FOR T=1TO500:NEX
T
1260 AS=INKEY$:IF AS="Y" THEN PR
INT@239,AS:GOTO770 ELSE IF AS="
N" THEN PRINT@238,AS:RETURN ELS
E 1250
1270 FOR X=1TO R:PMODE3,5:SCREEN
1,0:SOUND RND(50)+100,2:PMODE3,1
:SCREEN1,0:SOUND RND(50)+100,1:N
EXT:RETURN
1280 PRINT@483,"PRESS ANY KEY TO
CONTINUE":EXEC44539:CLS:PRINT:
RETURN

```

COMPUTER

RESOURCE

DATABASE

Goldsoft Publishing endeavours to place current data into the Computer Resource Database. However, Goldsoft Publishing makes no claims as to the accuracy of the information supplied for use in this database.

Prices quoted were current at the time of entry. Where two suppliers have differing prices, we have quoted the highest price.

The Database is a free service of Goldsoft Publishing. If you market a product for use with the computers we service in this magazine, you can forward information to:

CRD Manager
Goldsoft Publishing
PO Box 1742
Southport, Qld. 4215.

Please note that many programs have fuller descriptions on the monthly disk which partners this magazine. (See contents page for details of this disk.)

■ GAMES ■

Name:	Hardware:	Source:	Price:	Rate:
P-51 FLIGHT SIM	COCO 2	D	\$ 49.95	@@@
3D ROMMEL	COCO 2	D	\$ 44.95	@@@
SPEED RACER	COCO 3 64K	D	\$ 49.95	***
TIME BANDIT	COCO 2	D	\$ 39.95	****
CASHMAN	COCO 2 64K	D	\$ 39.95	****
EXETER	COCO 3 128K	B	\$ 29.95	****
ROGUE	COCO 3	B	\$ 69.95	****
THEXDER	COCO 3	B	\$ 49.95	****
BOUNC. BOULDERS	EITHER	B	\$ 59.95	**
GANTELET	EITHER	B	\$ 59.95	****
APPROACH CNTRL.	COCO 2 64K	B	\$ 49.95	@@@
RET. OF JR REV.	COCO 3	B	\$ 59.95	@@@
BEST OF #2.1	EITHER	C	\$ 16.00	***
BEST OF #2.2	EITHER	C	\$ 16.00	***
BEST OF #8	EITHER 16K	C	\$ 16.00	***
BEST OF #9	EITHER 32K	C	\$ 16.00	***

■ EDUCATIONAL ■

Name:	Hardware:	Source:	Price:	Rate:
GEOGRAPHY	COCO 2	B	\$ 99.95	@@
EARS	EITHER	B	\$ 190.00	@@@
BEST OF #1	EITHER	C	\$ 16.00	***
BEST OF #6	EITHER	C	\$ 16.00	***
BEST OF #10	EITHER	C	\$ 16.00	***

■ UTILITY ■

Name:	Hardware:	Source:	Price:	Rate:
OS-9 LEVEL 2	COCO 3	B	\$ 129.95	****
DESKMATE 3	COCO 3	B	\$ 129.95	***
ADOS 3	COCO 3	B	\$ 69.95	***
MULTIVUE	COCO 3	D	\$ 99.95	@@@
THE WIZ	COCO 3 512K	B	\$ 140.00	@@@
DISKFIX	COCO 3	B	\$ 59.95	***
ADV. DISKFIX	COCO 3	B	\$ 99.95	***
PROG. UTILITY	COCO 2 64K	B	\$ 39.95	@@@
SECTOR INSPEC.	COCO 2	B	\$ 39.95	@@@
DEPUTY INSPECT.	COCO 2	B	\$ 39.95	@@@
COCOTEX	EITHER	B	\$ 79.95	****
VIP-TERMINAL	EITHER	B	\$ 39.95	@@@
SBU	COCO 2	B	\$ 59.95	****

Rating explanation :

* is used for products we have used or tested

@ is used for the reputation of a product

The number of symbols defines the opinion or reputation ie:
 1 symbol is a poor rating and 5 symbols is a good rating
 Lack of symbols simply means we have not commented on the product
 It does not infer the product is of poor quality
 A good middle of the road product has 3 symbols.

Source explanation :

A - Tandy
 B - Blankland
 C - Goldsoft
 D - Paris Radio

UTL ROUTS, PT1	EITHER	D	\$ 47.94	@@@
UTL ROUTS, PT2	EITHER	D	\$ 53.94	@@@
OS9 DEVEL SYS.	COCO 3	D	\$ 175.00	@@@
MULTI-VUE	COCO 3	D	\$ 99.94	****
SDISK 3	COCO 3	D	\$ 71.94	@@
BASIC09	COCO 3	D	\$ 179.94	****
C COMPILER	EITHER	D	\$ 179.94	***
HI-RES SCREEN	EITHER	D	\$ 71.94	@@@
OS-9 SOLUTION	EITHER	D	\$ 83.94	@@@
RAMDISK	COCO 3 512K	B	\$ 39.95	@@@

■BUSINESS

Name:	Hardware:	Source:	Price:	Rate:
MAILIST PRO	EITHER	B	\$ 39.95	@@
COMP. CHQ BOOK	EITHER	B	\$ 39.95	@@
NEWSROOM	COCO 3	B	\$ 99.95	@@@
COLOR SCRIBE	COCO 3	B	\$ 99.95	@@@
WORD POWER 3	COCO 3	B	\$ 130.00	***
IMS	EITHER	B	\$ 250.00	@@@
SCULPTOR	COCO 3 512K	D	\$ 495.00	****
SCREEN STAR	COCO 3 512K	B	\$ 99.95	@@
TEXT FORMATTER	COCO 3	B	\$ 69.95	@@@
DYNASTAR	EITHER	D	\$ 180.00	@@
TELEWRITER-64	COCO 2 64K	B	\$ 84.95	****
TELEWRITER-128	COCO 3	B	\$ 140.00	****
VIP-WRITER	COCO 2 64K	B	\$ 98.95	@@@
VIP-DATABASE	COCO 2	B	\$ 84.45	@@@
VIP-SPELLER	COCO 2	B	\$ 77.95	@@@
BEST OF #4	EITHER	C	\$ 16.00	***
VIP CALC	EITHER	B	\$ 84.45	@@@
BUS A/C SYSTEM	COCO 2	B	\$ 112.95	@@
STYLO PACK	COCO 3	D	\$ 359.94	****
STYLO III	COCO 3	D	\$ 203.94	****
SCULPTOR	COCO 3 512K	D	\$ 495.00	****
DYNACALC (OS9)	EITHER	D	\$ 179.94	****
D'CALC (RSDOS)	COCO 2 64K	D	\$ 179.94	****

■GRAPHICS

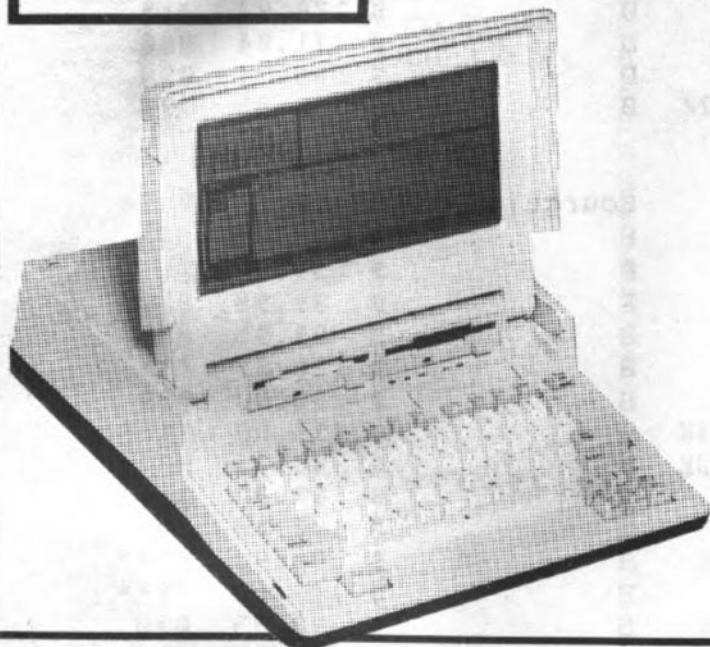
Name:	Hardware:	Source:	Price:	Rate:
COLORMAX	COCO 3	B	\$ 135.00	***
COCO-MAX 3	COCO 3	B	\$ 150.00	****
COCOMAX II	COCO 2 64K	B	\$ 100.00	****
3D GRAPHIMATOR	COCO 2 64K	B	\$ 79.95	@@
BEST OF #7	EITHER	C	\$ 16.00	**
PIX CONVERTOR	EITHER	D	\$ 54.94	@@@

■MUSICAL

Name:	Hardware:	Source:	Price:	Rate:
LYRA	EITHER	B	\$ 110.00	****
" " CONVERT	EITHER	B	\$ 29.95	@@@
" " PRINT	EITHER	B	\$ 59.95	@@@
" " LIBRARY	EITHER	B	\$ 69.95	@@@
SYMPHONY 12	EITHER	B	\$ 140.00	@@@
MUSICA LIBRARY	COCO 2	B	\$1 @ 59.	****
MUSICA II	COCO 2	B	\$ 59.00	****

Tandy ELECTRONICS

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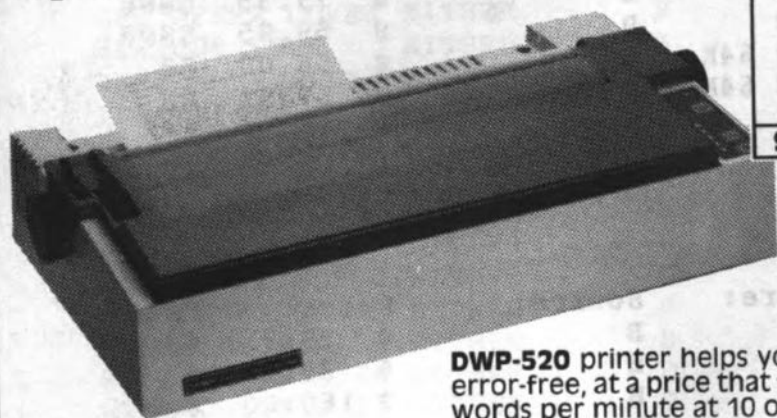
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Model 100 Technical Reference Manual. 26-3810 Reg 14.95 **Sale! 5.95**
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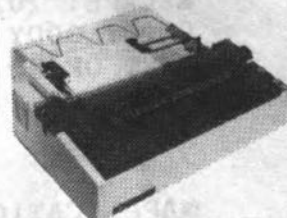


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PTC-64 Printer Controller. 26-1269 Reg 349.95 **Save \$150 Sale! 199.95**



VM-1 Monitor Pedestal. Supports monitor and allows personal positioning. Keyboard/monitor not included. 26-5115
Reg 179.95 **49.95**



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Black Cauldron. 3-D animation game. 25-1133	79.95
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Shanghai. Tension game. 25-1194	69.95
Gunship. Simulation program. 25-1305	89.95
Winter Games. Selection of winter sports. 25-1195	79.95
Print Shop. Graphics and design. 25-1304	109.95
PFS: Professional File. Your own financial management pack. 25-1171	399.95
Managing Your Money. A complete management/reporting program. 25-1159	399.95

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Multi-Vue. Graphics program. 26-3035	99.95
Thexder. Action game. 26-3072	49.95
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Microscopic Mission. Pilot a microscopic probe through the human body. 26-3271	54.95
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Color Computer Artist. 26-3277	59.95
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Kings Quest III. Adventure game. 26-3285	79.95
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Ghost Gobbler. Super maze game. 26-9647	24.95
Color Golf. Golf simulation game. 26-9648	24.95

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■ADVENTURES■

Name:	Hardware:	Source:	Price:	Rate:
NUKE LOVE BOAT	COCO 3 512K	B	\$ 59.95	**
MAGIC OF ZANTH	COCO 3	B	\$ 69.95	@@@
KINGS QUEST 3	COCO 3	B	\$ 79.95	@@@@
CALADURIL	EITHER	B	\$ 59.95	@@@@
ESCAPE: 2012	COCO 2 64K	B	\$ 56.00	@@
ROBOT ODDY.	COCO 2 64K	B	\$ 69.95	@@
BEST OF #5	EITHER	C	\$ 16.00	***

■APPLICATIONS■

Name:	Hardware:	Source:	Price:	Rate:
DISK LABELER	EITHER	B	\$ 39.95	@@
VCR TAPE ORG.	EITHER	B	\$ 39.95	@@
SUPER VOICE	EITHER	B	\$ 160.00	@@@
GENEOLOGY	COCO 2	B	\$ 33.95	@@

■HARDWARE■

Name:	Hardware:	Source:	Price:	Rate:
10MB DRIVE	EITHER	B	\$1299.00	@@@@
20MB DRIVE	EITHER	B	\$1599.00	@@@@
512K UPGRADE	COCO 3 128K	B	\$ 220.00	@@@@
DRIVE 40T DSDD	EITHER	B	\$ 630.00	@@
MONITOR	EITHER	B	\$ 300.00	@@@@
I-RES INTERFACE	COCO 3	B	\$ 19.95	@@@@
COCO 3 128K	EITHER	B	\$ 370.00	****
MULTIPACK	EITHER	B	\$ 199.95	***
DMP-106 PRINTER	EITHER	B	\$ 399.00	***
AVTEK MINIMODEM	EITHER	B	\$ 250.00	****
DMP-130	EITHER	B	\$ 599.00	****
VIDEO DRIVER	COCO 2	B	\$ 38.00	****
" " W/OUT SOUND	COCO 2	B	\$ 32.00	****
NX-1000 DMP	EITHER	B	\$ 525.00	@@@
CITIZEN DMP	EITHER	B	\$ 599.00	@@
COCOCONNECTION	EITHER	C	\$ 219.95	****
Y-CABLE	EITHER	D	\$ 47.94	***
THE PROBE	EITHER	C	\$ 49.95	**
ADOS 3	COCO 3	D	\$ 65.94	@@@
DISTO 80COL CRD	COCO 2	D	\$ 239.94	@@@
DISTO C/P	COCO 2	D	\$ 119.94	@@@
DISTO: THE LOT	COCO 2	D	\$ 479.94	@@@@
J&M CONTROLLER	EITHER	D	\$ 299.94	@@@
PBJ-RS232 CARD	EITHER	D	\$ 179.94	@@@
PBJ CCBUS	EITHER	D	\$ 287.94	@@@
PBJ PC PACK	EITHER	D	\$ 167.94	@@@
PBJ WORDPAK I	COCO 2	D	\$ 239.94	@@@
PBJ WPAK, RSDOS	COCO 2	D	\$ 239.94	@@@
RSDOS CONTRLR.	EITHER	D	\$ 239.95	@@@
WYSE 30 TRMNL	EITHER	B	\$ 999.00	@@@
ARCHER JOYSTIX	EITHER	B	\$ 27.00	@@

BOOKS

Name:	Hardware:	Source:	Price:	Rate:
6809 ASSEMBLY	EITHER	B	\$ 41.95	@@@
COCO 3 SECRETS	EITHER	B	\$ 39.95	@@@@
300 PEEKS POKES	EITHER	B	\$ 39.95	@@@
BASIC09 TOUR	EITHER	B	\$ 34.95	***
DECB UNRAVELLED	EITHER	B	\$ 39.95	@@@
INSIDE OS9 L2	EITHER	D	\$ 79.00	****
500 PEEKS POKES	EITHER	B	\$ 33.95	@@@@
COCO 3 FACTS	EITHER	B	\$ 19.95	@@@
SUPER ECB	EITHER	B	\$ 49.95	@@@
ECB UNRAVLED.	EITHER	B	\$ 79.95	@@@
RNBOW GDE OS9L2	EITHER	D	\$ 39.95	@@@
500 PEEKS POKES	EITHER	D	\$ 24.95	****
US RAINBOW MAG	EITHER	D	\$ 9.95	**
RAINBOW ON DISK	EITHER	D	\$ 29.94	@@
UTL ROUTINES 1	EITHER	D	\$ 29.95	
BASIC PRG.TRIX	EITHER	B	\$ 29.95	@@
NANOS REF. CARD	EITHER	B	\$ 5.95	@@

More details on most of the programs listed in this database can be found on this month's edition of CoCoOz, tape or disk.

Hints

and

Tips

After buying OS9 level II from Tandy, I found, to my horror, that the program had not been fixed to work on our television sets. For those who don't have a vertical hold knob, the problem cannot be resolved.

For those who do, they have to adjust their vertical hold knob everytime they enter OS9.

To resolve this problem, only ONE byte of data must be changed. This byte is at track 34, sector 1, byte number 45.

The value of this byte, if left unmodified, should be 0. To fix the problem, change this byte to a value of 8. This change applies also to those OS-9 level II games.

The technicalities of this:

The computer will only interrupt the screen 50 times a second instead of 60 (which the OS uses). Simple, isn't it?

Darren Reed,
Watsonia, 3087

*

This very short program is for owners of the CoCo 3 and disk Edtasm+.

It patches to reset routine to add a routine to reset the screen properly after pressing the reset button. The CoCo 3 uses three different screens, and this routine will select the proper one.

Type in and save the source code as "Edpatch". Then assemble it on tape. Go to Zbug, load the assembled version and Edtasm will be patched.

Type PD EDTASM 1600 4A7F 1600. This will see the modified version.

When Tandy wrote the program, they put in a routine to check the sign on message, and if it's not right, it will print "bad" after the sign on. This doesn't affect the program in any way that I know of.

I tried tacking it onto the program, but it was overwritten by the source code buffer, so the easiest way around it was to use part of the space for the sign on message. Sorry about that, Tandy.

There are some surprising features to this machine. On reset, the computer goes to 32k of RAM and 32k of ROM. The trouble is that this isn't the same ROM that you see with a normal program. By putting a short program in, I was able to save the portion of the ROM that I wanted to look at. That's

where the picture of the three programmers are hidden. To see them, press the ALT and CTRL keys together and press the reset button. This does a very handy cold start and give a pretty pictures. A second reset will take you back to Basic.

The screen should have been reset properly in the reset routines. This is why it isn't compatible with the older programs (one reason, anyway).

Other problems found are:

- * it dies when clearing memory below about 17000, and if the wrong palette numbers are used, it destroys the Basic program.

- * with a disk drive, the screen doesn't reset properly on a cold start. A reset puts it right. Apparently there's a cure for that at Tandy.

Ed's note: this is NOT on the tape or disk CoCoOz monthly.

Program:

```

00100 *****
00110 ***** EDPATCH *****
00120 * BY GORDON THURSTON *****
00130 *****
00140   ORG   $2505
00150   LBSR $165C
00160   ORG   $165B
00170   FCB   0
00180   CLR   $FFDF
00190   JSR   $E019
00200   LBSR $1698
00210   RTS
00220   END
    
```

Gordon Thurston

1290 FOR X=1T04:PCOPY X TO X+4: N
EXT: RETURN
1300 FOR X=1T04:PCOPY X+4 TO X: N
EXT: RETURN
1310 ' string definations
1320 A1\$="BR2BD1D6U4NR5U2E1R3F1D
6BR2BU7"
1330 B1\$="BR2ND7R4F1D1G1NL4F1D2G
1NL4BR1BR2BU7"
1340 C1\$="BR2BD1D5F1R3E1U1BU3U1H
1L3G1BD6BR5BR2BU7"
1350 D1\$="BR2D7R4E1U5H1L4BD7BR5B
R2BU7"
1360 E1\$="BR2NR5D3NR4D4R5BR2BU7"
1370 F1\$="BR2NR5D3NR4D4BR5BR2BU7
"
1380 G1\$="BR2BD1D5F1R3E1U2NL2BU2
U1H1L3G1BD6BR5BR2BU7"
1390 H1\$="BR2D7U4R5U3D4BR2BU7"
1400 I1\$="BR2R4L2D7L2R4BR1BR2BU7
"
1410 J1\$="BR2BD5D1F1R3E1U6BD7BR2
BU7"
1420 K1\$="BR2D7U4R3E2NU1G2F2D2BR
2BU7"
1430 L1\$="BR2D7R5BR2BU7"
1440 M1\$="BR2ND7R2F2ND1E2R2D7BR1
BR2BU7"
1450 N1\$="BR2D1ND6F5D1NU7BR2BU7"
1460 O1\$="BR2BD1D5F1R3E1U5H1L3G1
BD6BR5BR2BU7"
1470 P1\$="BR2ND7R4F1D2G1L4BD3BR5
BR2BU7"
1480 Q1\$="BR2BD1D5F1R3E1U5H1L3G1
D4BR3F2BR2BU7"
1490 R1\$="BR2ND7R4F1D1G1NL4BL3F4
BR2BU7"
1500 S1\$="BR2BD1D1F1R3F1D2G1L3H1
BU5E1R3F1BD6BR2BU7"
1510 T1\$="BR2R4L2D7BR3BR2BU7"
1520 U1\$="BR2D6F1R3E1U6BD7BR2BU7
"
1530 V1\$="BR2D5F2E2U5BD7BR1BR1BU
7"
1540 W1\$="BR2D7R3NU5R4U7BR2"
1550 X1\$="BR2D1F5D1BL5U1E5U1BD7B
R2BU7"
1560 Y1\$="BR2D2F2ND3E2U2BD7BR1BR
2BU7"
1570 Z1\$="BR2R5D1G5D1R5BR2BU7"
1580 C\$ (1)="BM+11, 20XG1\$, XE1\$, XN
1\$, XE1\$, XR1\$, XA1\$, XL1\$, BM-72, 12X
K1\$, XN1\$, XO1\$, XW1\$, BR2D7R4BU7BR3
NR4D3NR2D4NR4BR6BU7XD1\$, XG1\$, BR2
NR4D3NR2D4NR4": 'GENERAL KNOWLEDG
E
1590 C\$ (2)="BM+30, 20XT1\$, XH1\$, XE
1\$, BM-35, 12XB1\$, XI1\$, XB1\$, XL1\$, X
B1\$, ": 'THE BIBLE
1600 C\$ (3)="BM+2, 26XG1\$, XE1\$, XO1
\$, XG1\$, XR1\$, XA1\$, XP1\$, XH1\$, XY1\$,
": 'GEOGRAPHY
1610 C\$ (4)="BM+10, 26XH1\$, XI1\$, XS
1\$, XT1\$, XO1\$, XR1\$, XY1\$, ": 'HISTOR
Y
1620 C\$ (5)="BM+18, 26XM1\$, XU1\$, XS
1\$, XI1\$, XC1\$, ": 'MUSIC
1630 C\$ (6)="BM+10, 20XL1\$, BL2X11\$
; BL2XT1\$, XE1\$, XR1\$, XA1\$, XR1\$, XY1
\$, BM-76, 12"+RIGHT\$ (C\$ (1), 78): 'LI
TERARY KNOWLEDGE
1640 C\$ (7)="BM+8, 26XT1\$, XV1\$, BR1

ONG7BR2XF1\$, XI1\$, XL1\$, XM1\$, ": 'TV
& FILM
1650 C\$ (8)="BM+16, 26XP1\$, XE1\$, XO
1\$, XP1\$, XL1\$, XE1\$, ": 'PEOPLE
1660 C\$ (9)="BM+20, 26XS1\$, XP1\$, XO
1\$, XR1\$, XT1\$, ": 'SPORT
1670 C\$ (10)="BM+2, 26XA1\$, XU1\$, XS
1\$, XT1\$, XR1\$, XA1\$, XL1\$, XI1\$, XA1\$
; ": 'AUSTRALIA
1680 C\$ (11)="BM+10, 26XS1\$, XC1\$, X
I1\$, XE1\$, XN1\$, XC1\$, XE1\$, ": 'SCIEN
CE
1690 C\$ (12)="BM+30, 20XP1\$, XO1\$, X
T1\$, BM-32, 12XL1\$, XU1\$, XC1\$, XK1\$,
": 'POT LUCK
1700 RETURN

1710 T\$="general knowledge": RETU
RN
1720 T\$="the bible": RETURN
1730 T\$="geography": RETURN
1740 T\$="history": RETURN
1750 T\$="music": RETURN
1760 T\$="literary knowledge": RET
URN
1770 T\$="tv/film": RETURN
1780 T\$="people": RETURN
1790 T\$="sport": RETURN
1800 T\$="australia": RETURN
1810 T\$="science": RETURN

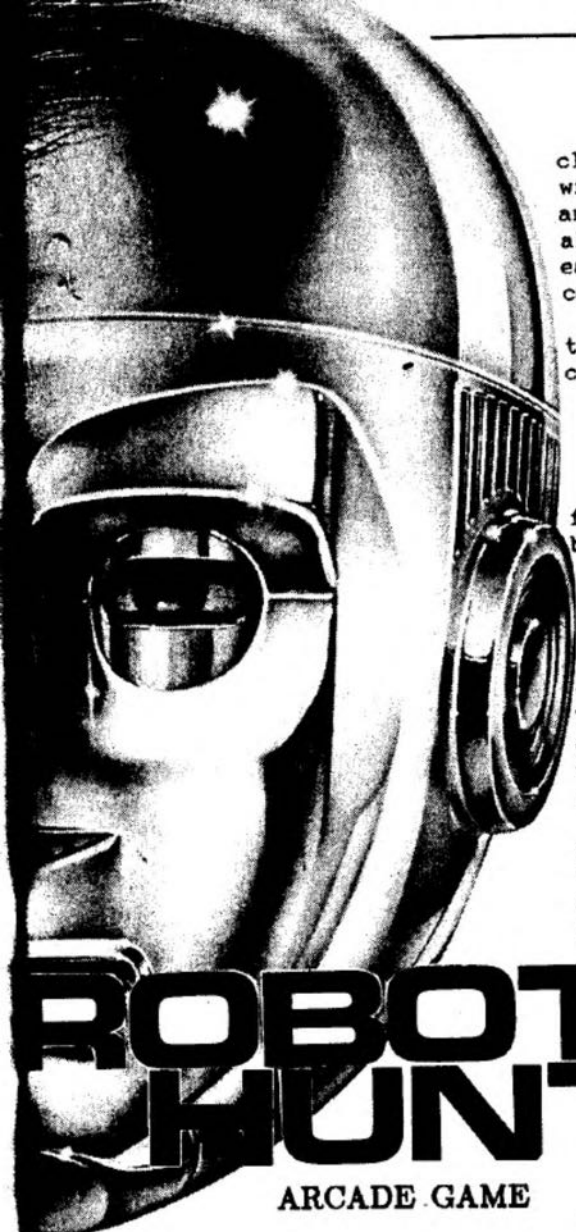


by Scott Harvey
CoCo3
I ORDER TO celebrate the
Bicentenary year, Goldsoft,
as you might know, have
been running a Bicentenary
graphics competition.
Here is another entry into
this competition, this time by a
Scott Harvey.
Well done, Scott!
Type in and enjoy.
If you do submit a graphics
picture with the theme of
"Australia's Bicentenary", you
could in the running for some
great prizes!!
- Ed.

The Listing:

0 GOTO10
1 ***** BICENTENARY
2 ***** SCOTT HARVEY
3 SAVE"142C:3":END"5
10 PALETTE 5, 16: PALETTE6, 54: PAL
TTE7, 37
20 HSCREEN 2
30 HCLS11
40 HCOLOR5:HLINE(5,5)-(315,186),
PSET,B
50 HCOLOR5:HLINE(90,30)-(50,100)
,PSET:HLINE-(54,109),PSET:HLINE-
(100,30),PSET:HLINE-(90,30),PSET
60 HCOLOR6:HLINE(104,30)-(56,112

),PSET:HLINE-(58,115),PSET:HLIN
-(108,30),PSET:HLINE-(104,30),PS
ET
70 HCOLOR5:HLINE(120,30)-(62,125
,PSET:HLINE-(70,140),PSET:HLIN
-(139,30),PSET:HLINE-(120,30),PS
ET
80 HLINE(140,32)-(101,96),PSET:H
LINE-(132,115),PSET:HLINE-(167,5
9),PSET:HLINE-(140,32),PSET
90 HLINE(200,10)-(134,116),PSET:
HLINE-(144,122),PSET:HLINE-(205,
25),PSET:HLINE-(200,10),PSET
100 HCOLOR6:HLINE(207,28)-(147,1
24),PSET:HLINE-(151,126),PSET:HL
INE-(210,36),PSET:HLINE-(207,28)
,PSET
110 HCOLOR5:HLINE(215,45)-(159,1
31),PSET:HLINE-(180,144),PSET:HL
INE-(225,67),PSET:HLINE-(215,45)
,PSET
120 HPAINT(90,35),5,5:HPAINT(105
,32),6,6:HPAINT(120,50),5,5:HPAI
NT(140,80),5,5:HPAINT(190,40),5,
5:HPAINT(200,43),6,6:HPAINT(210,
70),5,5
130 HCOLOR5:HPRINT(30,12),"The":
HPRINT(27,13),"Australian":HPRIN
T(26,14),"Bicentenary":HPRINT(27
,15),"1788-1988"
140 HCOLOR5:HPRINT(2,22),"Copyr
ight"
150 GOTO 150



ROBOT HUNTER

ARCADE GAME

Equipment:

You have been issued with a class 1 terra-vehicle equipped with 5 inch plate steel armourment capable of trapping all radiation contained in the earth's atmosphere and converting it to stellar-3 fuel. Weapons systems consists of two front mounted Class 1 carbide vaporising lasers.

The Enemy:

You will have access to all files on the robots before you begin your mission.

The Game:

Robot Hunter is played using the right joystick controller. The object of the game is to destroy the robots flying down the screen before they get a chance to hit you.

If you wish to see the files on the various robots just press 'Y' at the prompt asking whether or not you would like instructions.

Good Luck and happy hunting!

by Scott Harvey CoCo3

The Story.

THE YEAR IS 2390 and all life on earth is at the brink of destruction at the hands of a threat created by the scientists of the early 2370's. This threat is in the form of intelligent robots, designed for various domestic and military purposes.

These robots have become affected by a solar flare that struck the moon 2 years ago. They now roam the old highways destroying anything that gets in their way.

You are the Robot Hunter - you have been licensed to hunt down these renegade robots and terminate them no matter what the cost.

The Listing:

```
0 POKE65497,0
10 WIDTH 40:ON BRK GOTO 1130
20 HBUFF 1,860:HBUFF3,860:HBUFF4,860:HBUFF5,860:HBUFF6,860:HBUFF7,860:HBUFF8,860:HBUFF9,860
30 HSCREEN 2
40 B=10:D=3:A=160
50 PALETTE 0,0:PALETTE1,0:PALETTE2,0:PALETTE3,0:PALETTE9,0:PALETTE5,0:PALETTE6,0:PALETTE7,0:PALETTE8,0
60 HCLS0
70 HDRAW"BM160,96;COR4C1U1R4D1U1R2U1H1E2U4D2R1D2L1U4H1U5L3D4R3U4E1U5D2R1D2L1U4H2L7G2D2L1D2R1U2D2D1F1D4R3U4L3D5G1D4L1U2R1D2F2G1D1R4BM163,91;U2R5D2L5;BM163,79;R5;BM164,76;R3L1U1L1D1;BM163,93R5"
80 HPAINT(164,78),2,1:HPAINT(165,94),3,1
90 HGET(152,110)-(178,69),1
100 HPAINT(164,78),9,1:HPAINT(165,94),10,1
110 HGET(152,110)-(178,69),9
120 HCLS0
```

```
130 HDRAW"BM160,96;COU1C8U2R2F1H1L2U2E3U3E1U4H2U1R5D1G2D4F1D3G1L1R1E1F3D2L2G1E1R2D2"
140 HGET(152,100)-(178,68),3
150 HCLS0
160 HDRAW"BM160,96;COL4U2C8R1U1R1L3R1U5L3U3E2R3F2D3L3U1COU1C8L1R1D1COD1C8D4
170 HGET(143,100)-(170,70),4
180 HCLS0
190 HDRAW"BM160,96;COR3C8U1R3D1U1R1U1R1L1U3R1L1U1L1U1D1L3U1D1L1D1L1R1D3L1R1D1R1D1U1
200 HGET(152,100)-(178,76),5
210 HCLS0
220 HDRAW"BM160,96;COU3C8E4U6H2U4L2D4R2R1COR5C8U4R2D4L2G2D6F4
230 HGET(152,100)-(178,65),6
240 HCLS0
250 HDRAW"BM160,96;C8U2R1D2U2R2U4L3U2R1D2R7U2R1D2L3D4R3D2L1U2L6"
260 HGET(152,100)-(178,74),7
270 HCLS0
280 HDRAW"BM160,96;COR1C8E2R3F2E1H2L4R3U6U1E1U3E1R1D2U2L1G1D3G1D1L3U1H1U3H1L1D2D1COD2R3C8D7L1G2F1E2R2
290 HGET(152,100)-(178,69),8
300 HSCREEN2
301 PALETTE 0,64:PALETTE1,0:PALETTE2,11:PALETTE3,27:PALETTE5,16:PALETTE6,54:PALETTE7,4:PALETTE8,32
310 MV=2:LV=3:SC=0
320 HCLS0:HCOLOR1:HCOLOR8:HPRINT(14,1),"ROBOT HUNTER":Y=10
330 FOR X=5 TO 83 STEP 26
340 HPUT(X,Y)-(X+26,Y+41),1,PSET
350 NEXT X
360 IF Y<=100 THEN Y=Y+41:GOTO 330
370 Y=10
380 FOR X=211 TO 289 STEP 26
390 HPUT(X,Y)-(X+26,Y+41),1,PSET
400 NEXT X
410 IF Y<=100 THEN Y=Y+41:GOTO 380
420 X=143:Y=190
430 FOR A=4 TO 18
440 READ T$:IF T$="4" THEN T$=""
450 HCOLOR2:HPRINT(19,A),T$:HCOLOR1
460 NEXT A
470 PALETTE 9,37:PALETTE10,46
480 FOR I=1 TO 600:NEXT I:FOR Y=190 TO 30 STEP -2
490 HPUT(X,Y)-(X+26,Y+41),9
500 NEXT Y
510 DATA B,Y,4,S,C,O,T,T,4,H,A,R,V,E,Y
520 FOR Y=190 TO 71 STEP-4:HPUT(X,Y)-(X+26,Y+41),1:HPUT(X-26,Y)-(X,Y+41),9:HPUT(X+26,Y)-(X+52,Y+41),9:NEXT Y
530 FOR Y=190 TO 112 STEP-4:HPUT(X,Y)-(X+26,Y+41),9:NEXT Y
540 FOR Y=190 TO 153 STEP-4:HPUT(X,Y)-(X+26,Y+41),1:HPUT(X-26,Y)-(X,Y+41),9:HPUT(X+26,Y)-(X+51,Y+41),9:NEXT Y
```

```

550 HPRINT(12,24),"INSTRUCTIONS
Y/N"
560 IF INKEY$="Y" THEN 1140 ELSE
IF INKEY$="N" THEN 570 ELSE 560
570 HCOLOR1
580 HCLS0
590 A=160
600 HLINE(80,0)-(80,191),PSET:HL
INE(240,0)-(240,191),PSET
610 HPAINT(0,0),5,1:HPAINT(320,0
),5,1
620 HCOLOR0:HPRINT(0,0),"SCORE":
HPRINT(0,4),"CARS":HCOLOR6:HPRI
N T(5,4),LV
630 HCOLOR1
640 X=160:Y=140
650 H=JOYSTK(0):V=JOYSTK(1)
660 ON BRK GOTO 1130
670 IF H=0 THEN X=X-4
680 IF H=63 THEN X=X+4
690 IF V=0 THEN Y=Y-4
700 IF V=63 THEN Y=Y+4
710 IF X<=83 THEN 1040
720 IF X>=212 THEN 1040
730 IF Y<=27 THEN Y=27
740 IF (X-A)<0 THEN A=A-2
750 IF (X-A)>0 THEN A=A+2
760 IF Y>=163 THEN Y=163
770 IF A<83 THEN A=83
780 IF A>211 THEN A=211
790 ON D GOSUB 970,980,990,1000,
1010,1020,1030
800 IF B>=180 THEN GOSUB920
810 B=B+MV
820 HPUT(X,Y)-(X+26,Y+39),1,PSET
830 IF BUTTON(0)=1 THEN GOSUB870
840 IF (X-A)>-15 AND (X-A)<15 AN
D (Y-B)>-10 AND (Y-B)<20 AND D<>
1 THEN GOSUB 1040
850 GOTO 650
860 GOTO 860
870 HCOLOR7:HLINE(X+8,Y+3)-(X+12
,Y-27),PSET:HLINE(X+18,Y+3)-(X+1
4,Y-27),PSET:HCOLOR0
880 PLAY"P120"
890 HCOLOR0:HLINE(X+8,Y+3)-(X+12
,Y-27),PSET:HLINE(X+18,Y+3)-(X+1
4,Y-27),PSET:HCOLOR1
900 IF HPOINT(X+12,Y-28)=8 OR HP
OINT(X+14,Y-28)=8 THEN GOSUB930
910 RETURN
920 B=10:D=RND(6):A=RND(100)+100
:RETURN
930 SOUND50,1:HCOLOR0:HLINE(A,B)
-(A+26,B+41),PSET,BF:SC=SC+30:HC
OLOR1:B=10:D=RND(7):IF MV >=9 TH
EN MV=9 ELSE MV=MV+1
940 A=RND(100)+100
950 HCOLOR5:HLINE(40,0)-(79,8),P
SET,BF:HCOLOR6:HPRINT(5,0),SC:HC
OLOR8
960 RETURN
970 HPUT(A,B)-(A+26,B+24),5,PSET
:RETURN
980 HPUT(A,B)-(A+26,B+32),3,PSET
:RETURN
990 HPUT(A,B)-(A+28,B+30),4,PSET
:RETURN
1000 HPUT(A,B)-(A+26,B+24),5,PSE
T:RETURN
1010 HPUT(A,B)-(A+26,B+35),6,PSE

```

```

T:RETURN
1020 HPUT(A,B)-(A+26,B+26),7,PSE
T:RETURN
1030 HPUT(A,B)-(A+26,B+31),8,PSE
T:RETURN
1040 FOR R=1 TO 12:HCIRCLE(X+15,
Y+13),R:NEXT R
1050 LV=LV-1:HCOLOR5:HLINE(32,32
)-(72,40),PSET,BF:HCOLOR6:HPRINT
(5,4),LV:HCOLOR8
1060 IF LV<1 THEN 1090
1070 HLINE(81,0)-(239,191),PRESE
T,BF
1080 GOSUB920:GOTO640
1090 HSCREEN0:CLS5:LOCATE15,5:AT
TRO,0,B:PRINT"GAME OVER":ATTN4,0
:LOCATE1,10:PRINT"YOUR FINAL SCO
RE WAS: ";SC
1100 LOCATE 1,15:PRINT"ANOTHER G
AME (Y/N)?"
1110 CLEAR:RESTORE
1120 IF INKEY$="Y" THEN 30 ELSE
IF INKEY$="N" THEN GOTO 1130 ELSE
GOTO 1120
1130 PALETTE:RGB:WIDTH40:POKE6549
6,0:END
1140 HCLS:HPRINT(0,0),"THE FOLLO
WING INFORMATION IS CLASSIFIED":
HPRINT(0,1),"TOP SECRET":GOTO 15
50
1150 IF INKEY$="" THEN 1150 ELSE
1190
1160 HCLS:HLINE(0,0)-(60,60),PS
ET,B
1170 HPRINT(8,0),"NAME":HPRINT(
13,0),NMS:HPRINT(8,1),"SERIES TY
PE":HPRINT(20,1),ST$:HPRINT(8,2
),"CLASSIFICATION: DANGEROUS"
1180 RETURN
1190 NMS="SCORPEX":ST$="123-56A"
1200 GOSUB 1160
1210 HPUT(10,5)-(36,37),3,PSET
1220 HPRINT(0,8),"Originally des
igned as animal trackers":HPRINT
(0,9),"the SCORPEX model was dis
continued due":HPRINT(0,10),"a n
umber of unfortunate deaths due
to":HPRINT(0,11),"their misuse.
They are highly dangerous"
1230 HPRINT(0,12),"and should be
approached with extreme":HPRINT
(0,13),"caution."
1240 HPRINT(14,19),"PRESS ANY KE
Y"
1250 IF INKEY$="" THEN 1250
1260 NMS="RANDOR":ST$="123-65C":
GOSUB1160
1270 HPUT(12,5)-(40,35),4,PSET
1280 HPRINT(0,8),"The RANDOR mod
el was used exclusively":HPRINT(
0,9),"in demolitions. They were
however known":HPRINT(0,10),"to
be unpredictable and unstable."
1290 HPRINT(14,19),"PRESS ANY KE
Y"
1300 IF INKEY$="" THEN 1300
1310 NMS="SPIKE":ST$="127-32D":G
OSUB1160
1320 HPUT(17,18)-(43,42),5,PSET
1330 HPRINT(0,8),"Originally des
igned as a domestic pet":HPRINT(

```

```

0,9),"to replace the dog which d
ied out in the":HPRINT(0,10),"ye
ar 2199. They have now mutated i
nto":HPRINT(0,11),"the equivalen
t of a class 3 SCORPEX"
1340 HPRINT(14,19),"PRESS ANY KE
Y"
1350 IF INKEY$="" THEN 1350
1360 NMS="SKISSOR":ST$="123-87A"
:GOSUB 1160
1370 HPUT(17,12)-(43,47),6,PSET
1380 HPRINT(0,8),"The SKISSOR we
re used only in extreme":HPRINT(
0,9),"terrorist situations where
hundreds of":HPRINT(0,10),"live
s were at stake. They are simply
a":HPRINT(0,11),"highly advance
d killing machine. They do"
1390 HPRINT(0,12),"not fear, nor
do they think, they just":HPRIN
T(0,13),"kill. They are the most
dangerous of all":HPRINT(0,14),
"renegade robots. Extreme Cautio
n is":HPRINT(0,15),"advised."
1400 HPRINT(14,19),"PRESS ANY KE
Y"
1410 IF INKEY$="" THEN 1410
1420 NMS="SPINDEL":ST$="122-45E"
:GOSUB 1160
1430 HPUT(17,17)-(43,43),7,PSET
1440 HPRINT(0,8),"The SPINDEL mo
del was designed as a":HPRINT(0,
9),"gardening aid. They cut hedg
es and mowed":HPRINT(0,10),"lawn
s. However they were found to al
so":HPRINT(0,11),"develop a tend
ency to turn on their":HPRINT(0,
12),"operators."
1450 HPRINT(14,19),"PRESS ANY KE
Y"
1460 IF INKEY$="" THEN 1460
1470 NMS="KRINSER":ST$="123-57A"
:GOSUB1160
1480 HPUT(17,14)-(43,45),8,PSET
1490 HPRINT(0,8),"The KRINSER we
re used in bomb detection":HPRIN
T(0,9),"and disposal in built up
areas. They":HPRINT(0,10),"carr
y an explosive charge and are":H
PRINT(0,11),"highly unpredictabl
e and volatile."
1500 HPRINT(14,19),"PRESS ANY KE
Y"
1510 IF INKEY$="" THEN 1510
1520 HCLS:HPRINT(0,0),"That comp
letes the robot file of known":H
PRINT(0,1),"renegade robots. Goo
d luck on your":HPRINT(0,2),"mis
sion!":HPRINT(14,19),"PRESS ANY
KEY"
1530 IF INKEY$="" THEN 1530
1540 GOTO 570
1550 HPRINT(0,2),"Your mission i
s to destroy all of the":HPRINT(
0,3),"renegade robots roaming th
e forbidden":HPRINT(0,4),"sector
":HPRINT(0,5),"Press any key fo
r a full list of robots."
1560 IF INKEY$="" THEN 1560
1570 GOTO 1190

```

ALIAS OS9=

submitted by Jeff Larson

ALIAS CREATES A synonymous command as well as a program in the current execution directory with the name <newname>. The command <newname> must not already exist and <command> must be in the current execution directory.

The created program is less than a sector long and will chain to the specified command with the user-set memory size and pass the command line in the parameter area. This allows the user to access the command with more than one name; for example, accessing c.asm under the name rna by typing: alias c.asm rna

The Listing:

```
/* */
/* alias - create alternate name for a command */
/* */
/* Questions and comments can be addressed to: */
/* */
/* Eric Williams */
/* 5712 San Diego */
/* El Cerrito, CA 94530 */
/* 415-526-1575 evenings/weekends */

#include <modes.h>
#define ATTR S_IREAD+S_IWRITE+S_IEXEC+S_IOREAD+S_IOEXEC

/* the array code[] contains the assembled form of the following:

start
pshs y,u
tfr x,u
tfr d,y
puls d
subd ,s++
tfr a,b
lda #OBJECT+PRGRM
leax alias,pcr
os9 f$chain
os9 f$exit

*/

char header[] = {
    0x87, 0xCD, 0x00, 0x62, 0x00, 0x0D, 0x11, 0x81, 0x4A, 0x00,
    0x47, 0x01, 0x00
};
char name[29], alias[29];
char code[] = {
    0x34, 0x60, 0x1F, 0x13, 0x1F, 0x02, 0x35, 0x06, 0xA3, 0xE1,
    0x1F, 0x89, 0x86, 0x11, 0x30, 0x8D, 0xFF, 0xD1, 0x10, 0x3F,
    0x05, 0x10, 0x3F, 0x06
};
char crc_loc[3] = {0xFF, 0xFF, 0xFF};

main (argc, argv)
char *argv();
{
```

```

int f;

if (argc < 3) {
    printf ("form: alias <old> <new>\n");
    exit (0);
}
if (access (argv[1], S_IEXEC) == -1) {
    printf ("error finding command %s\n", argv[1]);
    exit (0);
}
fixstr (argv[1], alias);
fixstr (argv[2], name);
crc (header, sizeof (header), crc_loc);
crc (name, sizeof (name), crc_loc);
crc (alias, sizeof (alias), crc_loc);
crc (code, sizeof (code), crc_loc);
for (f = 0; f < 3; f++)
    crc_loc[f] = ~crc_loc[f];
if (access (argv[2], S_IEXEC) != -1) {
    printf ("command already exists\n");
    exit (0);
}
if ((f = creat (argv[2], ATTR)) == -1) {
    writeln (1, "error creating %s\n", argv[2]);
    exit (0);
}
write (f, header, sizeof (header));
write (f, name, sizeof (name));
write (f, alias, sizeof (alias));
write (f, code, sizeof (code));
write (f, crc_loc, sizeof (crc_loc));
close (f);
}

```

```

fixstr (s, d)
char *s, *d;
{
    while (*s)
        *d++ = *s++;
    d--;
    *d |= 0x80;
}

```

PATCH FILES

by Jeff Larson

Some L-II patch files available on CompuServe OS9 Forum:

TOOLS

PATCH.AR - Santy's Create/do any-module patch util; as important as AR
 CRC.AR - Turn on/off CRC check cmd
 COPY34.AR - Copy Kernal track

WMODE.AR - XMode for window defaults
 MODPAT.TXT - How to use the RS Modpatch utility
 JOYKEY.B09 - Change joystick / keyboard repeat

APPLICATIONS

TSEdit.PCH - TSEdit in L-II windows patchfile
 PASCAL.TXT - Pascal compiler
 DMHELP.AR - DeskMate-3 patches
 DIRCOP.PAT - Dircopy
 SPOOL.TXT - Patch to spooler
 BOOT80.TXT - For 80 col boot
 SSPAK.AR - Hack and driver for SSC pak
 XCODES.AR - XED/XWORD
 DEBUG.PAT - Usable L-I debugger
 RGBFIX.SCR - Boot into RGB mode patch to CC3IO
 KRWIN.AR - Win at Koronis Rift!

ROQUEP.BAS - Enable Rogue hidden cmds
 IOBEEP.SCR - Bell on error
 SCFED2.AR - Enhanced cmd line editor
 LOGIN2.PAT - Convert L-I login
 STYLO.TXT - Help with Stylograph
 PAKMOD.SCR - Increase ACIAPAK buffer sizes
 DBMV2.PTC - Databank v2.00.16
 CC3DSK.PAT - Motor delay, back sides of disks
 PROFIL.PTC - Profile
 MODDRV.SCR - Drive descriptor chgs
 PCPAK.AR - Hardware hack for PC-PAK
 VDGINT.IPC - Patchfile for blip-free VDGInt

* Files with .SCR extension are Modpatch script files.

OS9

by Ross Pratt

CHANGE CHARACTER AND LIST ERROR UTILITY

I found need to change various bytes in an ASCII file the other day when, during debugging a program, it changed the wrong bytes in a random access file.

So last Friday night I got to it and wrote the utility "chgchar" to change the bytes back to their correct value.

The "chgchar" utility, written in Basic09, is used to change any character in an ASCII file.

It first prints a dump of the file you are going to edit on the printer. When you are sure of the character(s) you wish to change, just type in the hex address of the character from the dump of the file, and then enter the value which you want it to be, either in hex or decimal.

To terminate the program press <ENTER> at the address prompt. The second program, "erhan", is used by all my Basic09 programs when an error occurs.

It can also be used as a stand alone program to check an error number.

The Listing:

```
PROCEDURE chgchar
0000      (* chgchar utility*)
0014      (* By Ross Pratt 31 Campbell St. Cooma *)
003E      DIM charnum:REAL
0045      DIM file:BYTE; filetochange:STRING[80]; rep,char:STRING[1]
0066      DIM chartochange,value:STRING[4]
0076      ON ERROR GOTO 90
007C      PRINT CHR$(12) \ PRINT \ PRINT
0085      PRINT USING "s80^", "Change Character Utility"
00A9      PRINT USING "s80^", "By"
00B7      PRINT USING "s80^", "Ross Pratt 31 Campbell St. Cooma"
00E3      PRINT \ PRINT
00E7      INPUT "Enter the name of the file to be edited ",filetochange
0117      PRINT TAB(10); "Set up printer and press any key";
0140      GET #0,rep
0149      SHELL "dump "+filetochange+" >/p"
015D      OPEN #file,filetochange:WRITE
0169      LOOP
016B          PRINT "Press <ENTER> when complete"
018A          INPUT "Enter the character location to be changed in hexadecimal ? "

          ,chartochange
01CD      EXITIF chartochange="" THEN CLOSE #file
01DE      PRINT TAB(10); "Set up printer and press any key";
0207      GET #0,rep
0210      SHELL "dump "+filetochange+" >/p"
0224      PRINT CHR$(12)
0229      END
022B      ENDEXIT
022F      PRINT "If Hexdecimal value prefix it with $"
0257      INPUT "The new value is ? ",value
0272      charnum:=VAL("$"+chartochange)
027F      char:=CHR$(VAL(value))
028A      SEEK #file,charnum
0294      PUT #file,char
029E      ENDLLOOP
02A2 90   RUN erhan(ERR)
02AC      END
```

PROCEDURE erhan

```
0000 PARAM enum: INTEGER
0007 DIM pout:STRING(30); an:STRING(1); emes:STRING(60)
0029 DIM file:BYTE
0030 PRINT CHR$(12)
0035 pout:="You have caused a "+STR$(enum)+" Error"
005C OPEN #file,"/h0/sys/errmsg":READ
0075 PRINT CHR$(2); CHR$(32); CHR$(43);
0083 WHILE NOT(EOF(#file)) DO
008E READ #file,emes
0098 EXITIF LEFT$(emes,LEN(STR$(enum)))=STR$(enum) THEN
00AC emes:=RIGHT$(emes,LEN(emes)-4)
00BC ENDEXIT
00C0 ENDWHILE
00C4 CLOSE #file
00CA PRINT USING "s80^",pout
00D7 PRINT USING "s80^",emes
00E4 PRINT USING "s80^","Press any key to continue";
010A GET #0,an
0113 END
```

OS9

THE BEST THING SINCE SLICED BREAD

by Ross Pratt

A lot of the club members would ask, "What is OS9?" Well it is a Disk Operating System. "So What?", I hear you say, "so is Disk Extended Colour Basic."

The difference is that OS9 is a complete operating system. DECB sets up and controls the system: for example the disks are formatted for 35 tracks and the stepping rate is set at 30 milliseconds.

With OS9 you can have 40 or 80 track single or double sided disk and a stepping rate down to 6 milliseconds. Of course the limitation with all of this is the hardware itself.

OS9 was developed from a system called UNIX, which itself was developed in the USA for use on the large mainframes in the universities. It has all the power of the UNIX system, but the 64k of memory is its only restriction.

Things that you never thought possible with a personal computer could be achieved, such as multitasking (running two programs together or running a terminal from your printer port or from a RS232 port). Most of the programs developed for OS9 are re-entrant, which allows two people to run the one program at the same time.

Now there are four ways you can write programs to run under OS9, and they are:

1. Assembly language: you can use the text editor that come with OS9 to create them.
2. There is the pascal compiler.

3. There are two C compilers, one called Dyna C, the other by Tandy. Tandy's one is about \$50.00 dearer than Dyna C, but I think Tandy's is better.

Yes, I bought the cheap compiler. I did not know a lot about C compilers at the time and I took the advise of a Colour Computer software agent from the eastern suburbs of Sydney. I have since found out, by experience, that he doesn't know a lot about C compilers either.

4. Basic09. Now this is the one for you chaps that can't handle the first three. Basic09 is not like the first three - the final product is a program in machine code. When Basic09 is packed, it is an intermediate code.

This means that it must have another program to interpret it as it is run by OS9. Of course this is going to slow things down a little, but I am told that you can not tell the difference.

Those of you contemplating buying OS9, I can definately recommend it. The minimum hardware requirements are 64K of memory, and one disk drive

To really get things going you need two drives. Also I think that a multi pak, an 80 column card and a monitor is a must.

But there is a software version of a 51 character screen driver available which gives very good results.

With OS9 running on our little colour computer and the appropriate disk capacity, it will do the work that much dearer computers are bought for standing on its head.

DISK ROM FIXES OS9

You'll be put on our mailing list and get a free newsletter listing all kinds of neat programs you can spend your hard-earned money on.

Please feel free to share this code, however, please be fair and leave in these credits.

If you need an EPROM burned with this code I can do so for you for a cost of \$25.00 (includes a 2764 EPROM and shipping). You'll have to advise if you want the code for double sided drives included, and the track stepping rate of your slowest drive and the default printer baud you want.

These fixes are for RADIO SHACK DISK COLOR BASIC 1.0

THIS PATCH TO DISK Extended BASIC is the one I use everyday for program development and booting OS-9. It is completely compatible with every program I have tried to

run. If you find the code worthwhile, you may send a contribution to:

Bob van der Poel Software
17435-57 Avenue
Edmonton, Alberta
Canada T6M 1E1

by Bob van der Poel
submitted by Jeff Larson

The Listing:

```
ORG $COD1 end of initialize  
JMP STRTUP do the new startup
```

- * This fixes a bug in DISK BASIC
- * See 'Disk BASIC Unravalled' for details

```
ORG $C70C somewhere in update FAT routine
```

```
JSR FIX1 go to our routine  
NOP skip two bytes and then continue with  
NOP the existing JMP $D5FF
```

- * another DISK bug
- * this one affects the CLOSE command when
- * files are open on different drives.
- * Documented in 'Unraveled'

```
ORG $CACC
```

```
BCS $CAD8 jump to a RTS
```

- * This disk bug is in the copy command. It causes
- * the computer to lock up if an OB error occurs.
- * Again, see 'Unraveled'

```
ORG $D2EB
```

```
JSR FIX2 replaces LEAX -100,S instruction
```

- * The patches go at the end of the copyright
- * message used by BASIC's signon.

```
ORG $C160
```

```
FCB $0D  
FCB 0 new text terminator
```

- * This is the new code for the update FAT routine
- * It allows files to be written to on drive 3.

```
FIX1
CLR ,U+
CMPU #$700
BNE FIX1
RTS
```

* This code replaces the LEAX -100,S in the COPY
* command with -\$100,S. The '+2' is needed since
* this is a subroutine and two bytes are on the
* stack as a return address.

```
FIX2
LEAX -$FF+2,S proper instruction
RTS
```

```
ORG $D4FF
```

* this patch fixes the problem with precomp
* not being properly set by the DSKINI command
* By setting the track to 0, DSKCON will clear
* the precomp flag.

* The original code is:

```
*           LDA #0
*           STA $EA dskcon operation
```

```
CLR $EA dskcon operation (restore)
CLR $EC track 0
```

* This patch will modify the DSKINI
* routine to add a delay before the
* before the step-in command is issued.

* It also uses a 6ms step in command

* This routine works by replacing 2 EXG A,A
* instructions (a delay of 16 cycles) with
* a MUL (a delay of 11 cycles). This saves 3
* bytes which are used for the JSR DELAY.

* all this work was needed in order for my funny CDC
* disk drive to format disks. (But I got a real deal on it!)

