

For your  
TANDY Computer  
and IBM PC

\$3.75

NOVEMBER, 1986  
Vol 3, No. 3

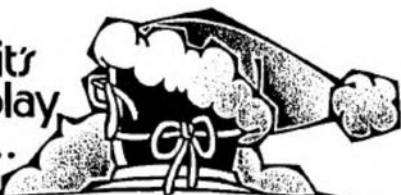
Incorporating



AUSTRALIAN

# GoGo

When it's  
time to play  
Santa...



**BAYNE & TREMBATH**  
**CHRISTMAS SPECIAL**  
**CoCo3+DRIVE 0**  
**\$ 820**

CALL NOW!!!  
Ask for Bob Parkinson



SPECIAL CLOSES 24/12/86  
Sorry, this special price applies  
ONLY to sales of the CoCo3 + DRIVE 0

3 Boneo Rd., Rosebud, Victoria 3940  
Ph: (059) 88 8288. A/H: (059) 85 4947

### **MKI SERIAL/PARALLEL PRINTER INTERFACE**

- Connect COCO 1, 2 or 3 to any PARALLEL PRINTER eg: EPSON, GEMINI, BMC, CP 80, TANDY
  - EXTRA SERIAL PORT for MODEM no need to UNPLUG CABLES.
  - INCLUDES all CABLES and Connectors
  - SIX BAUD RATES: 300, 600, 1200, 2400, 4800, 9600.
  - FASTER PRINTING for SCREEN DUMPS
  - Power Pack required for Printers not supplying power at pin 18 on on Printer connector eg: Epson, BMC
- ONLY : \$ 110.00 (includes postage)  
add \$9.00 for Power Pack if required.

### **VDT VIDEO DRIVER**

- Connect to a Color or Monochrome Composite Video Monitor
  - Solderless Installation.
  - Includes Sound Output.
- only: \$35.00      S.A.G. FIALA  
Available from: P.O. BOX 46.  
PHONE: 02-843172      THORNLEIGH. 2120

SEASON'S GREETINGS MERRY CHRISTMAS JOYOUS NOEL PEACE ON EARTH HALLELUJAH  
HAPPY HOLIDAYS  
MERRY CHRISTMAS HALLELUJAH

# COMPUTER HUT SOFTWARE CHRISTMAS SPECIALS

64K CoCo \$349

includes \$100 voucher for software  
purchased directly from us.

64K Upgrade Kits - suit most CoCos \$45

T1000 (128K) with Green screen monitor \$1499

ANY 5 16K CoCo Games for \$100

Note: Above specials not available from our Dealers.

**VIA TEL** No. \*64262#

We Accept:- BANKCARD, MASTERCARD, VISACARD  
21 William St., BOWEN. QLD. 4805 Phone 077-86-2220

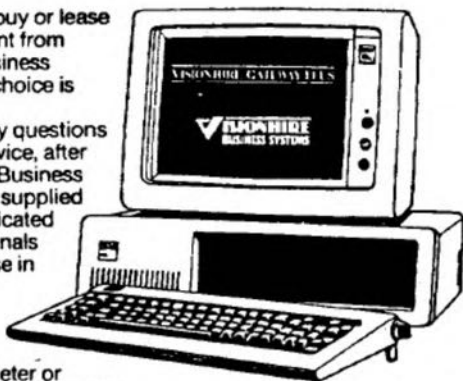
# VIDEOTEX EQUIPMENT SOLUTIONS

Anyone with a telephone can access Videotex and Visionhire Business Systems will tailor the hardware and software to suit your needs, ranging from an adaptor for only \$18.00 per month up to IBM's PC of the year, the AT. Only the latest equipment from famous brands like IBM, Apple, Commodore, Tandata and Sony is used, all backed by Visioncare's Australia wide full service network.

You can rent, buy or lease your equipment from Visionhire Business Systems, the choice is yours.

If you have any questions just ask for advice, after all, Visionhire Business Systems have supplied 75% of all dedicated videotex terminals currently in use in Australia.

For friendly advice ring Will Ballschmieter or Don Sanderson on 52 5723.



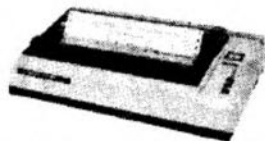
**VISIONHIRE  
BUSINESS SYSTEMS**  
A Division of Visionhire Australia Pty Ltd

36 Brookes Street, Bowen Hills

CPA - 80 (S) \$522.96

CPB - 80 (S) \$554.38

**PERIPHERAL PRINTERS  
IDEAL FOR CO-CO**



- 100 CPS CPA - 80 (S) ● 130 CPS CPB - 80 (S)
- TRACTOR/FRICTION PAPER FEEDER STD.
- WITH SERIAL RS 232 C/CURRENT LOOP.
- DATA TRANSFER RATE - 75, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2400 AND 4800 B.P.S. - PROGRAMMABLE.
- SYNCHRONIZATION - ASYNCHRONOUS
- HANDSHAKING - FLAG CONTROL X-ON/X-OFF PROTOCOL.
- LOGIC LEVEL - EIA LEVEL (RS 232 C) 20ma CURRENT LOOP.
- SOCKET PROVISION FOR USER FITTED 4K BUFFER (USES 6116)
- SERVICE MANUALS AND SPARE PARTS AVAILABLE.

**SPECIAL OFFER — WHILE STOCKS LAST**

**● DUAL DISC SYSTEM FOR CO-CO**

DUAL SINGLE SIDED DOUBLE DENSITY DISC DRIVES.  
CONTROLLER CABLES.

CASE POWER SUPPLY AND MANUALS DOS & ROM \$499 inc. Tax

**● SINGLE DRIVE SYSTEM FOR CO-CO**

ONE DOUBLE SIDED DISC DRIVE (CASE HAS SPACE  
FOR 2 DRIVES) OTHERWISE AS ABOVE

\$449 inc. Tax

**● DISKETTE SPECIAL**

DS DD GTR BLK PK25  
CLUB OR SCHOOL BUY

\$2.14 ea inc. Tax

200 \$1.95 ea inc. Tax

800 \$1.85 ea inc. Tax

**PRICES VALID WHILE STOCKS LAST — OTHERWISE  
SUBJECT TO EXCHANGE VARIATION.**

**energy  
CONTROL**

ENERGY CONTROL PTY. LTD.  
P.O. BOX 6902, GOODNA, QLD. 4300  
BRISBANE, AUSTRALIA  
PHONE (07) 288 2455  
TELEX AA 43778 ENECON  
PHONE WELLINGTON N.Z. (64) 843 499  
W.A. (09) 325 5722

## STOP GLARE!

Ever tried to de-bug your screen of Glare and Reflection! Can't, can you? TELEMAT Anti-Glare sprays for Computer and T.V. screens can. Developed and manufactured in Australia to combat this very problem. It will reduce Reflection and Glare by up to 94% and will also solve the problems of eye strain and headaches. TELEMAT is available in VDU monitor Amber, Green, Neutral and TV Neutral. It is applied in a spray form and application is carried out by trained technicians. The coating has an indefinite life span and is guaranteed for 3 years. The coating is very durable and will not show fingerprints. Average coating time is approximately 10 to 15 minutes per unit. It can change a normal black and white VDU into an Amber or Green unit. To maintain the coating, we use as part of the process, and recommend, TELEMAT ANTI-STATIC POLISH. The coating has no detrimental effect on the screen or unit and can be removed very quickly if required. This form of Anti-Glare treatment is being used throughout Australia by large corporations right through to the home user. The product has been independently tested by the Queensland Institute of Technology and these results are available on request.

For more detailed information write,  
**TELEMAT Anti-Glare Pty. Ltd.,**  
3 Fortril Drive, Springwood,  
Qld. 4127. or Phone: (07) 208 3557



**GOLOLINK  
COM.  
STATION  
642 on VIATEL**

## DISTRIBUTORS

Distributors are required in all states throughout Australia for a recently developed product designed to combat the problems of reflection and glare on Computer and Television screens. This form of anti-glare is a proven product and is manufactured in Australia. The low initial purchase price for the distributorship and the extremely attractive returns make this a very viable proposition to an individual or company. There is unlimited sales potential in the Australian market. Initial assistance in setting-up is provided and on-going aid etc assured.

For further details write to **TELEMAT Anti-Glare Pty. Ltd.**  
3 Fortril Drive, Springwood, Qld. 4127  
Phone (07) 208 3557 or N.S.W. (065) 54 1441



# CONTENTS

## Who is this magazine for?

This magazine is for users of Tandy Colour Computers, MC-10 computers, Model 100 and 200 users, T1000 and T2000 users.

I.B.M. P.C. and I.B.M. clone users will also be able to use the T1000 programmes and articles in the "softgold" section.

## Who provides the material for this magazine?

90% of the material to be found in this magazine is provided by people who just want to share their knowledge with you.

## The Crew

**Publishers** Graham & Annette Morphet  
**Managing Editor** Graham Morphet  
**Accounts** Annette Morphet  
**Assistant Editor** Sonya Young  
**Advertising**  
**Art & Internal Layouts** Jim Bentick  
**Sub Editors**

**Assembly Language:** Kevin Mischewski  
**MC-10:** Jim Rogers  
**softgold:** Barry Cawley  
**Forth:** John Poxon  
**OS-9:** Jack Fricker  
**Special Thanks to**  
Brian Dougan, Paul Humphreys,  
Alex Hartmann, Michael Horn,  
Darcy O'Toole, Martha Gritwhistle,  
Geoff Fiala, John Redmond  
and Mike Turk.

All programs in this issue are available on tape or disk. See "Goldsoft" page for details of availability and cost.  
Phones: (075) 51 0577 Voice

**Deadlines:**  
7th of the preceding month.  
**Printed by:**

Australian Rainbow Magazine  
P.O. Box 1742  
Southport, Qld. 4215.

Registered Publication QBG 4009.

This material is COPYRIGHT. Magazine owners may maintain a copy of each program plus two backups, but may NOT provide others with copies of this magazine in ANY form or media.

## CLUB ROOM

Letters .....	P 6
MiCo News .....	by Jim Rogers P 7
Doctor CoCo .....	P 7
Help:- POSTCODE .....	by Gordon Levis P 8
Scoreboard .....	by Michael Horne P 9
CoCoConnection .....	P 9
Caught in the Act .....	P 10
Goldlink .....	P 15

## PROGRAMS

VIA BASIC .....	by Richard Rogers P 16
GRAPHICS .....	by Andrew Simpson P 18
RETIRE .....	by Brian Grey P 21
LETTERHEAD .....	by Johanna Vagg P 22
RECWAVE .....	by Richard W. Cain P 23
FIRE .....	by Darren Yates P 23
GRAFPLLOT .....	by Michael Hartmann P 24
LABELMAKER .....	by Michael Hartmann P 25
DMP-110 .....	by Brian Bere-Streeter P 26
OYBZ .....	by Mal McLaughlan P 26
Correction .....	P 26
PRINTEX4 .....	by Keith Echberg P 27
BIN-BAS .....	by D. W. Thurbon P 27
FILE DISPLAY .....	by K. Paterson P 28
MIRCO FILES .....	by Grahame Pollock P 29
LOG-MATH .....	by L. W. Thurbon P 30
FORMFILL .....	by D. Bourne P 31
BIRD REGISTER .....	by Ron Simpkin P 32
CoCo 3 GRAFIX .....	by D. Morton P 33
CoCo 3 COMPETITION .....	P 34
CoCo MUSIC .....	by David Sitsky P 39
ORCHESTRA .....	by Michael Monck P 41
MUSIC .....	by Mal McLaughlan P 47
MICO MUSIS .....	by Brett Ross P 49
DEC-HEX .....	by Jim Simpson P 50
TYPING TEACHER .....	by Grahame Pollock P 51
HI-RES DRAW .....	by Scott Ferro P 51
EDUCATION .....	by Darren Yates P 52
CHEMISTRY .....	by Darren Yates P 53
OHMS .....	by Jason Krah P 53
ROBOT WAR .....	P 54
TABLES .....	by Jason Krah P 54
BIG MATHS .....	by John Nyveld P 55

## CLASS OF '86

VARIATIONS ON PYE .....	by Michael Bell P 56
QUADSOLVE .....	by Mal McLaughlan P 57
SPELLING QUOTA .....	by Johanna Vagg P 59

## softgold

PRIME NUMBERS .....	by Bob Delbourgo P 61
DISK ORGANISER .....	by Barry Cawley P 62
NUMBER SORT .....	by Barry Cawley P 67

# clubroom

CoCo 3

Rarely has any product been so anticipated, so eagerly sort and so dramatically successful as the CoCo 3 in its initial release!

Tuesday 7th October 1986 dawned clear and fine in Sydney, and as I made my way to Tandy's Head Office in Mt Druitt, I couldn't help but speculate on how the computer would really be received by the public.

I wanted to be there specifically to see the first computers roll out the Warehouse door, and I wasn't disappointed... by 9.30am they were on their way!

I attended a meeting of the Sydney users of Goldlink that evening (more on that later) and already one of those people had his computer!

The next day, all hell broke loose! Not enough computers to go around!

The first batch had been flown out and were meant to be released just in front of a batch on the water, but the ones on the water got held up... so no backup stock was to be available for the best part of a month.

Many stores just didn't have enough to go around, and by Thursday there were only a few lonely computers left in the occasional store.

Then the problems started to rear their heads, & of course we were at the centre of that on Viatel! Messages & phone calls were flying back & forth... "This DOS doesn't work", "My computer's blown up", "The screen looks funny on my monitor", "Help!".

The noise of the problems started to quieten as people discovered that what they had was not a straight CoCo 2, but a computer capable of operating as a CoCo 2, provided the software was written within the frame work provided by Tandy 5 or 6 years ago!

Some hardware problems remain at the time of writing. The major one is the power up screen. Sometimes the CoCo 3 will power up with a corrupted screen. This can normally be corrected by either a second power up, or by resetting the computer.

Tandy have however, discovered the cause of this problem, & will take steps to attend to the problem in the near future.

Some computers did indeed not work when they were taken from the box... or soon after, but again, considering the total age of this design, statistically the number is insignificant and will fall off as Tandy gets to understand what is essentially quite a different machine to the CoCo 2.

Currently, out of the thousands of programs which have been written for the CoCo, the following programs do not work on the CoCo 3 in any mode:

Micro - Illustrator	Dynacalc	Cyrus Chess
Kidwriter	F-16 Assault	Decathlon
Worlds of Flight	Pac Panic	CoCoMax
Electron	Super Voice	Sailor Man
Pen Pal	Draconian	Jet I
TUT	Color Panic	Cave Hunt
Alpha Search	Le Mans	Mr Dig
		Mc Paint

in addition, the early versions of OS 9 probably won't work, but the latest update does (Level 1 Version 2), so if you've been updating as Tandy releases the updates, you should be OK. (Good way to get the pirates eh?)

Some of the programs listed above are pace setters and you may feel that there is a great loss here, but in most cases we understand that either new versions or patches for existing versions will be available in time.

Some are having difficulties with Telewriter &/or VIP - we are not by the way - but the real issue is in any case, "which wordprocessor will we now use?", because the screen quality we now have on the CoCo 3 dictates that sooner or later we will want a wordprocessor which uses this screen.

At present, the only wordprocessor available in Australia which can utilise the native screens of the CoCo 3 is Stylograph - an OS-9 based wordprocessor - but to utilise the 80 column screen, you'll need Level II OS9 which won't be released till January!

But the new wordprocessors are coming - already "Color Scribe II" from Computerware in the USA is available there.

Color Scribe II uses the 80 column mode, & has justification, headers, footers and pagination. There are over 20 line editing commands such as insert, delete and etc.

Expect this package, if it comes to Australia to retail for \$90 - \$100.

Computerware in the US have also released "The Color Connection IV", a terminal program which utilises the 80 column mode; "The Magic of Zanth", an adventure with over 24 16 colour hi-res color animated screens, 4 voice music & sound, and speech when used with the Tandy Speech Pack; and "The Return of Junior's Revenge" - the arcade game with CoCo 3 graphics.

We've converted some CoCo 2 programs for the CoCo 3, & we've already received some fine work from Colin North, showing how the PALLETTE command works, and these are published this month to demonstrate just how simple conversion is, and how simple it is to get some very nice colors into your graphics.

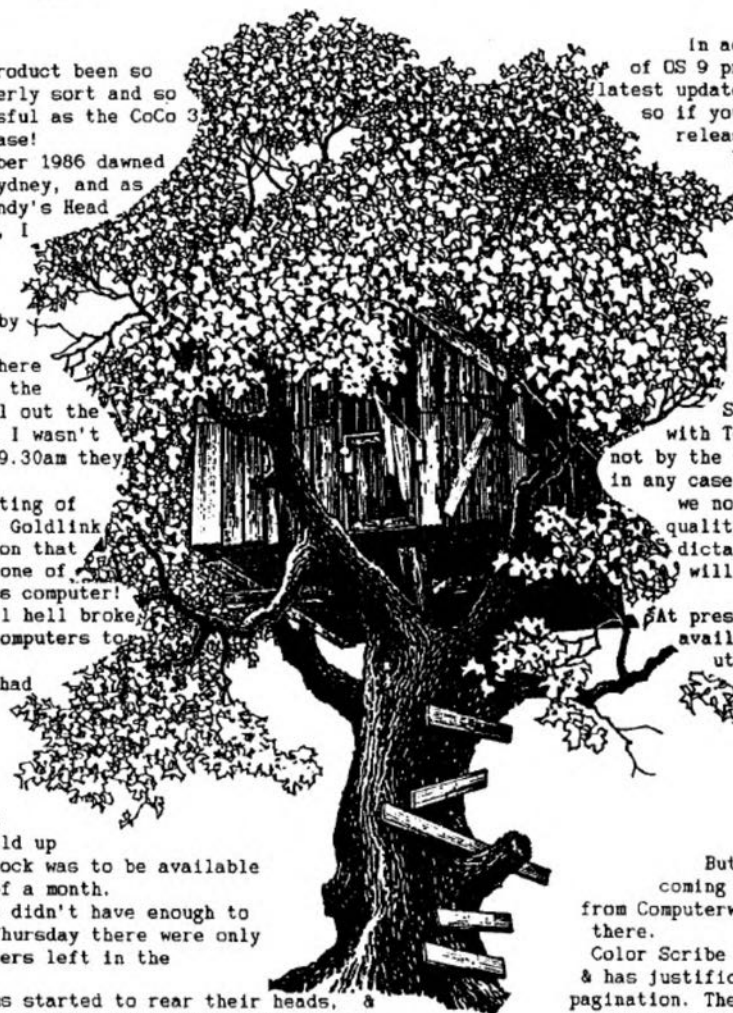
Finally, Ron Wright is releasing his CoCoTex Version 3 for this computer this month, & this represents probably the best value for money in any terminal package available today. It not only embodies the colour we have hitherto missed - which by the way looks as good as the dedicated terminals - but the program will allow you to download our software on Viatel, when we get that online.

CoCoTex V3 has a number of other features and we'll talk in detail about them next month.

CoCoConf

A number of people have taken the opportunity to let us know their feelings re CoCoConf '87, for which we thank them.

I'm warming to the concept of doing it in Sydney



## CLUB ROOM

at one of the Church campsites, where we can get accommodation & catering as part of the deal. I even looked at the Hydro Magestic in Medlow Bath, but it is not big enough!

### The Survey

Our Survey this year showed a few changes over last year.

Firstly it showed that you're all getting slack! Compared with last year, we had a drop off in responses of 50%...that's despite the fact that we now have twice as many magazines being sold! I hope that this isn't a sign of apathy towards your computers!

According to our survey, 1% of our readership is under 10 years old, 40% is in the 11 - 20 group, 40% in the 21- 40 age group, and the remaining 19% in the 40 - 200 group.

23% of you use your computer primarily to play games, another 23% of you use your computer to learn more about computing, 14%'s primary use for the computer is with utilities, 13 % use the computer for children's education.

92% said that your local Tandy store is neat, 73% said that you can always get what you need at your local store, 50% said that you can get the sort of help you need with computing at Tandy, & 70% of you have been able to strike up a friendly relationship with the staff. This is a good result for Tandy, & reflects the fact that much of the "charf" has of late, been weeded out! Tandy has been turned into a highly professional unit.

A very surprising 79% of you have 64K CoCos...indicating that it was the enthusiasts who filled out the Survey Form (there are more 16K's 'out there' than any other type in reality).

The winner of the guessing competition was Thomas McManus, who was the first to guess that the price of the 512K upgrade for the new CoCo 3 will be \$299.95.

We congratulate him, he wins two boxes of our disks, value \$58.90.

### New Best of's

In time for Christmas we present 4 new "Best of's"! The Best of CoCoOz #8 is 16K Games, with one or two 16K Colour Basic Games included; The Best of CoCoOz #9 is 32K Games, and included here are many very good quality games; and finally, The Best of CoCoOz #10 - Education is also now available, with many excellent programs included!

#10 (Disk) has different programs to those on the tape version, so in fact we are releasing 2 different Education "Best of's" this time.

See the Goldsoft page towards the rear of this magazine for more details.

In addition to all these new products, we will have available in November, a disk or tape of programs for the CoCo 3.

The selection includes many popular programs from the past and concentrates on displaying the graphics abilities of the CoCo 3.

Please note that there are no instructions with this disk/tape as the purpose of the disk/tape is to both give you something to run on your new CoCo over Christmas, and to provide you with some thought starters for the competition!

"The CoCo 3 Tape/Disk" is just \$10!

### Gift Vouchers

Also in time for Christmas, we have released Gift Vouchers. Now when people give you the old story about not knowing what to get you for Christmas, you

can organise yourself a gift voucher!

With a Goldsoft Gift Voucher, you can get any of our products, and in January we'll also take a further 5% off the price, when you use a Gift Voucher to purchase your goods from us.

### Competitions

Winner of Our Peace Competition.

The winner of the Peace Competition in Australian CoCo Magazine is D. Voutsis. He receives a copy of Telepatch from Computer Hut Software.

The winner of the Peace Grafix competition on Viatel is Neil Pye, who has a Sinclair computer & receives goods to the value of \$50 for his computer from Tandy.

Announcing CoCo 3 Competition!

Effective immediately, we announce a programming contest for the CoCo 3.

You can write any type of program for the 3, but we are really looking for programs which experiment with or explain the new graphics capabilities of the 3.

The winner of this contest will be announced in March's magazine, which means that the deadline for entries is 7th February!

The prize is a pair of Tandy Joysticks, a box of Tandy DDDS disks, a Tandy Koala Pad and two months supply of Australian Rainbow on Tape or Disk - all up, several hundred dollars worth of goodies!

### Goodies for Christmas.

The Tandy Catalogue was released recently, and we were very impressed with the range of new lines it introduced this year. Not only in the area of computers, but also in some of the more traditional Tandy product areas.

So we asked if we could have a play with some of the new Tandy goodies and Tandy said 'yes' & supplied a number of items.

Next month we'll look at the Robots... 3 of which are perfect additions for the CoCoConnection; the new Portable Laser Disk player; the Chess sets; the Australia 2 Yacht; and a couple of new books.

This month I thought I'd draw your attention to the following:

\* The VSC 2000 Variable Speech Control Tape Player/Recorder. This unit is monorial and can play tapes at a faster speed, adjustable by you, than normal.

The system includes a Pitch control which allows the user to bring the 'Donald Duck' voice back to near normal, even though the tape is being played more quickly.

If you have to listen to a lot of tapes, especially if you have to listen to a lot of voice tapes, then this system could ease your burden considerably.

The VSC 2000 is \$149.95.

\* The Nova 15 speaker is one which I have installed for several friends of late & with which they have expressed great satisfaction.

It has been a relatively expensive speaker, and the quality of sound definitely reflects this fact, but Tandy have decided to reduce it to \$79.95 ea over Christmas.

At this price, this is real value for money.

\* The Concertmate 500 is a most interesting new Keyboard from Tandy.

It has the ability to take any sound you give it (through a microphone), and convert that sound into a set of scales, which are then applied to the keyboard!

Imagine playing Beethoven's Moonlight Sonata in

your own voice or using a dog's bark to play "Pleasuredome"!!!

The Concertmate 500 is \$179.95.

\* With the preoccupation of most state police forces in making money off the road system (& not about making them safer), the new Tandy Speed Alert system may save you some money over Christmas.

This system is not a radar detector, it merely warns you when you exceed whatever preset speed you have given the unit.

The unit is also handy in assisting you to drive more economically. The price is \$34.95.

If they were serious, the police might even endorse the product.

\* Having a young daughter, I've found the FM intercoms of Tandy a real boon.

Just recently, Tandy released the Cordless Room Intercom, which frees me up even further.

Now I can leave Katie to sleep in her room and work in the back yard (not something I get a lot of time for mind you!), and be confident of hearing her should she disturb.

This is a product I would really recommend to parents. The price is \$99.95 for the set of two units.

\* The Rechargeable Lantern is also a new product for Tandy this year. At \$39.95 it is a mite expensive, but if you add up the amount of money you spend on batteries for your current Torch, you'll find that this unit pays for itself fairly quickly!

Club News

Our magazine is now going to a number of people & clubs in Canada, and as this month's magazine is the magazine they will have in December, we wish them a very Happy Christmas from all of us in Australia.

We have appreciated the contribution you Canadians have made already to our magazine, & we're really looking forward to seeing more programs & letters from you in 1987!!

Please note that Carl Stern's phone number (Bankstown, NSW) has changed. Carl's phone number is now 02 649 3793.

Our thanks to the National OS 9 Users' Group who are providing National Back up for OS 9 users each night on Goldlink - this is a valued and worthwhile service.

Whilst in Sydney this trip, I called in to see Leonie Duggan at the Green Valley Community Centre.

You may recall that Leonie is working there with unemployed young people, teaching them how to use computers, with the aim of assisting them to obtain employment.

I also had the opportunity to pass on to her a Tandy Model 1 that Colin North (Birkdale Users' Group) sent for the group's use.

The work Leonie is doing is valuable, and having been involved in similar projects over the years, I was impressed with the progress she is making...also impressed that most of it is accomplished on CoCo's!!

Bob Devries (07 375 3161) is initiating a Users' Group in Woodridge (Qld) this month.

Since Patrick left, the south side of Brisbane has been devoid of a Users' Group, so we look forward to seeing this group up & running.

In fact I will be present at the November meeting & hope to show Goldlink on the CoCo 3.

The Gympie Group is underway now, under Bert Lloyd. Users in that area should contact Bert, who is a new user, but who is gaining experience very quickly ... judging from the programs he sends me now!

There is a new group in Upper Ferntree Gully. Rory

Doyle is the contact, his number is 03 758 2671. Rory tells me that the group meets at the Fire Station on the 3rd Monday of the month at 7.30pm.

Andrew Simpson, expert games programmer, all round good guy and former contact at Dalby has recently moved job to Tandy at Redbank Plains. We wish him well in the new job, we're sure he'll do well.

We got Mick Murphy's phone number wrong in the magazine last month. Mick is the new contact for the Ipswich area, & his real phone number is 271 1777.

Laurie O'Shea has changed address, his address is now GPO 1947, Adelaide, SA 5001.

Arthur Slade is recovering quite well from his recent car accident. He had to have a pin inserted recently, but got out of his sick bed to be at our Viatel 'BASH' in Sydney...of which more soon!

Softgold

We forshadowed the move of the Softgold pages from this magazine last month, & this indeed will happen in the near future. But first Christmas!

The Tandy Store Award

The Tandy Store Award this month goes to Les Rose, who has done a mighty job in the recently opened Redbank Plains store, & has now moved to another new store at Sunnybank Hills.

Les is a CoCo man from way back, and has made the Redbank store a top outlet for our magazines, and a top place for CoCo owners to go to to obtain assistance.

That of course is now backed up by Andrew's presence in Redbank!




# LETTERS

Dear Graham,

At the moment I am using my new copy of CoCoMax. I have a small problem with trying to get a double strike print out of any work. Single strike works OK but double strike starts the two runs about an inch apart. This makes the work one big mess. I run an Epsom LX80. Can you offer any suggestions?

One thing I would like to see in CoCo is the menu of each program and a description in detail of how the program works. There are still a lot of commands I don't understand. And this would help no end.

I attend the "Latrobe Valley CoCo Club" and I am very pleased to say the club is growing by leaps and bounds. We have our own newsletter and a new meeting place. We can be found on the third Tuesday of the month at the Kosciusko State School at 7.30pm. Well I think that's all for now. Keep up the good work.

Regards,  
Brian Grey  
VIC

Brian,

We had the same problem with Max 1, but the Max 2 seems to be OK, so it must have been a bug!

The Latrobe Club has helped many people, & you're fortunate to be able to make it there.

Graham

\*

Dear Graham,

I would like to say that your magazine Australian CoCo is the best Colour Computer Magazine I read and that's saying a lot because I subscribe to USA Rainbow. Keep it up Aussies, you're leaving the Yanks for dead!

I noticed in April's CoCo there was a program called "Bridge". We have been after this for years and I notice it is only for Disk. Is there anyone out there who has a tape version of it, as I would appreciate if they would contact me. We have lots of other card games but this one has eluded me.

Also, for you keen programmers, Mahjong would be another good one to sink your teeth into.

Yours faithfully,  
Ross Lyon  
MS 102  
Ingham, 4850

\*

Dear Graham,

If I could make a suggestion, how about providing some form of reference to the supporting article/s in Rainbow or CoCo on, or with, the "Best of --" tapes.

I've found it very frustrating to load a program and then find no instructions or reference to what it can do or how it works. I make it a practice now to record, as REM statements, or as final program lines (like Jason Krah in "Cricket"), the title, source (magazine or book) modifications if required for my equipment, and the tape title and counter reference.

Incidentally, this note was prepared

using a version of the 'Hot CoCo' program, 'Qtype', which I modified to work with the MC10.

It is fast to load, has virtually no rules or commands to remember, and can give me a copy to retain if I wish.

Admittedly, you can't edit a line once you've "ENTERED" it; it prints a line at a time as it is 'Entered', but for a short "one-off" note I've found it is great.

Regards to all the team,  
Mike Maloney  
Mackay. Qld.

Mike,

The newer "Best of's" now have a text file included which provides program details.

The Utilities issue has been updated to include this feature too, and anyone requiring an updated version of this "Best of" can obtain it at no charge by returning their original tape or disk to us for update.

Graham.

\*

Dear Graham,

I sent in some contributions some time ago. One of these contributions contain an error of fact which I didn't correct.

On top of page 6 of "Some Aspects of BASIC", end of first paragraph states, "This also applies even if the original string is in normal string space."

This is wrong. It should read, "This feature only applies when the string data is stored below normal string space. If the original string is held in normal string space, ie if A\$=B\$+C\$, then the statement D\$=A\$ will in fact duplicate the string data rather than simply equate the VARPTR's".

Yours,  
G. T. McIntock  
Canberra. ACT.

\*

Dear Graham,

To briefly introduce myself (or should I say ourselves); The 'S' is for Steve and the 'P' for my lovely wife Pauline.

I am in the Army (have been for just over 15 1/2 years), Pauline is a professional housewife (and good at it too) - I had to put that as she will probably read this before I send it off!

We have had our CoCo 64K ECB tape system since just before last Christmas. We use our CoCo for a number of different things, the boys' (two of them) for their school work, Pauline for writing her many letters and storing recipes etc and myself for just about anything and everything.

We are moving to Perth in about 5 weeks. I was involved in our user group here at Albury/Wodonga but I'm afraid it is not going too well at this time. The lack of a convenient meeting place seems to be the biggest problem. However there are some determined people in the group who want it to succeed so I'm sure it will.

Well that's about all for this time. As an avid reader of CoCo though I'm

sure it will be not too long before we are in contact again. I have even toyed with the idea of sending a couple of programs that I have made, but I always seem to see a much better program doing the same thing before I get enough courage.

I have a copy of Scripsit, but I do not understand what you mean when you say that programs can be submitted in Scripsit file format. If you get the chance could you please explain this or answer through the CoCo magazine.

Until later, keep up the good work.

Regards,  
Steve and Pauline Issanchron  
Albury. NSW.

PS. We have a Tandy DMP 105 printer; is there any chance of publishing through the magazine a list of the more common printer CHR\$ codes and their equivalents on other popular printers.

Even though I enjoy trying to decipher programs made to run on other printers so that they will run on ours, it does sometimes become time consuming and frustrating. A ready reconer chart would be ideal. Only food for thought.

Dear Steve & Pauline,

You are headed into one of the top Users' Groups in the country, I'm sure Iain & the boys in Perth will make you feel very welcome!