```
ORG $D525
```

```
JSR $D6FD go delay
LDA #$50 step-in 6ms command
STA $FF48 issue command
MUL    delay (replaces 2 EXG A,A)
```

* change the number of retries when verifying
* after a format from 5 to 2

```
ORG $D601
```

LDB #2

* change the number of retries used by dskcon
* from 5 to 2.

ORG \$D66E

LDA #2

* change restore drive track stepping rate in
* dskcon from 30ms to 6ms.

ORG \$D6CC

LDA #0

* change seek track stepping rate in dskcon
* from 30ms to 6ms.

ORG \$D722

LDA #\$14

* modify drive select tables so double sided
* drives are accessed as 0/2 and 1/3

ORG \$D7AC

FCB \$41 back side of 0
FCB \$42 back of 1

*

* new startup patch --- set baud rate, do dos boot

ORG \$DF00

STRTUP

LDA #1 set to 6800 baud
STA 150

LDA #\$55 set warm start flag
STA \$71

* reset heads to track 0

LDU \$C006 pointer to dskcon variables
CLR ,U opcode=restore
LDA #1 driv1

RESET

STA 1,U set drive #
JSR [\$C004] go reset head

DECA next drive
BPL RESET

* this is the DOS code -- modified to do 'cold start' on error

CLR \$03 reset sector counter
LDD #\$2600 buffer address
PSHS D

DOS0

LDX \$C006 point to dskcon variables
INC \$03 next sector
LDA \$03 get sector #
CMPA #\$12 done all 18?
BHI DOS1
STA 3,X save sector number
LDD #\$0200 op code and drive #
STA ,X
LDA #34 track number
STA 2,X
PULS D
STD 4,X buffer address
ADDA #1 fix buffer address for next sector
PSHS D and save it
JSR [\$C004] goto dskcon
TST 6,X read error?
BEQ DOS0
PULS D clean stack
JMP COLD

DOS1

PULS D clean stack
LDD \$2600 start of buffer
CMPD #'OS did data start with 'OS'?
LBEQ \$2600+2 yes, go execute data
CLR \$2600
CLR \$2600+1

COLD

JMP \$A0E2 continue basic init.



Join in the fun.

CONF '88

Koonjewarre, Gold Coast, Qld.

October 1st and 2nd

ENHANCED

OS9 DUMP UTILITY

by Peter May
submitted by Jeff Larson

'DUMP' was written on a CoCo3, using the CO380.io screen driver, and is thus designed around it's control codes.

NOTICE: THIS PROGRAM IS totally free. It is not Shareware, Freeware, or anywhere. That means that you send me no money. All I would appreciate from you is your feedback on any bugs, or enhancements that you would like to see in it.

DUMP is an enhanced version of the OS-9 dump command for OS9 Level 1.

It has been tested on Version 2,k but not on Version 1, although it does not use any calls that are contrary, I cannot guarantee that it will work 100% on version 1.

Dump is primarily intended for use with full width, 80 column screens.

The display on any other screen will wrap around, and produce a somewhat unreadable display. You may find a use for it in dumping to your printer, which looks very strange in the old 32 column format.

Dump was written on a Colour Computer 3, using the CO380.io screen driver, and is thus designed around it's control codes. The codes it uses are:

1B 32 - Change foreground colour. This is followed by a control code (0,1,3, or 5) to indicate which colour text is to be displayed in. The documentation for CO380.io regards this as a standard level II escape sequence, I cannot confirm this.

Dump has two operating modes: Colour, and Monochrome. In the colour mode, unprintable Ascii characters are converted to legible characters (i.e. standard Ascii set) but in a different colour. Please note that as supplied the colours are as follows:

Addresses, and hex data:
Palette 0 in foreground *
ASCII Printable: Palette 0 in foreground *
Control (00h-1fh): Palette 3 in foreground
Control (80h-9Fh): Palette 5 in foreground
Control (A0h-FFh): Palette 1 in foreground

* NOTE: On my system, the Auto Exec file StartUp sets palette 0 to be CYAN, or 1Bh. The other palettes are not changed, so Palette 3, which is a slightly reddish white (on my RGB monitor) does not conflict with the normal foreground colour of CO380.io, which is pure white.

If you wish to change this, you may modify the source code, which is packed with this document. See comments later on the source code.

You can ascertain for yourself which colours present which characters, but they have been assigned in a logical fashion.

The second mode of operation is MONOCHROME. In this mode, all text is printed in the current colour (it is not changed), and no control codes are sent to the screen. This is useful when redirecting the output to a printer, as the escape sequences for colour can do some strange things to some printers. In Monochrome mode, any non printable ASCII characters are displayed as a decimal point '.'

Dump also provides the facility to dump directories. The D option tries to open the file as a directory. It will fail with a no permission error if the file is not a directory.

The USAGE of Dump is as follows:

DUMP [opts] pathname

where [opts] are :

d: treat file as a directory
m: do not use colour codes in the output

Naturally, both options may be used, or none at all.

Note that there is no '-' before the options.

THE SOURCE CODE:

Dump is written in pure assembler. It use the OS9Defs file, which it expects to be present in a directory DEFS on /D1. On my system, I use a 20mb Hard Disk, partitioned into two 10mb logical drives, which is why /D1 is my DEFS Directory ... and can be shared with the C Defs directory, which is required to be on /D1.

The primary sections of dump are as follows:

Exec --> Ex2 - This section reads options and opens the file
Pline - Dumps a single screen line from the input buffer

Dump - Dumps the Hex portion of the input buffer to the output buffer

Dump2 - Dumps the ASCII portion of the input buffer to the output buffer

DspAdd - Writes the address for the line to the output buffer and increments the address counters.

If you are having trouble with the colour mode of operation, the section of code to look at is in the area of Dump2 - The only place that control codes may be inserted in the output buffer.

Please note that there are two different sections in Dump2, one for the Colour mode, and one for the Monochrome mode.

The source code is fairly well commented, albeit with semi colons in front of all code line comments, a hang over from my Z80 days, and one which I believe to be useful in legibility.

If your defs file is not in /D1/DEFS, alter the USE /D1/DEFS/OS9DEFS statements in the IFP1/ENDC section of the source, very near to the beginning, after the initial comments.

Any comments you may have on dump can be sent to me on the International Fidonet, to Soft Tech Opus, Net/Node 640/201, in The Western Pacific Opus Matrix, via the OZ-Gate. Alternatively, comments may be sent to me via The OS9 Connection, Net/Node 711/404 also in the Western Pacific Opus Matrix.

Enjoy!
Authored by Peter May, in Brisbane, Australia, on 3rd July, 1987

Version 1.0 Released to Public Domain : 3rd July 1987.

The Listing:

*A Better Dump Command -- For OS9 - Source Listing

*This program provides full width dumps of the input file:

*Usage: Dump [d,m] pathname

*Where d: treat pathname as a directory

* m: do not use control codes for colour ascii

*Dump will provide a full width display of the input file

*In the following format:

*nnnnnn dd dd dd dd dd dd dd dd dd dd dd dd dd dd dd aaaaaaaaaaaaaaaaaa

*Where n: 24 bit address within the file (begins at 000000)

* dd: hex display of data byte at position nnnn...

* a: ASCII character located at nnnn....

* Note: The character is displayed in the normal foreground colour if it is a printable code, It is displayed in Red, (Palette 01) if it is above A0H, i.e. C1H is a red capital A, given by clearing the high bit of the character and printing in red.

* It is displayed in WHITE if it is a control code. I.e. 01H is displayed as a white capital A, representing Control-A.

* It is displayed in GREEN if it is a control code above 80H. i.e. 81H is displayed as a GREEN capital A.

* RED characters map to ALT-xx, WHITE map to CTRL-xx, and green characters map to those unaccessible on the keyboard. (i.e. between 80H and 9FH.)

* Note: The foreground colour on my system is set to cyan automatically by StartUp. If you are using a white screen, then you may wish to change the colour palette mapping. This is in the section of code beginning at label Dump2.

* This program is TOTALLY Public domain. SEND ME NO MONEY! I don't need it! The program was authored to fill a gap on my system that nothing would fill, and the result turned out OK, so it was released to the public domain on the 3rd of July 1987. It was uploaded to The OS9 Connection in Sydney, Australia on this day. Comments on the program, plus any improvements or extra features you would like to see included may be sent to me care of that system. The Net/Node number for the OS9 Connection is 711/404, in the Western Pacific OPUS Matrix.

* Regards,
* Peter May, Brisbane, Australia.

*Program Starts Here:

nam Dump

ttl A Utility by Peter May For OS9 Level I, Ver 2.0

org 0 ;set beginning of data area

pth rmb 1 ;input path number

c1 rmb 1 ;address counters in ascii

c2 rmb 1 ;address counters in ascii

c3 rmb 1 ;address counters in ascii

c4 rmb 1 ;address counters in ascii

c5 rmb 1 ;address counters in ascii

c6 rmb 1 ;address counters in ascii

tmp rmb 2 ;temporary buffer area used by address counting routine

mode rmb 1 ;read mode setup param

attr rmb 1 ;attribute flag

bfr rmb 255 ;output buffer

ibf rmb 20 ;input buffer

bsz rmb 2 ;number of bytes read into the buffer

stk rmb 200 ;bytes for stack usage.

```
par rmb 100 ;bytes for parameter passing.
dsize equ . ;size of data area.
```

```
dir equ $80 ;directory access mode
read equ $01 ;read access mode
stdout equ 01 ;standard o/p
```

```
ifpl
use /d1/defs/os9defs ;include definitions file
endc
mod size,name,prgrm+objct,reent+1,exec,dsize
```

```
*Code segment begins here
```

```
name fcs /dump/
Exec sty tmp,u ;save y for later comparisons
stx bfr,u ;save x for now
lda #read ;read mode
sta mode,u ;save in data area
clr attr,u ;set up for colour attributes
elp ldd ,x+ ;get parameter
cmpa #$20 ;is it a space?
beq nchr ;yes, get next character
cmpa #'m ;monochrome attributes?
beq mchr ;go and set it up
cmpa #'M ;uppercase check
beq mchr ;go and set it up
cmpa #'d ;directory mode?
beq dirmd ;yes, do it
cmpa #'D ;uppercase?
beq dirmd ;yes, do it
leax -1,x ;correct pointer
bra ex2 ;try and read it as a file name ....
nchr cmpx tmp,u ;are we at end of param area ?
blt elp ;loop untill we are or are successful
ldb #eof ;end of file error
coma ;set carry
os9 f$exit ;exit with an error
dirmd cmpb #'M ;check for another param
beq drok ;yes
cmpb #'m ;check lowercase too
beq drok ;yes
cmpb #$20 ;space?
beq drok ;yes
leax -1,x ;restore x register to file name start
bra ex2 ;try and dump it
drok cmpb #$20 ;was it a space?
beq setdr ;set the mode if so
lda 1,x ;get the next char if an Mm
cmpa #$20 ;was it a space?
beq setdr ;set the mode if so
leax -1,x ;restore x to point properly
bra ex2 ;try and dump the file
setdr lda #dir+read ;directory read mode
sta mode,u ;save it in memory
bra elp ;there should be more after this ...
mchr cmpb #'d ;was there a d after this?
beq mok ;yes
cmpb #'D ;uppercase maybe?
beq mok ;yes
cmpb #$20 ;space even?
beq mok ;yes
leax -1,x ;restore x to filename start
bra ex2 ;and execute the dump segment
mok cmpb #$20 ;was it a space?
beq stmchr ;yes, set the mono mode
lda 1,x ;get next character
cmpa #$20 ;check for a space ... must be
beq stmchr ;yes, set the mono mode
leax -1,x ;restore the filename pointer
```

```

bra ex2 ;execute dump
stmchr lda #$FF ;flag for monochrome
sta attr,u ;save it
bra elp ;there must be more after this lot
ex2 lda mode,u ;select access mode
os9 i$open ;try and open the specified file path
bcs opnerr ;if an error occurred
sta pth,u ;save path number for future reads
lda #$30 ;a = ascii for '0', initial counter value
sta c1,u ;reset address counter
sta c2,u
sta c3,u
sta c4,u
sta c5,u
sta c6,u ;end of address counters
bsr ruler ;print ruler line
bra dump ;go and do the rest of the program
opnerr os9 f$exit ;exit and report errors!
clrbuf pshs a,b,x ;save registers
leax bfr,u ;point to buffer
lda #$20 ;space character
ldb #255 ;255 characters
clp sta ,x+ ;write space
dec b ;decrement counter
bne clp ;loop till counter is zero
puls a,b,x ;restore register integrity
rts ;return
ruler bsr clrbuf ;clear the buffer
leax rmsg,pcr ;point at ruler line
ldy #$255 ;255 char's maximum
lda #stdout ;standard output path
os9 i$writln ;write the line
rts
dump bsr clrbuf ;clear the buffer
lbr dspadd ;write the address and increment it
leax ibf,u ;address to store buffer contents
ldy #16 ;16 bytes to read
lda pth,u ;input path from memory
os9 i$read ;read buffer
bcs rderr ;if an error occurred on read, hopefully EOF
sty bsz,u ;save number of bytes read
bsr pline ;print the line
bra dump ;loop until rderr.
rderr cmpb #E$EOF ;end of file flagged?
beq rdcn ;continue dumping last line if so
coma ;set carry bit
os9 f$exit ;leave us
rdcn clrb
os9 f$exit ;end the program nicely.
pline tfr y,d ;put size in D
leax bfr+10,u ;point to output buffer
leay ibf,u ;address of input buffer
bloop tstb ;are we finished?
lbeq dump2 ;go away if so
dec b ;decrement counter
lda ,y+ ;get data byte
pshs b ;save registers
bsr cvhex ;convert to hex.
stb ,x+ ;save data in output buffer
sta ,x+ ;save second data byte
lda #$20 ;space character
sta ,x+ ;save the space
puls b ;restore register
bra bloop ;loop till done, test is at top of loop
cvhex pshs x ;save index register
leax htbl,pcr ;point to hex/ascii table
pshs a ;save register
anda #$F0 ;mask out unwanted bits
lsra ;shift to correct position

```



```

lsra ;shift to correct position
lsra ;shift to correct position
lsra ;shift to correct position
ldb a,x ;get character to B
puls a ;restore a
anda #$0F ;mask out unwanted stuff
lda a,x ;get character to A
puls x ;restore index register
rts ;return
htbl fcc /0123456789ABCDEF/ ;hex conversion table
rmsg fcc / ADDRESS 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 0123456789AB
CDEF /
fcc / -----
- /

```

```

fcb 13 ;end of initial message
dump2 leay ibf,u ;point to input buffer
leax bfr+58,u ;point to ascii area
ldd bsz,u ;get buffer size
tst attr,u ;are we in colour mode?
bne mnatr ;no, go and monochrome dots mode
pshs b ;save this as it is corrupted later
dloop puls b ;restore temporarily
tstb ;are we finished the loop ?
beq pbfr ;if so, next step ... print the buffer
decb ;decrement counter for next time around
pshs b ;save it now
lda ,y+ ;get a byte from the input buffer
bita #$80 ;high bit set??
bne pfls
cmpa #$1F ;is it a control code ?
ble pdot ;put in a white character if so
bra dl2 ;jump over pdot routine
pdot pshs a ;save this
ldd #$1B32 ;set foreground colour
std ,x++ ;save in buffer
lda #$03 ;colour = white
sta ,x+ ;save in buffer
puls a ;restore a
adda #64 ;correct value of a
sta ,x+ ;save in buffer
ldd #$1B32 ;common palette
std ,x++ ;save in buffer
clra ;for next bit
dl2 sta ,x+ ;save in the output buffer
bra dloop ;loop untill finished
pfls pshs a ;save this for a sec
ldd #$1B32 ;set colour
std ,x++ ;write to buffer
lda #$01 ;red
sta ,x+
puls a ;restore a
suba #$80 ;modify for virtual coding
cmpa #$20 ;still control sequence
blt pctl ;fix it up if so
sta ,x+ ;save in outbuf buffer
popt ldd #$1B32 ;reset colour scheme
std ,x++ ;save this bit too
clra ;normal foreground colour
sta ,x+ ;save in buffer
bra dloop ;loop untill finished
pctl pshs a ;save a again
ldd #$1B32 ;set foreground colour again
std ,x++ ;save this in buffer
lda #$05 ;green
sta ,x+ ;save in buffer
puls a ;restore a
adda #64 ;restore to normal character
sta ,x+ ;put into buffer

```

```

bra popt ;return to program
mnatr tstb ;are we at end of buffer?
beq pbfr ;yes, print buffer
decb ;decrement counter
lda ,y+ ;get character
tsta ;test for high bit
bmi mdot ;print a dot if high bit set
cmpa #$20 ;is it a control code
bit mdot ;yes, print a dot
bra mnaa ;jump over dot code
mdot lda #$2E ;a= ascii for a dot
mnaa sta ,x+ ;save in the output buffer
bra mnatr ;loop till finished
pbfr lda #$0D ;carriage return character
sta ,x+ ;save at end of buffer
leax bfr,u ;point to buffer
ldy #255 ;255 characters to print maximum
lda #stdout ;standard output path
os9 i$writln ;write buffer to path
bcs prterr ;if an error occurred
rts ; return to the main process
prterr coma ;set carry flag
rts ;return & maybe ignore ????
dspadd pshs x,d ;save these registers from whoever called
leax bfr,u ;point to buffer
lda #$20 ;space character in A
sta ,x+ ;first char of line is a space
lda c6,u ;get first address
sta ,x+
lda c5,u
sta ,x+
lda c4,u
sta ,x+
lda c3,u
sta ,x+
lda c2,u
sta ,x+
lda c1,u ;get last address
sta ,x+ ;write in the buffer
leax c2,u ;point to first modifiable address,
ncntn inc ,x ;increment this counter
lda ,x ;get contents
cmpa #$3A ;overflowed to hex yet?
beq ohex ;if an overflow occurred
cmpa #$47 ;next digit to increment ?
beq ndig ;if we have to ...
puls x,d ;restore these registers
rts ;return to the main flow
ohex adda #$07 ;correct for ascii
sta ,x ;save location
nextit puls x,d ;restore these or we will crash
rts ;return to the main flow
ndig lda #$30 ;zero this counter
sta ,x+ ;save and increment pointer
leay c6+1,u ;setup y for a compare operation
sty tmp,u ;save in temp register area
cmpx tmp,u ;are we finished the lot?
beq nextit ;exit if so ...
bra ncntn ;continue till finished ...
emod ;generate crc bytes
size equ * ;for module header
end ;finally.

```

A SHORT WHILE AGO I attended a 'C' programming workshop for my employer. I was quite pleased about this, as I was teaching myself C from a couple of books that I had bought.

Now 'C' is the up and coming language in the computing world and is really quite simple, but it does confuse you when you first look at it.

The CoCo has a 'C' compiler which is run under the OS-9 operating system, either Level 1 or 2.

The difference with the 'C' compiler to, say Basic or Basic09, is that the source code is compiled into machine code before you run it. This will slow things up when you are testing and debugging.

OS9

C COMPILER

PRINTS THE BINARY CODE OF A NUMBER

by Ross Pratt

Well on with the program. It is called 'Bincode' and it prints out the binary value of an integer number that you enter. The main body of the program gets the input from the keyboard and prints out the number you have entered on the next line.

It then calls the function binary which does all the work in printing the binary value. Now one of the special things about 'C' is that a variable declared inside a function will have memory set aside for it only while the function is called and that variable is then deallocated when control returns to the calling function.

This function is called 'recursive', that is, it calls itself. I will run through the steps of the binary function to make it clearer.

The function is called firstly by the main program. The number you have typed in is passed to this main program.

This value is placed in the variable num. Num is declared a long (a number that can be larger than 32767).

The next code is declared an integer and set to 0. The first test is to see if the number is greater than 0. If this is true, then the rest of the function is carried out. The next test does a logical AND with num and 1: this will be true when bit 0 of num is a 1 and code is set to 1.

The next step is to right shift num by 1 bit, and this drops off the bit you have just tested and fills the lefthand bit with a 0.

At this stage binary is called again. This continues until num becomes a 0. If the first test fails then control is passed back to the preceding function. This allows binary to carry out its last line of code and the value of the variable code is printed.

All this works because each time binary is called it sets aside a separate piece of memory for num and code.

That's about all there is to it. The program is not of any great use, but I do hope that it will spark the interest of all you good programmers out there.

We hope to see more programs written in 'C' in the near future.

XCOM PATCH

by Jeff Larson

FOR ALL COCO XCOM91 users with OS9 Level 1 version 2: this patch will provide you with direct command keys for XCOM9. For example, to display the help screen, press ALT/H (press the ALT key, and while still holding it down, press H).

In the following listing, 'displ' is the displacement into the XCOM91 module, '#1' is the original value, and '#2' is the replacement value.

displ	#1	#2	displ	#1	#2
----	--	--	----	--	--
+029C	D6	4D	+02A8	0F	12
+029D	8B	2A	+02A9	8B	12
+029E	26	11	+02AA	03	12
+029F	42	84	+02AB	8B	12
+02A0	91	7F	+02AC	17	12
+02A1	8D	20	+02AD	0E	12
+02A2	27	3F	+02AE	2E	12
+02A3	04	12	+02AF	39	12
+02A4	81	12	+1577	83	70
+02A5	BE	12	+1578	19	F3
+02A6	26	12	+1579	D8	6D
+02A7	08	12			

The Listing:

```
/* bincode - Prints the binary value of an integer */
#include <stdio.h>
main()
{
    long        number;

    pflinit(); /* Tells the compiler to expect longs */

    do
        {
            printf("Enter an Integer Number ");

            scanf("%ld",&number);

            if(number > 0.0 ) /* Is it a valid number */

                { /* If true carry out the following */

                    printf("The Binary notation of %ld is ",number);
                    binary(number);
                    printf("\n");

                } /* If false carry out the following */

            else    printf("You have entered an invalid Number \n");

            printf("Enter another Number 'y' or 'n' ? ");
            getc(stdin);
        }

    while( tolower(getc(stdin)) == 'y' );
}

binary(num) /* This function prints out the 0's and 1's */
long        num;

{
    int        code = 0;

    if( num > 0 )
        {
            if(num & 1)
                code = 1;
            num = num >> 1;
            binary(num);
            printf("%d",code);
        }
}
```

Terminals

by Rose Pratt



IT HAS BEEN some time since I first tried to connect a terminal to my CoCo while it was running OS-9 but, I have finally got it all working.

There are a few ways of doing this:

1. Connecting the CoCo to a modem and communicating through the telecom system.
2. Connecting two computers together through RS-232 ports and a null modem cable.

Both of the above methods can be operated in two ways:

Firstly both computers could be running terminal programs, in which case neither is the host computer, and

Secondly one computer can be a terminal, the other becomes the host computer.

OS9 is ideal for running a terminal as it provides all the utilities that are needed. You must, of course set up your password file which is in the SYS directory.

The format of the password file is as follows:-

```
superuser, pword, 0, 128, /d0/cmds, /d0, shell
user1, 1, 128, ..., shell
user2, 2, 128, ..., shell
```

... and so on.

Each line is set aside for a user and the information that is separated by a "," tells the login utility who you are, your password, your user identification number, your priority, where to set the execution directory, where to set the data directory and what process to run.

Now you can change user1 etc, to any name you like and either give them a password or leave it blank. I would suggest you always give a password.

The system identification number can be any value between 0 and 65535, but you can not have any two ID's the same.

Priority can be any value between 1 and 255. The higher the value, the higher your priority. This means that if your priority is higher than another user, your task will be done first.

The execution and data directories can be set to anywhere on your system, but if the user does not change the execution directory he will only be able to run programs that are in that execution directory.

The same goes for the data directory.

The last item on the line is "shell". If you leave the shell there then the user will end up with a shell and the usual os9 prompt, once the login process is over. Of course you could replace the "shell" with any program you liked and the user would be restricted to that program only.

Well I got off the track a bit there! I am using OS9 level 1 version 2, and I found that with the Tandy Delux RS232 pak it would only work in slot two of the multipak using the device descriptor /T3 and device driver MODPAK.

This set up will allow you to connect a modem to your CoCo and you could have your friends sign on to your system and use OS9, or you could run a BBS.

The other thing that can be done with the modem connected is to run a terminal program yourself and you could then connect to a BBS or to a friend's CoCo to swap files/programs and so on.

Now at this point I will mention a bug that I have found, which may be in the MODPAK driver.

When I exit from either of my terminal programs, the system crashes. That is, I get an error number 232 whenever I try to run another program.

This of course means a reboot.

The other way of connecting two computers together is with a null modem cable. This means that you do not need the modems between the two computers. A null modem cable is not just the straight pin to pin connection. Pins 2 and 3 (transmit data and receive data) and pins 4 and 5 (request to send and clear to send) and also pins 6 and 20 (data set ready and data terminal ready) have to be reversed on one of the 25 pin connectors on either end of the null modem cable.

There are a few other pins that are used by the Delux RS232 pak, and they are pin 1 (frame ground), pin 7 (signal ground) and pin 8 (carrier detect).

Pin 8 is what makes everything go with the Tandy RS232 pak. I was told some time ago that to get the RS-232 pak to look for a signal from the other computer (terminal), pin 8 had to be grounded. This was not correct in my case, as I found out one night when, in exasperation, I pulled out my multimeter and measured the voltages on pin 8 while the modem was connected.

The voltage on pin 8 swung from minus 10 volts to plus 10 volts, so I temporarily bridged out pin 8 with another 10 volt line that did not change and suddenly the two computers were communicating to each other.

The final stage of this saga was to open up the RS232 pak and solder a switchable permanent bridge onto the PC board.

I hope that this article is of some help to those of you out there who like me, are stumbling around in the dark looking for some answers.

If you have any questions, I can be contacted at 31 Campbell St. Cooma 2630. Phone 064-523065 or on Viatel.

Coding in Forth has taught me so much about the general art of programming. Most particularly, it has taught me to structure programs properly - and to use the stack for ALL parameter passing.

One of the really nice things about the 6809 is the availability of an extra stack. Forth, as a high-level language, is unusual in that it explicitly uses a stack - two of them, in fact.

For this reason, and because of the good stack addressing, the 6809 is almost perfect for implementing Forth (the 8086 is horrible!).

The devil of using a single stack in assembly programming is that, when you branch or jump to a subroutine, the return address is sitting on top of the stack when you enter the subroutine.

If you have passed any parameters on the stack, they are there under that critically important return address and therefore it is not possible simply to PULL them off.

The best way around this is to load them, eg by LDD 2,S, but that means that they are still on the stack at the end of the routine. But at least the designers of the 6809 saw the problem and provided the multi-register PULL instruction.

It is therefore possible to leave the subroutine by, eg, PULS PC,X,Y to return and shed two stack entries.

The lesson of Forth here is that the parameters should be passed on the second ('software') stack and that the 'hardware' stack should be used only for the return addresses and for temporary saves within routines. This obviates a lot of self-conscious stack juggling within routines and really is a great deal less prone to errors.

Another sensible policy decision will be that only 16-bit values will ever be used on the stack, in order to avoid clangers. All that is then required in the design of a subroutine is to ensure that the correct number of passed parameters are removed from the parameter stack, and that the correct number of results are returned on it.

Many of us have, of course, tried to pass parameters in registers. This saves the time for the PSH and PUL instructions, but leads to some

monumental bugs in the code.

Why place on yourself the burden of having to keep track of the current contents of all the registers? Assembly programming is hard enough, anyway.

A more subtle disadvantage of register passing is that it does not lend itself to the development of library modules which can be used over and over in different programs. And that is what we really need to do - develop a number of totally reliable, referentially transparent, black boxes which will never let us down. Forth is constructed from such black boxes, which is why it is so reliable.

THE BASIC ELEMENTS.

It is not so very hard to write a few lines of assembly code and get it to run. What is a lot harder is the job of communicating with the program. How do you give it instructions, and how do you get the results?

At the development stage, this can be done with a monitor, but proper I/O must be provided with the finished product - otherwise you end up with an abomination like Telewriter 64, which has a very crude Basic front end to carry out the I/O. With a few well-designed tools, we can do a lot better. These tools are some of the lessons of Forth.

The most primitive I/O words of Forth are KEY (to get a character from the keyboard) and EMIT (to display a character on the screen). From these are constructed EXPECT (which expects a certain number of characters from the keyboard) and TYPE (which types a number of characters to the screen), which are the basic string I/O words.

Related words are CMOVE (which will move a string in memory from one location to another), COUNT (which is given the address of a counted string and returns the address of the string with its length on top) and -TRAILING ('not-trailing', which trims spaces from the end of a designated string). With this set of utilities, you have the basis for a fully-fledged word processor, believe it or not.

It is just a matter of developing a library and using

STRUCTURED
PROGRAMMING PART 2

table one:

```
ROUTINE KEY U PSHS (ROM bashes it)
BEGIN A000 [] JSR 0= NOT UNTIL
U PULS A PSHU CLRA A PSHU RTS
```

table two:

```
ROUTINE EMIT A PULU A PULU (char in A)
A002 [] JSR RTS
```

table three:

```
ROUTINE TYPE
BEGIN ,U R++ LDX Y PULU
(length in X and address in Y)
0= NOT
WHILE CLRA ,Y R+ LDB (get char)
-1 ,X LEAX (dec count)
D X Y PSHU EMIT JSR
REPEAT RTS
```

table four:

```
ROUTINE COUNT X PULU
,X R+ LDB CLRA D X PSHU RTS
```

table five:

```
OUTPUT LDD D PSHU
COUNT JSR TYPE JSR
```

table six:

```
ROUTINE ADD D X PULU D ,X LEAX
X PSHU RTS
```

table seven:

```
ROUTINE END
COUNT JSR ADD JSR RTS
```

table eight:

```
ROUTINE SWAP D X PULU D PSHU
X PSHU RTS
```

table nine:

```
EXTRA LDX X PSHU COUNT JSR
OUTPUT LDX X PSHU END JSR
SWAP JSR
CMOVE JSR RTS
```

table ten:

```
: END COUNT + ;
: JOIN EXTRA @ COUNT
OUTPUT @ END SWAP CMOVE ;
```

the applications program to string the modules together in the proper way.

GETTING STARTED.

I love the CoCo - though I do not love Tandy for the TOTAL LACK OF SUPPORT for the CoCo 3 - but they did not have the assembly programmer in mind when they asked Microsoft to develop the ROMS. As a result, the firmware support is minimal, but we can still get started on our library.

KEY will use the routine at \$A000 (POLCAT) to get a character from the keyboard and return the value:

(Ed's Note: See table one)

So simple, but powerful and essential (note that a 16-BIT value for the character is returned on the parameter stack). EMIT is even simpler:

(Ed's Note: See table two)

Now we can design TYPE, which expects on the parameter stack the address of a string, followed by its length:

(Ed's Note: See table three)

Note that the incremented address and the decremented count are repeatedly put back on the parameter stack before EMIT is called. EMIT can do what it likes with the registers, provided that it respects the stacks.

Now a very short routine:

(Ed's Note: See table four)

What is the point of COUNT? Lets consider how the string 'ABCD' might be stored in memory. Basic and Forth (not C) do it as a counted string.

Assume our string is stored at address 1000. The memory contents will be:

```
1000 : 4
1001 : 65 (= 'A')
1002 : 66 (= 'B')
1003 : 67 (= 'C')
1004 : 68 (= 'D')
```

If then, COUNT is given 1000 on the parameter stack, it will return 1001 (the string address) with 4 (its length) on top. Now lets string [sic!] things

together, assuming that the value of 1000 is stored in a memory location called OUTPUT. We can code in our program:

(Ed's Note: See table five)

By this point, we are starting to get somewhere - and note that, while I've used structured assembly code (Forth style), it is very easy to convert to more conventional code. The general philosophy is what is important.

I intend to hold EXPECT over until next month, as it rather more complicated. I leave you at this point with an impression of just how 'right' the basic Forth tools are. Some of you might start thinking about more complex string operations, such as adding one string to the end of another.

Look back at the memory map for 'ABCD' and ask how you would join 'EFG' to then end of it. Say 'EFG' is a counted string and its address is held in a location called EXTRA. We can get its length with COUNT. What we need is an algorithm for finding the address of the first free location at the end of a counted string, like OUTPUT.

OUTPUT contains 1000, and COUNT converts this to 1001 and 4, which are returned on the parameter stack. Say we have a routine called ADD, which adds the top two values on the stack.

(Ed's Note: See table six)

Now, if we were to use ADD to add the 1001 and 4 together, we would get 1005, which is just the address we need for the first free byte after 'ABCD'. But we knew the answer, anyway. The important point is that, if we used COUNT and ADD on ANY counted string, we will ALWAYS get the correct answer:

(Ed's Note: See table seven)

Another very valuable, and simple, routine is SWAP, which swaps the top two values on the stack:

(Ed's Note: See table eight)

Now, if you could devise a routine (CMOVE) which moves a block of characters and expects three parameters on the stack (start, destination and length), we could join EXTRA to the end

of OUTPUT and get the new string 'ABCDEFG':

(Ed's Note: See table nine)

This code is, in fact, a crude form of Forth code. In Forth we would code:

(Ed's Note: See table ten)

Our code is crude for two reasons: it requires explicit use of the stacks and it uses more memory than the equivalent Forth code. But the modules are the same, and they are brilliantly useful (and general). Forth was devised in the School of Hard Knocks and what has emerged is something that really works well.

As exercises for what is coming, try to devise code for CMOVE and for -TRAILING, and think around the general logistics of getting a string into a program, with some scope for editing along the way (you need, for instance, to be able to use a backspace).

Here's to Forth and its concepts of structured programming!

NEWS NEWS NEWS NEWS NEWS NEWS NEWS NEWS NEWS NEWS NEWS

New Price For CoCoOz

Its not often that costs reduce, but we're pleased to announce that due to the reduction in some of the costs associated with the production of CoCoOz, we are able to hold last month's special price of \$99.95 for a 12 month subscription.

Unfortunately, single item prices will remain the same, although if you get CoCoOz billed monthly, you will be charged at the reduced rate of \$14.99 from now on.

Now you have even more reason to subscribe to CoCoOz - the best way to get information and programs for your Tandy Colour Computer!!!

Tandy Develops First Erasable Compact Disk (CD ROM)

Tandy Chairman John Roach has announced the development of the Thor-CD, on which music, video or computer data can be repeatedly recorded and erased.

The Thor-CD will require a new generation of CD players capable of recording and erasing.

Tandy will speed the production of the new players by licencing the technology to big consumer electronics and computer manufacturers.

Tandy spokesman Mr Ed Jug said that it would take 18 to 24 months for the new players to reach the market.

MPD Releases Sculptor 1.16 And Reduces The Price!
Availability of version 1.16 of Sculptor 4GL has been announced by MPD Australia.

As well as the addition of a full Structured Query Language and increased filesize limits, the version includes two major portability enhancements.

With the help of the Sculptor Development System, Sculptor applications can now be compiled on one system.

It also provides data and index file binary compatibility and allows Sculptor databases to be copied from one environment to another without re-indexing, by using System-independent IEEE standard data formats.

And that's not all. Sculptor's

file sizes have even been increased. The maximum data file size is 17 million records of up to 32K bytes in length, which makes a maximum length of 500,000 Megabytes and maximum index file size of 16,000 Megabytes.

Compatible Sculptor versions are available for over 100 machines ranging from micros to mainframes, and operating systems including UNIX, XENIX, AIX, UNOS, VMS, ULTRIX, OS9, UNIFLEX, QNX and MS-DOS.

Now MPD has decided to reduce the price of the full Sculptor development System for 6809 systems, (including the Tandy CoCo 3) to \$249.95 including tax.

The same Sculptor package for IBM systems costs well over \$1000, so the new price for CoCo's is an especially attractive offer.

OS9

COCO-3 L-II vr 2.00.01
patches/bugs/etc as of 8
July 1987: by K Darling,
K Meyers.

Much of this is excerpted from
the book "Inside OS9 Level II"
from FHL.

Note: There might also be bugs
in this file <grin>, so ask if
something doesn't seem right to
you. Thanks! Don't forget to
reverify the CRC's.

COCO3 BUG FIXES AND PATCHES

submitted by Jeff Larson

SOFTWARE

PROBLEM: Bad F\$Call error code
return.
MODULE: Clock

Somebody left the '#' sign off
of a LDB \$E\$illegal Argument

Offset Old New
0191 D6 C6

PROBLEM: Queues sorted wrong.
MODULE: IOMan

Change first made in L-I 2.0
to insert processes in I/O
queues according to priority.
Used wrong register. Not
crucial.

Offset Old New
09A6 10 12
09A7 A3 E1

PROBLEM: Non-efficient use of
screen memory.
MODULE: GrfDrv

Opening a 40 column screen
should use the last 2K of an 8K
screen block if it's free for
use. However, apparently a bad
Def was used in MW's source code
and GrfDrv cannot match an
internal code as a 40 column
screen.

Offset Old New
033A 84 86

PROBLEM: Cannot have more than
one VIRQ device at a time.
MODULE: IOMan

While Clock gets the size of
the VIRQ table from the Init
module (as it should), IOMan has
a different size hard-coded in.

Clock inserts the first entry at
the front of the VIRQ table, but
the next call starts searching
at the end of the table ...
which turns out to usually be
the header of the first module
in your bootfile.

Symptoms: if your disk drive
is still going (waiting for
motor time-out), you cannot Iniz
a ModPak device. Or, if you Iniz
a ModPak device, your drives
will never shut off.

IOMan really should be fixed,
but easiest patch is to the INIT
Module, to change the number of
IRQ/VIRQ devices down from 15 to
say, 12.

Offset Old New
000C 0F 0C

PROBLEM: SS.Montr GetStt
possibly bad.
MODULE: CC310

Although the manual doesn't
mention it, CC310 also supports
getting the current monitor type
set by Montype. The value
(0,1,2) is returned in the X
register.

The code in CC310 should have
been a STD R\$X instead of STB
R\$X though.

Offset Old New
07D2 E7 ED

PROBLEM: SS.ScTyp returns wrong
value.
MODULE: GrfInt

This GetStt call should return
a screen type of 1 for 40 column
text screens.

Instead, it will wrongly
return a type of 2. Internal
comparison made using wrong
register.

Offset Old New
0A5B 81 C1

PROBLEM: CLEAR to End of Screen
code ignored.
MODULE: GrfDrv

L-II windows have a bug where
the Clear to End of Screen code
doesn't work on the next to
last line. They do some calcs to
see (after they've done a Clear-
to-End-of-Line) if there's a
need to clear more lines.

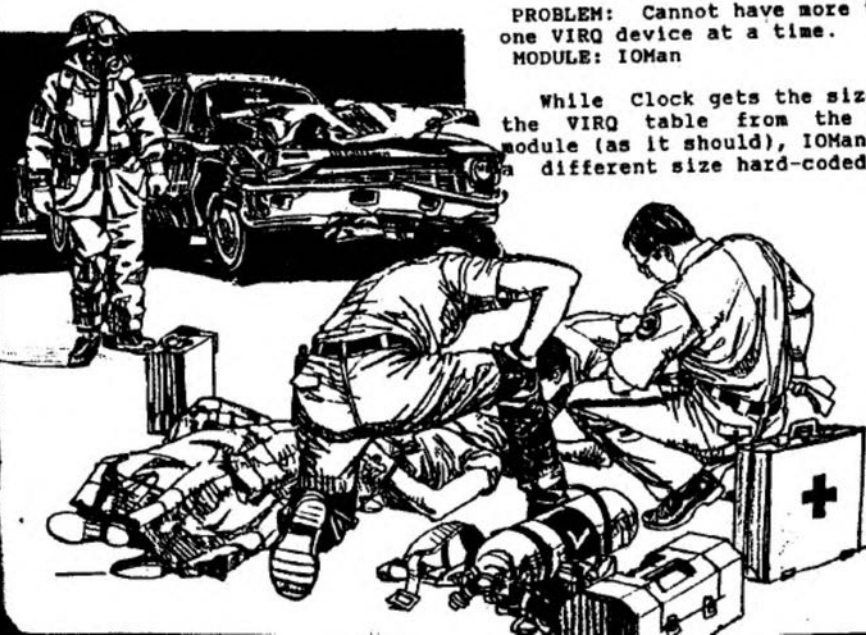
The bug is that they used the
wrong comparison operator, a BLE
(branch if less or equal). Kent
really hates it when they use
these <grin>. Anyway a quick
patch is to change it to a BMI.

Offset Old New
1417 2F 2B

Fun Patches:

You can disable the CRC
checking if you wish module
loads to go much faster.

The module header check is



still active. Patch is to OS9P1.
Use at own risk.

```
Offset Old New
05B7 CC 4F
05B8 00 5F
05B9 02 39
```

You can also patch the BOOT module to run at 6ms step rate. Combined with the no-CRC patch above, boots really fly.

```
Offset Old New
00C0 03 00
017C 13 10
```

PROBLEM: Command line crash possible.

Shell scans memory past input line if a second quote mark (") is missing, as:

```
format /d0 r "Boot Disk
(instead of:
format /d0 r "Boot Disk")
echo "hi
(instead of:
echo "hi")
```

Can be fixed if also looks for <return>. Will post my patch later. In the meantime, be careful to match up quote marks.

PROBLEM: At times, modules aren't unlinked by the Shell.

Shell won't unload a module if the name it was called in by doesn't match module name. Module then must be manually unlinked. Shell should read true name of module to be forked in, as otherwise the F\$UnLoad call might use the wrong name. No patch yet. Examples:

```
/d0/cmds/bob
(tries to unlink "/d0/cmds/bob")