The idea of the summary of printer commands has come to us before.

I think in our reference issue in January, we'll try and make a start on such a list.

So those of you with DMP's, Epsoms, Gemini's Ritemans & so on, how about getting a list of the escape codes your printer uses off to us now!

Graham.

\*

## The Things we do!

As many have noticed, some time ago we introduced a recommended Standard for the way programmers start their programs.

We recommend that the following procedure be adopted for all your programming:

- 1 '\*\*\*\*Program Name\*\*\*\*\*  
\*\*\*\*\*Author\*\*\*\*\*  
\*\*\*\*\*Date\*\*\*\*\*
- 2 GOTO 10
- 3 (C)SAVE "Program Name"
- 4 - 9 Further REM's re program
- 10 Start of program

With the introduction of the CoCo 3, we will be prefixing all program file names for the CoCo 3 with the numeral 3.

So on a disk from us a program in the directory which DIR's as "3DONKEY/BIN" would be a program for the CoCo 3, and a program which DIR's as "DONKEY/BIN" would also work on the CoCo 2's & 1's.

The same principle will apply to tape file names.

We ask that at least with the programs you submit to us that you adhere to this convention.



# MICO NEWS

Editor Jim Rogers

You will notice that, beginning this month, the format of CoCo has changed somewhat for reasons which, no doubt, Graham will explain elsewhere.

It seems that the old 16K CoCo, like the MC10, has been relegated to the scrapheap and now having no one to care for it any longer there is no longer any software being developed for it. Well that's what they think!!! What they don't know is that we are getting stronger every day and we also have the backing of our friends in USA. I really think that we will become so powerful that Tandys may drop production of all other models and restart the MC10. Of course they will probably have to rename it the Super MC10 or CoCo4 or something such to cover their embarrassment at not recognising the superior qualities of the MC10 before this.

However, combining the MC10 programs with the 16K programs will give the 16K users many more programs to work on as it is intended to include the necessary program modifications where required.

One other advantage is that, in this way, I will

have managed to squirm some extra magazine space out of you know who. I am hoping that, under the new format, I will be able to reply to readers letters of interest to other readers which, up to now, I have been answering personally owing to lack of space. There could also be more space for reviews and the articles which you are about to send in.

By the way, for anyone who may be interested, I have just unearthed from the archives, half a dozen copies of "MICO EXPOSED" by Ron Wright and they are still marked at the old price of \$11.50. They are all in mint condition and none of them have been chewed up by the rats.

For anyone who may also be interested in some of the MICO OZ Super Tapes, containing around 20 programs per tape, we have #1 to #5 divided into - Games and Amusements - Educational - Technical and Utilities. They are \$9.50 each.

Lets hear your comments on the new CoCo/MICO format, good or bad, but remember that if they are too bad I could go out on my ear.

## doctor COCO

Dear Dr CoCo,

I have a 64K ECB TRS80 I bought from my Tandy retailer. In Australian CoCo (vol. 12 No. 1) September 1985 there is a game called Ghostbusters. I always get an error in 280.

It reads:

280 READ GM

I have checked all the errors and have found nothing. I wish you could help me in finding this error.

Charlie Farrugia  
6 Chandler St  
Sunshine  
Vic

Dear Charlie,

Generally the error messages given by the BASIC interpreter are quite cryptic. They are intended to give an indication of the problem the computer is having. In the example you quote the error is not in line 280, but elsewhere.

LINE 280 is an instruction to CoCo to 'READ' a bit of DATA from the next location in the DATA FILES in Lines 372-374. These lines must be typed in EXACTLY as they appear (its easy to miss a digit or a comma) or this type of error you have will result.

For a fuller explanation on DATA STATEMENTS refer to your Tandy BASIC Manuals, they give an excellent tutorial on this and all other functions of the computer.

Dear Dr CoCo,

I need a hand with something! What is the 64K mode and how can I get my

computer into it? Or is this just a fantasy mode invented by an over-zealous brag to a Commodore 64 owner?

I've just amazed my "Commodore" user brother in law and he's thinking about CoCo's power now.

Yours sincerely,  
Stephen Ridgeway

Dear Stephan,

No, the 64K mode is not a figment of somebody's imagination.

If your CoCo is fitted with 64K RAM, you can access only 32K from BASIC because in the Memory Map of the computer the EXTENDED BASIC and BASIC ROMS are located at addresses immediately above 32K. (Actually you get less than 32K because the BASIC operating system uses varying blocks of the 32K for graphics pages, screen addresses and its own 'scratchpad' or housekeeping tasks.)

Only if you are not using BASIC can you access the second block of 32K. Many machine language software packages such as word processors or terminal programs and games make use of the extra block of memory.

This limit of 32K from BASIC is of no practical concern. A 32K BASIC program would be either an epic feat or more likely terrible programming (good programs are short sharp code). If more than 32K is needed for data storage it is time you went to DISK operation.

Sorry, but the feat of "amazing" a Commodore owner has lost its significance. They don't know what a computer is, or they wouldn't be Commodore owners.

Dear Dr CoCo,

I have recently upgraded my printer to a DMP110 and with all the different types of print had hoped to be able to do my cash book printout (with Spectaculator) using the 'condensed' printing, however I am finding that it will not print across the full width of the paper!

Our cashbook with normal printing spreads across two sheets of paper for Debit and one and a half sheets for credit. Is there any way I can instruct Spectaculator (while using the condensed printing) to print across the full width of the paper? This would enable us to have one sheet for debit and one for credit.

I have a grey case CoCo with 64K and a disk based system.

Yours sincerely,  
Karen Watkins.

Dear Karen,

Your problem is not with the printer.

Unfortunately the problem is in the software and since this is ROM based machine language there is no easy way to affect changes.

Check with the software distributors in your area or the ones advertising in this magazine for another spreadsheet which permits control of the printer output, an ideal spreadsheet for your purposes may well turn out to be Dynacalc.

## HELP:

## POSTCODE

by Gordon Levis

**A**N ARTICLE by Judy Rutledge (CoCo August. re HELP) reminded me of a time when I had my back to the wall.

The following program isn't of much use to anyone except that it is full of some very interesting routines for any beginner.

This program resulted from a TAFE project/assignment I had to do some time ago, but was done on a much larger computer. However, I have transposed it to work on CoCo. The internal documentation simplifies the procedure I followed to have it perform the required functions. Should you consider it of assistance to beginners, be my guest.

## The Listing:

```
0 GOTO 5
1 'POSTCODE/BAS--BY GORDON LEVIS
  JURIE W.A.
3 SAVE"PCODE:3":END
5 PRINT:PRINT"PROGRAM ACCEPTS POSTCODE
  QUERIES
10 PRINT:PRINT"PROGRAM ACCEPTS 4
  DIGIT POSTCODEAND 1 DIGIT STATE
  IDENTIFICATION
15 PRINT:PRINT"CHECKS ENTERED POSTCODE
  AGAINST ANY PREVIOUSLY ENTERED
  CODE DATA
20 PRINT:PRINT"IF DEFINED PRINTS
  SUBURB/TOWN + THE STATE NAME.":
  PRINT:PRINT"  PRESS [ENTER] TO
  CONTINUE":LINE INPUTA$:CLS:PRINT
25 PRINT:PRINT" STATE VALUES","
  STATE IDENTITY
30 PRINT" *****","*****
  *****":PRINT
35 PRINT" NSW 2000-2999"," 2 =
  NSW
40 PRINT" VIC 3000-3999"," 3 =
  VIC
45 PRINT" QLD 4000-4999"," 4 =
  QLD
50 PRINT" SA 5000-5999"," 5 =
  SA
55 PRINT" WA 6000-6999"," 6 =
  WA
60 PRINT" TAS 7000-7999"," 7 =
  TAS":PRINT:PRINT"  PRESS [ENTE
  R] TO CONTINUE.":LINE INPUTA$:CL
  S:PRINT
```

```
65 PRINT"ENTER [2-7] LISTS ALL P
  OSTCODES + CORRESPONDING SUBURB/
  TOWN/CITY":PRINT
70 PRINT"ENTER [-2 TO -7] REVERS
  E LISTS POSTCODES + LOCALITY NA
  MES":PRINT
75 PRINT"ENTER [-999] OUTPUTS AL
  L DATA TO FILE [PCODE/DAT] AND P
  RINTS NO.OF POSTCODES FOR EACH S
  TATE":PRINT
80 PRINT"ENTER [999] INPUTS ALL
  DATA FROMFILE [PCODE/DAT].":PRIN
  T:PRINT"  PRESS [ENTER] TO CONT
  INUE.":LINE INPUTA$:CLS:PRINT
100 DIM PC(600),SB$(600),SN$(7),
  CL(7),SC(7)
110 COUNTER=0
120 'INITIALISE TABLE VALUES
130 DATA 1999,2999,3999,4999,599
  9,6999,7999
140 FOR A=1 TO 7 :READ CL(A)
150 NEXT A
160 DATA NSW,VIC,QLD,SA,WA,TAS
170 FOR A=2 TO 7 :READ SN$(A)
180 NEXT A
500 INPUT"ENTER CHOICE":CHOICE
510 IF CHOICE >=2000 AND CHOICE
  <=7999 GOSUB 5000:'PROCESS VALID
  POSTCODES
520 IF CHOICE >=2 AND CHOICE <=7
  THEN GOSUB 6000:'LISTS POSTCODES
  AND SUBURB/TOWN/CITY NAMES
530 IF CHOICE >=-7 AND CHOICE<=-
  2 THEN GOSUB 7000:'REVERSE LISTS
  POSTCODES+SUBURB/TOWN/CITY NAMES
540 IF CHOICE = 999 THEN GOTO
  8000:'INPUTS DATA FROM FILE
550 IF CHOICE =-999 THEN GOSUB
  9000:'OUTPUTS DATA TO FILE
560 '
570 'PROGRAM CONT. PROMPTS.
580 '
600 PRINT:PRINT:INPUT" FURTHER
  ENTRY [Y/N] ";YNS
610 IF YNS="N" THEN 32767
620 IF YNS="Y" THEN 500
630 IF YNS<> "Y" THEN 600
5000 '
5010 'PROCESS VALID POSTCODES
5020 '
5100 GOSUB 10000:' TO LINEAR
  SEARCH ROUTINE
5200 '
5300 IF FD$="TRUE" THEN PRINT"
  POSTCODE IS IN LIST."
  :SA=INT(CHOICE/1000)
  :PRINTCHOICE;"IS ";SB$(PN);"
  STATE=";SN$(SA) :RETURN
```

```
5600 PRINT" POSTCODE NOT FOUND"
  :INPUT"ENTER SUB/TOWN";ST$
  :COUNTER = COUNTER + 1
  :PC(COUNTER) = CHOICE
  :SB$(COUNTER) = ST$
  :PRINT ST$;" IS NOW IN LIST"
  :RETURN
6000 '
6100 ' PROCESS STATE LISTS.
6110 '
6200 PRINT:PRINT"POSTCODES AND S
  UBURB/TOWNS IN ";SN$(CHOICE)
6300 PRINT:FOR A = 1 TO COUNTER
6400 IF PC(A) > CL(CHOICE-1) AND
  PC(A) < CL(CHOICE) THEN
  PRINT PC(A),SB$(A)
6450 NEXT A
6500 RETURN
7000 '
7010 ' REVERSE LIST ROUTINE.
7020 '
7100 CHOICE = -CHOICE
  :MAKE INDEX POSITIVE
7200 PRINT"LISTS POSTCODES + SUB
  /TOWNS IN REVERSE ORDER FOR "
  SN$(CHOICE)
7300 FOR A=COUNTER TO 1 STEP -1
7400 IF PC(A) > CL(CHOICE-1) AND
  PC(A) < CL(CHOICE) THEN PRINT
  PC(A),SB$(A)
7500 NEXT A
7600 RETURN
7700 '
7800 ' OPENS FILE FOR INPUT.
7900 '
8000 OPEN "I",#1,"PCODE/DAT"
8200 IF EOF(1)=-1 THEN 8900
8300 INPUT #1,PC(A),SB$(A)
8400 PRINT PC(A),SB$(A)
8500 GOTO 8200
8900 PRINT:PRINT"-999, ENDS FILE
  ":CLOSE #1
8950 GOTO 600
8960 '
8980 ' OPENS FILE FOR OUTPUT.
8985 '
9000 CLOSE #1
9010 INPUT"ARE YOU SURE [Y/N]";
  A$: IF A$="N" THEN 600
9030 '
9050 OPEN "O",#1,"PCODE/DAT"
9100 FOR A=1 TO COUNTER
9200 WRITE #1,PC(A),SB$(A)
9300 SA=INT(PC(A)/1000)
9400 SC(SA)=SC(SA) +1
9500 NEXT A
9600 CLOSE #1
9700 PRINT"POSTCODE COUNTS FOR E
  ACH STATE."
9750 FOR A=2 TO 7
9800 PRINT SN$(A),SC(A)
9850 NEXT A
9900 RETURN
9910 '
9920 'LINEAR SEARCH ROUTINE.
9930 '
10000 FD$="FALSE"
10100 FOR PN=1 TO COUNTER
10200 IF CHOICE=PC(PN)
  THEN FD$="TRUE": RETURN
10300 NEXT PN
10400 RETURN
32767 END
```

# SCOREBOARD

It was great to see the intense competition in the Games Competition at CoCoConf. There were 3 games to compete on this year - Shock Trooper, Sailorman, & Gauntlet - with a prize for each high score of 2 games of your choice from Computer Hut Software.

The winners were:-

Paul Simpson for Shock Trooper 52929  
Sean Street for Sailorman 88800  
Chris Nagle for Gauntlet 59600

I'd like to thank all the competitors, especially those who slogged away at the game for almost the whole day, ending up with square eyes and sore thumbs. Also thanks to Andrew Simpson for helping me run the competition. I hope to see you all again at CoCoConf 87 for some more fierce competition!

Chris Nagle told me of a small bug in CANYON

CLIMBER, which you can use to your advantage in scoring extra points. On the second set, with the Indians shooting the arrows, make your way up to the second ladder from the top. Climb half way up the ladder so that your out of range of the arrows and wait for several minutes. After awhile the arrows will get faster and closer together. You can then climb up and the arrows will go straight through you. Hold the button down and you can jump the arrows with out loosing a man until you get sick of watching the score clock over. This method certainly takes the fun and skill out of playing the game, but some people will do anything to get on the Scoreboard!

Now to the mail:

Dear Michael,

I need help in the adventure MADNESS AND THE MINOTAUR. The main things are :-

- 1) How to get out of the mazes.
- 2) How to get the shield or torch.
- 3) how to use jump correctly.

I can't find the last treasure in RAAKA-TU. I know how to get the double points after I get out. Treasures I can get are - Gold Ring, Golden Chopstick, Jeweled lever, and golden Idol.

Yours sincerely,  
Nigle McLaughlin  
Goulburn, NSW.

Nigle,

In order to get out of the maze, you must find the small pit and jump over it. But when you jump, if your physical condition is below a certain point you won't make it. As for the

sword and torch, if anyone has found then please let us know.

The last piece of treasure for you to find in RAAKA-TU is hidden in one of the rooms, this you must "search" for!

Michael.

have two or three other items. To find out what you need to get an item, either look in the pool or ask the oracle if he's present. To get the first spell the food and the mushroom.

Michael.

Dear Michael,

If anyone has got a very high score on MADNESS AND THE MINOTAUR I would be very grateful to hear from them, especially about how to get spells.

Yours in Computing,  
Russell Scott  
Traralgon, Vic.

Russell,

Most of the important items that you need can only be obtained if you

Dear Michael,

If anyone out there has solved the game BUGS I'd really appreciate it if you'd let me know. I can get as far as the reactor and then I have no idea what to do. What use is the salt? What do I do once inside the reactor? Please, anyone, reply quick, the suspense is killing me!!!

Yours in Pain,  
Bernard Florence.

## CoCoConnection

We don't make a big deal of the CoCoConnection in this magazine because you do need a month or two's experience with CoCo before you start on the CoCoConnection. But once you have that ability in Basic, the CoCoConnection is an add on from which you will get years of pleasure.

Essentially, the CoCoConnection allows you to use your computer to control anything electrical.

Imagine being able to control Tandy's new line of Robots from a program you wrote, or being able to run a model railway, or controlling the household's environment... opening shutters, closing windows, admitting people at a remote location - that sort of thing.

CoCoConnections are already being used in a number of capacities, they control the lighting at the Sydney Cricket Grounds, they run temperature control facilities on chicken farms, they operate remotely controlled gates on farms, a number of model railways and a number of hobbyists & so far one educational institution, use them for experimentation.

The CoCoConnection is supported from time to time with articles & programs in Australian Rainbow Magazine, and of course, if you have difficulties you can phone, write or Viatel us with your problem.

What facilities does the CoCoConnection have?

Well essentially there are 32 connections ranged around the unit to which you connect your wiring.

Using POKE statements as instructed in the manual, you can then have the computer "read" each connection as either an input, or an output.

As an input, the computer will look for current moving in the line, if you have programmed the computer to do this. Then once the computer senses the presence of current, you can use Basic to tell the computer what to do next... for example put a message on the screen, SOUND a warning, or effect one of the connections you have configured as an output.

It is all very interesting, a lot of fun and of course very educational!

# CAUGHT IN

GOLDLINK  
Clubroom  
From: 285350000  
FRI 10 OCT 1986 19:39:42  
64231452a Oc Goldlink Member

TO EVERYONE. PLEASE TAKE NOTICE !!!  
THE PHRASE "LUSH BOOSIE" WHEN USED TO  
DESCRIBE SVAN MEANS:

"LUSCIOUS BEAUTY"

SO ALL YOU PERVERTS WHO HAVE BEEN HASSLI  
NG HER, JUST LEAVE OFF, OR YOU WILL END  
UP ON A LANCE WHERE YOU DON'T WANT IT.  
MY SINCEREST APOLOGIES TO "SVAN" FOR USI  
NG A PHRASE THAT TWISTED MINDS COULD AND  
DID DISTORT IN SUCH A MANNER.  
ANORILY, LORD ORQUISS

O Menu 9>>

GOLDLINK  
Clubroom  
From: 493322550  
FRI 03 OCT 1986 20:54:10  
64231412a Oc

I HAVE FINALLY SEEN THE LIGHT! The othe  
r day while stumbling around Vistel wond  
ering where everyone was, I came around  
a last bend into the clearing and found.  
... GOLDLINK and everyone else who I had  
been looking for! Gudday G!

AUTOMATIC

Well well... a convert! How are you?  
This person must be our first newy in  
well, years! .... Wait till Neil knows  
you're here!

O Menu 9>>

64239325a Oc

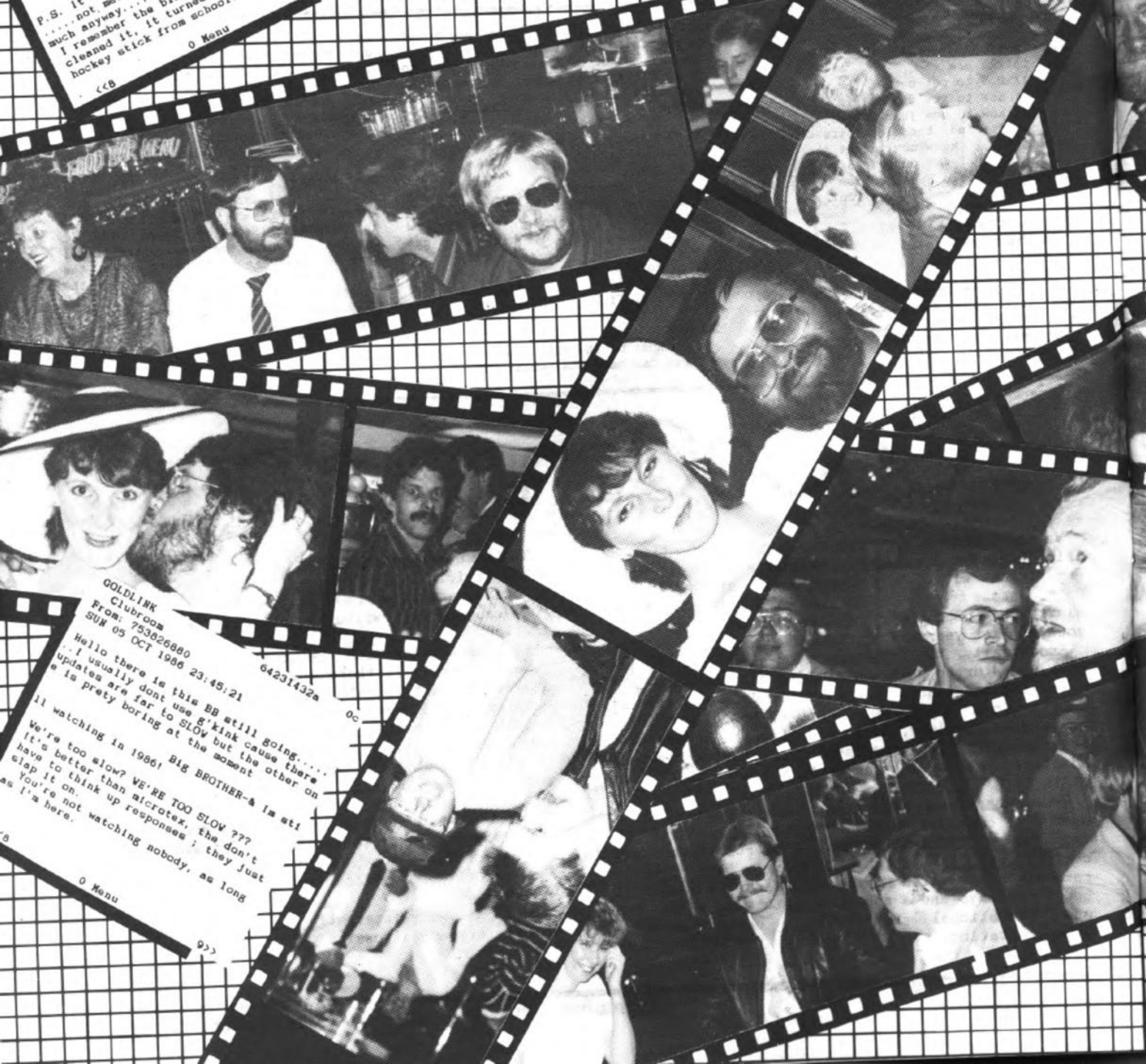
al's Naval Board  
024460  
D 01 OCT 1986 22:41:07

G. No. .... lies ..... I DID have a  
bath once!!!! Remember, thata  
where I found my bicycle! (before Rick  
switched off the light to stop me from  
Photosynthesizing! Neil Pyal

P.S. It's Rick and Vyvyan who smell...  
... not me ..... nor Mike, well not that  
much anyway. I remember the bike ..... when you finally  
cleaned it, it turned out to be your  
hockey stick from school!

<<B

O Menu 9>>



GOLDLINK  
Clubroom  
From: 753826880  
SUN 05 OCT 1986 23:45:21  
64231432a Oc

Hello there is this BB still going.....  
... I usually dont use g'kink cause there  
updates are far to SLOW but the other on  
e is pretty boring at the moment

ll watching in 1986! Big BROTHER-a la sti  
We're too slow? WE'RE TOO SLOW ???  
It's better than microtex, the don't  
have to think up responses ; they just  
clap it on.  
You're not watching nobody, as long  
as I'm here.

O Menu 9>>

# THE ACT

GOLDLINK Clubroom  
 From: 298151500  
 THU 09 OCT 1986 12:31:21  
 6423143a Goldlink Member Oc

GOLDLINK Bell's Navel Board  
 827244340  
 VED 01 OCT 1986 08:35:45  
 64239311a Oc  
 Graham, darlin'ug, Not yet, maybe tonight  
 Oh I won't be on slot, really must  
 have a shower tonight, I'll be too busy  
 tomorrow! I'll come on after that or  
 before that or inbetween before and after  
 P.S. Hi Neil and everyone else on here!

Hi TWO (if you're still on) looks like  
 you didn't get my last message due to  
 Viatel. Terrible I got heaps of MOMs bu  
 t twice I got on only to find a message  
 saying that on only to find a message  
 A friend of my dad made about a 1000 of  
 those callcards for a joke. I saw one of  
 my messages in the COCO mag yesterday.  
 & a pic of G and Alex at COCO conf. I'm g  
 oing to finish reading it tonight when I  
 goto work.  
 I've goto get back to studying I exam do  
 wn 5 to go...  
 Yes, I'm still on. And it doesn't look  
 like I got your last message.  
 What have you got left to study?  
 RUNNER  
 0 Menu

GOLDLINK Clubroom  
 787024460  
 VED 15 OCT 1986 18:01:51  
 64231440a Oc

Graham,  
 Thankyou very very very very very very very  
 very very very very very very very very ver  
 y very very very very very very very ver  
 y very very very very very very very ver  
 y very very very very very very very ver  
 y much for the two boxes of disk!  
 RICK!  
 (got them today.....ta!)

Oh boy... a shower! Can I watch?  
 0 Menu



GOLDLINK Clubroom  
 From: 285350000  
 THU 09 OCT 1986 07:25:09  
 64231459a Goldlink Member Oc

1987 CoCoConf should be held in Sydney  
 There are enough NSW persons who would  
 love to attend but can't go interstate.  
 1988 could beheld in Melbourne. This  
 way each stae would get its own chance  
 to attend en masse. Some of us cannot  
 afford to go interstate EVERY year, but  
 WANT to attend. This way we get the  
 chance.  
 What does everyone think? Please give  
 Graham your view. HE HAS ASKED FOR IT  
 in this month's CoCo.  
 LADY BEETLENUIT  
 Sound great to me! TWO

GOLDLINK Clubroom  
 033119340  
 TUE 07 OCT 1986 00:04:26  
 64231440a Goldlink Member

'TWO'  
 I WISH TO REGISTER A COMPLAINT  
 THREE (YES 3) NIGHTS RUNNING  
 I SAY HELLO I'M HERE AND THREE  
 (3) NIGHTS RUNNING YOU SHUT DOWN  
 STRAIGHT AWAY. ARE YOU TRYING TO  
 SAY SOMETHING OR WHAT  
 TASKMANIAC ( UNHAPPY )  
 Ok, this is what I'm (indirectly)  
 saying... Come on-line earlier  
 (Directly) I get tied... I gotta work  
 from 8:30 to 5:30 and then from 7:30  
 to 12:30. (finishing off stuff)...  
 0 Menu

# BETTER FOR MICROS



Now there's an exciting new world for Personal Computer owners to explore. The world of Goldlink 642 on Telecom Viatel.

All you need is a 1200/75 baud modem, the appropriate software, and a telephone line, and your PC will be ready to go.

Suddenly you'll be able to shop for software on your PC, and actually download\* it directly through the Viatel system. You'll be able to get PC advice and tips. Even place messages on the system for other Viatel users to read and respond to — literally a PC talkback service that lets you have a say on almost any subject.

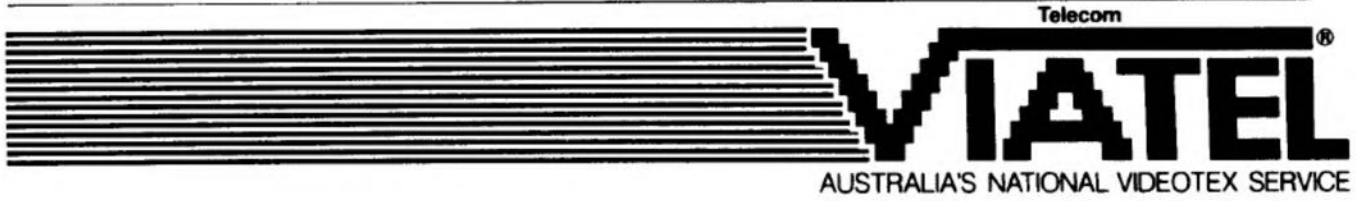
That's just part of what Goldlink 642 offers. And Goldlink 642 is just part of what Telecom Viatel offers. You can also bank with Viatel, place bets, buy and sell shares, book travel, and much more. Instantly, easily, economically. 24 hours a day.

Ask for a free brochure at any Telecom Business Office. And start using your micro in a whole new, better way.

\* Coming



**Telecom Australia**  
Better for Business



# APPLICATION FORM

DATE OF APPLICATION / /

(BEFORE COMPLETING THIS APPLICATION, PLEASE READ REVERSE SIDE CAREFULLY)

**section 1**

**PLEASE TICK APPROPRIATE BOX TO INDICATE SERVICE REQUIRED**

**BUSINESS SERVICE**  **NON-BUSINESS SERVICE**

(CHARGES INCURRED ON BUSINESS SERVICES ARE USUALLY TAX DEDUCTIBLE)

**SURNAME (OR BUSINESS NAME IF BUSINESS SERVICE)** **GIVEN NAMES**

\_\_\_\_\_

**POSTAL ADDRESS NUMBER/STREET**

\_\_\_\_\_

**SUBURB/CITY** **STATE** **POSTCODE**

\_\_\_\_\_

**TELEPHONE NUMBER ON WHICH SERVICE IS REQUIRED (INCLUDING STD CODE)**

\_\_\_\_\_

**section 2**

**CONTACT NAME (IF BUSINESS SERVICE)** **GIVEN NAMES**

\_\_\_\_\_

**POSTAL ADDRESS FOR BILLING IF DIFFERENT FROM SECTION 1 ABOVE**  
**NUMBER/STREET**

\_\_\_\_\_

**SUBURB/CITY** **STATE** **POSTCODE**

\_\_\_\_\_

**CONTACT TELEPHONE NUMBER (INCLUDING STD CODE)**

\_\_\_\_\_

**section 3**

**PLEASE DESCRIBE NATURE OF BUSINESS (OR OCCUPATION IF NOT A BUSINESS SERVICE)**

\_\_\_\_\_

**PLEASE INDICATE TYPE OF EQUIPMENT USED TO ACCESS VIATEL**

\_\_\_\_\_

**special instructions** THIS FORM SHOULD BE HANDED IN AT ANY TELECOM BUSINESS OFFICE OR MAY BE MAILED WITHOUT A STAMP TO FREEPOST 20, VIATEL BOX 188C, GPO MELBOURNE, VICTORIA 3001.

PLEASE ALLOW TEN WORKING DAYS FOR PROCESSING OF APPLICATION AND RETURN MAIL ADVICE.

**telecom use only**

DTE \_\_\_\_\_ PP \_\_\_\_\_ VN \_\_\_\_\_

\_\_\_\_\_ BG \_\_\_\_\_ SC \_\_\_\_\_ CI \_\_\_\_\_

REF \_\_\_\_\_

## **REGISTRATION AND SUBSCRIPTIONS**

**Customers must register as a Business Service if the telephone number nominated for the use of the VIATEL Service is a Business Service and/or VIATEL is to be used wholly or mainly for Business, Commercial, Industrial, Professional or Government purposes. (Charges incurred on Business Services are usually tax deductible.)**

**Where a Business Telephone Service is nominated for the use of VIATEL, but the use of VIATEL is wholly or mainly for Non-Business purposes, the Customer may be registered as a Non-Business VIATEL subscriber, providing the registration is taken out in the Customer's personal name and address and not a Business name.**

**Telecom Australia will register the Business or Individual named under Section 1 as a Customer of its VIATEL Service and will provide the Customer with a confidential Customer Identity Number and Personal Password by mail.**

**Where billing address is indicated, bills and bill related correspondence ONLY will be forwarded to that address. All other correspondence will be forwarded to address under Section 1.**

**Customers should advise VIATEL of any change of address as soon as possible.**

**If you lose your Customer Identity Number and/or Personal Password, you must advise VIATEL in writing before new numbers are issued. Our postal address is: Freepost 20, Box 188C, GPO Melbourne, Vic. 3001. FOR SECURITY REASONS REPLACEMENT NUMBERS AND PASSWORDS CANNOT BE PROVIDED OVER THE TELEPHONE.**

Customers of VIATEL acknowledge that their name and registered VIATEL Number will appear on the VIATEL Mailbox Directory and that Service Providers and/or other registered VIATEL users may send messages to their VIATEL number.

Telecom Australia undertakes no responsibility in relation to the accuracy of the information or service provided by Service Providers on VIATEL. Telecom Australia will not be responsible for any loss or damage arising out of or in any way connected with the use of this information or service.

Attention is also drawn to the terms and conditions governing the provision of information and services by some Service Providers. These terms and conditions may, in some cases, include a disclaimer absolving the Service Provider from liability regarding information and services supplied on VIATEL. The means of accessing these terms and conditions is set out on the Service Provider's Index Page on VIATEL.

Should you require any changes to your existing telephone equipment (e.g. new exchange line, additional socket), please contact your local District Telecom Office.

In a small number of cases VIATEL reception may be unsatisfactory. Correction may incur an additional charge.



# GOLOLINK

# COM.STATION 642

**C**om Station 642 has earned a place on Viatel as one of the most popular services on the system.

During the past month, we exceeded 40000 accesses to Clubroom alone, thereby creating a milepost which we celebrated appropriately!

In the Bulletin Board system is fast approaching saturation point on busy nights! On Saturday nights, instead of being typically 30 minutes behind your messages, we've been up 90 minutes behind!

That's not due to slackness on our part, but due to the way Viatel works.

All Bulletin Board messages come to our mail box, the same as all your other messages.

As the messages are seen in the mail box, they are stored in the memory of the terminal we use. We store up to 14 messages at a time.

The process is highly interrupted by letters and other "MB's" which have to be answered as they appear. Eventually we have 14 pages in memory, and we then begin the process of downloading the message - yes, all messages actually have to come off the system and get redownloaded - presently at 75 baud!

It is a very primitive system, it works well but S L O W L Y !

We attempt to answer questions as we download each message, and of course as we now have 13 Bulletin Boards on the system, a board may appear to be dormant for some time if there is a block of messages for other boards to be downloaded first.

However I admit that as "Com Jok", it is usually good fun.

There is a great feeling of "Family" about it.

Like any family, we have people on line who are in love, or who need company, or who just want to be entertained, or who can help others, and we also have occasions when members of the family scwabble, and through it all, we seem to have found a new interest & concern for others!

It is a great feeling!

In the near future we will have installed a computer which will assist with updates.

Our intent is not to drop the involvement of the "Com Jok" (SYSOP) as he/she is known, but to facilitate his/her job.

Using the new program, we should be able to run pretty close to time even in the peak periods, even though we're adding our words of wisdom (?) onto most messages.

Once this system is in place, we will then start on providing programs for download on Viatel.

And THAT is another story!

We congratulate Neil Pye on winning the Peace Grafix competition on Com Station 642.

Neil's contribution really enhanced the look of the board.

I should also mention a late entry from Lord Schizoid which, had there been one, would have taken out a close second prize.

There were other entries including a very creditable one from Manticore.

The Jokes Contest was won this month by RICK, who asked "How can you tell when an Irishman has been using a word processor? Answer, because of all the liquid paper on the screen!"

We've had other contests and prizes. Sir Jonsey won a sub to this magazine (Hi Sir!) as well as some disks for his part in a recent Treasure Hunt. We have Trivia quizzes and we are about to add a couple of new games to the system.

WOODROW'S CASTLE, our existing adventure game on Viatel, continues to be very popular. The object is to find two of our most popular ladies on Viatel, Lady Daisy & Princess Cygnus, who have been captured by the evil villain Vyvyan (also a Viatel user).

The problem is that Vyvyan keeps moving around, so you can't be sure that he is now where he was last night!

Fortunately, WOODROW the Wizard is around, and you can MB him to obtain clues .... if you bring him the right presents!

Its quite complex, it's a lot of fun, but be warned, it is addictive!

I can't go with out saying hi to Helen, Rick, WOODROW, The Supreme Commander, Princess Cygnus, The Material Girl, Michael, Sique Sique, SWAN, The White Rabbit, The Cheshire Cat, Lil Sis, Lord Orquis, Lady Beetlenut, John, Rubber Duck, Wombat, Spider, ART, Xylarthen, RUNNER, JADE, Alby, Hobo, ANDY 7, Blondy, Fraz, Dazz & Hannibis, Sally, Miniane, Lord Schizoid, Wozie, Babs, Tasmaniac, UNKNOWN (Martha's friend), Neil, Vyvyan, Roxanne, JJ, dBEST, dBEST 2, WILDEBEESTE, Manticore, Lady Daisy (Queen of Viatel) and the rest of the family on Com Station 642!

Finally, thanks go to our Advertisers on Viatel for their continued support.

Viatel is a great way to shop! You can get most of your computer needs on Viatel, usually at very competitive prices.

Tandy even have products on the system they don't have in their shops!

And Power Code, one of our newer advertisers has a wide range of hard drives many of which are very suited to IBM PC clones and to T1000's.

In a very inovative move, Paris Radio have introduced "Micro News", a news service for computer users which will be updated daily.

Our other major advertisers, The Computer Hut, and Blaxland Computer Services have not been backward in providing service and bargains on their systems either!

Log on for fun, log on to obtain assistance, or log on to shop. Com Station 642 is THE place to be, any night of the week!

# VIABASIC

WARNING: This program for experienced users!

by Richard Rogers

WHEN I bought a modem about eighteen months ago I wrote a program to enable me to look at Viatel. This was sufficient to let me look around but it had a number of bugs which made it very difficult to use the response pages. The recent introduction of GOLDLINK to Viatel stirred my interest again and I have spent a few weeks searching for and destroying all (?) the bugs. The result is the program listed, which has all the essential facilities to make use of Viatel but none of the fancy things like flashing or double height characters. Occasionally this causes a few odd characters to appear on the screen but these are little inconvenience.

Viatel makes much use of the \* and # keys and to avoid the use of shift to obtain these characters, this program uses the : \* key for \* and the - = key for #.

A 1200/75 baud modem is required, connected by a special cable similar to the one shown in the diagram. The COCO does not supply all the control signals the modem requires, so we must do so at the modem end of the cable. The required connections are shown below, with the usual pin numbers. You will have to check your modem manual for the correct ones to use.

RTS (4)	negative (10) or ground (7)
BRTS (19 or 11)	positive (9) or DSR (6)
DTR (20)	positive (9) or DSR (6)

The program was of course originally written in assembler, but I present it as a Basic program which may be used to generate the working copy. Before typing in or loading the program, 16K owners must type POKE 25,30:POKE7680,0:NEW

When you RUN the program there will be a short delay whilst the machine language program is generated. You will then be asked to dial Viatel (01955). When you hear the tone, operate the connect switch on your modem and press <ENTER>. Viatel will ask for your Customer Identity number and Personal Password. When entering the responses, type slowly. An error in transmission is indicated

## The Listing:

```

10 '16K OWNERS, BEFORE TYPING IN
OR LOADING THIS PROGRAM;
TYPE POKE25,30:POKE7680,0:NEW
20 '
30 ' A MINIMUM VIATEL PROGRAM
40 '(C) RICHARD ROGERS 25/8/86
50 '
60 CLS: PRINT@38,"READY IN 20 SE
CONDS"
70 FOR A = 3584 TO 5919
80 READ X : POKE A,X : NEXT A
90 CLS:PRINT@230,"DIAL VIATEL (<
1955)"
100 PRINT@259,"PRESS ENTER WHEN
CONNECTED"

```

```

110 ID$=""
120 IF ID$="" THEN 160
130 FOR N=1 TO LEN(ID$)
140 CH$=MID$(ID$,N,1)
150 POKE 3585+N,ASC(CH$) : NEXT
160 IF INKEY$(<>CHR$(13)) THEN 160
170 EXEC 3584
180 DATA 32,19,0,0,0,0,0,0,0,0,
,0,0,0,0,0,0,0,0,0,16,142,23,3
0,16,191,14,19,134,255,183,255,3
4,183,14,239,23,0,200,204,17,30,
253,14,237,26,80,182,255,33,138,
1,183,255,33,204,14,112,253,1,16
,28,191,23,0,203,173,159,160,0
190 DATA 39,247,129,58,38,4,134,
42,32,6,129,45,38,2,134,95,26,80
,141,86,28,191,32,225,26,80;206,
14,2,166,192,77,39,4,141,70,32,2

```

```

47,28,191,57,26,50,52,22,198,8,1
41,31,141,34,182,255,34,70,102,1
64,90,38,245,141,23,49,33,16,140
200 DATA 39,255,47,4,16,142,23,3
0,182,255,32,53,22,59,142,0,40,3
2,3,142,0,89,48,31,38,252,57,52,
2,95,72,201,0,77,38,250,53,2,84,
57,141,241,36,2,138,128,127,255,
32,141,21,198,8,73,73,70,183,255
,32,141,11,90,38,247,134,2,183
210 DATA 255,32,141,1,57,142,5,1
99,48,31,38,252,57,0,0,0,0,0,0,7
,5,3,1,0,0,255,129,254,7,248,31,
224,127,0,0,0,142,255,200,167,10
,167,8,167,7,167,4,167,3,167,0,1
67,30,167,29,167,27,167,24,23,0,
250,23,1,204,57,16,188,14,19,39
220 DATA 52,141,51,77,39,245,129

```

by a small square. If you make a mistake, type \*\* and start again.

\*199= will take you to the "How to Use Viatel" frames. Notice how the number you enter appears at the bottom left.

You may insert your Customer Identity number and save the machine code for faster starting by following these steps.

- Load the program as detailed above.
- Type 110 ID\$="1234567890" <ENTER>
- Where 1234567890 is replaced by your identity number.
- RUN the program.
- When asked to press <ENTER>, press <BREAK> and save the machine code:-  
(C)SAVEM,"V",3584,5919,3584

When you wish to run the program, (C)LOADM"V" and EXEC. The program will automatically send your password on startup.

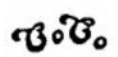
It is possible, but not recommended, to include your password in ID\$ and have that sent automatically also. If you do so you must be very careful not to let a copy of the program "V" escape your custody, for whoever runs it will do so at your expense.

COCO	MODEM
CD 1 0-----	0 3 RXD
232IN 2 0---	---0 4 RTS
GND 3 0-----	0 7 GND
232OUT 4 0-----	0 14 BTXD
	---0 6 DSR
COCO - AVTEK MODEM CABLE	! ---0 11 BRTS
FOR USE WITH VIABASIC	! ---0 20 DTR

,27,38,72,141,42,77,39,251,129,6  
 4,47,28,129,71,47,18,129,80,47,2  
 0,129,87,47,2,32,14,204,20,30,25  
 3,14,237,32,6,204,17,30,253,14,2  
 37,134,32,141,31,32,198,57,190,1  
 4,19,166,132,48,1,140,39,255,47  
 230 DATA 3,142,23,30,191,14,19,2  
 3,255,70,36,2,134,127,132,127,57  
 ,141,105,129,5,38,5,23,254,241,3  
 2,96,129,8,38,5,23,1,41,32,87,12  
 9,9,38,5,23,0,190,32,78,129,10,3  
 8,5,23,1,98,32,69,129,11,38,5,23  
 ,1,107,32,60,129,12,38,5,23,0  
 240 DATA 105,32,51,129,13,38,5,2  
 3,1,107,32,42,129,17,38,5,127,14  
 ,239,32,33,129,20,38,7,134,255,1  
 83,14,239,32,22,129,30,38,5,23,1  
 ,24,32,13,129,32,45,8,23,0,163,2  
 3,0,113,32,1,57,125,14,239,38,46  
 ,52,2,134,8,183,14,219,23,0,53  
 250 DATA 190,14,217,182,14,222,1  
 83,14,221,198,127,23,0,51,52,6,2  
 36,132,168,228,232,97,237,132,48  
 ,136,32,122,14,219,38,240,53,6,5  
 3,2,57,204,255,255,142,40,0,237,  
 129,140,64,0,38,249,22,0,197,246  
 ,14,220,142,14,222,166,133,183  
 260 DATA 14,222,57,79,28,254,89,  
 73,122,14,221,38,247,57,52,6,236  
 ,132,180,14,227,244,14,228,170,2  
 28,234,97,237,132,53,6,57,190,14  
 ,217,182,14,220,129,1,39,5,74,48  
 ,1,32,2,134,4,183,14,220,31,16,1  
 93,30,38,17,142,17,30,191,14,237  
 270 DATA 195,0,226,16,131,64,0,1  
 6,44,0,112,253,14,217,57,198,7,2  
 47,14,219,92,128,32,61,243,14,23  
 7,31,3,141,151,142,14,228,174,13  
 4,191,14,227,190,14,217,182,14,2  
 19,230,198,182,14,222,183,14,221  
 ,141,139,141,148,48,136,32,122  
 280 DATA 14,219,44,233,57,190,14  
 ,217,182,14,220,129,4,39,5,76,48  
 ,31,32,2,134,1,183,14,220,31,16,  
 193,0,38,6,142,17,30,191,14,237,  
 193,255,38,17,131,0,226,16,131,4  
 0,0,44,8,134,2,183,14,220,204,63  
 ,29,253,14,217,57,134,1,183,14  
 290 DATA 220,204,40,0,253,14,217  
 ,204,17,30,253,14,237,57,252,14,  
 217,195,1,0,16,131,64,0,45,2,134  
 ,40,253,14,217,57,252,14,217,131  
 ,1,0,16,131,40,0,44,2,134,63,253  
 ,14,217,57,127,14,218,134,1,183,  
 14,220,204,17,30,253,14,237,57  
 300 DATA 63,63,63,63,63,63,63,63  
 ,63,55,63,55,55,55,55,55,63,63,6  
 3,63,63,63,43,43,63,3,45,47,7,39  
 ,43,51,63,55,3,53,35,23,33,55,63  
 ,25,25,47,55,59,13,13,63,37,27,2  
 1,47,39,43,55,63,63,63,63,63,47,  
 51,51,63,59,55,47,47,47,55,59  
 310 DATA 63,31,47,55,55,55,47,31  
 ,63,55,21,35,55,35,21,55,63,63,5  
 5,55,1,55,55,63,63,47,51,61,63,6  
 3,63,63,63,63,63,63,1,63,63,63,6  
 3,63,51,51,63,63,63,63,31,31,  
 47,55,59,59,59,63,35,29,13,21,25  
 ,29,35,63,35,55,55,55,39,55  
 320 DATA 63,1,31,47,51,61,29,35,  
 63,35,29,61,35,61,29,35,63,59,59  
 ,1,27,43,51,59,63,35,29,61,61,3,  
 31,1,63,35,29,29,3,31,29,35,63,4

7,47,47,55,59,61,1,63,35,29,29,3  
 5,29,29,35,63,35,29,61,33,29,29,  
 35,63,63,39,39,63,39,39,63,63  
 330 DATA 47,51,51,63,51,51,63,63  
 ,63,59,55,47,55,59,63,63,63,1  
 ,63,1,63,63,63,63,47,55,59,55,47  
 ,63,63,55,63,55,59,61,29,35,63,3  
 9,31,17,21,17,29,35,63,29,29,1,2  
 9,29,43,55,63,3,45,45,35,45,45,3  
 ,63,35,29,31,31,31,29,35,63,3  
 340 DATA 45,45,45,45,45,3,63,1,3  
 1,31,3,31,31,1,63,31,31,3,31,  
 31,1,63,35,29,29,25,31,29,35,63,  
 29,29,29,1,29,29,29,63,35,55,55,  
 55,55,55,35,63,39,27,27,59,59,59  
 ,59,63,29,27,23,15,23,27,29,63,1  
 ,31,31,31,31,31,31,63,29,29,29  
 350 DATA 21,21,9,29,63,29,29,29,  
 25,21,13,29,63,35,29,29,29,39,29  
 ,35,63,31,31,31,3,29,29,3,63,37,  
 27,21,29,29,29,35,63,29,27,23,3,  
 29,29,3,63,35,29,61,35,31,29,35,  
 63,55,55,55,55,55,1,63,35,29,  
 29,29,29,29,29,63,55,43,29,29  
 360 DATA 29,29,29,63,43,21,21,21  
 ,29,29,29,63,29,29,43,55,43,29,2  
 9,63,55,55,55,43,29,29,29,63,1,3  
 1,47,55,59,61,1,63,63,55,47,1,47  
 ,55,63,63,49,59,21,43,39,43,45,6  
 3,63,55,59,1,59,55,63,63,55,55,5  
 5,21,35,55,63,63,43,43,1,43,1  
 370 DATA 43,43,63,63,1,63,63,  
 63,63,63,35,27,27,27,35,63,63,63  
 ,7,27,27,27,7,31,31,63,39,27,31,  
 27,39,63,63,63,35,27,27,27,35,59  
 ,59,63,39,31,3,27,39,63,63,63,47  
 ,47,47,3,47,47,51,39,59,35,27,27  
 ,35,63,63,63,27,27,27,7,31  
 380 DATA 31,63,47,47,47,63,47  
 ,63,15,55,55,55,55,63,55,63,63,2  
 7,23,15,23,27,31,31,63,47,47,47,  
 47,47,47,47,63,21,21,21,11,63  
 ,63,63,27,27,27,11,23,63,63,63,3  
 9,27,27,27,39,63,63,31,31,7,27,2  
 7,7,63,63,59,59,35,27,27,35,63  
 390 DATA 63,63,31,31,31,11,23,63  
 ,63,63,7,59,39,31,35,63,63,63,51  
 ,45,47,47,47,3,47,63,39,27,27,27  
 ,27,63,63,63,55,43,29,29,29,63,6  
 3,63,43,21,21,21,21,63,63,63,29,  
 43,55,43,29,63,63,39,59,35,27,27  
 ,27,63,63,63,3,31,47,55,3,63,63  
 400 DATA 63,59,33,19,43,39,43,45  
 ,63,63,35,35,35,35,35,63,63,59,3  
 3,19,43,7,11,13,63,63,63,63,1,63  
 ,63,63,63,63,1,1,1,1,1,63,63,63,  
 63,63,63,63,63,63,63,63,63,63,63  
 ,63,7,7,63,63,63,63,63,56,56,  
 63,63,63,63,63,63,0,0,63,63,63  
 410 DATA 7,7,7,63,63,63,63,63,7,  
 7,7,7,7,63,63,63,7,7,7,56,56,63,  
 63,63,7,7,7,0,0,63,63,63,56,56,5  
 6,63,63,63,63,63,56,56,56,7,7,63  
 ,63,63,56,56,56,56,56,63,63,63,5  
 6,56,56,0,0,63,63,63,0,0,0,63,63  
 ,63,63,63,0,0,0,7,7,63,63,63,0  
 420 DATA 0,0,56,56,63,63,63,0,0,  
 0,0,0,7,7,7,63,63,63,63,7,7,7  
 ,63,63,63,7,7,7,7,7,63,63,63,56,  
 56,7,7,7,63,63,63,0,0,7,7,7,7,7,  
 7,63,63,7,7,7,7,7,7,7,7,7,7,7,  
 7,7,56,56,7,7,7,7,7,0,0,7,7,7,  
 56,56,56,63,63,7,7,7,56,56,56

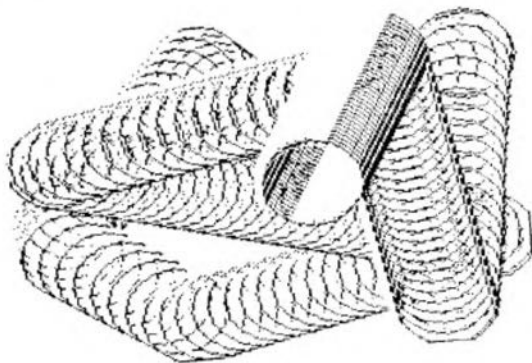
430 DATA 7,7,7,7,7,56,56,56,56,5  
 6,7,7,7,56,56,56,0,0,7,7,7,0,0,0  
 ,63,63,7,7,7,0,0,7,7,7,7,7,0,0  
 ,0,56,56,7,7,7,0,0,0,0,63,39,3  
 1,17,21,17,29,35,63,29,29,1,29,2  
 9,43,55,63,3,45,45,35,45,45,3,63  
 ,35,29,31,31,31,29,35,63,3,45  
 440 DATA 45,45,45,45,3,63,1,31,3  
 1,3,31,31,1,63,31,31,31,3,31,31,  
 1,63,35,29,29,25,31,29,35,63,29,  
 29,29,1,29,29,29,63,35,55,55,55,  
 55,55,35,63,39,27,27,59,59,59,59  
 ,63,29,27,23,15,23,27,29,63,1,31  
 ,31,31,31,31,63,29,29,29,21  
 450 DATA 21,9,29,63,29,29,29,25,  
 21,13,29,63,35,29,29,29,29,35  
 ,63,31,31,31,3,29,29,3,63,37,27,  
 21,29,29,29,35,63,29,27,23,3,29,  
 29,3,63,35,29,61,35,31,29,35,63,  
 55,55,55,55,55,55,1,63,35,29,29,  
 29,29,29,29,63,55,43,29,29,29  
 460 DATA 29,29,63,43,21,21,21,29  
 ,29,29,63,29,29,43,55,43,29,29,6  
 3,55,55,55,43,29,29,29,63,1,31,4  
 7,55,59,61,1,63,63,55,47,1,47,55  
 ,63,63,49,59,21,43,39,43,45,63,6  
 3,55,59,1,59,55,63,63,63,55,55,5  
 5,21,35,55,63,43,43,1,43,1,43  
 470 DATA 43,56,56,56,63,63,63,63  
 ,63,56,56,56,63,63,63,7,7,56,56,  
 56,63,63,63,63,56,56,56,63,63,63  
 ,63,0,0,56,56,56,7,7,7,63,63,56,  
 56,56,7,7,7,7,7,56,56,56,7,7,7,5  
 6,56,56,56,56,7,7,7,0,0,56,56,56  
 ,56,56,56,63,63,56,56,56,56,56  
 480 DATA 56,7,7,56,56,56,56,56,5  
 6,56,56,56,56,56,56,56,0,0,56  
 ,56,56,0,0,0,63,63,56,56,56,0,0,  
 0,7,7,56,56,56,0,0,0,56,56,56,56  
 ,56,0,0,0,0,0,0,0,0,63,63,63,63,  
 63,0,0,0,63,63,63,7,7,0,0,0,63,6  
 3,63,56,56,0,0,0,63,63,63,0,0  
 490 DATA 0,0,0,7,7,7,63,63,0,0,0  
 ,7,7,7,7,7,0,0,0,7,7,7,56,56,0,0  
 ,0,7,7,7,0,0,0,0,0,56,56,56,63,6  
 3,0,0,0,56,56,56,7,7,0,0,56,56  
 ,56,56,56,0,0,0,56,56,56,0,0,0,0  
 ,0,0,0,0,63,63,0,0,0,0,0,7,7,0  
 ,0,0,0,0,0,56,56,0,0,0,0,0,0,0  
 500 DATA 0,0,0  
 600 'SAVE CASSETTE COPIES  
 610 CLS:MOTORON  
 620 FOR I=0 TO 10000:NEXT I  
 630 CSAVE"VIABASIC"  
 650 FOR I=0 TO 5000:NEXT I  
 660 CSAVE"VIABASIC"  
 670 MOTOROFF  
 690 CLS:PRINT"NEXT CASSETTE PLEA  
 SE"  
 700 IF INKEYS="" THEN 700  
 710 GOTO 620



# Graphics

by Andrew Simpson

32KECB



**M**Y PROGRAM demonstrates and displays the Extended Color Basic graphics commands. The program itself is fairly self-explanatory and can be modified so that it runs through itself instead of the user having to press the space bar at the appropriate time.

## The Listing:

```
0 CLS:PRINT" GRAPHICS DISPLAY
BY ANDO":PRINT:PRINT" THIS PROGR
AM DEMONSTRATES AND DISPLAYS TH
E EXTENDED BASIC GRAPHIC COM
MANDS.":PRINT:PRINT:PRINT" PRESS
ANY KEY TO PROCEED TO THENEXT D
EMONSTRATION DURING THE PROGRA
M":GOSUB4
1 PRINT" THE FIRST PART OF THE P
ROGRAM USES pmode, pcls, pclear
AND pcopy. THE PROGRAM GOES
THROUGH THE DIFFERENT pmode'S ST
ARTING AT DIFFERENT PAGES. ON E
ACH PAGETHERE IS A SMALL CIRCLE
DRAWN AT40,20. THERE IS A LINE A
T THE TOP OF EACH ";
2 PRINT"PAGE. EACH PAGE IS NUMB
ERED AND THERE IS A CIRCLE DRAW
N ON PAGE 5 OF EACH PMODE AT200,
96. THE PROGRAM GOES ON TO FLIP
THROUGH THE PAGES TO SHOW AYO-Y
O. FROM THE MANUAL.":GOSUB4
3 PCLEAR8:GOTO90
4 IFINKEY$=""THEN4ELSECLS:RETURN
5 POKE65495,0
6 PMODE4,1:PCLS:SCREEN1,1
7 I=0:Z=0
8 COLOR2,1
9 PCLS
10 A=RND(255):C=RND(191):E=RND(2
55):G=RND(191)
11 B=RND(10):D=RND(10):F=RND(10)
:H=RND(10)
12 IFINKEY$=""THENI=I+1:Z=Z+1ELS
EPRINT" THE NEXT PROGRAM DRAWS C
IRCLES, OVALS AND ARCS OF DIFFERE
NT COLORS. THEN DEMONSTRATES
paint BY FILLING IN COMPLETED C
IRCLES. THEN paint'S TO UP TO THE
SPECIFIED BOARDERS.":GOT
058
13 IF A<10 THEN B=RND(6)
14 IF A>245 THEN B=RND(6):B=0-B
15 IF C<10 THEN D=RND(6)
16 IF C>181 THEN D=RND(6):D=0-D
17 IF E<10 THEN F=RND(6)
18 IF E>245 THEN F=RND(6):F=0-F
```

```
19 IF G<10 THEN H=RND(6)
20 IF G>181 THEN H=RND(6):H=0-H
21 A=A+B:C=C+D:E=E+F:G=G+H
22 IF I=1 THEN J=A:K=C:L=E:M=G:G
OTO39
23 IF I=2 THEN N=A:O=C:P=E:Q=G:G
OTO39
24 IF I=3 THEN R=A:S=C:T=E:U=G:G
OTO39
25 IF I=4 THEN V=A:W=C:X=E:Y=G:G
OTO39
26 IF I=5 THEN AA=A:AB=C:AC=E:AD
=G:GOTO39
27 IF I=6 THEN AE=A:AF=C:AG=E:AH
=G:GOTO39
28 IF I=7 THEN AI=A:AJ=C:AK=E:AL
=G:GOTO39
29 IF I=8 THEN AM=A:AN=C:AO=E:AP
=G:GOTO39
30 IF I=9 THEN AQ=A:AR=C:AS=E:AT
=G:GOTO39
31 IF I=10 THEN AU=A:AV=C:AW=E:A
X=G:GOTO39
32 IF I=11 THEN BA=A:BB=C:BC=E:B
D=G:GOTO39
33 IF I=12 THEN BE=A:BF=C:BG=E:B
H=G:GOTO39
34 IF I=13 THEN BI=A:BJ=C:BK=E:B
L=G:GOTO39
35 IF I=14 THEN BM=A:BN=C:BO=E:B
P=G:GOTO39
36 IF I=15 THEN BQ=A:BR=C:BS=E:B
T=G:GOTO39
37 IF I=16 THEN BU=A:BV=C:BW=E:B
X=G
38 IF I=16 THEN I=0
39 LINE(A,C)-(E,G),PSET
40 IF Z=16 THEN LINE(J,K)-(L,M),
PRESET:GOTO 12
41 IF Z=17 THEN LINE(N,O)-(P,Q),
PRESET:GOTO12
42 IF Z=18 THEN LINE(R,S)-(T,U),
PRESET:GOTO 12
43 IF Z=19 THEN LINE(V,W)-(X,Y),
PRESET:GOTO 12
44 IF Z=20 THEN LINE(AA,AB)-(AC,
AD),PRESET:GOTO 12
45 IF Z=21 THEN LINE(AE,AF)-(AG,
AH),PRESET:GOTO 12
46 IF Z=22 THEN LINE(AI,AJ)-(AK,
AL),PRESET:GOTO 12
47 IF Z=23 THEN LINE(AM,AN)-(AO,
AP),PRESET:GOTO 12
48 IF Z=24 THEN LINE(AQ,AR)-(AS,
AT),PRESET:GOTO12
49 IF Z=25 THEN LINE(AU,AV)-(AW,
AX),PRESET:GOTO12
50 IF Z=26 THEN LINE(BA,BB)-(BC,
BD),PRESET:GOTO12
```

```
51 IF Z=27 THEN LINE(BE,BF)-(BG,
BH),PRESET:GOTO12
52 IF Z=28 THEN LINE(BI,BJ)-(BK,
BL),PRESET:GOTO12
53 IF Z=29 THEN LINE(BM,BN)-(BO,
BP),PRESET:GOTO12
54 IF Z=30 THEN LINE(BQ,BR)-(BS,
BT),PRESET:GOTO12
55 IF Z=31 THEN LINE(BU,BV)-(BW,
BX),PRESET
56 IF Z=31 THEN Z=15
57 GOTO12
58 PRINT" THE NEXT PROGRAMS SHOW
A FEW THINGS THAT CAN BE DONE
WITH circle.":GOSUB4
59 PMODE3,1:PCLS:SCREEN1,1:CIRCL
E(20,20),20:CIRCLE(90,20),20,2:C
IRCLE(170,20),20,3,.5:CIRCLE(20,
98),20,4,1.5:CIRCLE(90,98),20,2,
1,0,.5:CIRCLE(170,98),20,3,.5,.2
5,.75
60 IFINKEY$=""THEN60ELSEPAINT(20
,20),2,4:PAINT(90,20),3,2:PAINT(
170,20),4,3:PAINT(20,98),2,4
61 IFINKEY$=""THEN61ELSEPAINT(17
0,98),2,3
62 IFINKEY$=""THEN62
63 PMODE4,1:PCLS:SCREEN1,1
64 X=30:Y=30:R=5:S=3
65 CIRCLE(X,Y),R
66 IFR=>80THENS=-5
67 IFR<4THEN69
68 X=X+5:Y=Y+3:R=R+S:GOTO65
69 IFINKEY$=""THEN69
70 PMODE4,1:COLOR1,2:PCLS:SCREEN
1,1
71 Z=5:W=5
72 X=RND(256):Y=RND(192)
73 CIRCLE(X,Y),25,0
74 CIRCLE(X+1,Y+1),25,0
75 CIRCLE(X+2,Y+2),25,0
76 CIRCLE(X+3,Y+3),25,0
77 CIRCLE(X+4,Y+4),25,0
78 CIRCLE(X,Y),25,1
79 IF X>220 THEN GOSUB 86
80 IF X<25 THEN GOSUB 88
81 IF Y=>165 THEN GOSUB 87
82 IF Y<25 THEN GOSUB 89
83 X=X+Z
84 Y=Y+W
85 IFINKEY$=""THEN73ELSE245
86 Z=RND(5)*2-1:Z=-Z:RETURN
87 W=RND(5)*2-1:W=-W:RETURN
88 Z=RND(5)*2-1:RETURN
89 W=RND(5)*2-1:RETURN
90 X=1:CLS
91 PMODEP:PCLS:PRINT@202,"PMODE"
P",X:PRINT@234,"MODE"P:PRINT@26
6,"START PAGE"X:FORT=1TO2000:NEX
```

```

T:CLS
92 LINE(0,0)-(255,0),PSET:CIRCLE
(40,20),15
93 DRAW"BM120,10D20R10U10NL10U10
L10":IFZZ=1THEN122
94 PCOPY1TO8:GOSUB116
95 DRAW"BM120,10R10D20":IFZZ=1TH
EN122
96 PCOPY1TO7:GOSUB116
97 DRAW"BM120,10D20R10U10L10":IF
ZZ=1THEN122
98 PCOPY1TO6:GOSUB116
99 DRAW"BM120,10NR10D10R10D10L10
":IFZZ=1THEN122
100 PCOPY1TO5:GOSUB116
101 DRAW"BM120,10D15R8NU5ND5R2":
IFZZ=1THEN122
102 PCOPY1TO4:GOSUB116
103 DRAW"BM120,10R10D10NL7D10L10
":IFZZ=1THEN122
104 PCOPY1TO3:GOSUB116
105 DRAW"BM120,10R10D10L10D10R10
":IFZZ=1THEN122
106 PCOPY1TO2:GOSUB116
107 DRAW"BM125,10D20":IFZZ=1THEN
122
108 PMODEP,5:CIRCLE(200,96),50
109 PMODEP,X:SCREEN1,1
110 FORT=1TO2000:NEXT
111 IFP=0ANDX=>8THEN117
112 IF(P=1ORP=2)ANDX=>7THEN117
113 IFP=3ANDX=>5THEN117
114 IFP=4ANDX=>5THEN118
115 CLS:X=X+1:PRINT@202,"PMODE" P
",X:PRINT@234,"MODE" P:PRINT@266
,"START PAGE" X:FORT=1TO2000:NEXT
:GOTO109
116 LINE(120,10)-(130,30),PRESET
,BF:RETURN
117 P=P+1:X=1:GOTO91
118 ZZ=1:DD=300
119 FORP=1TO8
120 PMODE0,P:SCREEN1,1
121 PCLS:ON P GOTO107,105,103,10
1,99,97,95,93
122 LINE(148,0)-(158,10+(P-1)*15
),PSET
123 CIRCLE(148,P*15),15
124 FORYY=1TO300:NEXT
125 NEXTP
126 FORP=1TO8:GOSUB130:NEXTP
127 FORP=7TO1STEP-2:GOSUB130:NEX
TP
128 IFINKEY$=""THEN126ELSEPCLEAR
4:CLS:PRINT" THE NEXT PART OF TH
E PROGRAM RANDOMLY pset'S POIN
TS, WHEN A CERTAIN ppoint IS FO
UND A LINE IS DRAWN AND A POINT
IS preset FOLLOWED BY A pset."
129 PRINT" AFTER THAT A SINE WAV
E IS pset BASED ON A PROGRAM FRO
M COLOR COMPUTER GRAPHICS.":GO
SUB4:GOTO205
130 PMODE0,P
131 SCREEN1,1
132 DD=DD-5:IFDD<20THENDD=20
133 FORT=1TODD:NEXTT
134 RETURN
135 PCLS
136 GOTO141
137 LINE((255-X),(191-Y))-(X,Y),
PSET
138 IFINKEY$<>""THEN165
139 J=J+1:IF J>A THEN J=0:A=RND(
50)
140 RETURN
141 REM ROTATING FAN
142 FOR I=1 TO 5 STEP 4
143 PMODE3,1
144 SCREEN1,0
145 A=25:X=0:Y=0:J=0
146 FOR X=0 TO 254
147 COLOR X/32+1,5
148 GOSUB137:NEXT X
149 FOR Y=0 TO 190
150 COLOR Y/24+1,5
151 GOSUB137:NEXT Y
152 FOR X=255 TO 1 STEP-1
153 COLOR X/32+1,5
154 GOSUB137:NEXT X
155 FOR Y=191 TO 1 STEP -1
156 COLOR Y/24+1,5
157 GOSUB137:NEXT Y
158 NEXT I
159 FOR I=1 TO 5 STEP 4
160 PMODE3,1
161 SCREEN1,0
162 FOR T=1 TO 30:NEXT T
163 NEXT I
164 IFINKEY$=""THEN159
165 PCLS3
166 FOR I=3 TO 7
167 FOR J=2 TO 6
168 FOR R=0 TO 3
169 COLOR R,S
170 A=0:B=255:C=0:D=191
171 LINE(A,C)-(B,D),PSET,B
172 A=A+J:B=B-J:C=C+I:D=D-I
173 IFINKEY$<>""THENPRINT" TWO P
ROGRAMS USING line WITH COS AN
D SINE. FROM HOME COMPUTERADVANC
ED COARSE.":GOSUB4:GOTO178
174 IF A<255 AND C<191 THEN171
175 NEXT R
176 NEXT J,I
177 GOTO166
178 PMODE4,1:PCLS:SCREEN1,1
179 XM=256:YM=192:XC=INT(XM/2):Y
C=INT(YM/2)
180 R=50
181 PI=3.1415926
182 S=PI/30
183 FORI=0TO2000STEP5
184 X=XC+(R+30)*COS(I):Y=YC+(R+3
0)*SIN(I)
185 P=XC+R*SIN(I):Q=YC+R*COS(I)
186 LINE(X,Y)-(P,Q),PSET
187 IFINKEY$<>""THEN190
188 NEXT I
189 IFINKEY$=""THEN189
190 PCLS
191 FORI=0TO2000STEP 5
192 X=XC+(R+30)*COS(I)*SIN(I):Y=
YC+(R+30)*SIN(I)*COS(I)
193 P=XC+R*SIN(I):Q=YC+R*COS(I)
194 LINE(X,Y)-(P,Q),PSET
195 IFINKEY$<>""THENPRINT" A SHO
RT PROGRAM TO DEMONSTRATE line p
set AND preset.":GOSUB4:GOTO5
196 NEXT I
197 IFINKEY$=""THEN197ELSE5
198 PMODE4,1:PCLS:SCREEN1,1:LINE
(10,10)-(245,180),PSET
199 IFINKEY$=""THEN199ELSELINE(2
0,18)-(230,171),PSET,B
200 IFINKEY$=""THEN200ELSELINE(3
1,26)-(220,163),PSET,BF
201 IFINKEY$=""THEN201ELSELINE(2
45,8)-(10,179),PRESET
202 IFINKEY$=""THEN202ELSELINE(6
1,48)-(190,141),PRESET,B
203 IFINKEY$=""THEN203ELSELINE(9
9,76)-(151,113),PRESET,BF
204 IFINKEY$=""THEN204ELSELINE135
205 POKE65495,0:PMODE0,1:PCLS:SC
REEN1,1
206 PSET((RND(50)+100),(RND(50)+
100)):IFPPOINT(125,125)=0THEN206
207 LINE(10,50)-(245,50),PSET
208 FORX=10TO245:PRESET(X,50):PS
ET(X-1,50):NEXT:IFINKEY$=""THEN2
08
209 PMODE4,1:PCLS:SCREEN1,1:ND=4
00:SD=20
210 ND=ND+SD:FORX=0TO255:RD=((X
/255)*ND)+SD)/57.29578:PSET(X,96
-SIN(RD)*95):NEXT:IFINKEY$=""THE
N210
211 PRINT" NOW COMES line USING
BOTH pset AND preset. DEMONSTR
ING b AND bf. TO SHOW line AND c
olor BOTH FAN AND IN-OUT COME FR
OM THE MANUAL.":GOSUB4:GOTO19
8
212 PMODE3,1:PCLS:SCREEN1,1
213 DRAW"BM30,30NU30NE30NR30NF30
ND30NG30NL30NH30"
214 IFINKEY$=""THEN214
215 FORX=1TO2:DRAW"BM90,30M140,2
0K-40,+40M90,30":DRAW"S8C3"
216 IFINKEY$=""THEN216ELSENEXT:D
RAW"SA"
217 AS="C2BM148,106U50R20D20L20"
:DRAW"A0"+AS:GOSUB244:DRAW"A1"+A
$:GOSUB244:DRAW"A2"+AS:GOSUB244:
DRAW"A3"+AS
218 IFINKEY$=""THEN218
219 PCLS:DRAW"BM128,96"
220 IFINKEY$=""THENONRND(14)GOTO
221,222,223,224,225,226,227,228
,229,230,231,232,233ELSEGOTO235
221 DRAW"U20":GOTO220
222 DRAW"E20":GOTO220
223 DRAW"R20":GOTO220
224 DRAW"F20":GOTO220
225 DRAW"D20":GOTO220
226 DRAW"G20":GOTO220
227 DRAW"L20":GOTO220
228 DRAW"H20":GOTO220
229 DRAW"C1":GOTO220
230 DRAW"C2":GOTO220
231 DRAW"C3":GOTO220
232 DRAW"C4":GOTO220
233 IFZ=20THENPAINT(RND(256),RND
(191)),RND(4),RND(4):Z=0:GOTO220
234 Z=Z+1:GOTO220
235 PCLS:DRAW"A0":AS="BL8R16DL16
UBR6U4R2NU4R2D4"
236 FORS=1TO62
237 BS="S"+STR$(S)
238 DRAW"C3: BM128,136"+BS+AS
239 FORI=1TO99/S:NEXTI
240 DRAW"C1: BM128,136"+BS+AS
241 NEXT
242 FORX=1TO1000:NEXT
243 PRINT" THE NEXT TWO PROGRAMS
ARE CENTERED AROUND THE X,
Y AXIS":GOSUB4:GOTO251
244 FORI=0TO1000:NEXT:RETURN
245 PCLS:Y=0
246 FOR X=.02 TO 1.01STEP .01
247 Y=Y+1
248 CIRCLE(Y,Y),Y,1,X,.01,X
249 NEXT X
250 GOSUB4:PRINT" draw SHOWS THE