../shellfile
(same bug as above)
```

```
commandfilename
(where it's real name in the module might be "command". So it can't find it.)
```

MANUAL

SUBJECT: Creating GFX Windows
SECTION: BASIC09 Reference
PAGE: 9-37

Here they tell you how to create a graphics window, but show the "merge sys/stdfonts >/v1" AFTER the vcreate. Nope. All you get is dots on the screen.

You must merge stdfonts BEFORE opening any gfx windows, unless you care to do a FONT command to that window after merging. They had it correctly on the page before (9-35) about merging so that you can type later.

SUBJECT: F\$ALARM
SECTION: OS9 Tech Reference
PAGE: 8-66

F\$Alarm is a user call, too. And they left out how to use it. This call has several variations, which have to do

D = 0000 : clear the alarm setting

X = ptr to 5-byte time packet (YYMMDDHHMM)

D = 0001 : cause the CC3IO "beep" for 16 seconds after the time packet sent matches system time.

X = ptr to spot for time packet return

D = 0002

X < current alarm setting packet returned at (X)

D < current proc id and signal pending in A:B

X = ptr to 5-byte time packet (YYMMDDHHMM)

A = proc id to signal on time match

B = signal to send on time match

SUBJECT: F\$FORK, F\$LINK,
F\$LOAD, I\$CREATE, I\$MAKDIR,
I\$OPEN
SECTION: OS9 Tech Reference
PAGE: 8-16, 8-23, 8-26, 8-49,
8-56, 8-58

On all of these, after the call, X should be pointing to the \$0D (carriage return) at the end of the string.

SUBJECT: F\$FORK
SECTION: OS9 Tech Reference
PAGE: 8-15

The Y register contains the parameter area size in BYTES, not in pages.

SUBJECT: F\$TIME
SECTION: OS9 Tech Reference
PAGE: 8-40

To be exact, on exit X points to the time packet returned to the area at (X) that you had originally passed for the call.

SUBJECT: I\$DELETE
SECTION: OS9 Tech Reference
PAGE: 8-50

On return, X should be pointing to the beginning of "MEMO".

SUBJECT: F\$DATLOG
SECTION: OS9 Tech Reference
PAGE: 8-78

Actually, not a bad example, but only if you're running on a machine with 4K blocks. On the CoCo-3, Output X = \$4329. The actual code just multiplies B*\$2000 and adds it to X.

with setting time variables that the Clock module will try to match once a second. You may clear the alarm setting, read it, or set it for one of two exclusive actions. It depends upon the A:B (D) register as to what action F\$Alarm takes:

CLEAR

SET BELL ALARM

IN-USE CHECK

SET SIGNAL ALARM

SUBJECT: SS.RDY
SECTION: OS9 Tech Reference
PAGE: 8-113

On devices that support it, the B register will return the number of characters that are ready to be read. Both CC3IO and ACIAPAK support this feature.

SUBJECT: SS.MOUSE
SECTION: OS9 Tech Reference
PAGE: 8-125 on

Somebody forgot the two reserved bytes between Pt.ToTm and Pt.TTTo. As printed, offsets after ToTm are off by two. So insert a "rmb 2 - reserved" after Pt.ToTm. Ignore the system use note at the end after Pt.Siz.

SUBJECT: SS.DSCRN
SECTION: OS9 Tech Reference
PAGE: 8-143

Also, if you specify screen number zero (Y=0000), then you will return to the normal VDG (32x16) screen. This should be done before a SS.F\$Scrn if you wish to return to a text screen.

SUBJECT: Example Program
SECTION: Basic09
PAGE: 9-40

OPEN call to new window should have UPJATE, not WRITE mode. Otherwise, the GET call at the end never sees your key. GET call should use \$path, not \$1 to get key from new window.

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VISA

DR COCO

THE DOCTOR IS IN!

Dear Dr CoCo,

I wonder if you can help me find a solution to a heavy problem I'm faced with, concerning the CoCo 3 and the ever helpful 'Shift-lock' project I did on the CoCo 2 with the help of 'Hardware Project' by David Geoffroy and Norman Racine, from the Australian Rainbow, December 1985 magazine.

The problem is this: when I did the project on the CoCo 3, the 'shift-lock' worked fine, except when I press the 'shift-0' combination to get lower-case ... nothing happens. It stays on the upper-case mode. Everything else works with the 'Shift-lock' in the 'on' position.

If I press the back-space arrow, I lose the whole line or paragraph, but no lower case characters when I press the shift-0 combination.

Can you tell me why it works on the CoCo 2 and not on the CoCo 3? Is the CoCo 3 keyboard wiring different to that of the CoCo 2's keyboard? I have a CoCo 2 keyboard wiring diagram, but none for the CoCo 3's.

Can anyone out there in CoCo-Land help me please? I miss it, especially when I'm using Telewriter-64.

Frank Buttigieg,
Werribee, VIC.

Frank,

I have looked through my own (very little) resources and haven't found any reason (so far) why the shift-lock project will not work with your CoCo 3. However, I do know that you are not the only one with this dilemma. One user down at Coffs Harbour, I'm told, gets rubbish on his screen whenever he tries to print lower-case letters.

As soon as I get a service manual for the CoCo 3, the matter will be looked into.

Dear Dr CoCo,

I have two questions.

Firstly, a few months ago, I received, from you, in return for a tape that I had sent to you with a program on it, my tape. Plus a copy of CoCoOz September 1984. This tape had a program on it called "Garfield". I presume it is supposed to draw a picture of Garfield to a printer, however, my DMP-130 prints nothing after the heading "From the Desk of Jenny Dutton".

Secondly, the system I am using is a CoCo 3, with an FD-500 disk drive, a Tandy V1275 modem and a DMP-130 printer. Why is it that sometimes, for no apparent reason, my computer will simply cease to operate? Either the disk stops loading halfway

through a program causing everything to simply freeze up, or the same thing happens to the computer in the middle of a program? Is the 'drop test' required or should I take it to a Tandy store to get it checked out?

By the way, I thoroughly enjoy both your magazines and fully intend to subscribe.

Fred Remin,
Arana Hills, Qld

Fred,

"Garfield", page 12 September 1984 CoCo Magazine, is designed to print out on a C-Itch printer ONLY. That's the reason why your DMP-130 'does nothing' after printing the heading.

As for your second query, I would try the drop test, which involves basically 'slamming' your CoCo 3 on a table to settle the GIME chip inside the computer. Although it sounds like it goes much deeper than that. Depending upon your warranty (ie, has it expired yet), I would open up your CoCo 3 and give it the 'thumb press' trick, or, in technical terms, press the GIME chip using your thumb.

If your warranty has NOT expired, then giving it to your Tandy store for repairs sounds like a good idea. After all, it IS still part of warranty, right?

Dear Dr CoCo,

Could you please help me with "Calendar", by David Kemp, published in January 1988 Softgold on page 25. I get an ?OD error in line 60, and I have checked the program over for errors. I have also checked out line 5800 where MT\$ is used, but this checks out okay.

If I delete line 60, I can get the program to run and have the calendar print to the printer. The only catch is that I can't get the calendar months printed.

Hoping you can help.
Arthur Williams,
Harrington, NSW

Arthur,

An ?OD error implies that the computer is trying to read data that it can't find. Remember, for every READ statement, you must have, somewhere in the program, DATA statements.

In your case, line 32300 are your DATA statements. If you check it out, you might find that you have missed out on a comma, or you may have missed out the entire line.

If you have a computer problem,
let the doctor take a look at it!



you do that? Simple. Type 'BACKUPO' after a cold start and do as the computer tells you to do. You can back up a disk in six passes, at the most, after doing a cold start.

Dear Dr CoCo,

I am writing concerning my letter published in the 'Dr CoCo' section of the October 1987 issue. You had helped me by saying that you would publish the program "Shorthand Key Utility" in the basic machine-language version in the November issue. It was not published. It wasn't in the December or January issue either.

Where is it?

Also, with Nick's and anyone else's problem with the program "Gunfight", the solution to get rid of the ?OD error is to do a PCLEARO. For disk users that is POKE 25,14:POKE26,1:POKE3584,0:NEW and for tape it is POKE25,6:NEW. Do this BEFORE loading the program.

I am having problems with 2 programs which I am unsure about. These programs are "Rambo" in the August 1987 issue of Softgold, on page 41, and "Paul Simon", in the October issue of Softgold, page 37.

They are both the same sort of program. The Rambo program was half a screen of total scribble and Paul Simon was fine but he was all over the place. I have a 64K DECBC computer. I have checked these programs over and over and have found no errors. Please help!!

Gavin Stok
Nth Blackburn, VIC

Gavin,

Sorry about that! The program went missing, as did the other half of my column, and now finds itself in the local dump ...

Anyway, the program you want follows this article.

Ta muchly for that information regarding "Gunfight" - that will answer some problems that people are having.

The two programs you mention - "Rambo" and "Paul Simon" - have actually crashed, due to a bad batch of disks we had recently. If you did get it on tape or disk, send it back, and we'll replace it for you. By the way, you don't pay for the postage in such circumstances. Post it to:

Freeport 5,
PO Box 1742,
Southport, Qld, 4215

Dear Dr CoCo,

I am a fairly new user of the CoCo 2, and I have quite a few ideas. Most of these ideas sometimes take a while to be put into action.

I was recently reading through Aussie CoCo September issue and saw the article by Gordon Thurston regarding the "fastbackup" program.

I was wondering if this would work on a CoCo 2 with 64K. I have had a look at the program (on paper) and I think that there shouldn't be a problem in converting it to run on a 64K CoCo.

If this is absolutely not possible, I was wondering if you might be able to send me a program to suit me and my system, currently using one drive and soon with two.

I am currently making backups with another type of computer and it doesn't always work first go - usually the 6th or 7th go.

I hope you can help.

Jason Pigdon,
Coldstream, VIC

Jason,

In a few short words: No, that program cannot be converted to run on a 64K CoCo, simply because the program addresses the CoCo 3, and not the CoCo 2.

As for your 6th or 7th attempt on another persons system: I think perhaps his disk heads are either out of alignment or need a cleaning.

Presently the best thing you can do is to backup your disks from your single drive system. How do

AT A GLANCE

REVIEWS
BY
ALEX
HARTMANN

LYRA hits a high note

Lyra has got to be the best musical-orientated program I've come across yet!

First there was Music, now known as Music+. The limitation with that program was that you had to enter the note values in the way of a number, and not a note.

Then, out of the box came Musica, even more simple with its direct music-note entry. The only limitation with Musica was that you could only play it in stereo, using a stereo pack and not a MIDI interface.

Now along comes Lyra, complete with 8 voices, option to include MIDI interfaces to play your music with, and completely joystick (or mouse) controlled. What the mouse did for CoCoMax, the mouse will do again for Lyra.

Everything is joystick controlled, from choosing your notes to choosing whether or not to turn off the filter, describing the instruments to play with, setting the volume, appending instruments, appending other musical notes, copying and deleting of musical notes, and a lot more!!

The range of notes you can use are presented at the bottom of the screen, with pull down menus at the top.

I thoroughly recommend this for the music buff (like me - therefore I recommend it to myself) and anyone who is slightly interested in creating more music with their CoCo. This, incidentally, is also compatible with the CoCo 3.

There is also a program, I hear, that lets you convert Musica/Musica 2 files over to Lyra format, which is another good reason to get Lyra.

Lyra:
Source: Blaxland Computer Services
Price: \$110.00
Rating: ****

THEXDER - The graphics are great!

If you like shoot-em up games in an arcade-quality environment, with plenty of colour and diverse noises, then you'll be interested in one of the latest releases from Tandy.

Thexder comes in ROM-pak form, the first that I know of for the CoCo 3.

The authors of Thexder are the same people who gave you "Kings Quest" 1, 2, and 3, as well as "Lounge Lizard Larry".

The idea of Thexder is to battle through 15 levels of weird creatures to eventually get to the main computer to 'let the smoke out of the chips', or, blow it up.

The robot itself is something like a transformer (something for the littles!), converting

from a human-like robot to a smaller fighter jet, to get through some of the small spots that you might encounter.

Overall, I enjoyed it a lot and would recommend it to those kamakasi (the kind of game that goes on nearly forever), science fiction game freaks who enjoy a good challenge.

I agree with Charlie (from Decro Electronics, the man nice enough to lend me the pack) who said, regarding graphics "it's probably the best graphics-orientated game I have seen to date."

Thexder:
Source: Tandy
Catalog Nr: 26-3072
Price: \$59.95
Rating: ****

TANDY Mouse is right on the button

Remember the black mouse that Tandy put out a few years ago? Well, there's a new mouse on the block, with the added feature of a second button, which makes it totally compatible with the CoCo 3.

The colour of the mouse follows the trend that Tandy

took with the colour of the CoCo 2 and 3, namely an 'off-white', or light-cream colour.

Weighing only 200 grams, it makes a neat 'little extra' for those fortunate peoples who have everything else.

Or, something extra for those who like mice.

Tandy Mouse:
Source: Tandy
Catalog Nr: 26-3125
Price: \$99.95
Rating: ***

Look out for BOUNCING BOULDERS

Bouncing Boulders is another fine quality game from Diecom, the people who bought you, Paper Route, Gantelet, Flame of Caliduril, just to name a few.

The idea, essentially, is to get all the gems without being crushed by any of the rocks looming overhead.

Some amount of strategy and skill is needed until one can successfully get around the obstacles.

The only real problem I saw in the game is that the little man running around the screen is extremely fast, and the joystick control (from the software point

of view) has to be too exact (ie, to go up, the joystick has to be at an exact 90 degree angle upwards). Frustrating, but one of the points that would make me think twice about buying the game.

Quite apart from that small technicality, the game itself can be played for hours on end (been there, done that), without getting bored.

Bouncing Boulders.
Source: Blaxland Computer Services
Price: \$49.95
Rating: **

MARTHA'S TRADING POST

Well possums!! I've just been doing a few turns on my broomstick and I couldn't help but notice all that electronic trash you mere mortals seem to be hanging on to. Just like a lot of little bower birds, aren't we!! Ummmm!!
If any of you darling little possums would like to swap that junk for cash then why not place your ad here.

We'll run your ad for three months - and remember possums, let us know if your junk sells so we can adjust our records - and you never know, you just might be able to make enough money to purchase a super turbo charged "stick" like mine.

And possums - do it - now!
Martha.

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Malcolm Patrick on (086) 457-837.

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Phone Mrs. L. Moss on (075) 364 343.

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Best offer: Single/double drive and controller for CoCo 2.

Phone Ken Sellwood on (07) 848-1204.

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(apr '88)

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Conf '88 is at Koonjewarre on the Gold Coast of Queensland. The dates are 1st and 2nd October - that is, during the October school holidays.

Expo '88 will still be on at this time, so you can come up for Conf '88 and then see Expo '88.

Despite Expo '88, we've managed to hold prices to the same level as last year - quite a feat given the accommodation price rises during Expo in Queensland.

The Program:

This year, the theme is "Computers in the Family", so we're encouraging you to involve your family in the weekend.

Apart from the education themes, we'll have activities for the children, and something also for those who would prefer less computer involvement.

Koonjewarre offers some beautiful bush walks and a unique gathering of broad varieties of animal life for you to discover.

On the tutorial front, we'll have tutorials on all the usual subject areas covering both the Tandy CoCo and the MS DOS worlds.

Subjects such as OS 9 will be covered in detail, as will computer communications, Basic, Advanced Basic, Pascal, C, Forth and much more.

There'll be the usual presentation dinner on the Saturday night where the winners of the prizes in the various competition categories will be announced.

And finally, there'll be an opportunity to renew friendships or make new ones; to meet some of the authors from our magazines; and to find the answer to those problems you've been experiencing all year.

Bargains!

Traditionally, advertisers from our magazines use Conf to move stock - so Conf '88 is the place to find the bargains! Bring some spending money!

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Accommodation is in camp style rooms. Usually, there are about 18 beds to a room, but there are a few family rooms for early bookings.

Last year, those who shared the large rooms had a ball!

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You may pay the total price when booking, or pay a deposit of \$20 and pay the rest off by 7th September, 1988.

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 TARA DEBBIE DORFIELD 074 85 3177
 TOOWOOMBA LEN GOSPELWISKI 078 35 8204
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 PORT MACDONALD ROB DALZIEL 08 366 1647
 SEACONCHE HTS GLENN DAVIS 08 296 7477
 FORT LINCOLN BILL DEARMAN 086 82 2365
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 MORVELL JEFF SHEEN 051 33 0906
 SHEPPARTON ROSS FARRAR 058 25 1007
 SKYTESDALE TONY PATTERSON 053 42 8515
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 KALGOORLIE TERRY BURNETT 090 21 9212

CANADA - CoCo:
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 Toronto Franz Lichtenberg 416 845 2689

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 BRISBANE NON-SMOKERS JOHN FOXON 07 208 7820

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MC-10 CONTACTS:
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 SYDNEY GRAHAM POLLOCK 02 603 5028

TARDY 1000 / MS DOS:
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QLD:
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300 BAND BULLETIN BOARDS
 SYDNEY:
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 TARDY ACCESS 02 835 8371
 THE COCOCONNECTION 02 618 3591

VIDEOTEX SYSTEMS:
 VIATEL 01255
 MOUTEX 059 42 5520
 VTX 4000 03 741 3295

TARDY INFO ON VIATEL:
 GOLDLINK VIATEL *942#
 TOWER CODE VIATEL *64265#
 TARDY VIATEL *64261#

SOME TARDY USSES ON VIATEL:
 ALLAN BEALE 720353300
 FRED BISSELLING 648232930
 JACK FRICKER 726263690
 JOHN GRICERBY 945972030
 STUART HALL 929765790
 BOB KERRY 835122050
 JEFF LARSEN 707471270
 G LEVIS 954811900
 IAIN MACLEOD 914821390
 CHRIS MAGLE 839523390
 RICHARD PANKHURST 280717870
 ROSS PRATT 640230690
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