```

# CoCo PROGRAMS

```

DIRECTION WE CANdraw, USING REL
ATIVE AND ABSOLUTMOTION, THE USE
OF a, c AND s OPTIONS ARE DEM
ONSTRATED." :GOSUB4:GOTO212
251 PMODE3,1:PCLS:SCREEN1,1:X=12
8:Y=96
252 C=RND(4):A=RND(128):B=RND(96
):D=RND(128):E=RND(96):F=RND(128
):G=RND(96):PSET(X-F,Y-G,C):PSET
(X+F,Y+G,C):PSET(X-F,Y+G,C):PSET
(X+F,Y-G,C):ONRND(3)GOTO 253,254
,255,256,252
253 COLOR2:GOTO257
254 COLOR3:GOTO257
255 COLOR4:GOTO257
256 COLOR1
257 LINE(X-A,Y-B)-(X-D,Y-E),PSET
:LINE(X-A,Y+B)-(X-D,Y+E),PSET:LI
NE(X+A,Y+B)-(X+D,Y+E),PSET:LINE(
X+A,Y-B)-(X+D,Y-E),PSET:Z=Z+1:IF
Z=20THENPCLS:Z=0
258 IFINKEY$=""THEN252
259 PMODE4,1:PCLS:SCREEN1,1:X=12
8:Y=96
260 A=11:C=181:B=X:D=X:E=RND(6)+
2
261 LINE(X,A)-(D,Y),PSET:LINE-(X
,C),PSET:LINE(X,A)-(B,Y),PSET:LI
NE-(X,C),PSET:IFA=>96THENFORZ=1T
O1000:NEXT:PCLS:GOTO260
262 A=A+E:B=B-E:C=C-E:D=D+E
263 IFINKEY$=""THEN261ELSEPRINT"
THE NEXT AND LAST PART SHOWS
THE USE OF get AND put USING
pset, preset, and, or AND not
OPTIONS. IT DOES NOT DEMONSTRATE
THE g OPTION." :GOSUB4
264 AA=0:DIM PS(65),PR(94),AN(49
),O(33),NO(49)
265 DA$="NRU5END6R3D4NL3D2RU5HBR
4BD6"
266 DD$="NRU6RND6R3ND6FD4GNL3BR4
"
267 DE$="NRU6RNR4D3NR2D3R4BR3"
268 DN$="NRU6FND5M+3,+4U5RD6NHBR
4"
269 DO$="BUNFU4END6R3ND6FD4GNL3B
R4"
270 DP$="NRU6RND6R3ND3FDGNL3BD3B
R4"
271 DR$="NRU6RND6R3ND3FDGL2NLF3B
R3"
272 DS$="BU4NFUEND3R3FBD3HNL3FDG
NU3L3HBD8R8"
273 DT$="BR2NRU6NL2RNR2D6BR5"
274 PMODE4,1:PCLS:SCREEN1,1
275 DRAW"S12BM5,20":DRAWDP$:DRAW
DS$:DRAWDS$:DRAWDT$:GET(0,0)-(10
0,25),PS,G:FORX=1TO500:NEXT:PCLS
276 DRAW"BM5,20":DRAWDP$:DRAWDR$
:DRAWDS$:DRAWDS$:DRAWDS$:DRAWDT$
:GET(0,0)-(145,25),PR,G:FORX=1TO
500:NEXT:PCLS
277 DRAW"BM5,20":DRAWDA$:DRAWDN$
:DRAWDD$:GET(0,0)-(75,25),AN,G:F
ORX=1TO500:NEXT:PCLS
278 DRAW"BM5,20":DRAWDO$:DRAWDR$
:GET(0,0)-(50,25),O,G:FORX=1TO50
0:NEXT:PCLS
279 DRAW"BM5,20":DRAWDN$:DRAWDO$
:DRAWDT$:GET(0,0)-(75,25),NO,G:F
ORX=1TO500:NEXT:PCLS
280 LINE(0,0)-(128,191),PSET,BF
281 PUT(80,10)-(180,35),PS,PSET
282 PUT(60,40)-(205,65),PR,PRESE

```

```

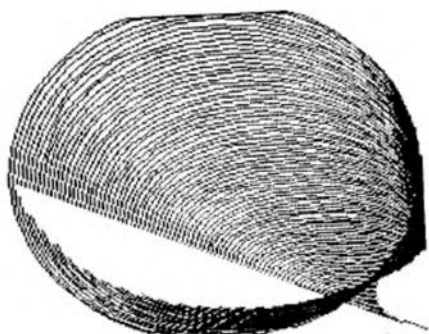
T
283 PUT(90,70)-(165,95),AN,AND
284 PUT(100,100)-(150,125),O,OR
285 PUT(90,130)-(165,155),NO,NOT
286 IFINKEY$=""THEN286ELSEIFAA=1
THEN294
287 PCLS:LINE(0,0)-(128,191),PSE
T,BF:X=50:Y=20
288 PUT(X,Y)-(X+100,Y+25),PS,PSE
T:X=X+1:Y=Y+1:IFINKEY$=""THEN288
ELSEPCLS:LINE(0,0)-(128,191),PSE
T,BF:X=20:Y=20
289 PUT(X,Y)-(X+145,Y+25),PR,PRE
SET:X=X+1:Y=Y+1:IFINKEY$=""THEN2
89ELSEPCLS:LINE(0,0)-(128,191),P
SET,BF:X=70:Y=40
290 PUT(X,Y)-(X+75,Y+25),AN,AND:
X=X+1:Y=Y+1:IFINKEY$=""THEN290EL
SEPCLS:LINE(0,0)-(128,191),PSET,
BF:X=80:Y=40
291 PUT(X,Y)-(X+50,Y+25),O,OR:X=
X+1:Y=Y+1:IFINKEY$=""THEN291ELSE
PCLS:LINE(0,0)-(128,191),PSET,BF
:X=60:Y=40
292 PUT(X,Y)-(X+75,Y+25),NO,NOT:
X=X+1:Y=Y+1:IFINKEY$=""THEN292EL
SEPCLS
293 FORX=0TO256STEP6:LINE(X,0)-(
X+1,191),PSET,B:NEXT:AA=1:GOTO28
1
294 X=0:PCLS:FORX=20TO150STEP30:
PUT(0,Y)-(100,Y+25),PS,PSET:X=X+
1:ON X GOTO295,296,297,298,299
295 PUT(110,Y+1)-(210,Y+26),PS,P
SET:NEXT
296 PUT(0,Y+1)-(100,Y+26),PS,PRE
SET:PUT(110,Y)-(255,Y+25),PR,PSE
T:NEXT
297 PUT(0,Y+1)-(100,Y+26),PS,AND
:PUT(110,Y)-(185,Y+25),AN,PSET:N
EXT

```

```

298 PUT(0,Y+1)-(100,Y+26),PS,OR:
PUT(110,Y)-(160,Y+25),O,PSET:NEX
T
299 PUT(0,Y+1)-(100,Y+26),PS,NOT
:PUT(110,Y)-(185,Y+25),NO,PSET:N
EXT
300 IFINKEY$=""THEN300
301 X=1:PMODE3,1:PCLS:SCREEN1,1
302 DIMA(24),B(24),C(24)
303 A$="BM10,2C2NL2NDR2NDF2NGD2C
3G2L4U3LEU2DR3F2D2RBL2BD2C4DF2D5
GL4HU5E2U"
304 B$="BG3G2L2H2RF2R2E2BR9F2D2L
UH2BD5BL3F3R3DND2L4H4G4D4NL2RU3E
3
305 C$="BG2PD2G2L2UR2BR8BU4F3GH3
ED7BL3F3R3DND2L3H4LD8NL2RU8
306 D$="BD6L4U1R3BR7BU4R1D3LU2LB
D6BL4F8NL2RH8G4F4NG2E1H3E4
307 DRAW"SA":DRAWA$:DRAWB$:PSET(
8,21,4):PSET(10,19,4):PSET(15,18
,4):GOSUB318
308 DRAWA$:DRAWB$:PSET(13,19,4):
GOSUB318
309 LINE(0,0)-(30,30),PRESET,BF
310 DRAWA$:DRAWB$:GOSUB318
311 PUT(80,10)-(180,35),PS,PSET:
PUT(60,40)-(205,65),PR,PSET:PUT(
90,70)-(165,95),AN,PSET:PUT(100,
100)-(150,125),O,PSET:PUT(90,130
)-(165,155),NO,PSET:X=200
312 PUT(X,5)-(X+30,35),A,PSET:X=
X-5:PUT(X,5)-(X+30,35),B,PSET:X=
X-5:PUT(X,5)-(X+30,35),C,PSET:X=
X-5:IFX<30THENX=200ELSEGOTO312
313 PUT(X,35)-(X+30,65),A,PRESET
:X=X-5:PUT(X,35)-(X+30,65),B,PRE
SET:X=X-5:PUT(X,35)-(X+30,65),C,
PRESET:X=X-5:IFX<30THENX=200ELSE
EGOTO313
314 PUT(X,65)-(X+30,95),A,AND:X=
X-5:PUT(X,65)-(X+30,95),B,AND:X=
X-5:PUT(X,65)-(X+30,95),C,AND:X=
X-5:IFX<30THENX=200ELSEGOTO314
315 PUT(X,95)-(X+30,125),A,OR:X=
X-5:PUT(X,95)-(X+30,125),B,OR:X=
X-5:PUT(X,95)-(X+30,125),C,OR:X=
X-5:IFX<30THENX=200ELSE315
316 PUT(X,125)-(X+30,155),A,NOT:
X=X-5:PUT(X,125)-(X+30,155),B,NO
T:X=X-5:PUT(X,125)-(X+30,155),C,
NOT:X=X-5:IFX>30THEN316
317 IFINKEY$=""THEN317ELSECLS:FO
RX=1TO10:CLS:FORT=1TO300:NEXT:IF
INKEY$<>""THENENDELSEPRINT@238,"
bye":FORX=1TO300:NEXTY,X:CLS:END
318 PAINT(10,14),4,4:ON X GOTO31
9,320,321
319 GET(0,0)-(30,30),A,G:X=X+1:P
CLS:RETURN
320 GET(0,0)-(30,30),B,G:X=X+1:R
ETURN
321 GET(0,0)-(30,30),C,G:X=X+1:P
CLS:RETURN

```



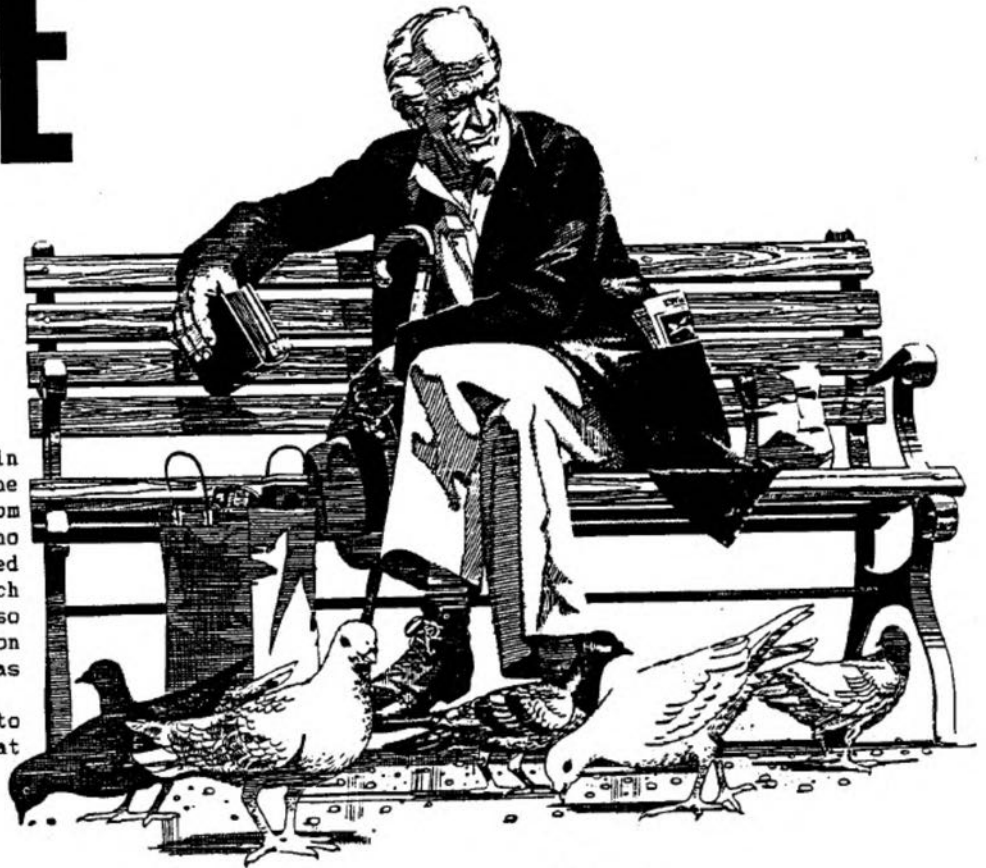
# RETIRE

by Brian Grey

16K CB  
UTILITY

**T**HIS PROGRAM came about in a rather funny way. The idea also came from work. An apprentice who knew I was a computer freak asked the burning question. 'How much would he have to save each year so he could retire on a million dollars? Two weeks later I was able to answer his question.

The program prints everything to the screen. So lets make that million.



## The Listing:

```

0 GOTO5
1 'RETIRE -- BRIAN GREY
2 SAVE"RETIRE:3":END
5 CLS
10 FORZ=448T0510
20 PRINT@Z, CHRS(127);
30 NEXTZ
40 FORX=0T063
45 PRINT@X, CHRS(127);
50 NEXTX
55 PRINT@232, "RETIREMNT FUND"
60 PRINT@368, "BY BRIAN GRAY"
70 PRINT@418, "<DO YOU NEED INSTR
UCTIONS>"
75 I$=INKEY$: IF I$="" THEN 75
80 IF I$="Y" THEN GOTO 790
110 CLS
220 PRINT@232, "WHAT IS YOUR NAME
"
230 INPUT A$
240 CLS
250 PRINT@232, "WHAT AGE ARE YOU"
260 INPUT B
270 CLS
275 C=0: D=0: E=0: F=0: G=0: P=0: H=0:
M=0: I=0: J=0: K=0: Y=0
280 PRINT@232, "WHAT AGE DO YOU W
ISH
          TO RETIRE"
290 INPUT C
300 CLS
310 PRINT@228, "HOW MUCH DO YOU T
HINK
          YOU CAN SAVE EACH
YEAR"

```

```

320 INPUT D
330 CLS
340 PRINT@228, "HOW MUCH DO YOU W
ISH
          TO RETIRE ON"
350 INPUT E
360 CLS
370 PRINT@228, "WHAT IS A REASONA
BLE
          INTEREST RATE YOU
          THINK YOU CAN GET
"
380 INPUT F
390 CLS
400 PRINT@228, "WHAT TAX WILL YOU
PAY
          (1)  NIL
          (2)  33 PERCENT
          (3)  45 PERCENT
          (4)  60 PERCENT"
410 INPUT G
420 CLS
430 ON G GOTO 435, 440, 445, 450
435 P=0: GOTO 460
440 P=33: GOTO 460
445 P=45: GOTO 460
450 P=60: GOTO 460
460 H=C-B
470 M=M+D: M=INT(M)
475 I=M/100*F
480 J=I/100*P
485 K=I-J
490 M=M+K
500 Y=Y+1
502 PRINTM, Y
506 IFM>=E THEN GOTO590
508 IFM=H THEN GOTO 690
510 IFM<E THEN GOTO 470
590 PRINT

```

```

600 PRINT
610 PRINT@416, "WELL "A$
615 PRINT@448, "BETWEEN NOW AND R
ETIREMNT THERE WILL BE"H"YEARS.
BY THEN YOU WILL HAVE"M"DOLLA
RS."
620 GOTO900
690 PRINT
700 PRINT@416, "WELL "A$
710 PRINT@448, "YOU HAVE RUN OUT
OF TIME. BETWEEN NOW AND RETIREME
NT THER ARE"H"YEARS. IN THAT TIME
YOU WILL HAVE"M"DOLLARS"
715 GOTO900
790 CLS
800 PRINT"THIS PROGRAM IS TO HEL
P IN THE PLANNING OF A SUM OF M
ONEY FOR RETIREMNT"
810 PRINT
820 PRINT"A CERTAIN AMOUNT MUST
BE ADDED TO THE CUMULATING TOTA
L EACH YEAR. DEPENDING WHAT T
HE USER CAN SAVE EACH YEAR."
830 PRINT@454, "<INKEY TO RETURN>
"
840 I$=INKEY$: IF I$="" THEN 840
850 GOTO100
900 PRINT"DO YOU NEED ANOTHER CA
LCULATION"
910 I$=INKEY$: IF I$="" GOTO910
920 IF I$="Y" THEN 270
930 CLS
940 PRINT@230, "GOODBYE AND GOOD
SAVING"

```

☺☺

# LETTERHEAD

by Johanna Vagg

16K ECB + DMP 110

I ALWAYS LIKED fancy stationery. When we bought the printer about 12 months ago, I started looking for programs to dress up my printed letters. I was able to make GARFIELD from September 1984 CoCo print to my DMP110 after I made some changes.

So I had a great picture which I could use in the top left corner of my letters.. or on the bottom left.. or centre left.. I was limited to printing it on the left edge of the page. Then I managed to make a working copy of Gordon Thurston's PMODE0 PRINTER. (DEC 84 CoCo)

Now I could print any PMODE0 picture I had.. but still only on the left edge. That's not strictly true, as you might discover if Graham prints my article about that program.. I have been able to print Mighty Mice, side by side, from a picture of Mighty Mouse.

In January 1986 we bought Geoff Tolputt's GSPR. With this program we could print a picture in any position across the page; we could also print all the way across the page, so we could DRAW something on the top portion of the HI-RES SCREEN, and print it out as a letterhead.

June 1986 Rainbow has a program called PICPR. On the top of the page are printed the words EDTASM+ and DISK. I don't let that put me off. I have neither of those things, but I do have a working copy of the program for my tape-based system.

With this one, I can print a picture in various positions across the page. I can also print a 20 cm by 20 cm picture made up of any character I like, eg a HI-RES picture converted to one made up of inverted commas, or x's.. OR a picture which is so BIG it requires four pages.

The article says it is a program for the DMP printers.. but it uses block graphics, which the DMP110 (at least) doesn't have. Again, I didn't let that stop me.

Before this I had also made up a non-graphic letter head on Telewriter-64. I printed various foreign characters.. 132 across the page in condensed type.. a half-line feed.. and another row of characters.. my name and address in italics .. and so on.

Mal McLaughlin had some pretty patterns in the letter section of June 1986 CoCo. I needed to put my printer into elongate before I got the same pattern as he got on his DMP200. So it seems the DMP110 and DMP200 print different widths.

This brings me to my latest letterhead, alias an entry in the Peace competition. I tried the ESCHER DMP200 GRAPHIC PATTERN PRINTOUT PROG. by Eric M. White in September 1986 Rainbow. The article said (DISK again by the way) that it would give an 8 inch wide printout. On the DMP110 it didn't. By adding an elongate I made it too wide. It was time to study the program and adjust it for my printer.

Soon? I was able to print a page full of repeats of a pattern which was DRAWn in a square 64\*64 pixels in the top left of the HI-RES SCREEN. With further adjustments I had a new letterhead printing program.

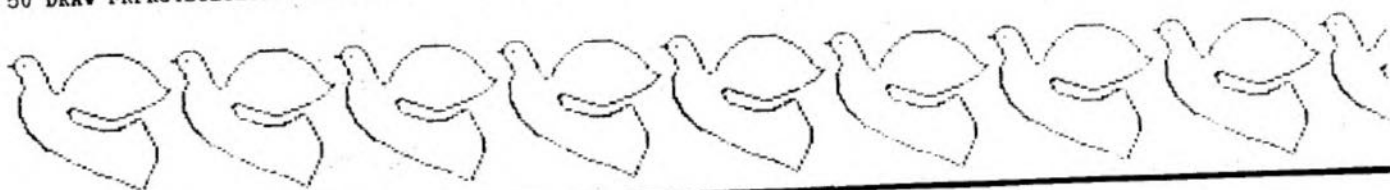
The Peace Dove happens to fit nicely in that particular corner of the screen, but you could adjust the program to 'read' a smaller or larger section. Then you need to adjust the number of repeats across the page. The relevant LINES are REM'd. Apparently the DMP200 will print 9 repeats, without elongate, 8 inches wide.

## The Listing:

```
0 REM PEACE DOVE LETTERHEAD
  PRINTS 7 DOVES ACROSS THE PAGE
  ON A DMP110 PRINTER
1 REM DOVE TAKEN FROM PEACE LOGO
  BY D VOUTSIS
2 REM DOVE AND PRINT ROUTINE
  EXTRACTED AND COMBINED BY
  JOHANNA VAGG
3 GOTO5
4 SAVE"DOVEHEAD:3":END
5 CLEAR1000
10 PMODE4:SCREEN1,1:PCLS1
20 COLOR0,1
30 DRAW"BMO,10RE4R4F3DFDFDF2DFD
2RBR40BU2
40 CIRCLE(40,24),20,0,.9,.55,.95
50 DRAW"FRFRG4LGLGLGL2GL2GL2GL
```

```
4HL2HL2HL2HL2DLDFDF2R2FR2FR2FR
8UR2UR2UR2UR2FDFDFDFDFDF6GDGDG
GDGDG
60 DRAW"HLHLHLHL2HL2HL2HLHLHL
LHLHLHLHLHLULULULULULULULUL2LU2
LU2LU2EUEUHU2HU2HUL
70 PSET(6,10)
75 FORT=1 TO 1000:NEXT:CLS:PRINT
@230,"ANY KEY TO PRINT"
80 EXEC44539
85 PMODE4:SCREEN1,1
90 DIM PR$(64)
95 'PRINT ROUTINE FROM A PROGRAM
  BY ERIC M WHITE (SEPTEMBER 1986
  RAINBOW). HIS PROGRAM PRINTS A
  PAGE-FULL. I JUST WANTED ONE ROW
  SO I USED A PART OF HIS PROGRAM.
100 REM ELONGATE
110 PRINT#-2,CHR$(27)CHR$(14)
120 GNS=CHR$(18)' GRAPHICS ON
```

```
140 FOR Y1=0 TO 63 STEP 7'DEPTH OF
  64 PIXELS
150 FOR X1=0 TO 63 'WIDTH OF 64
  PIXELS
160 FOR Y2=0 TO 6
170 IF PPOINT(X1,Y1+Y2)=0 THEN N
  B=NB+INT(2^Y2)
180 NEXT Y2
190 PR$(Y1)=PR$(Y1)+CHR$(NB+128)
  :NB=0
200 NEXT X1:PRINT#-2,GNS;
205 ' ADJUST NUMBER OF DOVES (L)
210 FOR L=1 TO 7:PRINT#-2,PR$(Y1);:
  NEXT
220 PRINT#-2:NEXT Y1
230 PRINT#-2,CHR$(30)'GRAPHICS
  OFF
232 PRINT#-2,CHR$(27)CHR$(15)
  'ELONGATE OFF
233 CLS
```





# recwave

MC-10 ONLY



by Richard N. Cain

**H**ERE IS A program for those who like to experiment with sound. It produces a rectangular wave. If you enter an incorrect pulse you will be told. All instructions are included in the listing.

The Listing: RECTWAVE

```

2 R$="ANNOUNCE": GOSUB 20
4 R$="SELECT THE WAY THE PULSE-
WIDTHS ARE ENTERED": GOSUB 40
6 IF SEL$="I" THEN 60:
REM CENTER P.W.S. INDIVIDUALLY)
8 IF SEL$="W" THEN 80:
REM GENERATE P.W.S. BY WK.APRX)
10 END
17 R$="HOW TO LET Y=2PEEKZ":
Y=256*PEEK(Z)+PEEK(Z+1): RETURN
19 R$="HOW TO DO 2POKE Z,Y":
POKE Z, INT(Y/256):
POKE Z+1, Y-256*INT(Y/256):
RETURN
20 CLS: PRINT "RECTANGULAR WAVE
1/20/86"
22 PRINT " BY RICHARD N. CAIN
P.O. BOX 147
VALENCIA, PA
16059": PRINT
24 PRINT " THIS PROGRAM GENERAT
ES IN THEY SOUND A WAVE CONSIST
ING OF ALTERNATING POSITIVE AND
NEGATIVE PULSES OF ADJUSTABLE"
26 PRINT " WIDTHS--A RECTANGULAR
WAVE. EITHER ENTER THESE PULSE
WIDTHS INDIVIDUALLY, OR GENERATE
THEM BY MEANS OF AN ALGORITHM"
28 PRINT " M THAT PERFORMS NEAR AP
PROXIMATION OF YOUR OWN FCT.":
30 R$="TURN PAGE": GOSUB 300
32 RETURN
40 REM HOW TO SELECT THE WAY THE
PULSE-WIDTHS ARE ENTERED)
42 R$="ANNOUNCE MENU": GOSUB 420
44 INPUT SEL$
46 RETURN
60 REM HOW TO ENTER P.W. INDIV.)
62 R$="LET Z=FILE ORG": GOSUB 620
64 R$="HOW TO INITIALIZE I,D":
I=1: D=5
66 R$="ANNC. INDIV. ENT.": GOSUB 660
68 R$="ENTER ONE P.W.": GOSUB 680
70 R$="HOW TO CONT. OR CLOSE FL":
LET I=I+1: Z=Z+2: D=4:
IF P><0 THEN 68: REM (CONT. FL)
72 R$="GENERATE WAVE": GOSUB 100
100 REM HOW TO GENERATE WAVE)
102 W$="": Z=VARPTR(W$)+2:
R$="Y=2PEEK(Z)": GOSUB 17:
W=Y+81: EXEC W:
REM R$="5: Z=22: BZ$
30n22: 7: 4: 8:
300 REM HOW TO TURN PAGE)

```

```

302 LET TP=1600
304 IF INKEY$ <> "" THEN 308:
REM (I.E., EXIT AFTER KEY)
306 LET TP=TP-1:
IF TP>0 THEN 304:
REM (I.E., COUNT 20 SECONDS)
308 R$="EXIT": CLS: RETURN
420 REM HOW TO ANNOUNCE MENU)
422 PRINT " HOW ARE THE PULSE WI
DTHS TO BE SPECIFIED (ENTER SYMBO
L BELOW)": PRINT
424 PRINT "INDIVIDUALLY .....
..... I)"
426 PRINT "BY WEAKE APPROXIMATION
..... W"
438 RETURN
620 REM HOW TO LET Z=FILE ORGN)
621 R$="ENT.ALL VAR.": GOSUB 6210
622 LET Z=153:
R$="LET Y=2PEEKZ": GOSUB 17:
R$="ADD PROG.LGTH": Z=Y+19:
C=Y: RETURN
660 REM HOW TO ANNOUNCE IND. EN.)
662 CLS: PRINT " ENTER EACH PULS
E DURATION IN UNITS OF 6.70 MIC
ROSECONDS. (USE INTEGERS N IN THE
RANGE D =< N":
664 PRINT " =< 65535 WHER
E D=5 FOR THE FIRST PULSE, 4FOR
THE REMAINING ONES.) ENTER ZERO
TO INDICATE WHEN THROUGH."
666 PRINT "PRINT" FOR EXAMPLE, IF
ONE ENTERS '170', '170', '0
', THE RESULTING WAVE WILL BE A S
QUARE WAVE WITH FREQUENCY 439":
668 PRINT " HERTZ ('A' ABOVE MID
DLE 'C'), BY THE CALCULATION 4
39 = 1/((170+170)*6.70E-6) .":
PRINT
670 RETURN
680 REM HOW TO ENTER ONE P.W.)
682 PRINT "WIDTH NO.": STR$(I):
"=": INPUT P
684 R$="HOW TO EXAMINE P":
IF ((D=<P) AND (P<65536))
OR (P=0) THEN 688: REM (P OK)
686 R$="ANNC.WRONG P": GOSUB 6860:
R$="REPEAT INPUT": GOTO 682
688 R$="HOW TO ACCT.FR.PROG TM":
IF P><0 THEN P=P-D+1
690 R$="HOW TO COMPLETE ENTRY":
Y=P: R$="2POKE Z,Y": GOSUB 19:
RETURN
6210 REM HOW TO ENTER ALL VARS.)
6212 Z=0: Y=0: I=0: D=0: P=0:
W$="": M=0
6214 C=0: RETURN
6860 REM HOW TO ANNOUNCE WRNG P)
6862 PRINT:
PRINT "PLEASE RESPECIFY."
6864 PRINT "YOU'VE JUST GIVEN P
OUTSIDE THEREQUIRED INTERVAL
": D: "=" P =< 65
535 .)"
6866 SOUND 150,1: SOUND 240,3
6868 PRINT: RETURN

```

MC-10 ONLY

# FIRE

by Darren Yates

**H**ere is a small game that is a little different in that you are stationary and the target ship is going like a house on fire.

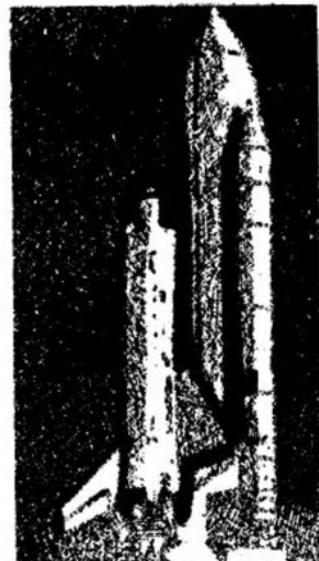
You have a maximum of 16 shots to shoot down the ship before you are beheaded by a marauding band of yahoos. Your score for that game is recorded at the top of the screen.

The Listing: MISSILE

```

1 CLS0
10 Z=495
20 PRINT@Z-1,"█";
25 PRINT@1,X;
30 A$=INKEY$: IFA$="" THEN 100
35 IFA$=CHR$(32) THEN 50
50 FORA=ZTOZ-510STEP-32
52 PRINT@A,"█": IFA<480 THEN PRINT
@A+32," ";
53 IFA<32 THEN PRINT@A," ";
54 S=S+1: PRINT@S,"█": PRINT@S-1
," "; IFS=478 THEN PRINT@S,"█": S
=0: GOTO 200
55 IFA=S THEN 120
56 NEXTA: GOTO 20
100 S=S+1: PRINT@S,"█": PRINT@S-1
," "; IFS=478 THEN PRINT@S,"█": S
=0: GOTO 200
110 GOTO 20
120 PRINT@S,"█": FORQ=0TO1000: NE
XTQ: X=X+1
125 S=0
130 PRINT@1,X;: GOTO 1
200 PRINT@256," YOU HAVE HAD YOU
R HEAD REMOVED BY HEAD-HUNTING
SPACEMEN "
210 FORQ=0TO4000: NEXTQ: GOTO 1

```



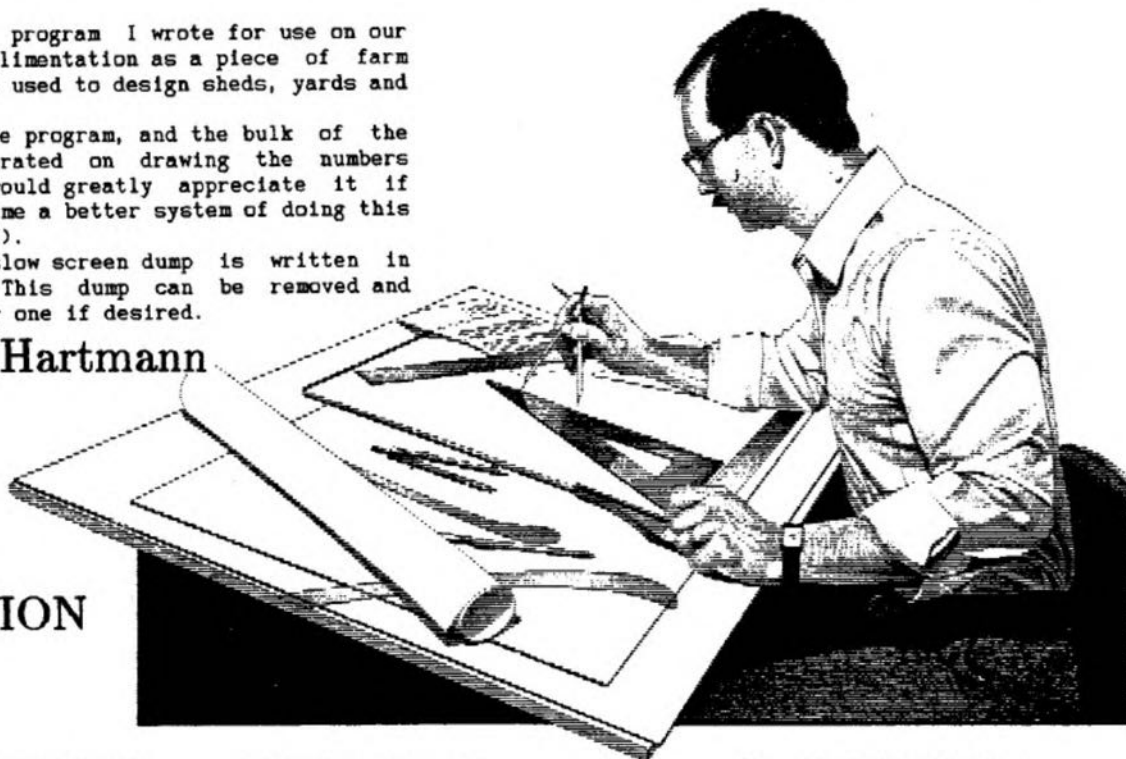
# GRAFFPLOT

'GRAFFPLOT' is a program I wrote for use on our farm. Since it's implementation as a piece of farm software it has been used to design sheds, yards and a tennis court.

It is a very simple program, and the bulk of the program is concentrated on drawing the numbers around the grid. I would greatly appreciate it if someone could show me a better system of doing this (if such is possible).

A short and very slow screen dump is written in for hard copies. This dump can be removed and replaced by a better one if desired.

by Michael Hartmann



16KECB

APPLICATION

The Listing:

```


0 *****
1 ***** GRAFFPLOT *****
2 *****MICHAEL HARTMANN*****
3 *****MOUNT VIEW GUYRA*****
4 *****2365*****
5 GOTO10
6 SAVE"GRAFFPLOT:3":END
10 GOTO25
15 CSAVE"GRAFFPLOT"
20 IS=INKEY$:IFIS=""THEN20
25 CLEAR1000:POKE65494,0
30 CLS
35 PMODE4:PCLS5:SCREEN1,1:COLOR2
,1
40 '
45 ' <<= DRAW-GRID ROUTINE =>>
50 '
55 LINE(12,12)-(244,148),PSET,B
60 FORX=12TO244STEP8:FORY=12TO15
0STEP8:PSET(X,Y):NEXTY,X
65 '*NUMBERS
70 '
75 '*<10Y
80 OOS="U4R4D4L4" '0
85 UNS="U4" '1
90 TVS="R4L4U2R4U2L4" '2
95 THS="R4U2L4R4U2L4" '3
100 FRs="BR2U4D2R2L4U2" '4
105 FVs="R4U2L4U2R4" '5
110 SXs="R4U2L4D2U4R4" '6
115 SVs="BR2U2L2R4L2U2L4" '7
120 ETs="R4U2L4U2R4D2L4D2" '8
125 NNs="R4U4L4D2R4" '9
130 '*>9Y
135 YIS="D4BR4" '*1Y
140 THs=YIS+OOS '10
145 ELVs=YIS+UNS '11
150 TLVs=YIS+TVs '12
155 TRTs=YIS+THs '13
160 FOTs=YIS+FRs '14
165 FITs=YIS+FVs '15
170 SITs=YIS+SXs '16
175 SNTs=YIS+SVs '17
180 XIS=UNS+"BD10" '*1X
185 TS=XIS+OOS '10
190 LS=XIS+UNS '11
195 WS=XIS+TVs '12
200 RS=XIS+THs '13
205 FS=XIS+FRs '14
210 IS=XIS+FVs '15
215 SS=XIS+SXs '16
220 VS=XIS+SVs '17
225 ES=XIS+ETs '18
230 NS=XIS+NNs '19
235 XTs=TVs+"BD10" '*2
240 TIS=XTs+OOS '20
245 TUs=XTs+UNS '21
250 TDs=XTs+TVs '22
255 TTs=XTs+THs '23
260 TCs=XTs+FRs '24
265 TFs=XTs+FVs '25
270 TSs=XTs+SXs '26
275 TVs=XTs+SVs '27
280 TEs=XTs+ETs '28
285 '*RIGHT SIDE
290 DRAW"BM250,12"+OOS
295 DRAW"BM250,20"+UNS
300 DRAW"BM250,28"+TVs
305 DRAW"BM250,36"+THs
310 DRAW"BM250,44"+FRs
315 DRAW"BM250,52"+FVs
320 DRAW"BM250,60"+SXs
325 DRAW"BM250,68"+SVs
330 DRAW"BM250,76"+ETs
335 DRAW"BM250,84"+NNs
340 '*LEFT SIDE
345 DRAW"BM2,88"+THs
350 DRAW"BM2,96"+ELVs
355 DRAW"BM2,104"+TLVs
360 DRAW"BM2,112"+TRTs
365 DRAW"BM2,120"+FOTs
370 DRAW"BM2,128"+FITs
375 DRAW"BM2,136"+SITs
380 DRAW"BM2,144"+SNTs
385 '*TOP
390 DRAW"BM4,10"+OOS
395 DRAW"BM20,10"+UNS
400 DRAW"BM26,10"+TVs
405 DRAW"BM34,10"+THs
410 DRAW"BM42,10"+FRs
415 DRAW"BM50,10"+FVs
420 DRAW"BM58,10"+SXs
425 DRAW"BM66,10"+SVs
430 DRAW"BM74,10"+ETs
435 DRAW"BM82,10"+NNs
440 '*BOTTOM
445 DRAW"BM92,154"+Ts
450 DRAW"BM100,154"+Ls
455 DRAW"BM108,154"+Vs
460 DRAW"BM116,154"+Rs
465 DRAW"BM124,154"+Fs
470 DRAW"BM132,154"+Is
475 DRAW"BM140,154"+Ss
480 DRAW"BM148,154"+Vss
485 DRAW"BM156,154"+Ess
490 DRAW"BM164,154"+Nss
495 '*TOP2
500 DRAW"BM170,4"+TIs
505 DRAW"BM178,4"+TUs
510 DRAW"BM186,4"+TDs
515 DRAW"BM194,4"+TTs
520 DRAW"BM202,4"+TCs
525 DRAW"BM210,4"+TFs
530 DRAW"BM218,4"+TSSs
535 DRAW"BM226,4"+TVs
540 DRAW"BM234,4"+TEs
545 '*ANY-KEY SUBROUTINE**
550 AS="C2U6E6F6L12R12D6BR6"
555 NS="U12F12U12BR6"
560 Ys="F6D6U6E6BR20"

```

```

565 KE$="D12U6E6G6F6BR6;R12L12U6
R12L12U6R12BR6"
570 DRAW"BM75,180"+AS+NS+YS+KES+
YS
575 EXEC44539
580 SCREEN0,0
585 CLS
590 PRINT"//////////GRAFPLOT\
//////////"
595 PRINT@34,"GRAFPLOT IS SIMPLY
A PIECE OF GRAPH PAPER ON THE C
OMPUTER. USE IT TO DRAW GRAPHS, DE
SIGN YARDS OR BUILDINGS, ETC."
600 PRINT@161,"JUST TYPE IN YOUR
CO-ORDINATES VIA THE FOLLOWING
FORMULA:"
605 PRINT@231,"(X1,Y1)-(X2,Y2)"
610 PRINT@257,"THE COMPUTER WILL
THEN DRAW A BLACK LINE BETWEEN
THESE POINTS"
615 PRINT@320,"//////////*\
//////////"
620 PRINT@386,"CO-ORDS OR PRINTE
R (C/P)": INPUT CP$
625 IF CP$="P" THEN745
630 PRINT@386,"INPUT CO-ORDINATE
S"
635 INPUT" X1=";XO
640 IFXO<OORXO>29THEN635
645 INPUT" Y1=";YO
650 IFYO<OORYO>17THEN645
655 INPUT" X2=";XT
660 IFXT<OORXT>29THEN655
665 INPUT" Y2=";YT
670 IFYT<OORYT>17THEN665
675 '**DRAW LINE**
680 COLOR4
685 XO=(XO*8)+12;YO=(YO*8)+12;XT
=(XT*8)+12;YT=(YT*8)+12
690 INPUT"DO YOU WANT IT BOXED (
Y/N)";B$
695 IFB$="Y"THEN710ELSEIFB$="N"TH
EN700ELSE690
700 LINE(XO,YO)-(XT,YT),PSET
705 GOTO715
710 LINE(XO,YO)-(XT,YT),PSET,B
715 SCREEN1,1
720 EXEC44539
725 CLS;GOTO580
730 '
735 ' <<= SCREEN DUMP =>>
740 '
745 COLOR1,1
750 PRINT#-2,CHR$(18):PRINT#-2,C
HR$(27)CHR$(14)
755 FORY=0TO191STEP7:PRINT#-2,CH
R$(27)CHR$(16)CHR$(0)CHR$(112);:
FORX=0TO255:G=128:FORC=0TO6:IFY+
C<192ANDPOINT(X,Y+C)THENG=G+2^C
760 NEXTC:PRINT#-2,CHR$(G);:NEXT
X:PRINT#-2,CHR$(13);:NEXTY:PRINT
#-2,CHR$(30)
765 END

```




# LABELMAKER

by Michael Hartmann

MIDNIGHT OIL

10,9,8,7,6,5,4,3,2,1

SIDE A

SIDE B

OUTSIDE WORLD

ONLY THE STRONG

SHORT MEMORY

READ ABOUT IT

SCREAM IN BLUE

:U.S FORCES

:POWER AND THE PASSION

:MARALINGA

:TIN LEGS AND TIN MINES

:SOMEBODY'S TRYING TO TELL ME...

:.SOMETHING

:

:

'LABLMAKR' is a printer utility (DMP110) I wrote to print index cards for cassettes. (Yes, I know it's been done before, but this one is simple!)

The program is self-explanatory and the end result will be something like figure one.

## The Listing: 16KECB + DMP110 PRINTER

```

0 '*****'
0 '*****'
1 '***** LABLMAKR *****'
2 '****BY MICHAEL J HARTMANN****'
3 'PRINTER. 5/1/1986'
4 '*****MOUNT VIEW GUYRA*****'
5 '*****NSW 2365*****'
6 '*****'
7 GOTO10
8 SAVE"LABLMAKR:3":END
10 CLS
15 '
20 ' <<= CHECK PRINTER =>>
25 '
30 IFPEEK(65314)/2<>INT(PEEK(653
14)/2)THENPRINT"PRINTER NOT READ
Y!":INPUT"WHEN READY,PRESS <ENTE
R>";PR$
35 IFPEEK(65314)/2<>INT(PEEK(653
14)/2)THEN30
40 PRINT#-2,CHR$(27)CHR$(19)
45 '
50 ' <<= INPUT DATA =>>
55 '
60 CLEAR1000:DIMA$(13),B$(13):CL
S
65 LINEINPUT"GROUP NAME (MAX 19
CHARS.) =";GP$:IFLEN(GP$)>
19 THEN GP$=LEFT$(GP$,19)
70 LINEINPUT"ALBUM NAME (MAX 38
CHARS.) =";AN$:IFLEN(AN$)>
38 THEN AN$=LEFT$(AN$,38)
75 CLS:PRINT@10,"<<SIDE A>>"
80 FOR I=1TO13
85 PRINTI;:LINEINPUTA$(I)
90 IFA$(I)=""THEN110ELSENEXTI
95 '
100 ' <<= LIST DATA =>>
105 '
110 CLS:PRINT@10,"<<SIDE B>>"
115 FORI=1TO13
120 PRINTI;:LINEINPUTB$(I)
125 IFB$(I)=""THEN130ELSENEXTI
130 CLS:PRINT@10,GP$:PRINT@35,AN
$:EXEC41393:PRINT:PRINT"<<SIDE A
>>"
135 FORI=1TO13
140 IF LEN(A$(I))>32THENPA$=LEFT
$(A$(I),32)ELSEPA$=A$(I)
145 PRINTPA$:NEXTI
150 EXEC41393:CLS
155 PRINT:PRINT"<<SIDE B>>"
160 FORI=1TO13
165 IF LEN(B$(I))>32THENPB$=LEFT
$(B$(I),32)ELSEPB$=B$(I)
170 PRINTPB$:NEXTI
175 INPUT" PRESS ENTER TO PRINT
A LABEL";N
180 '
185 ' <<= PRINT LABEL =>>
190 PRINT#-2,STRING$(40,"-"):FOR
I=1TO5:PRINT#-2:NEXTI
195 PRINT#-2,STRING$(40,"-"):PRI
NT#-2,CHR$(27)CHR$(14);TAB(INT((
20-LEN(GP$))/2));GP$:PRINT#-2,CH
R$(27)CHR$(15);TAB(INT((40-LEN(A
N$))/2));AN$:PRINT#-2,STRING$(40
,"-")
200 PRINT#-2,"SIDE A";TAB(19);":
SIDE B":PRINT#-2,STRING$(40,"-")
205 FORI=1TO12:PRINT#-2,CHR$(27)
CHR$(20);A$(I);TAB(35);":":B$(I)
:NEXTI
210 PRINT#-2,CHR$(27)CHR$(19)
215 PRINT#-2,STRING$(40,"-")
220 CLS:PRINT@35,"SAME LABEL AGA
IN? <Y/N>":INPUT S$:IF S$="Y"THEN
175ELSERUN

```

# DMP-110

by Brian Bere-Streeter

16K CB  
UTILITY + PRINTER

**T**HE DMP-110 printer has many different print fonts and can support elongation and embolding.

This utility will enable you to set up a font style of your choice and then automatically run your selected program.

## The Listing:

```

10 CLS
20 PRINTSTRING$(32,131+16)
30 PRINT@32,CHR$(138+16):PRINT@6
3,CHR$(133+16)
40 PRINT@64,CHR$(138+16);:PRINT@
68,"      DOS-110      ";;P
RINT@95,CHR$(133+16);
50 PRINT@96,CHR$(138+16);:PRINT@
98,"COPYRIGHT 1985 BERE-STREETER
":PRINT@127,CHR$(133+16);
60 PRINT@128,CHR$(138+16);:PRINT
@159,CHR$(133+16);
70 PRINTSTRING$(32,140+16);
80 PRINT@193,"DO YOU WANT INSTRU
CTIONS - Y/N"
90 Z$=INKEY$:IF Z$=""THEN90 ELSE
IF Z$="Y"THEN 800 ELSE IF Z$="N
"THEN100ELSE IF Z$<>"THEN90
100 CLS
110 POKE150,41
120 PRINT#-2,CHR$(20)
130 PRINTSTRING$(5,163)+ " SELECT
CHARACTER SET "+STRING$(5,163);
140 PRINTTAB(3)"1.Standard - Nor
mal
150 PRINTTAB(3)"2.Standard - Eli
te
160 PRINTTAB(3)"3.Correspondence
- Normal
170 PRINTTAB(3)"4.Correspondence
- Elite
180 PRINTTAB(3)"5.Proportional
190 PRINTTAB(3)"6.Italic
200 PRINTTAB(3)"7.Condensed
210 PRINTTAB(3)"8.Microfont
220 PRINTTAB(3)"9.-----Set E
longation
230 PRINTTAB(3)"10.-----End E
longation
240 PRINTTAB(3)"11.-----Set B
old
250 PRINTTAB(3)"12.-----End B
old
260 PRINTSTRING$(8,172)+ " YOUR S
ELECTION "+STRING$(8,172);
270 INPUT A$
280 IF A$<>"THEN300
290 GOTO270
300 IF A$="1"THEN440
310 IF A$="2"THEN460
320 IF A$="3"THEN580
330 IF A$="4"THEN600
340 IF A$="5"THEN620
350 IF A$="6"THEN640
360 IF A$="7"THEN660
370 IF A$="8"THEN560

```

```

380 IF A$="9"THEN480
390 IF A$="10"THEN500
400 IF A$="11"THEN520
410 IF A$="12"THEN540
420 GOTO270
430 GOTO100
440 PRINT#-2,CHR$(27);CHR$(19)
450 GOTO680
460 PRINT#-2,CHR$(27);CHR$(23)
470 GOTO680
480 PRINT#-2,CHR$(27);CHR$(14)
490 GOTO100
500 PRINT#-2,CHR$(27);CHR$(15)
510 GOTO100
520 PRINT#-2,CHR$(27);CHR$(31)
530 GOTO100
540 PRINT#-2,CHR$(27);CHR$(32)
550 GOTO100
560 PRINT#-2,CHR$(27);CHR$(77)
570 GOTO680
580 PRINT#-2,CHR$(27);CHR$(18)
590 GOTO680
600 PRINT#-2,CHR$(27);CHR$(29)
610 GOTO680
620 PRINT#-2,CHR$(27);CHR$(17)
630 GOTO680
640 PRINT#-2,CHR$(27);CHR$(66)
650 GOTO680
660 PRINT#-2,CHR$(27);CHR$(20)
670 GOTO680
680 RUN"DOS"
690 END
800 CLS:PRINT" THE DMP-110 PRINT
ER HAS MANY DIFFERENT PRINT FO
NTS AND CAN SUPPORT ELONGATION
AND EMBOLDING...A TOTAL OF 32
STYLES
810 PRINT:PRINT" THIS UTILITY WI
LL ENABLE YOU TOSET-UP A FONT ST
YLE OF YOUR CHOICE AND THEN
AUTOMATICALLY RUN YOUR SELECTE
D PROGRAM
820 PRINT:PRINT" SELECTION OF EL
ONGATION AND/OR EMBOLDING MUST B
E DONE FIRST BEFORE SELECTING
A FONT STYLE
830 PRINT:PRINT" <spa
ce>
840 Z$=INKEY$:IF Z$=""THEN840 EL
SE IF Z$=" "THEN850 ELSE IF Z$<>
" " THEN840
850 CLS:PRINT" LINE 110 CONTAINS
THE PRINTER BAUD RATE POKE AND
IS SET FOR 1200 BAUD , CHANGE
TO YOUR RATE
860 PRINT:PRINT" LINE 680 CONTAI
NS THE START-UP ROUTINE TO RUN T
HE SELECTED PROGRAM AND IS S
ET FOR STARTING STANDARD TANDY D
OS , CHANGE TO YOUR START-UP RO
UTINE
870 PRINT:PRINT"
875 PRINT:PRINT" <spa
ce>
880 Z$=INKEY$:IF Z$=""THEN880 EL
SE IF Z$=" "THEN 100 ELSE 880

```



# OYEZ

by Mal McLaughlan  
16K CB

**T**HERE is a simple eye-catc-  
-hing way for beginners to  
put any instructions,title  
etc. on screen at a speed  
to meet your needs. Just run it  
and follow the instructions!

## The Listing:

```

0 GOTO30
3 SAVE"OYEZ!":2
4 END
5 '***the messenger***OR SIMPLY
SAVED AS 'OYEZ!'*****
10 '*****A SIMPLE PROGRAMMING
UTILITY TO PUT A MESSAGE, TITLE,
ENDING ETC.ON THE SCREEN AT DES-
IRED SPEED*****
20 '*****BY MAL MCLAUCHLAN,
11 HUNTER ST., BOONAH. Q4310****
30 CLS2
40 A$="TO USE THIS PROGRAMME,CHA
NGE THEMESAGE IN LINE 40,AND TH
E DELAYTIME IN LINE 70, TO MEET
YOUR NEEDS FOR WORDING AND SPE
ED. "
50 FOR X= 1 TO LEN(A$)
60 PRINT MID$(A$,X,1);
70 FOR DL=1 TO 100:NEXT DL
80 NEXT X
90 GOTO 90

```



## CORRECTION



## TRIVIA

SN ERROR  
in Line 205

The line should read:  
IF TD = 12THEN  
215ELSE220

SN ERROR  
in Line 480

The line should read:  
FOR X=1TO2500:  
NEXT:CAT=RND(5)

16K CB+DMP 110 PRINTER UTILITY

# PRINTEX4

by Keith Echberg

**P** RINTEX4 IS QUITE a simple little program that I wrote because when I first got my DMP 110 printer I wasn't using continuous (full width) paper and I was scared of going over the edge of the single sheet of paper I was using.

Word processors take care of this problem, I know. But I didn't always want to use one. It's main virtue is that you can make use of the many print font options available with the DMP 110 (and no doubt, other printers). It is also useful if you just want to knock-up a short 'notice' in fancy print.

The actual program is very short. It looks bigger (by my standards, that is) because I have included a lot of explanatory 'REMS'. Anyhow, it is a bit of fun, if nothing else, and doesn't take long to enter.

## The Listing:

```
0 PRINT"PRINTEX4, BY KEITH ECHBERG, 16:9:86":FOR I=1TO5000:NEXT I
1 REM..FOR MATCHING PRINTER TO PAPER WIDTH.
2 REM..YOU CAN WRITE DIFFERENT COMMANDS ON THE SAME LINE, BUT EACH
3 REM..COMMAND MUST BE PRECEDED BY "CHR$(27)".
4 REM..FOR DOUBLE SPACING PRESS <ENTER>.
5 REM..PRECEDE ALL INPUT WITH "<>". THIS IS NECESSARY TO OBIATE PROBLEMS
6 REM..WITH COMMAS AND INDENTS.
7 REM..THIS PROGRAM WAS GENERATED AS ONE THAT YOU COULD ENTER QUICKLY
8 REM..OUT OF YOUR OWN MEMORY IF YOU DIDN'T WANT TO BE BOTHERED LOADING
9 REM..SCRIPTSIT,DESKMATE OR WORDPRO+(AUSSIE COCO APRIL 1986).
10 '..ALSO SO THAT YOU COULD ALT
```

ER THE PRINT FONT, WHICH CAN'T BE DONE

11 '..IN SCRIPTSIT OR DESKMATE BUT MAY BE DONE IN WORDPRO+ BY ALTERNATING

12 '..LINE 1350. ACTUALLY THIS PROGRAM WAS WRITTEN TO SUIT THE DMP 110

13 '..PRINTER. I PARTICULARLY WANTED TO GUARD AGAINST THE PRINTER

14 '..OVERSHOOTING THE PAPER. YOU CAN DO ALL SORTS OF THINGS WITH THE

15 '..DMP 110 BY VARYING LINE 40 IN THIS PROGRAM. THE EXISTING COMMAND

16 '..SETS THE MARGIN AT 30 DOTS (PAGE 32 OF DMP 110 MANUAL).

17 '..UNFORTUNATELY, IT IS A ONE ONLY PRINTOUT SO IF YOU WANT MORE THAN

18 '..ONE COPY YOU MUST USE CARE ON PAPER. ALSO, YOU MUST EDIT THE LINE

19 '..BEFORE IT IS ENTERED BECAUSE AS SOON AS IT IS ENTERED IT IS PRINTED.

20 INPUT S\$

25 PRINT "TEXT LENGTH IS" LEN(S\$) "CHARACTERS"

30 IF LEN(S\$) > 70 GOTO 60 ELSE 40

40 PRINT#-2, CHR\$(27) CHR\$(16) CHR\$(0) CHR\$(30) S\$

50 GOTO 10

60 PRINT "WHICH IS MORE THAN 70, 'GO AGAIN'"

70 GOTO 10



# BIN-BAS

by D. W. Thurbon

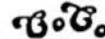
16K DECB UTILITY

**T**his program is useful for saving out to disk chunks of memory as a basic program i.e. pictures in screen memory. The program saves the ML chunk of memory out as an ASCII file with line numbers.

All that is required then is to LOAD the ASCII file back into the computer and reSAVE it as a basic program or whatever you require. The program will run on any CoCo and has the necessary prompts built in.

## The Listing:

```
0 GOTO20
3 SAVE"BIN-BAS:3":END
10 ' BIN-BAS. BY D.W.THURBON.
(C) PIXEL SOFTWARE. 1985
20 CLEAR1000
30 INPUT" ENTER START ADDRESS";A
40 INPUT" ENTER END ADDRESS";B
50 INPUT" ENTER FILENAME";E$
60 PRINT" INSERT DISC IN DRIVE":PRINT:PRINT" PRESS ANY KEY WHEN READY"
70 A$=INKEY$:IFA$=""THEN70
80 OPEN"O",1,E$
90 LN=20:A$=""10 FORX=""+STR$(A)+"TO"+STR$(B)+"":READA:POKEY,A:NEXT:END
100 PRINT#1,A$
110 A$=STR$(LN)+" DATA"
120 FORX=A TO B:P=PEEK(X)
130 A$=A$+STR$(P)+"",":C=C+1
140 IFC<=50THEN NEXT ELSE A$=LEFT$(A$,LEN(A$)-1):PRINT#1,A$:C=0:LN=LN+10:A$=STR$(LN)+" DATA":A=X+1:GOTO120
150 A$=LEFT$(A$,LEN(A$)-1):PRINT#1,A$
160 CLOSE#1
```



# FILE DISPLAY

by K. Paterson

**F**ile Display is a disk utility which allows you to KILL, RUN and DISPLAY files.

DISPLAY will read any file off your disk and display its contents on your CoCo screen. The program gives a 16 file display menu plus a counter for the number of files. An auto repeat cursor makes selection quick and easy.

## The Listing: FILEDISP

```

0 GOTO20
1 SAVE"FD:3":END
10 '***ARRANGED BY KP 1-86 ***
20 CLS7: CLEAR3000: DIM NA$(90)
30 POKE 65495,0: GOTO 790
40 '***FIND GRANULES***
50 CLS: PRINT@72, "ANY KEY TO STOP
": PRINT@136, "ANY KEY TO CONT"
60 DSK1$ D,17,2,GA$,GB$
70 G$=MID$(NA$(CS*16+L),13,1)
80 LS$=MID$(NA$(CS*16+L),14,1)
90 LS=ASC(LS$)
100 SL=255: LL=9: CLS: G1=ASC(G$)
110 T=INT(G1/2): S=1+9*(G1-2*T):
IF T>16 THEN T=T+1
120 G2=ASC(MID$(GA$,G1+1,1))
130 IF G2>=192 THEN LL=G2-192
140 GOSUB 190
150 IF G2>=192 THEN 320
160 G1=ASC(MID$(GA$,G1+1,1))
170 GO TO 110
180 '***READ & DISP SECTORS ***
190 FOR SS=1 TO LL
200 DSK1$ D,T,S,C$,D$
210 CC=CC+1: IF CC=LL AND G2>=192
THEN SL=LS
220 J$=C$+LEFT$(D$,127)
230 FOR R=1 TO SL
240 DD$=MID$(J$,R,1)
250 PRINT DD$;: NEXT
260 IF SL<255 THEN 290
270 J1$=RIGHT$(D$,1)
280 PRINT J1$;
290 SOUND150,1: K$=INKEY$: IF K$<>
"" THEN 300 ELSE 310
300 K$=INKEY$: IF K$="" THEN 300
310 S=S+1: NEXT: RETURN
320 PRINT: PRINT: PRINT@453, "END O
F FILE "; CHR$(34); LEFT$(NA$(CS*1
6+L),8); CHR$(34);
330 FOR PL=1 TO 4: PLAY" T45; 05; D; 0
4; E; 03; A#; 02; DD; 01; AADA": PRINT@4
86, " E TO END C TO CONT ";: NEXT
340 K$=INKEY$: IF K$="E" THEN 360
350 IF K$="C" THEN 380 ELSE 340
360 CLS7: POKE65494,0: DRIVE0: END
370 '***READ DIRECTORY***
380 Q=0: POKE65495,0
390 FOR S=3 TO 11
400 DSK1$ D,17,S,A$,B$
410 A$=A$+LEFT$(B$,127)
420 FOR P=1 TO 255 STEP 32
430 NAME$=MID$(A$,P,8)
440 EXT$=MID$(A$,P+8,3)
450 G$=MID$(A$,P+13,1)
460 LS$=MID$(A$,P+15,1)
470 IF EXT$<>" " THEN EXT$="."+
EXT$
480 NAME$=NAME$+EXT$+G$+LS$
490 IF LEFT$(NAME$,1)=CHR$(255)
THEN 530
500 IF LEFT$(NAME$,1)=CHR$(0)
THEN 520
510 NA$(Q)=NAME$: Q=Q+1
520 NEXT: NEXT
530 Q=Q-1: GR=FREE(D)
540 NS=INT(Q/16+1)-1: CS=0
550 L=0: OL=0
560 CLS: FOR I=CS*16+0 TO CS*16+1
4
570 PRINT LEFT$(NA$(I),12)
580 NEXT: I=CS*16+15: PRINT LEFT$(
NA$(I),12);
590 PRINT@212, "DRIVE ="; D: PRINT@
84, "SCREEN" CS+1: PRINT@93, "OF";
600 PRINT@117, NS+1;
610 PRINT@276, AA$;: PRINT@310, FF$
;: PRINT@372, KK$: PRINT@404, RP$;: P
RINT@436, DI$;: PRINT@468, RS$;: PRI
NT@500, EE$;
620 PRINT@148, "SPACE LEFT": PRINT
@181, GR"GRANS";
630 FOR KT=338 TO 345: POKE KT,25
5: NEXT: A$=INKEY$: PRINT@L*32+15,C
HR$(143);: PRINT@L*32+15,CHR$(128
);: PRINT@20, "FILE" CS*16+L+1: PRIN
T@29, "OF";: PRINT@53, Q+1;: IF A$=""
" THEN 630
640 PRINT @L*32+15,A$;
650 ON INSTR(1,CMS,A$)+1 GOTO
630,700,740,670,680,1130,1040
,50,20,360
660 GOTO 630
670 CLS: CS=CS-1: IF CS<0 THEN CS=
NS: GOTO 550 ELSE GOTO 550
680 CLS: CS=CS+1: IF CS>NS THEN CS
=0: GOTO 550 ELSE GOTO 550
690 '***DOWN ARROW
700 L=L+1
710 IF L>15 OR CS*16+L>Q THEN L=
0
720 PRINT@OL*32+15, " ";: OL=L:
GOTO 630
730 '***UP ARROW
740 L=L-1
750 IF L<0 THEN L=15
760 IF CS*16+L>Q THEN L=Q-CS*16
770 PRINT@OL*32+15, " ";: OL=L:
GOTO 630
780 '***CHOOSE DISK***
790 CLS7: PRINT@44, " DISK ";
800 PRINT@108, " FILE ";
810 PRINT@171, " DISPLAY ";
820 PRINT@329, " INSERT DISK ";
830 PRINT@391, " TO BE INSPECTED
";
840 PRINT@485, " ANY KEY TO CONTI
NUE ";
850 K$=INKEY$: IF K$="" THEN 850
860 SOUND 150,1
870 PRINT@329, STRING$(14,239);
880 PRINT@391, STRING$(17,239);
890 PRINT@484, STRING$(25,239);
900 '***CHOOSE DRIVE***
910 PRINT@295, " CHOOSE DRIVE NO
";
920 PRINT@363, " 0 1 2 3 ";
930 D$=INKEY$: IF D$="" THEN 930
940 D=VAL(D$): IF D>3 THEN 920
ELSE SOUND 150,1
950 DI$=CHR$(34)+CHR$(68)+CHR$(3
4)+"= DISPLAY"
960 RP$=CHR$(34)+CHR$(82)+CHR$(3
4)+"= RUN"
970 RS$=CHR$(34)+CHR$(83)+CHR$(3
4)+"= RESTART"
980 AA$=CHR$(34)+"use arrows"+CH
R$(34)
990 FF$="to select"

```

continued on page 30

# MICRO FILES

by Grahame Pollock

32K ECB UTILITY

**M**ICROBASE is a database program for the CoCo. I first designed it on the 20K MC-10, but then a few CoCo owners wrote to me and asked for a CoCo version.

This program allows you to use your computer as a super efficient filing system. You can file cards, edit them or search for a word or part of a word on any card as well as the other features.

With MICROBASE you can "tailor make" your own filing system as long as you use 10 headings or less on each card. You are not restricted by set headings. Each filing system is stored along with its cards as a machine language file, so that you can load and use one filing system after the other.

MICROBASE has 2 menus:- a main menu and a card menu. The main menu allows you to:-

1. SET UP NEW SYSTEM
2. LOAD SYSTEM FILES
3. SAVE SYSTEM FILES
4. FLICK THROUGH FILES
5. SEARCH
6. INSERT NEW CARD
7. PRINT ENTIRE SYSTEM
8. RETRIEVE STORED FILES

The card menu will allow you to flick backwards(<a), flick forwards(>s), stop at that card(pAUSE), print out that card(hARDCOPY), alter that card(eDIT), return to the main menu(mENU), remove that card(dELETE), or continue searching(cONT).

To set up your own filing system, you simply choose option 1 from the main menu and answer the questions. The "main heading" that you are asked for is the heading that will contain the card entry to be alphanumerically sorted (do you like that word?).

Once the parameters for your system have been set, you will be returned to the main menu. From

there, you should choose option 6 to insert your first card into the system (This is great, isn't it?). You then need to enter your information under each heading. When that card is complete, you will be shown the card with the card menu at the top of the screen. You should now press "M" to return to the main menu and insert a new card. Each new card is inserted in its correct place according to the information under heading 0 (the main heading).

When you have finished inserting all your cards, you should flick through them, controlling the flicking with the keys A(left), S(right), and P(pause). (the A and S are a remnant from the MC-10 which has arrows on these keys, but there should be no confusion since all options are shown on the screen). If you find a mistake on one of the cards, you can edit it by pressing E when the card is displayed. In edit mode, you just need to enter the correct information for the desired heading.

The next stage is to save the system and file cards to tape. This is done from the main menu and the file is CSAVED under the system name.

Once this is done, you can load and update the filing system at any time. Searching for a word, phrase or part of a word within the filing system is simple and fast. You can ask the computer to search through all entries for a individual heading or through the entire system. Once the card is found, it is displayed. Pressing C will allow the search to continue for other cards with the same string in them.

If you have to BREAK and SKIPF to find a spot on the tape, then you should reenter the program with GOTO 1 <ENTER>. If you RUN the program then the files will be cleared. If you forget and RUN instead of GOTO 1, then all is not lost. You MAY be able to retrieve the files using OPTION 8 from the main menu.

NOTE: TRIPLE SPEED POKES ARE FOUND IN LINES 2065, 2165, 3015, 3215.

## The Listing:

```

0 CLS: CLEAR2500,29000:GOSUB500 1010 CLS: INPUT"SYSTEM NAME";NM$ 2075 M=M+1
1 CL 1015 PRINT"MAIN HEADING ";:GOSUB 2080 M=M+1: IFPEEK(M)=0THEN2110
0 CLS: CLEAR2500,29000:GOSUB500 1500: A$(0,0)=IK$ 2090 NM$=NM$+CHR$(PEEK(M))
1 CLS: PRINT"MICROBASE FOR THE CO 1020 INPUT"HOW MANY OTHER HEADIN 2100 GOTO2080
CO- BY G. POLLOCK JAN '86 GS";NH 2110 M=M+1: NH=PEEK(M)
" 1030 FORI=1TONH 2115 M=M+1
2 GOTO10 1040 PRINT"HEADING#"; I;:GOSUB150 2120 FORJ=0TOMC
3 FORSV=1TO33: FORT=1TO3000: NEXTT 0: A$(I,0)=IK$ 2130 FORI=0TONH
: CSAVE"MCBASE": PRINTSV: NEXTSV: EN 1050 NEXTI 2140 M=M+1: IFPEEK(M)=0THEN2165
D 1060 GOTO1 2150 A$(I,J)=A$(I,J)+CHR$(PEEK(M
10 PRINT: PRINT"CHOOSE": PRINT ))
15 DL=500: MC=100 1500 IK$="": PRINTCHR$(128); 2160 GOTO2140
20 PRINT"1.SET UP NEW SYSTEM" 1510 GOSUB4800 2165 IFPEEK(M+1)=0THENHC=J: POKE6
30 PRINT"2.LOAD SYSTEM FILES" 1520 IFI$=CHR$(13)THENPRINTCHR$( 5496,0: GOTO1
40 PRINT"3.SAVE SYSTEM FILES" 8): RETURN 2170 NEXTI
50 PRINT"4.FLICK THROUGH FILES" 1530 PRINTCHR$(8); I$; CHR$(128); 2180 NEXTJ
60 PRINT"5.SEARCH" 1540 IFI$=CHR$(8)THEN1560 3000 REM CSAVE
70 PRINT"6.INSERT NEW CARD" 1550 IK$=IK$+I$: GOTO1510 3010 CLS: PRINT"PLEASE WAIT"
80 PRINT"7.PRINT ENTIRE SYSTEM" 1560 IFIK$="" THEN1510 3012 FORT=1TODL: NEXTT
85 PRINT"8.RETRIEVE STORED FILES 1570 IK$=LEFT$(IK$,LEN(IK$)-1):G 3015 POKE65497,0
" OTO1510 3020 M=29000
90 GOSUB4800 2000 REM CLOADM 3030 M=M+1
100 N=VAL(I$) 2010 CLS: CLEAR6500,29000:GOSUB50 3040 FORI=1TOLEN(NM$)
110 ON N GOTO1000,2000,3000,4000 0 3050 M=M+1: L$=MID$(NM$,I,1)
,5000,6000,7000,8000 2020 INPUT "FILENAME";NM$ 3060 POKEM,ASC(L$)
120 GOTO1 2030 PRINT"PRESS PLAY ON TAPE" 3070 NEXTI
500 DIMA$(10,100): DL=500: MC=100: 2040 CLOADM NM$ 3080 GOSUB3999
RETURN 2050 SOUND100,2 3090 M=M+1: POKEM,NH
1000 REM SET UP 2060 CLS: PRINT"SORTING FILES" 3100 GOSUB3999
1005 CLS: CLEAR6500,29000:GOSUB50 2062 FORT=1TODL: NEXTT 3110 FORJ=0TOHC
0 2065 POKE65497,0 3115 IFA$(0,J)=" THEN3180
2070 M=29000

```

## CoCo PROGRAMS

```

3117 FORI=0TONH
3118 IFA$(I,J)="" THENA$(I,J)=" "
3120 FORK=1TOLEN(A$(I,J))
3140 M=M+1:L$=MID$(A$(I,J),K,1)
3150 POKEM,ASC(L$)
3160 NEXTK:GOSUB3999
3170 NEXTI:NEXTJ
3180 GOSUB3999:GOSUB3999
3190 SOUND200,3
3210 M=M+1
3215 POKE65496,0
3270 PRINT"PRESS RECORD AND ANY
KEY"
3280 GOSUB4800
3290 CSAVEM NM$,29000,M,17000
3300 SOUND100,2
3310 INPUT"SAVE AGAIN(Y/N)";SA$
3320 IFA$="N" THEN1
3330 GOTO3290
3999 M=M+1:POKEM,0:RETURN
4000 REM FLICK THROUGH
4010 J=1:DL=500:FL=1
4020 GOSUB4500:FORT=1TODL:NEXTT:
GOSUB4030:GOTO4060
4030 I$=INKEY$
4035 IFA$="P" THENGOSUB4800
4036 IFA$="M" THEN1
4040 IFA$="S" THENFL=1:GOTO4080
4050 IFA$="A" THENFL=-1:GOTO4080
4052 IFA$="H" THENGOSUB4600:GOSUB
4800
4054 IFA$="E" THEN4700
4056 IFA$="D" THEN4900
4058 RETURN
4060 REM
4080 J=J+FL:IFJ>HC THENJ=1
4090 IFJ<1THENJ=HC
4100 GOTO4020
4500 REM SCREEN DISPLAY
4510 CLSO:PRINT@64,NM$;"CARD";J
4520 PRINT
4530 FORI=0TONH
4540 PRINTI;A$(I,0);";";A$(I,J)
4550 NEXTI
4560 PRINT@0,"<a>:PAUSE:hardCO
PY:eDIT:mENU:DELETE:CONTINUE"
4570 RETURN
4600 REM HARDCOPY
4610 PRINT#-2,NM$;"CARD";J
4620 PRINT#-2,""
4630 FORI=0TONH
4640 PRINT#-2,I;A$(I,0);";";A$(I
,J)
4650 NEXTI
4655 PRINT#-2,"-----"
-----"
4660 RETURN
4700 REM EDIT
4705 PRINT@0,"":PRINT:PRINT
4710 PRINT@0,"":INPUT"WHICH HEAD
ING NUMBER";I
4715 IFI<1THEN4710
4720 PRINTI;A$(I,0);";";
4730 GOSUB1500:A$(I,J)=IK$
4740 GOSUB4500:GOSUB5120:GOTO474
0
4800 I$=INKEY$:IFA$="" THEN 4800
4805 SOUND1,1
4910 RETURN
4900 REM DELETE
4905 PRINT@0,"":PRINT:PRINT
4910 PRINT@0,"DO YOU WANT DELETE
THIS CARD(Y/N)"
4920 GOSUB4800
4930 IFA$="Y" THEN4950
4940 GOSUB4560:GOTO4800
4950 FORMV=J+1TOHC
4960 FORI=0TONH
4970 A$(I,MV-1)=A$(I,MV)
4980 NEXTI:NEXTMV
4985 FORI=0TONH:A$(I,HC)="" :NEXT
I
4990 HC=HC-1:GOTO4940
5000 REM SEARCH
5002 CLS:PRINT:PRINTNM$
5004 FORI=0TONH:PRINTI;A$(I,0):N
EXTI
5006 PRINTNH+1;"ENTIRE SYSTEM"
5010 PRINT@0,"WHICH HEADING NUMB
ER";:INPUTI
5015 II=I
5020 INPUT"SEARCH FOR WHAT";SH$
5025 IFI=NH+1 THEN5200
5027 GOSUB5030:GOTO1
5030 FORJ=1TOHC:PRINT@0,J
5035 I=II
5040 IFLEN(SH$)>LEN(A$(I,J)) THEN
5080
5050 FORK=1TOLEN(A$(I,J))-LEN(SH
$)+1
5060 IFMID$(A$(I,J),K,LEN(SH$))=
SH$ THENGOSUB5100
5070 NEXTK
5080 NEXTJ
5090 RETURN
5100 GOSUB4500
5120 GOSUB4800:GOSUB4035
5130 RETURN
5200 FORI=1TONH
5210 GOSUB5030
5220 NEXTI
5230 GOTO1
6000 REM NEW CARD
6010 CLS
6020 PRINT@64,NM$:PRINT
6040 PRINT0;A$(0,0);";";
6050 GOSUB1500:NC$=IK$
6060 FORJ=0TOHC:PRINT@0,J+1:PRIN
T@160,;
6065 IFNC$=A$(0,J) THENPRINT"ALRE
ADY IN FILE":GOTO6020
6070 IFNC$<A$(0,J+1) THEN6200
6075 IFA$(0,J)="" THEN6100
6080 NEXTJ
6090 HC=J
6100 A$(0,J)=NC$
6110 FORI=1TONH
6120 PRINTI;A$(I,0);";";
6130 GOSUB1500:A$(I,J)=IK$
6140 NEXTI
6150 GOSUB4500:GOSUB5120
6160 GOTO6150
6200 FORMV=HC TOJ+1 STEP-1
6210 FORI=0TONH
6220 A$(I,MV+1)=A$(I,MV)
6230 NEXTI:NEXTMV
6240 J=J+1:HC=HC+1
6250 GOTO6100
7000 REM SYSTEM PRINT
7010 FORJ=1TOHC
7020 GOSUB4600
7030 NEXTJ
7040 GOTO1
8000 REM RETRIEVE
8010 CLS:CLEAR6500,29000:GOSUB50
0
8020 GOTO2060

```



## LOG-MATH

by L. W. Thurbon

### 16K DCB UTILITY

This short little utility will give you the logarithm of any number and base given.

### The Listing:

```

0 GOTO30
10 REM LOG OF ANY NUMBER TO ANY
BASE. BY L. W. THURBON.
20 REM THE COCO AND MC-10 HAVE
LOGS TO BASE 'E' NORMALLY.
25 SAVE"LOG-MATH:2":END
30 CLS:PRINT:INPUT" ENTER YOUR W
HOLE NUMBER ";A
40 PRINT:INPUT" ENTER YOUR BASE
NUMBER";B
50 C=LOG(A)/LOG(B):REM THIS IS
THE MATHEMATICAL FORMULA.
60 CLS:PRINT:PRINT" THE LOG OF";
A
70 PRINT:PRINT" TO BASE";B
80 PRINT:PRINT" IS ";C
90 PRINT@482,"PRESS ANY KEY FOR
NEXT CALC";
100 K$=INKEY$:IFK$="" THEN100
110 GOTO10
120 END

```



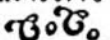
## FILE DISPLAY

continued from page 28

```

1000 EE$=CHR$(34)+CHR$(69)+CHR$(
34)+"= END"
1010 KK$=CHR$(34)+CHR$(75)+CHR$(
34)+"= KILL"
1020 CM$=CHR$(10)+CHR$(94)+CHR$(
8)+CHR$(9)+"K"+"R"+"D"+"S"+"E"
1030 GOTO 380
1040 '****RUN****
1050 EXT$=MID$(NA$(CS*16+L),10,3
)
1060 BN$=LEFT$(NA$(CS*16+L),8)
1070 DRIVED:POKE65494,0
1080 IF EXT$="BIN" THEN 1120
1090 IF EXT$="DAT" THEN 1110
1100 LOADBN$,R
1110 CLS7:PRINT@202," THIS FILE
";:PRINT@264," CANNOT BE RUN ";:
FOR DE=1TO2000:NEXT:GOTO380
1120 RUNM BN$
1130 '**** KILL FILES ****
1140 BN$=LEFT$(NA$(CS*16+L),8)
1150 EXT$=MID$(NA$(CS*16+L),10,3
)
1160 BN$=BN$+"/"+EXT$
1170 CLS7:PRINT@238," KILL ";
1180 PRINT@298," "+BN$+" ";
1190 PRINT@364," YES OR NO ";
1200 K$=INKEY$:IF K$="Y" THEN1220
1210 IF K$="N" THEN 380 ELSE 1200
1220 DRIVE D:POKE65494,0
1230 KILLBN$:CLEAR:DIM NA$(90):G
OTO 950

```







# Form Fill

by D. Bourne

16K ECB + PRINTER  
APPLICATION

**T**HIS IS an exercise in filling out forms, like job applications and things such as that.

You could even use the printout as part of your application for a job, the applications are endless!

## The Listing:

```

0 GOTO10
1 SAVE"FORMFILL:2
2 END
5 'STEVE BLYN-COMPUTER ISLAND
6 'AUST.RAINBOW SEPT.83
10 'ADAPTED BY D.W.F.BOURNE MAR.
86
15 GOSUB800
20 CLEAR500
30 CLS:PRINT@96,"DO YOU HAVE THE
  PRINTER TURNED ON":INPUT PR$:IF
  LEFT$(PR$,1)="Y" THEN PR=1
40 POKE359,57:SCREEN0,1
50 CLS
60 PRINT@6,"*application form*";
70 PRINT@32,"NAME:";
80 PRINT@69,"-----"
  ";
90 PRINT@102,"LAST          FI
RST";
100 PRINT@37,"";:LINE INPUT$:SO
UND170,3
110 PRINT@52,"";:LINE INPUT$:SO
UND200,3
120 PRINT@64," ":PRINT@96," ":
130 PRINT@96,"ADDRESS:";
140 PRINT@136,"-----"
  ";
150 PRINT@169,"NUMBER AND STREET
";
160 PRINT@104,"";:LINEINPUT$:SO
UND100,3
170 IF LEN(S$)>24 THEN PRINT@104
,LEFT$(S$,24)+" "
180 PRINT@132," ":PRINT@160," "
190 GOSUB200:GOTO210
200 PRINT@168,"-----"

```

```

---";:RETURN
210 PRINTTAB(10)"CITY"
220 PRINT@136,"";:LINEINPUT$:SO
UND125,3
230 CC=LEN(C$):IFCC>22 THEN PRIN
T@128," ":PRINT@ 136,LEFT$(C$,22
)
240 IF CC>22THEN CC=22
241 PRINT@160,"":PRINTTAB(26)"ST
ATE"
242 GOSUB245:GOTO255
245 PRINT@200,"-----"
  ";:RETURN
255 PRINT@168,"";:LINEINPUT$:S
T=LEN(ST$):IF ST>17 THEN GOTO520
260 PRINTTAB(12)"POSTCODE"
265 GOSUB270:GOTO275
270 PRINT@200,"----";:RETURN
275 PRINT@200,"";:LINEINPUT$:IF
LEN(Z$)<>4 THEN GOTO530
280 SOUND180,3
300 PRINT@224,"TELEPHONE #:"
310 PRINT@268,"-----";
320 PRINT@236,"";:LINEINPUT$:IF
LEN(T$)<>8 THEN 550
330 PRINT@256," ":PRINT@256,"AGE
"::PRINT@292,"--";
340 PRINT@260," ":PRINT@260,"";:
LINEINPUTAG$
350 IF VAL(AG$)<1 OR VAL(AG$)>99
THEN GOTO 560
400 PRINT@264,"DATE OF BIRTH :";
:PRINT@310,"-- -- --";
410 PRINT@342,"DA.MO.YR.";
420 NN=31:PRINT@278," ":PRINT@27
8,"";:LINE INPUT DA$:IFLEN(DA$)<
>2THEN GOTO 590
430 IF VAL(DA$)<0 OR VAL(DA$)>31
THEN GOTO600
440 NN=12:PRINT@281," ":PRINT@28
1,"";:LINEINPUT MO$:IF LEN(MO$)<
>2 THEN GOTO 570
450 IFVAL(MO$)<0 OR VAL(MO$)>12
THEN GOTO 580
460 PRINT@284," ":PRINT@284,"";:
LINEINPUTYR$:IFLEN(YR$)<>2 THEN
GOTO 610
471 PRINT@352," ":PRINT@352,"":P
RINT@352,"SEX(M/F):";

```

```

473 INPUTSE$:IF MID$(SE$,1)="M"
OR MID$(SE$,1)="F" THEN 474 ELSE
635
474 PRINT@361,SE$
475 PRINT@288," "
480 AP$="your application is acc
epted"
490 FORT=1TO29:PRINT@447-T,LEFT$
(AP$,T):SOUND230,1:NEXTT
500 IF PR=1THEN 640 ELSE 710
510 '
520 FORT=1TO3:PRINT@420,"CHECK S
PELLING !";:SOUND40,8:NEXTT:PRIN
T@152," ":PRINT@416," ":GOSUB200
:GOTO255
530 FORT=1TO3:PRINT@416," ALL PO
ST CODES HAVE 4 DIGITS.":SOUND 7
0,8:PRINT@192," ":NEXTT
:PRINT@416," ":GOSUB270:GOTO275
540 '
550 FORT=1TO3:PRINT@416,"TELEPHO
NE#'S HAVE 7 DIGITS WITH A
SPACE AFTER THE FIRST 3.":SOUND7
0,8:NEXTT:PRINT@416," ":PRINT@44
8," ":GOTO320
560 FOR T=1TO3:PRINT@417,"THAT'S
NOT YOUR REAL AGE...":SOUND70,8
:NEXTT:PRINT@416,"":GOTO340
570 GOSUB620:GOTO440
580 GOSUB630:GOTO440
590 GOSUB620:GOTO420
600 GOSUB630:GOTO420
610 GOSUB620:GOTO460
620 FORT=1TO3:PRINT@422,"USE 2 D
IGITS,PLEASE":SOUND70,8:NEXTT:PR
INT@416," ":RETURN
630 FORT=1TO3:PRINT@417,"ONLY US
E NUMBERS FROM 1 TO";NN:SOUND200
,6:NEXTT:PRINT@416," ":RETURN
635 FORT=1TO3:PRINT@416,"ONE LET
TER ONLY(M OR F)":SOUND200,6:NEX
T:PRINT@416," ":GOTO471
640 PRINT#-2,CHR$(31)TAB(10)**
APPLICATION FORM **":CHR$(30):GOS
UB720:GOSUB720
650 PRINT#-2,TAB(5)"NAME:"TAB(20
)TAB(40)F$:GOSUB730

```

continued on page 48

# BIRD REGISTER

by Ron Simpkin  
16KCB

**I** HOPE THAT my first program is acceptable. It is a program for keeping a record of birds in an aviary. I originally wrote this for my wife as she is breeding budgies and she needs to keep a record of what stock and breeding results she gets from birds.

I would appreciate any comments on this program from yourselves.

At the moment I am working on a disk system of the same program with a few modifications. Hopefully it will have a full editing facility with an alpha-sort option and a few more options that should make the program more user friendly.

## The Listing:

```

0 GOTO10
1 ***** BIRDREG *****
  ***** RON SIMPKIN *****
3 SAVE"BIRDREG:3":END
10 CLEAR2000
20 N=100:M=100:P=100
30 DIMBIRDS(N,3),BREEDS(M,3),YOUNGS(P,3)
40 CLS:PRINT:PRINT" 1) WRITE NEW
  DATA                2) READ MAST
  ER FILE              3) WRITE NEW
  MASTER FILE        4) DISPLAY D
  ATA                5) PRINTER":
  INPUTS
50 IFS<1 ORS>5 THEN40
60 ONS GOTO70,820,1110,110,1440
70 PRINT@9,"BIRD REGISTAR":PRINT
80 PRINT:PRINT" 1) NEW STOCK
                2) BREEDING PAIR
S                3) BREEDING RESU
LTS             4) MAIN MENU
90 N=N-J:M=M-K:P=P-L
100 INPUTS:ONS GOTO140,250,380,4
0
110 PRINT:PRINT" WHICH INFORMATI
ON DO YOU WANT?
120 CLS:PRINT" 1) STOCK
                2) PAIRS
                3) BREEDING RESUL
TS             4) MAIN MENU
130 INPUTS:ONS GOTO470,570,670,4
0
140 CLS
150 INPUT"HOW MANY BIRDS HAVE YO
U GOT":C
160 FORA=1+J TO C+J
170 PRINT
180 INPUT"RING NO.":BIRDS(A,1)
190 INPUT"COLOUR":BIRDS(A,2)
200 INPUT"SEX":BIRDS(A,3)
210 GOSUB790
220 NEXT
230 J=A-1
240 GOTO40
250 CLS:PRINT:INPUT"HOW MANY PAI
RS":C
260 Z=C*2
270 CLS4:PRINT@226,"PLEASE ENTER
  BY PAIRS BREED";
280 PRINT@261,"MALE FIRST THEN F
 EMALE";
290 FORZZ=1TO2500:NEXT:CLS
300 FORA=1+K TOZ+K
310 INPUT"RING NO.":BREEDS(A,1)
320 INPUT"COLOUR":BREEDS(A,2)
330 INPUT"SEX":BREEDS(A,3)
340 GOSUB790
350 NEXT
360 K=K+Z
370 GOTO40
380 CLS:INPUT"HOW MANY ENTRIES D
O YOU WANT":S
390 FORA=1+L TO S
400 CLS:INPUT"EGGS LAYED":YOUNGS
(A,1)
410 INPUT"EGGS HATCHED":YOUNGS(A
,2)
420 PRINT:PRINT"ENTER RING NOS.
AS ONE ENTRY...
430 INPUT"RING NO.":YOUNGS(A,3)
440 GOSUB790:NEXT
450 L=A-1
460 GOTO40
470 CLS:PRINT@0,"RING NO."TAB(10
)"COLOUR"TAB(23)"SEX
480 FORC=1TOJ
490 PRINTTAB(0)BIRDS(C,1);TAB(10
)BIRDS(C,2);TAB(23)BIRDS(C,3)
500 LL=LL+1
510 IFLL=12 THEN530
520 GOTO540
530 PRINT:PRINT"PRESS ANY KEY":E
XEC44539
540 NEXT
550 GOSUB1410
560 GOTO40
570 CLS:PRINTTAB(8)"MALE"TAB(17)
" FEMALE
580 FE=0:ML=0
590 FORX=1TOK
600 IFBREEDS(X,3)="MALE"THEN610E
LSEGOTO630
610 ML=ML+1:PRINT:PRINT@32*ML,BR
EEDS(X,1)TAB(8)BREEDS(X,2)
620 GOTO640
630 FE=FE+1:PRINT@32*FE+17,BREED
S(X,1)TAB(24)BREEDS(X,2)
640 NEXT
650 GOSUB1410
660 GOTO40
670 REM PRINT EGG RESULTS
680 FORA=1TOL
690 PRINT:PRINT"RESULTS OF PAIR
NO.":A
700 PRINT
710 PRINTTAB(0)"EGGS LAYED"TAB(1
5)"EGGS HATCHED"
720 PRINTTAB(0)YOUNGS(A,1)TAB(15
)YOUNGS(A,2)
730 PRINT"RING NO.
740 PRINTTAB(0)YOUNGS(A,3)
750 LL=LL+1:IFLL=2 THENGOSUB1410
:CLS
760 NEXT
770 GOSUB1410
780 GOTO40
790 PRINT:PRINT"IS INPUT CORRECT
(Y OR N)":INPUTQS
800 IFQS="N" THENGOTO810ELSEIFQS
="Y" THENRETURN
810 A=A-1:RETURN
820 PRINT" WHICH INFORMATION DO
YOU WANT
830 PRINT" 1) STOCK
                2) BREEDERS
                3) RESULTS OF BREEDIN
G             4) MAIN MENU
840 INPUTR:ON R GOTO850,950,1030
,40
850 OPEN" I",#-1,"BIRDST"
860 PRINT:INPUT#-1,TS
870 PRINT"READING FILE.":TS
880 INPUT#-1,J
890 FORA=1TOJ
900 PRINT"READING FILE":A
910 INPUT#-1,BIRDS(A,1),BIRDS(A
,2),BIRDS(A,3)
920 NEXT:CLOSE#-1
930 J=A
940 GOTO40
950 OPEN" I",#-1,"BIRDPA"
960 PRINT:INPUT#-1,TS
970 PRINT"READING FILE":TS
980 INPUT#-1,K:FORA=1TOK
990 PRINT"READING FILE":A
1000 INPUT#-1,BREEDS(A,1),BREEDS
(A,2),BREEDS(A,3)
1010 NEXT:CLOSE#-1
1020 K=A:GOTO40
1030 OPEN" I",#-1,"BIRDRES"
1040 PRINT:INPUT#-1,TS
1050 PRINT"READING FILE":TS
continued on page 46

```



# CoCo 3 GRAFIX

by D. Morton

**T**HE FIRST program we have for the CoCo 3 is a program made by the son of one of the Tandy Managers. The program he made goes through some of the CoCo's supreme graphics. When RUN, you are presented with a menu. Pressing 1 will produce some random graphics while pressing 2 will draw colour bars. Pressing 3 will draw a newer version of the Ghostbuster logo.

The last choice (choice 4) will present Tocatta by Bach.

## The Listing:

```

10 ' *****
20 ' ** Basic Graphics **
30 ' ** Demonstration 1 **
40 ' ** By D.Morton '86 **
50 ' *****
60 WIDTH 40:CLS 5
70 GOSUB 250
80 PRINT "See - "
90 PRINT
100 PRINT "(1) Random Graphics"
110 PRINT
120 PRINT "(2) Color Bars"
130 PRINT
140 PRINT "(3) GhostBuster"
150 PRINT
160 PRINT "(4) Music"
170 PRINT
180 PRINT "(5) Draw"
190 PRINT
200 PRINT "Enter (1-5) ";
210 A$=INKEY$: IF A$="" THEN GOTO 210
220 IF VAL(A$)<1 OR VAL(A$)>5 THEN 210
230 ON VAL (A$) GOTO 320,430,520,750,890
240 GOTO 210
250 PALETTE 9,1
260 PALETTE 10,4
270 PALETTE 12,12
280 PALETTE 13,5
290 PALETTE 14,6
300 PALETTE 15,15
310 RETURN
320 HSCREEN 2
330 HCLS 8
340 X1=RND(320):Y1=RND(192):C1=RND(16)-1
350 X2=RND(320):Y2=RND(192):C2=RND(16)-1
360 C3=RND(16)-1
370 HCOLOR C1,C1
380 HLINE (X1,Y1)-(X1+10,Y1+10),PSET,BF
390 HCIRCLE(X2,Y2),10,C2
400 HPAINT(X2,Y2),C3,C2
410 A$=INKEY$: IF A$="" THEN 340
420 GOTO 10
430 HSCREEN 2:T=0
440 HCLS 8
450 FOR X=0 TO 320 STEP 20
460 HCOLOR T,1
470 HLINE (X,0)-(X+19,192),PSET,BF
480 T=T+1: IF T=16 THEN GOTO 500
490 NEXT X
500 A$=INKEY$: IF A$="" THEN 500
510 GOTO 10
520 ' *****
530 ' ** GhostBuster **
540 ' ** Logo for the**
550 ' ** COCO - 3 **
560 ' *****
570 HSCREEN 2:HCLS 11:R=3
580 HCIRCLE(100,40),20,8,.9,.46,.05:HDRA
W"C4BM100,24NU2R6DR2C8R4ER2M+6,-1R2L3H6L
6G2L2G2LG2DR3"
590 HCIRCLE(100,62),30,8,.66,.41,.63:HCIR
CIRCLE(100,62),30,8,.66,.9,.1:HDRAW"BM-22,
+24M+2,-4BR36M+2,+4F2BM-16,-20F4M-6,-3R2
BL12BUG4BD4BRD4F2U8F2D5BR9BUNU4F2U8F2D5B
D8BL4G2L4H2BD12BL2D6F2U10R2D10R2U10F2D6B
D6BR2G2L8H2BL16BU2F4H2L6"
600 HDRAW"M-12,+10M-16,+10M-24,-6L4G2D2R
4M+10,+6NF2H2L6G2L2G4D2R4E2R4F2R4F2H2L4G
2L4D4R4ER4M+10,+2R4NH4M+6,+8R4E2U2M-6,-8
D2R4M+20,-10F2R4F2D"
610 HCIRCLE(138,80),30,8,.6,.69,.9:HCIRC
LE(136,112),42,8,.5,.25,.4
620 HDRAW"BM114,130M-18,+10"
630 HDRAW"BM166,100F4R2F2NE4G4D2F2R4M+9,
-3F2R9E2M+24,+10R2U4M-12,-8M+3,+2R4NDR2N
DR8E2U2H2M-14,-2NDU4M+8,-4ND8M+8,-4U4H2L
4G4L2NU4L4G2L4G2L12H2L2H2"
640 HCIRCLE(128,98),92,8,.85,.52,.675:HC
IRCLE(128,98),92,8,.85,.74,.98:HCIRCLE(1
28,98),92,8,.85,.05,.48
650 HCIRCLE(128,98),62,8,.85,.74,.9:HCIR
CLE(128,98),62,8,.85,.05,.39

```

continued on page 38

# CoCo 3 COMPETITION

**F**OR THOSE of you with a new Colour Computer 3, there is a competition running. Anyone who can produce a program that will work exclusively for the CoCo 3 will win the following prizes:

- \* A pair of Joysticks
- \* One box of disks
- \* One Koala Pad
- \* 2 Months of Rainbow on Tape or Disk.

The only condition to this competition is that your program has to be in BEFORE the 7th of February, 1987 to be eligible.

To start this competition off, we have 9 entries already. They all originate from Colin North's User Group in Brisbane and they all work excellently!

The first program, PALETES, draws a circle in the middle of the screen and colours in the circle in 64 different colours.

SHADES goes through the same as the above program, only the whole screen is used to show different shades of colours.

COLOR BARS shows the eight base colours using bar lines.

AUSTRALIAN FLAG shows just that, the aussie flag in all it's glory and colours.

CIRCLES will draw a series of circles in different colours and then use the PALETTE command to flash them in different colours.

CIRCLES II will draw circles across the screen and paint each one different. At the end the program will use the PALETTE command to flash the background colours.

LIL' COCO will draw Little CoCo (March 1984 CoCo) on the hi-res screen in different colours.

## LIL' L CoCo

```

0 ***** Lil' CoCo *****
1 *** Conv. by Colin North User Group *
3 SAVE"3COCO:1":END
10 POKE65281,0
20 HSCREEN2
30 HCLS4
40 HCOLOR8
50 HDRAW"BM52,164M+156,0":HCIRCLE(52,152),12,8,1,.25,.5:HCIRCLE(208,152),12,8,1,0,.25:HCIRCLE(52,152),12,8,1.6,.5,.75:HCIRCLE(208,152),12,8,1.6,.75,.0
60 HDRAW"BM52,135M+20,-12BM208,135M-20,-12M-115,0BM56,156M+148,0":HCIRCLE(56,152),4,8,1,.25,.5:HCIRCLE(204,152),4,8,1,.0,.25
70 HLINE(84,148)-(176,148),PSET:HLINE-(172,142),PSET:HLINE-(88,142),PSET:HLINE-(84,148),PSET
80 HLINE(84,125)-(176,125),PSET:HLINE-(196,140),PSET:HLINE-(64,140),PSET:HLINE-(84,125),PSET
90 HCIRCLE(72,115),8,8,1,.25,.5:HCIRCLE(72,115),4,8,1,.25,.5:HLINE(72,119)-(187,119),PSET:HCIRCLE(188,115),4,8,1,.0,.25:HCIRCLE(188,115),8,8,1,.0,.25
100 HDRAW"BM64,115M+19,-64BM68,115M+19,-64":HCIRCLE(91,51),8,8,1,.5,.75:HCIRCLE(91,51),4,8,1,.5,.75
110 HDRAW"BM196,115M-19,-64BM192,115M-19,-64":HCIRCLE(169,51),8,8,1,.75,.0:HCIRCLE(169,51),4,8,1,.75,.0:HLINE(168,47)-(92,47),PSET:HLINE(168,43)-(92,43),PSET
120 HCIRCLE(124,74),5,8,2:HCIRCLE(134,74),5,8,2:HCIRCLE(124,77),3,8,1:HCIRCLE(134,77),3,8,1:HPOINT(124,77),8,8:HPOINT(134,77),8,8

```

```

130 HCIRCLE(129,100),9,8,1,.0,.5:HLINE(120,100)-(123,90),PSET:HLINE(138,100)-(135,90),PSET
140 HCIRCLE(40,40),35,8,.5:HCIRCLE(40,70),7,8,1:HCIRCLE(60,105),3,8,1:HCIRCLE(50,87),5,8,1
150 G$="BU5FR4HL2G2D2FR3EUL2BD2BR3":D$="BU4BRD4LURFR2EU3HL3GBD4BR5":A$="BRNR2HU3ER2FNUD3NGFBR":Y$="BU4ED2FRND2REU2BD5BR"
160 HDRAW"S8BM17,45"+G$+D$+A$+Y$:HDRAW"B M28,35U1"
170 HLINE(0,0)-(320,192),PSET,B:HLINE(4,4)-(315,186),PSET,B:HPOINT(5,5),6,8:POKE 65494,0
180 HCIRCLE(129,120),1
190 HPOINT(129,100),5,8:HPOINT(129,130),3,8:HPOINT(129,150),1,8:HPOINT(2,2),1,8:HPOINT(129,145),2,8:HPOINT(129,121),2,8
200 C2=RND(64)
210 PALETTE6,C2
220 FORX=1TO50:NEXT:GOTO200

```

## CIRCLES

```

0 GOTO10
1 ***** Circles *****
2 ***** Colin North User Group *****
3 SAVE"3CIRCS:1":END
10 HSCREEN 2
15 FOR T= 0 TO 20
20 C1=RND(15):C2=RND(15)
25 X=RND(320):Y=RND(192)
30 HCIRCLE(X,Y),RND(60),C1
35 HPOINT(X,Y),C2,C1
40 NEXT
60 PALETTE RND(16)-1,RND(63)
65 FORTL=1 TO 50:NEXT:GOTO 60

```

## CIRCLES II

```

0 GOTO10
1 '***** Circle II *****
2 '***** Colin North User Group *****
3 SAVE"3CIRC2:1":END
10 HSCREEN2
12 P=0
14 HCLS4
15 FORX=10 TO320 STEP20
20 HCIRCLE(X,96),10,12
30 HPAINT(X,96),P,12
40 P=P+1
50 NEXT
55 FORC2=0TO63
60 PALETTE4,C2
70 FORX=1TO1000:NEXT:NEXT
100 GOTO100

```

## PALETTES

```

0 GOTO10
1 '***** PALETTES *****
   ***** COLIN NORTH USER GROUP *****
3 SAVE"3PAL:1":END
10 HSCREEN2
20 FORX=1 TO 64
30 PALETTE1,X
40 HCLS4
50 HPRINT(2,2),"PALETTE 1,"
60 HPRINT(11,2),X
70 HCIRCLE(160,96),40
80 HPAINT(160,96),1,1
90 NEXT
100 GOTO10

```

## COLOUR BARS

```

0 GOTO400
1 '***** COLOR BARS *****
2 '***** COLIN NORTH USER GROUP *****
3 SAVE"3CBARS:1":END
400 X=0:Y=0
410 HSCREEN2
420 HCLS4
430 FORP=0 TO 15
440 HLINE(X,Y)-(X+20,192),PSET,B
450 HPAINT(X+1,Y+1),P,1
460 X=X+20
470 NEXT
480 GOTO400

```

## SHADES

```

0 GOTO200
1 '***** SHADES *****
2 '***** COLIN NORTH USER GROUP *****
3 SAVE"3SHADES:1":END
200 HSCREEN4
210 PALETTE1,59:HPAINT(2,2),1,1
220 FORX=1 TO 64
230 PALETTE1,X
240 FORY=1TO500:NEXT
250 NEXT
260 GOTO200

```

## AUSTRALIAN FLAG

```

0 GOTO500
1 '***** AUSTRALIAN FLAG *****
2 '***** Colin North User Group *****
3 SAVE"3FLAG:1":END
500 PALETTE 1,32
510 HSCREEN2
520 HCLS2
530 HDRAW"BM0,30C1R50U30R20D30R50D20L50D
30L20U30L50"
540 HPAINT(1,42),1,1
550 HDRAW"BM0,25R25BR5R10BR5BU5U20"
560 HDRAW"BM75,0D21BD4BR5BR14R26D5"
570 HDRAW"BM0,0M40,25L10NM-40,-18BL5M-36
,-15":HPAINT(1,10),4,1
580 HDRAW"BM45,0D23M-37,-23":HPAINT(1,10
),4,1:HPAINT(0,5),1,1
590 HDRAW"BM75,0D23M+32,-23"
600 HDRAW"BM112,0M-34,25R8M+34,-25
610 HDRAW"BM120,0D5M-27,+20
620 HPAINT(73,2),4,1:HPAINT(115,2),1,1
630 HDRAW"BM0,55R30M-30,16BD5M+39,-21R6;
M-42,+25L8R8M+36,-21D21R5":HPAINT(1,53),
4,1:HPAINT(2,78),1,1
640 HDRAW"BM70,80R5U23M+33,23R9M-35,-25R
7M+31,22D3NL5U7M-26,-18R26U5":HPAINT(118
,52),4,1:HPAINT(114,75),1,1
650 AS="BU20M-4,13M-14,-6M+9,11M-13,7M+1
5,-1M-4,14M+10,-11M+9,11M-3,-14M+15,1M-1
3,-7M+10,-11M-14,6M-3,-13"
660 HDRAW"BM45,140S4"+AS:HPAINT(45,140),
4,1
670 HDRAW"BM180,90S2"+AS:HPAINT(180,90),
4,1
680 HDRAW"BM210,50"+AS:HPAINT(210,50),4,
1
690 HDRAW"BM250,80"+AS:HPAINT(250,80),4,
1
700 HDRAW"BM210,135"+AS:HPAINT(210,135),
4,1
710 BS="BU10M-4,7L6M+6,6M-4,7M+8,-4M+8,4
M-4,-7M+6,-6L6M-4,-7"
720 HDRAW"BM225,105S3"+BS:HPAINT(225,105
),4,1
730 GOTO730

```

# Tandy ELECTRONICS

## Computer Packages For Office and Home!

- Includes "DeskMate" Software
- PC-Compatible
- With Monitor Adapter

**Save  
\$899**

Reg 2598.00

**\$1699**



At last! A business computer you don't have to see your bank manager for. The Tandy 1000, complete with our new RGBI color monitor. The Tandy 1000 also includes adapter for adding joysticks, a monitor, light pen and printer. With 128K RAM, expandable to 640K, you've got a business and home education package that'll grow with you. The CM-5 Color Monitor has graphics that have to be seen to be believed. And only the Tandy 1000 has "DeskMate" applications software. It's a word processor, an electronic spreadsheet, a filer, a calendar and a communicator (with optional modem). It may be the only software you ever need. It'll definitely be part of the only computer you'll need. 25-1000, 25-1023

### Co-Co Multi-Pak Interface

- Connects Up to Four Paks
- Increase Your Co-Co's Memory



**179<sup>95</sup>**

Makes it much easier to change between program paks. Changes between slots with selector switch or under program control. A must for Color Computer owners. 26-3124

### Thermal Computer Printer

- Ideal for Small Spaces



**Save  
\$90**

Reg 189.95

**99<sup>95</sup>**

It's hard to believe! A thermal printer for less than \$100. With features of printers three times the price. Print alphanumeric and block graphics with your Color Computer. Get a hard copy of your monthly budget, the kids homework, Mum's recipes and so much more. Prints 30 cps. Buy now while it's on special and SAVE! 26-1261

### Computer Desk

**NEW!**

- Suits Most Computer Hardware
- Tough Construction



**199<sup>95</sup>**

Give your computer an established home. Finished in attractive woodgrain vinyl. Ready to assemble - no special tools needed. 90 x 93 x 60cm. 26-9408

Accessories not included

# The Amazing Color Computer 2

- Attaches to Any TV Set for Instant Computing
- Create Color Graphics with Exciting Sound Effects and Music

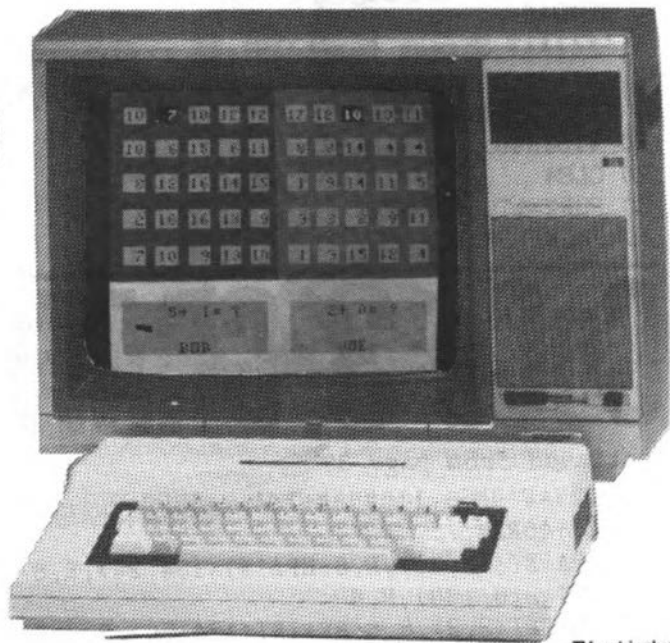
**Save  
\$70**

Reg 299.95

**\$229<sup>95</sup>**

One of the most popular home computers at a price that everyone can afford. Simply attach to your TV, plug in a Program Pak and you're away. Learn how easy it is to write programs, create graphics or make music. With 16K of memory, expandable to 64K. And you can add a tape recorder, joysticks, printer, modem and much more. Give your family something they'll use forever!

26-3136



TV not included

## INTRODUCING The Color Computer 3

**NEW!**

- Puts a Rainbow at Your Fingertips

**SPECIAL  
INTRODUCTORY  
OFFER!**

Reg 449.95



**NOW**

**399<sup>95</sup>**

It's NEW! It's our most powerful Color Computer yet. And it's set to take the market by storm. The Tandy Color Computer 3 comes with 128K of memory (expandable to 512K), advanced programming facilities and high resolu-

tion graphics. In fact, you can select 16 colors out of a pallet of 64 in detail as fine as 640 x 200-resolution. Expands easily with disk drives, printer, modem and more. Why pay more when you can get more for less! 26-3334

**WE SERVICE WHAT WE SELL!**

**Tandy  
ELECTRONICS**

A DIVISION OF TANDY  
AUSTRALIA LIMITED  
INC. IN N.S.W.

**Nearly  
350 Stores  
Australia-  
Wide**

**Available From 350 Stores  
Australiawide Including  
Tandy Computer Centres  
Order On VIATEL #642**

Independent Tandy Dealers may not be participating in this ad or have every item advertised.  
Prices may also vary at individual Dealer Stores

## SCREEN FULL'O MAGIC

```

0 GOTO10
1 '***** Screen full'o Magic *****
2 '***** Colin North User Group *****
3 SAVE"3MAGIC:1":END
10 WIDTH40
20 CLS4
30 FORX=1TO500:NEXT
40 PALETTE3,P
50 CLS4
60 LOCATE10,12
70 ATTR3,3
80 PRINT"A Screenfull of Magic";
90 FORX=1TO500:NEXT
100 P=P+1
110 IF P=63 THEN P=0
120 GOTO20

```

# CoCo 3 GRAFIX

continued from page 33

```

660 HDRAW"BM68,110NU8M+104,-46BF20BD4BL4
M-104,+46R2"
670 HPAINT(78,36),R,8:HPAINT(134,24),R,8
:HPAINT(218,100),R,8
680 HPAINT(2,2),8,8:HPAINT(134,50),8,8:H
PAINT(72,106),8,8:HPAINT(92,136),8,8
690 X=RND(320):Y=RND(192):C=RND(15)
700 IF HPOINT(X,Y)=3 THEN GOTO 690
710 IF HPOINT(X,Y)=11 THEN GOTO 690
720 HSET (X,Y,C)
730 A$=INKEY$:IF A$="" THEN 690
740 GOTO 10
750 WIDTH 80:CLS 5
760 CLS
770 LOCATE 35,11:PRINT "Toccatta"
780 PLAY"P8T3L16O4AGL2AP8L16GFEDL8C#P8L2
DP4P8O3L16AGL2AP8L8EFC#L2DP4P8O2L16AGL4A
P4L16GFEDL8C#P8L2DP2O1L8DO2C#EGB-O3C#L4E
L2DP4P8"
790 PLAY"T5O3L8C#L12DEC#DEC#DEC#L16DP16E
P16L12FGFEGFEGEL16FP16GP16L12AB-GAB-GAB-
GL4AP2P4P5P8L8O4C#L12DEC#DEC#DEC#L16DP16
EP16L12FGFEGFEGEL16FP16GP16L12AB-GAB-GAB
-GL4AP2P4P5P8"
800 PLAY"L8O4AL12GB-EGB-EFADFADGCEGCDFO
3B-O4DO3B-"
810 PLAY"T5L12O4CEO3AO4CEO3AO3B-O4DO3GB-
O4DO3GAO4CO3FAO4CO3FO3GB-EGB-EFADFADGEC#
EGC#L4O1DL2O3B-L16B-AGFEDC#O2BO3L8C#O2AO
3C#L16EGL16FGFEGFEGFEGFEGFGL8EL2F"
820 PLAY"T3P4P8L16AO4DO3AO4EO3AO4FO3AO4D
O3AO4EO3AO4FO3AO4GO3AO4EO3AO4FO3AO4GO3AO
4AO3AO4FO3AO4GO3AO4AO3AO4B-O3AO4GO3AO4AO
3AO4FO3AO4GO3AO4EO3AO4FO3AO4DO3AO4EO3AO4
C#O3AO4DO3AAAB-AGAAAFAGAEAFADAGAEAFADAEA
C#A"
830 PLAY"T3T3L16O3DAO2AO3AL2B-O3AO2GO3AO
2AO3AO2FO3AO2GO3AO2EO3AO2FO3AO2DO3AO2GO3
AO2EO3AO2FO3AO2DO3AO2EO3AO2C#O3AO2L8DP8L
16O3DFB-FCEAE02B-O3DGDO2AO3C#EAL8DB-O2AO
3AO2B-O3G"
840 PLAY"L8O3AP8L16DFB-FCEAE02B-O3DGDO2A
O3C#EAL8DB-O2AO3AO2B-O3GL4AL16AGFEDC#O2B
O3C#O2ABO3C#DEFGAGFEFDFAO4C#"
850 PLAY"L16DO3ABO4C#DEL32FGL16AL4B-L8DB
-O3AO4AO3B-O4GL4AL16DFB-FCEAE03B-O4DGDO3
AO4C#EAL8DB-O3AO4AO3B-O4GL4ADL4.C#L8O3BO
4C#L16EGL8B-L16AGFEFEDC#DCO3B-AGFEDL1O4E
"
860 PLAY"T5L12O4C#EC#O3B-O4C#O3B-O4C#EC#
O3B-O4C#O3B-O4C#EC#O3B-O4C#O3B-O4C#EC#O3
B-O4C#O3B-GB-GEGEGB-GEGEGB-GEGEGB-GEGEGB-
EC#O2B-O3C#O2B-O3C#EC#O2B-O3C#O2B-O3C#EC
#O2B-O3C#O2B-O3C#EC#O2B-O3C#O2B-O3C#EC#E
GEC#EC#EGE"
870 PLAY"T5L12O3C#EC#EGEC#EC#EGEGB-GB-GB
-GB-GB-GB-O4C#O3B-O4C#EC#EC#EC#EC#ET3L4A
P4AP4L2GP4L8O2AGL4.AL8EFDEC#DO1BO2C#O1AB
-G#AO4C#L4DO3FL32FEFEFEFEL4EL1D"
880 GOTO 10
890 HSCREEN 2
900 HCLS 8
910 C=4
920 X=160:Y=96
930 A=JOYSTK(0):B=JOYSTK(1)
940 A$=INKEY$:IF A$="" THEN 1000
950 IF A$="C" OR A$="c" THEN HCIRCLE (X,
Y),20,C:HPAINT(X+1,Y),C,C:GOTO 930
960 IF A$="B" THEN HLINE (X,Y)-(X+20,Y+2
0),PSET,BF:GOTO 930
970 IF A$="P" THEN HPAINT(X+1,Y),C,C:GOT
O 930
980 IF A$=CHR$(12) THEN HCLS C:GOTO 930
990 IF A$="" THEN GOTO 10
1000 IF A<32 THEN X=X-1
1010 IF B<32 THEN Y=Y-1
1020 IF A>32 THEN X=X+1
1030 IF B>32 THEN Y=Y+1
1040 IF X>320 OR Y>192 OR X<0 OR Y<0 THE
N GOTO 930
1050 IF C>15 THEN C=0
1060 IF C<0 THEN C=15
1070 HCOLOR C,1
1080 HSET(X,Y,C)
1090 IF BUTTON(0)=1 THEN C=C+1:GOTO 930
1100 IF BUTTON(1)=1 THEN C=C-1:GOTO 930
1110 GOTO 930

```





# CoCo MUSIC

by David Sitsky

32K ECB



**C**OCO MUSIC is the name of this program which enables you, the user, to play music using the entire keyboard. There are four octaves relating to the four layers of the keyboard, ie the top part of the keyboard (the numbers) will play the higher octaves which the lower part of the keyboard (Z, X, C, V, B, N, M... ETC) will lay the lower octaves. Only one note at a time can be played.

When RUN, the program will ask you to enter the note length. This can be a value from 1 (longest) to 255 (shortest).

After entering that, the computer will then ask you to place the computer in lower case. Do this by typing SHIFT + 0 together.

The screen will then change again and you can proceed to play.

## The Listing:

```

1 GOTO10
2 ***** COCOMUSIC *****
   ***** DAVID SITSKY ****
3 SAVE"COCOMUSIC:3":END
5 "COCO MUSIC
10 POKE65495,0:CLS
15 S=200:D=1:A$=CHR$(128):B$=CHR
$(197):C$=CHR$(202):TL$=CHR$(197
):T$=A$+A$:M$=B$+C$
20 PRINT@228,"D":SOUNDS,D:PRINT@
229,"A":SOUNDS,D:PRINT@230,"V":S
OUNDS,D:PRINT@231,"I":SOUNDS,D
21 PRINT@232,"D":SOUNDS,D
22 PRINT@234,"S":SOUNDS,D:PRINT@
235,"I":SOUNDS,D:PRINT@236,"T":S
OUNDS,D:PRINT@237,"S":SOUNDS,D:P
RINT@238,"K":SOUNDS,D
23 PRINT@239,"Y":SOUNDS,D
24 PRINT@241,"P":SOUNDS,D:PRINT@
242,"R":SOUNDS,D:PRINT@243,"E":S
OUNDS,D:PRINT@244,"S":SOUNDS,D:P
RINT@245,"E":SOUNDS,D
25 PRINT@246,"N":SOUNDS,D:PRINT@
247,"T":SOUNDS,D:PRINT@248,"S":S
OUNDS,D
26 FORI=1TO20:SOUNDRND(255),1
27 NEXT
30 CLS
32 FORI=1TO100:NEXT
35 PRINT@235,"C":SOUNDS,D
40 PRINT@236,"O":SOUNDS,D
45 PRINT@237,"C":SOUNDS,D
50 PRINT@238,"O":SOUNDS,D
55 PRINT@240,"M":SOUNDS,D
60 PRINT@241,"U":SOUNDS,D
65 PRINT@242,"S":SOUNDS,D
70 PRINT@243,"I":SOUNDS,D
75 PRINT@244,"C":SOUNDS,D
80 FORU=1TO20:SOUNDRND(255),1
85 NEXTU
90 CLS
100 PRINT:INPUT"ENTER NOTE LENGT
H";L
105 IFL<1 OR L>255 THEN@0
106 PLAY"L"+STR$(L)
107 PRINT@256,"make computer in
lowercase mode";
108 FORT=1TO5000:NEXT
110 CLS
120 FORX=33TO61STEP4:PRINT@X,T$;
:PRINT@X+32,T$;
121 NEXTX
125 PRINT@1,"c":PRINT@5,"d":PRIN
T@9,"e":PRINT@13,"f":PRINT@17,"g
":PRINT@21,"a":PRINT@25,"b":PRIN
T@29,"c"
126 PRINT@97,"C#":PRINT@101,"D#
":PRINT@109,"F#":PRINT@113,"G#
":PRINT@117,"A#":PRINT@125,"C#
";
130 PRINT@67,"1":PRINT@71,"2":;
PRINT@75,"3":PRINT@79,"4":;PRIN
T@83,"5":PRINT@87,"6":;PRINT@91
,"7":;PRINT@95,"8";
135 FORX=161TO189STEP4:PRINT@X,T
$;:PRINT@X+32,T$;:NEXT
136 PRINT@129,"c":PRINT@133,"d":
PRINT@137,"e":PRINT@141,"f":PRIN
T@145,"g":PRINT@149,"a":PRINT@15
3,"b":PRINT@157,"c"
137 PRINT@225,"C#":PRINT@229,"D
#":PRINT@237,"F#":PRINT@241,"G
#":PRINT@245,"A#":PRINT@253,"C
#";
138 PRINT@195,"Q":PRINT@199,"V"
:PRINT@203,"E":PRINT@207,"R":;
PRINT@211,"T":PRINT@215,"Y":;PR
INT@219,"U":;PRINT@223,"I";
139 PRINT@481,"C#":PRINT@485,"D
#":PRINT@493,"F#":PRINT@497,"G
#":PRINT@501,"A#":PRINT@509,"C
#";
140 FORX=289TO317STEP4:PRINT@X,T
$;:PRINT@X+32,T$;
141 NEXTX
150 PRINT@257,"c":PRINT@261,"d":
PRINT@265,"e":PRINT@269,"f":PRIN
T@273,"g":PRINT@277,"a":PRINT@28
1,"b":PRINT@285,"c"
154 PRINT@353,"C#":PRINT@357,"D
#":PRINT@365,"F#":PRINT@369,"G
#":PRINT@373,"A#":PRINT@381,"C
#";
155 PRINT@323,"A":PRINT@327,"S"
:PRINT@331,"D":PRINT@335,"F":;
PRINT@339,"G":PRINT@343,"H":;PR
INT@347,"J":PRINT@351,"K";
156 FORX=417TO445STEP4:PRINT@X,T
$;:PRINT@X+32,T$;:NEXT
157 PRINT@385,"c":PRINT@389,"d":
PRINT@393,"e":PRINT@397,"f":PRIN
T@401,"g":PRINT@405,"a":PRINT@40
9,"b":PRINT@413,"c"
158 PRINT@32,"O":PRINT@64,"1":;
PRINT@160,"O":PRINT@192,"2":;PR
INT@288,"O":PRINT@320,"3":;PRIN
T@416,"O":PRINT@448,"4";
159 PRINT@451,"Z":PRINT@455,"Y"
:PRINT@459,"C":PRINT@463,"V":;
PRINT@467,"B":PRINT@471,"F":;PR
INT@475,"M":PRINT@479,"";
160 A$=INKEY$:IFA$=""THEN160

```



## CoCo PROGRAMS

```

161 IFAS="1" THEN 300
162 IFAS="2" THEN 305
163 IFAS="3" THEN 310
164 IFAS="4" THEN 315
165 IFAS="5" THEN 320
166 IFAS="6" THEN 325
167 IFAS="7" THEN 330
168 IFAS="8" THEN 335
169 IFAS="!" THEN 340
170 IFAS=CHR$(34) THEN 345
171 IFAS="$" THEN 350
172 IFAS="%" THEN 355
173 IFAS="&" THEN 360
174 IFAS="q" THEN 365
175 IFAS="w" THEN 370
176 IFAS="e" THEN 375
177 IFAS="r" THEN 380
178 IFAS="t" THEN 385
179 IFAS="y" THEN 390
180 IFAS="u" THEN 395
181 IFAS="l" THEN 400
182 IFAS="Q" THEN 405
183 IFAS="W" THEN 410
184 IFAS="R" THEN 415
185 IFAS="T" THEN 420
186 IFAS="Y" THEN 425
187 IFAS="a" THEN 430
188 IFAS="s" THEN 435
189 IFAS="d" THEN 440
190 IFAS="f" THEN 445
191 IFAS="g" THEN 450
192 IFAS="h" THEN 455
193 IFAS="j" THEN 460
194 IFAS="k" THEN 465
195 IFAS="A" THEN 470
196 IFAS="S" THEN 475
197 IFAS="F" THEN 480
198 IFAS="G" THEN 485
199 IFAS="H" THEN 490
200 IFAS="z" THEN 500
201 IFAS="x" THEN 505
202 IFAS="c" THEN 510
203 IFAS="v" THEN 515
204 IFAS="b" THEN 520
205 IFAS="n" THEN 525
206 IFAS="m" THEN 530
207 IFAS="," THEN 535
208 IFAS="Z" THEN 540
209 IFAS="Y" THEN 545
210 IFAS="V" THEN 550
215 IFAS="B" THEN 555
220 IFAS="N" THEN 560
225 IFAS="(" THEN 565
230 IFAS="I" THEN 570
235 IFAS="K" THEN 575
240 IFAS="<" THEN 580
245 IFAS="@" THEN 100
250 IFAS="0" THEN 700
299 GOTO 160
300 PRINT@33, M$;
301 PLAY"O1C": PRINT@33, T$; : GOTO1
60
305 PRINT@37, M$;
306 PLAY"O1D": PRINT@37, T$; : GOTO1
60
310 PRINT@41, M$;
311 PLAY"O1E": PRINT@41, T$; : GOTO1
60
315 PRINT@45, M$;
316 PLAY"O1F": PRINT@45, T$; : GOTO1
60
320 PRINT@49, M$;
321 PLAY"O1G": PRINT@49, T$; : GOTO1
60
325 PRINT@53, M$;
326 PLAY"O1A": PRINT@53, T$; : GOTO1
60
330 PRINT@57, M$;
331 PLAY"O1B": PRINT@57, T$; : GOTO1
60
335 PRINT@61, M$;
336 PLAY"O2C": PRINT@61, T$; : GOTO1
60
340 PRINT@65, M$;
341 PLAY"O1C#": PRINT@65, T$; : GOTO
160
345 PRINT@69, M$;
346 PLAY"O1D#": PRINT@69, T$; : GOTO
160
350 PRINT@77, M$;
351 PLAY"O1F#": PRINT@77, T$; : GOTO
160
355 PRINT@81, M$;
356 PLAY"O1G#": PRINT@81, T$; : GOTO
160
360 PRINT@85, M$;
361 PLAY"O1A#": PRINT@85, T$; : GOTO
160
365 PRINT@161, M$;
366 PLAY"O2C": PRINT@161, T$; : GOTO
160
370 PRINT@165, M$;
371 PLAY"O2D": PRINT@165, T$; : GOTO
160
375 PRINT@169, M$;
376 PLAY"O2E": PRINT@169, T$; : GOTO
160
380 PRINT@173, M$;
381 PLAY"O2F": PRINT@173, T$; : GOTO
160
385 PRINT@177, M$;
386 PLAY"O2G": PRINT@177, T$; : GOTO
160
390 PRINT@181, M$;
391 PLAY"O2A": PRINT@181, T$; : GOTO
160
395 PRINT@185, M$;
396 PLAY"O2B": PRINT@185, T$; : GOTO
160
400 PRINT@189, M$;
401 PLAY"O3C": PRINT@189, T$; : GOTO
160
405 PRINT@193, M$;
406 PLAY"O2C#": PRINT@193, T$; : GOT
O160
410 PRINT@197, M$;
411 PLAY"O2D#": PRINT@197, T$; : GOT
O160
415 PRINT@205, M$;
416 PLAY"O2F#": PRINT@205, T$; : GOT
O160
420 PRINT@209, M$;
421 PLAY"O2G#": PRINT@209, T$; : GOT
O160
425 PRINT@213, M$;
426 PLAY"O2A#": PRINT@213, T$; : GOT
O160
430 PRINT@289, M$;
431 PLAY"O3C": PRINT@289, T$; : GOTO
160
435 PRINT@293, M$;
436 PLAY"O3D": PRINT@293, T$; : GOTO
160
440 PRINT@297, M$;
441 PLAY"O3E": PRINT@297, T$; : GOTO
160
445 PRINT@301, M$;
446 PLAY"O3F": PRINT@301, T$; : GOTO
160
450 PRINT@305, M$;
451 PLAY"O3G": PRINT@305, T$; : GOTO
160
455 PRINT@309, M$;
456 PLAY"O3A": PRINT@309, T$; : GOTO
160
460 PRINT@313, M$;
461 PLAY"O3B": PRINT@313, T$; : GOTO
160
465 PRINT@317, M$;
466 PLAY"O4C": PRINT@317, T$; : GOTO
160
470 PRINT@321, M$;
471 PLAY"O3C#": PRINT@321, T$; : GOT
O160
475 PRINT@325, M$;
476 PLAY"O3D#": PRINT@325, T$; : GOT
O160
480 PRINT@333, M$;
481 PLAY"O3F#": PRINT@333, T$; : GOT
O160
485 PRINT@337, M$;
486 PLAY"O3G#": PRINT@337, T$; : GOT
O160
490 PRINT@341, M$;
491 PLAY"O3A#": PRINT@341, T$; : GOT
O160
500 PRINT@417, M$;
501 PLAY"O4C": PRINT@417, T$; : GOTO
160
505 PRINT@421, M$;
506 PLAY"O4D": PRINT@421, T$; : GOTO
160
510 PRINT@425, M$;
511 PLAY"O4E": PRINT@425, T$; : GOTO
160
515 PRINT@429, M$;
516 PLAY"O4F": PRINT@429, T$; : GOTO
160
520 PRINT@433, M$;
521 PLAY"O4G": PRINT@433, T$; : GOTO
160
525 PRINT@437, M$;
526 PLAY"O4A": PRINT@437, T$; : GOTO
160
530 PRINT@441, M$;
531 PLAY"O4B": PRINT@441, T$; : GOTO
160
535 PRINT@445, M$;
536 PLAY"O5C": PRINT@445, T$; : GOTO
160
540 PRINT@449, M$;
541 PLAY"O4C#": PRINT@449, T$; : GOT
O160
545 PRINT@453, M$;
546 PLAY"O4D#": PRINT@453, T$; : GOT
O160
550 PRINT@461, M$;
551 PLAY"O4F#": PRINT@461, T$; : GOT
O160
555 PRINT@465, M$;
556 PLAY"O4G#": PRINT@465, T$; : GOT
O160
560 PRINT@469, M$;
561 PLAY"O4A#": PRINT@469, T$; : GOT
O160
565 PRINT@93, M$;
566 PLAY"O2C#": PRINT@93, T$; : GOTO
160
570 PRINT@221, M$;
571 PLAY"O3C#": PRINT@221, T$; : GOT
O160
575 PRINT@349, M$;
576 PLAY"O4C#": PRINT@349, T$; : GOT
O160
580 PRINT@477, M$;
581 PLAY"O5C#": PRINT@477, T$; : GOT
O160
600 GOTO 600
700 CLS: END

```

CoCo



# ORCHESTRA

by Michael Monck

Musical Additional

16K ECB + ORCHESTRA - 90 CC Program Pack



PLEASE NOTE:

THE \_ IS THE CHARACTER FOR A BACK ARROW.

DEAR READERS, here is a program for your TANDY ORCHESTRA-90 CC program pac. As you know there is no software for this pack, so I have put together 4 such songs for you. These songs are best heard through a stereo system.

These 4 songs are:

- \* Axel F
- \* Popcorn
- \* If I were a Rich Man
- \* Fur Elise

I hope you enjoy these songs as much as I have over the past few months!!!!

### The Listing:

AXEL F (FROM BEVERLY HILLS COP)

/ ENTERED AND ARRANGED BY /MICHAEL MONCK 21/6/86

NQ=80  
 JES80011001F  
 K3#  
 V1YD V2YD V3YD V4YD V5YD  
 P01  
 M  
 \*13, \$1.5, S33, 3, 16, 3, 2,

V5\_Q8" IC"8"8"\$C"  
 M  
 \*13, \$1.7, S33, 3, 18, 7, 5,  
 V5\_Q8" IC"8"8"\$C"  
 M  
 \*13, 7, A, S3, 22, 2, 10, 4, 3Q3\$\$\$  
 V5\_Q8" IC"8"8"\$C"\$"Q8" IC"8"8"\$C"  
 P02  
 R01  
 P03  
 M  
 V3\_I-B\$I.-4S-C-C-5I-E-7-C  
 V5\_Q8" IC"8"8"\$C"  
 M  
 V3\_I-B\$-4S\$-EI-7-5-4  
 V5\_Q8" IC"8"8"\$C"  
 M  
 V3\_I-D\$I.-6S-C-C-5I-E-C-B  
 V5\_Q8" IC"8"8"\$C"  
 M  
 V3\_Q-4S\$-5I-7-8-9  
 V5\_Q8" IC"8"8"\$C"  
 P04  
 R03  
 P05  
 \*M  
 \*13, \$1.5, S33, 3, 16, 3, 2,  
 V5\_Q8" IC"8"8"\$C"  
 V3\_I-B\$I.-4S-C-C-5I-E-7-C  
 M  
 \*13, \$1.7, S33, 3, 18, 7, 5,  
 V3\_I-B\$-4S\$-EI-7-5-4

V5\_Q8" IC"8"8"\$C"  
 M  
 \*13, 7, A, S3, 22, 2, 10, 4, 3  
 V3\_I-D\$I.-6S-C-C-5I-E-C-B  
 V5\_Q8" IC"8"8"\$C"  
 M  
 \*Q3\$\$\$  
 V3\_Q-4S\$-5I-7-8-9  
 V5\_Q8" IC"8"8"\$C"  
 M  
 P06  
 R05  
 P07  
 V3\_Q-4; I.-4S-5I\$-7;-5;  
 V1\*I\$7, 7, S7, 9, \$9, 19, 8#, 8#,  
 V2\*I\$5#, 5, S5, 6, \$6, 16, 6, 6,  
 V4\*I\$3, 3, S3, 4, \$4, 14, 3, 3,  
 V5\_Q8" IC"8"8"\$C"  
 M  
 V3\_Q-4; I.-4S-5I\$-7;-5;-4;  
 V1\*I\$7, 7, S7, 9, \$9, 18, 7, 5,  
 V2\*I\$5#, 5, S5, 6, \$6, 16, 5, 3,  
 V4\*I\$3, 3, S3, 4, \$4, 13, 3, 0,  
 V5\_Q8" IC"8"8"\$C"  
 M  
 V3\_Q-6; I\$-6; Q-5; \$  
 V1\*I\$5, 5, 5, S5I6, S6\$16, S6  
 V2\*I\$3, 3, 3, S3I4, S4\$14, S4  
 V4\*I\$1, 1, 1, S1I2, S2\$12, S2  
 V5\_Q8" IC"8"8"\$C"  
 M  
 V3\_Q-4; I\$-4; Q-4;-4;



# IF I WERE A RICH MAN

M18  
 \*IC,SB#,C,C,IC,SA,IB,SA,A,IA,S  
 9,  
 V4\_I-BS-4-7-B-9-7-4I-CS-5-8  
 -C-A#-8-5  
 P10  
 M19  
 \*IA,S9,A,A,IA,S9,IA,\$A,9,  
 V4\_(I-DS-6-9-D-B-9-6)1  
 P11  
 M1A  
 R0F  
 P12  
 M1B  
 \*IA,S9,8,8,8,I9,A,\$Q\$  
 V4\_I-DS-6-9-D-B-9-6I-FS-8-B  
 P13  
 M1C  
 V4\*(S6368A863)3  
 V1\_W-6H-8Q-8I-6-5  
 M1D  
 V4\*S6368A863  
 V1\_H-4  
 M1E  
 V4\*S525797524146864  
 16368A863  
 V1\_H-5-6-8  
 P14  
 M1E  
 R13  
 P15  
 M1F  
 V4\*(S858ACA85)3  
 V1\_W-2H.-4I-2-1  
 M20  
 V4\*S757ACA7564#69B#9645358A8535  
 358A853  
 V1\_H-7-1W-2  
 P16  
 M21  
 R15  
 P17  
 M22  
 V1\*I6,3,1,3,-1,\$6.5,6,3,1,3,-1  
 , \$6,7,  
 V4\_(I-FS-8-B)2 S-F-D-B-8  
 (I-FS-8-B)2 S-F-D-B-8  
 M23  
 \*I8,S7,8,8,18,S6,17,S6,7,7,17,S  
 5,  
 V4\_I-FS-8-B-F-D-B-8I-9S-9-C-9  
 -E-C-9  
 P18  
 M24  
 \*I6,S5,6,6,16,S5,16,\$6,5,  
 V4\_I-AS-A-D-A-F-D-AI-FS-8-B-F-D  
 -B-8  
 P19  
 M25  
 R17  
 P1A  
 M26  
 \*I6,S5,6,6,16,S5,16,\$6,5,  
 V4\_(I-FS-8-B-F-D-B-8)1  
 M27  
 \*(IA,8,A,8,A,8,A,8)1  
 V4\_(I-FS-8-B-F-D-B-8)3  
 M28  
 \*(I6,8,6,8,6,8,6,8,)>1  
 V4\_(I-FS-8-B)7  
 M29  
 \*(I6,8,6,8,6,8,6,8,)>1  
 V4\_(Q-F\$)3  
 M2A  
 \*W6  
 V4\_W-F

NQ=60  
 V1YA V2YD V3YD V4YD V5YD  
 P01  
 M  
 \*I4,3,4,3,Q2,0,  
 V2\_(Q\$I0;0;>1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*Q\$I2,3,4,3,4,3,  
 V2\_(Q\$I0;0;>1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*I2,3,4,5,6&,5,6,5,  
 V2\_(Q\$I0;0;>1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*Q4  
 V2\_(Q\$I0;0;>1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*Q5&,4,4&,3,  
 V2\_(Q\$I-1;-1;>1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-4;-4;>1  
 V5\_Q-A\$-A\$  
 M  
 \*I2&,1,0,1,H2,  
 V2\_(Q\$I0;0;>1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5&;-5;>1  
 V5\_Q-E\$-E\$  
 M  
 \*I2&,1,0,1,Q2,0,  
 V2\_(Q\$I0;0;>1  
 V3\_(Q\$I-2;-2;>1  
 V4\_(Q\$I-4#;-4;>1  
 V5\_Q-9\$-9  
 M  
 \*Q4;  
 V2\_Q-1;  
 V3\_Q-3;  
 V4\_Q-4;  
 V5\_Q-A  
 P02  
 V2YA  
 M  
 \*Q\$B\$  
 V2\*Q\$A#  
 V3\_Q\$-3\$  
 V4\_Q\$-4#\$  
 V5\_Q\$-A\$  
 P03  
 V2YB V1YA V3YD V4YD V5YD  
 M  
 \*I4,3,4,3,Q2,0,  
 V2\*W-3  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;I-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*Q\$I2,3,4,3,4,3,  
 V2\*W-2  
 V3\_(Q\$I-3;-3;>1

V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*I2,3,4,5,6&,5,6&,5,  
 V2\*H-1Q-1%-1%  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*W4,  
 V2\*W-2  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-7\$-7\$  
 M  
 \*Q5&,4,4&,3,  
 V2\_W-1  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5;-5;>1  
 V5\_Q-A\$-A\$  
 M  
 \*I2&,1,0,1,H2,  
 V2\*W0  
 V3\_(Q\$I-3;-3;>1  
 V4\_(Q\$I-5&;-5;>1  
 V5\_Q-E\$-E\$  
 M  
 \*I2&,1,0,2,1,0,-1,1,H0\$  
 V2\*H0,-1,H0\$  
 V3\_H-4#-4%H-3\$  
 V4\_W\$H-5%\$  
 V5\_H-9-AH-7\$  
 P04  
 M02  
 \*Q234  
 V2\*Q012  
 M  
 \*Q5&,5,5,5,  
 V2\*Q3,3,3,3,  
 V3\*W0  
 V4\_Q\$-2&;\$-2;  
 V5\_Q-B-4;-B-4;  
 M  
 \*Q5&,I6&,7,Q6,5,  
 V2\*Q3,I4,5,Q4,3,  
 V3\*W1  
 V4\_Q\$-1&;\$-1;  
 V5\_Q-B-2&;-B-2&;  
 M  
 \*Q4;I(4;)>5  
 V2\*W1  
 V3\*W1  
 V4\_Q\$-1&;\$-1;  
 V5\_-C&-3;-C-3;  
 M  
 \*H.4Q4,  
 V2\*H32%  
 V3\*H10  
 V4\_Q\$-1&;\$-1;  
 V5\_Q-A-4;-7-5%  
 M  
 \*Q3;3;3;3;  
 V2\*W0  
 V3\_W-2&  
 V4\*Q\$0;\$0;  
 V5\_Q-B-4;-B-4;  
 M  
 \*Q3,I4,5&,Q.4,I3,  
 V2\*W1  
 V3\_W-1  
 V4\_Q\$-3;\$-3;  
 V5\_-A-4;-A-4;  
 M  
 \*Q2;I0;-3;2;0;4;2;  
 V2\*Q0\$\$\$  
 V3\_Q-3\$I-5;-7;-3;-5;

# CoCo PROGRAMS

```

V4_Q-5$$$
V5_Q-7$-A-C
M
*Q72,3,4,
V2*Q6&0,1,2,
V3*Q2$$$
V4*Q00-1%-1&
V5_Q-C$$$
M
*Q5&,5,5,5,
V2*Q3,3,3,3,
V3*W0
V4_Q$-2;-2;
V5_Q-B-4;-B-4;
M
*Q5&,I6&,7,Q6,5,
V2*Q3,I4,5,Q4,3,
V3*W1
V4_Q$-1&;$-1;
V5_Q-B-2&;-B-2;
M
*Q4;I(4;)>5
V2*W1
V3*W1
V4_Q$-1;$-1;
V5_-C-3;-C-3;
M
*H.4Q4,
V2*H32%
V3*H10
V4_Q$-1;$-1;
V5_Q-A-4;-C-5%
M
*Q3;3;3;3;
V2*W0
V3_W-2&
V4*Q$0;$0;
V5_Q-B-4;-B-4;
M
*Q2&,1,0,2
V2*W0
V3_W-2%
V4_-4#
V5_W-B#
M
*Q4I6,5#,6,Q7,I7#
V2*Q-1
V3_Q-3I-3,-4#,-3,Q-2%,I-2#
V4_Q-4%
V5_Q-A
M
*Q8
V2_Q-1
M
*Q$$
P05
M
*H234
V2*H$12
V3_H$W-1&
V4_H$W-7
V5_H$W-E
M
*Q(5,)>3
V2*Q(3,)>3
V3_W-2
V4*Q$0;$0;
V5Q-B-4;-B-4;
M
*Q5,I6,7,Q.6,I5,
V2*Q3,I4,5,Q.4,I3,
V3_W-1
V4_Q$-3;$-3;
V5_Q-A-4;-A-4;
M
*Q4,I(4,)>5
V2*W2

```

```

V3*W0
V4_Q$-3,$-3,
V5_Q-E-5,-E-5,
M
*H.4,Q4,
V2*H.2
V3*W0#
V4_Q$-4;$-4;
V5_-9-3;-9-3;
M
*Q(3,)>3
V2*Q(1,)>3
V3*W0
V4_Q$-2;$-2;
V5_(-D-4;)>1
M
*Q3,I4,5,Q4,3,
V2*Q1,I2,3,Q2,1,
V3_W-1
V4_(Q$-3;)>1
V5_Q(-A-4;)>1
M
*Q2I0,1&,5&,4,2,1
V2*Q0
V3_Q-3
V4_Q-5I-7,-6,-2,-3,-5,-6,
V5_Q.-E
M
*Q02,3,4,
V4_Q-7
V5_Q-E
M
*Q(5&,)>3
V2*W0
V3*Q$0;$0;
V4_Q$-2&;$-2;
V5_Q-B-4;-B-4;
M
*Q5&,I6&,7,Q6,5,
V2*W1
V3*Q($1;)>1
V4_Q($-1&;)>1
V5_-F&-2&;-F-2;
M
*Q4,I(4,)>5
V2*W2&
V3*Q($0%;>1
V4_Q($-1&;)>1
V5_Q(-C&-3;)>1
M
*H42
V2*H2
V3*Q$1&;$0;
V4_Q$-1&;$-1;
V5_-A-4;-E-3%;
M
*Q(3,)>3
V2*W0
V3_W-2&
V4*Q($0;)>1
V5_(-B-4;)>1
M
*Q2&,1,Q.0,I2
V2*W0
V3_-2%
V4_-4#
V5_-B#
M
*W4
V2*Q$I:(3#2&1)2
V5_W-A
M
*H4$
V2*H1
V3_H-1
V5_Q-A
P06

```

```

M
*I4,3,4,3,Q2,0,
V2*W-3
V3_(Q$I-3;-3;)>1
V4_(Q$(I-5;-5;)>1
V5_Q-E$-A$
M
*Q$I2,3,4,3,4,3,
V2*W-2
V3_(Q$I-3;-3;)>1
V4_(Q$I-5;-5;)>1
V5_Q-E$-7$
M
*I2,3,4,5,6&,5,6&,5,
V2*H-1Q-1%-1%
V3_(Q$I-3;-3;)>1
V4_(Q$I-5;-5;)>1
V5_Q-E$-E$
M
*W4,
V2*W-2
V3_(Q$I-3;-3;)>1
V4_(Q$I-5;-5;)>1
V5_Q-E$-7$
P07
M
*Q5&,4,4&,3,
V2_W-1
V3_(Q$I-3;-3;)>1
V4_(Q$I-5;-5;)>1
V5_Q-A$-D$
M
*I2&,1,0,1,H2,
V2*W0
V3_(Q$I-3;-3;)>1
V4(Q$I-5;-5;)>1
V5_Q-E$-A$
M
*I2&,1,0,2,1,0,-1,1,H0$
V2*H0,-1,H0$
V3_H-4#-4%H-3$
V4_W$H-5%$
V5_H-9-AH-7$
P08
M
R06
P09
M
*Q5&,4,4&,3,
V2*W0
V3_W-2&
V4_W-4
V5_W-B
M
*I2&,1,0,1,H2,
V2*W0
V2_W-3
V4_W-5&
V5_W-E
M
*QC&,B,B&,A,
V2*W0
V3_W-2&
V4_W-6
V5_W-A
M
*IB,A,9,A,HB,
V2*W0
V3_W-3
V4_W-5&
V5_W-E
M
*Q5&,4,4&,3,
V2*W0
V3_W-2&
V4_W-6
V5_W-B

```

M  
 \*I2&, 1, 0, 1, H2,  
 V2\*W0  
 V3\_W-3  
 V4\_W-5&  
 V5\_W-E  
 M  
 \*I2&, 1, 0, 2, 1, 0, -1, 1, W0  
 V2\*H0, -1%, -3-3  
 V3\_-4#, -4%, -5%-5  
 V5\_-9-A-E-E

**FUR ELISE**

/BEETHOVEN ENTERED BY MICHAEL  
 /MONCK 1986

NQ=B0  
 JBS48F8F200A  
 JASC0C0A202F  
 V1YAV2YDV3YDV4YB  
 P01  
 M  
 \*S9, 8#,  
 M  
 \*98#968%7  
 P02  
 M  
 \*I5, S\$0, 2, 5,  
 V3\_S-9-5-2  
 M  
 \*I6, S\$2, 4#, 6,  
 V3\_S-C-5-3#  
 M  
 \*I7, S\$2, 9, 8#,  
 V3\_-9-5-2  
 M  
 \*S9, 8#, 9, 6, 8%, 7,  
 P03  
 M  
 \*I5, S\$0, 2, 5,  
 V3\_S-9-5-2  
 M  
 \*I6, S\$2, 7, 6,  
 V3\_S-C-5-3#  
 M  
 \*I5, S\$9, 8#,  
 V3\_S-9-5-2  
 M  
 \*S9, 8#, 9, 6, 8%, 7,  
 M  
 I5, S\$0, 2, 5,  
 V3\_S-9-5-2  
 V4\*Q. -2  
 M  
 \*I6, S\$2, 4#, 6,  
 V3\_S-C-5-3#  
 V4\*Q. -1  
 M  
 \*I7, S\$2, 9, 8#,  
 V3\_-9-5-2  
 V4\*Q. 0  
 M  
 \*S9, 8#, 9, 6, 8%, 7,  
 P04  
 M  
 \*I5, S\$0, 2, 5,  
 V3\_S-9-5-2  
 V4\*Q. -2  
 M  
 \*I6, S\$2, 7, 6,  
 V3\_S-C-5-3#  
 V4\*Q. -1  
 M

\*I5, S\$6, 7, 8,  
 V3\_S-9-5-2  
 V4\*Q. -2  
 M  
 \*I. 9, S4, A, 9,  
 V3\_S-7-3+0  
 V4\*Q. 0  
 M  
 \*I. 8, S3, 9, 8,  
 V3\_S-A-3-1  
 V4\*Q. -1  
 M  
 \*I. 7, S2, 8, 7,  
 V3\_S-9-5-2  
 V4\*Q. -2  
 M  
 \*I6, S\$2, 9,  
 V3\_S-C-52\$\$\$+2  
 V4\*Q-3#  
 P05  
 M  
 \*S\$9, G, 8#, 9, 8,  
 V3\*S9  
 P06  
 M  
 \*(S9, 8#, )2  
 P07  
 M  
 \*S9, 8#, 9, 6, 8%, 7,  
 P08  
 M  
 \*I5, S\$0, 2, 5,  
 V3\_S-9-5-2  
 V4\*Q. -2  
 M  
 \*I6, S\$2, 4#, 6,  
 V3\_S-C-5-3#  
 V4\*Q. -1  
 M  
 \*I7, S\$2, 9, 8#,  
 V3\_-9-5-2  
 V4\*Q. -2  
 M  
 \*S9, 8#, 9, 6, 8%, 7,  
 P09  
 M  
 R04  
 R06  
 R07  
 P0A  
 M  
 R02  
 P0B  
 M  
 \*I5, S\$0; 2, 5,  
 V3\_S-9-5-2  
 M  
 \*I6, S\$2, 7, 6,  
 V3\_S-C-5-3#  
 P0C  
 M  
 \*I5, S\$7, 7, 7,  
 V2\*I\$S\$2, 3, 4,  
 V3\_S-9-5-2\*00-1  
 V4\_S\$\$\$-1&-2-3  
 M  
 \*Q7, S. A, T9,  
 V3@S-4-20-20-2  
 V4\_Q. -B  
 M  
 \*I9, 8, S. D&, TC,  
 V3@S-4-1&1-11-1  
 V4\_Q. -B  
 M  
 \*SC, B, A, 9, 8, 7,  
 V3@-42-1&2-12

V4@\$\$-3\$-3  
 V2@\$\$-4\$-4  
 M  
 \*I6&, 5, T5, 4, 5, 6,  
 V3@S-4-20-20-2  
 V4\_Q. -B  
 M  
 \*Q7, S8, 8#,  
 V3@S-4-20-20-2  
 V4\_Q. -B  
 M  
 \*I. 9, S9, A, 5,  
 V3@-5-20-21-4  
 V4\_Q. -E  
 V2@S\$\$\$-6  
 M  
 \*Q7, S. 8, T6,  
 V3@S-32-3+3-3+3  
 M  
 \*T7B4B5B6B7B8B  
 V3\*I2S\$4"4"4"  
 V4\*I\$S\$3, 2, 1,  
 M  
 \*T9BEDCBA98BA8  
 V3\*I4, @-2, -1,  
 V4\*I2, @-4, -3,  
 V2\*I0,  
 M  
 \*T7B4B5B6B7B8B  
 V3\*I0, S\$4"4"4"  
 V4\*I\$S\$3, 2, 1,  
 M  
 \*T9BEDCBA98BA8  
 V3\*I2, @-2, -1,  
 V4\*0, @-4, -3,  
 M  
 \*T9A98#94989498  
 V3@I-1  
 V4@-3#  
 P0D  
 M  
 \*(I. 9, S6, 9, 8#, )1  
 M  
 \*S(9, 8#, )2  
 M  
 R01  
 R02  
 R09  
 R04  
 R05  
 M  
 \*S(9, 8#, )2  
 M  
 R01  
 R02  
 R0B  
 P0E  
 M  
 \*I5  
 V3\_S(-9, )5  
 P0F  
 M  
 \*Q. 7#  
 V2\*6&  
 V4\*4  
 V3\_S(-9, )5  
 M  
 \*Q3S9A  
 V2\*Q5S7#8  
 V4\*Q3  
 V3S(-9, )5  
 P10  
 M  
 \*QA" IA  
 V2\*Q8" I8  
 V4\*Q4#" I4

# CoCo PROGRAMS

```

V3_S(-9, )5
M
*Q.9
V2*7
V4*5
V3_S(-9, )5
M
Q*-4"S-3-2
V4*Q3"S21
V2_S(-D, )5
V3_(-9, )5
M
*Q5" I5
V4*Q3#" I0
V3_S(-9, )5
V2_(-D#, )5
M
*I576
V4*021
V3_S(-9, )3 (-8#, )1
V2 (-C, )5
M
*Q.5
V4*0
V3S(-9, )5
V2_S-E,
M
R0F
P11
M
*QA" IA"
V2*Q8" I8"
V3_S(-9, )5
M
*Q. A

V2*8
V3_S(-8&, )5
M
*Q9&S87
V2*Q4S32&
V3_S(-8&, )5
M
*Q6&I5
V2*Q3" I3
V4*Q1" I1"
V3_S(-8&, )5
M
*Q4#" I4
V2*Q3" I3
V4*Q1" I1
V3_S(-8%, )5
M
*Q5 I$
V2*Q2
V4*0
V3_Q-7
M
*I6$$
V2*2
V4@-3#
V3_-5
M
*S: -202S579876
V3_I-9$@-2
V2@I$50
V4@I$52
P12
M
*S579CEGFED
V4@I2, $2,

V2@0, $0,
V3@-2, $-2,
P13
M
R12
P14
M
*SD&CB#B%A#A%GF#F%
V2@I2
V3@-2
V4@0
M
*SE#E%DD&CB#B%A#A%
M
R01
R02
R04
R05
P15
M
NQ=C5
R01
R02
P16
M
NQ=D5
R0B
P17
NQ=E0
M
*I$H5
V3_I$H-9
V4@I$H-2
V2*I$H0

```



continued from page 32

```

1060 INPUT#-1, L: FORA=1TOL
1070 PRINT"READINGFILE"; A
1080 INPUT#-1, YOUNG$(A, 1), YOUNG$(
(A, 2), YOUNG$(A, 3)
1090 NEXT: CLOSE#-1
1100 GOTO40
1110 CLS: PRINT: PRINT"WHICH SECTI
ON DO YOU WISH TO RECORD
1120 PRINT" 1) LIST OF BIRDS
                2) LIST OF BREEDING
PAIRS          3) LIST OF BREEDING
RESULTS       4) MAIN MENU
1130 INPUTS
1140 CLS: PRINT@170, "NEW FILE
1150 PRINT: INPUT"FILE NAME"; FILE
$
1160 ONS GOTO1170, 1260, 1340, 40
1170 OPEN"O", #-1, "BIRDST"
1180 PRINT#-1, FILE$
1190 PRINT#-1, J
1200 FORA=1TOJ
1210 PRINT"WRITING RECORD"; A
1220 PRINT#-1, BIRD$(A, 1), BIRD$(A
, 2), BIRD$(A, 3)
1230 NEXT
1240 CLOSE#-1
1250 GOTO40
1260 OPEN"O", #-1, "BIRDPA": PRINT#
-1, FILE$
1270 PRINT#-1, K
1280 GOSUB1430
1290 FORA=1TOK
1300 PRINTA
1310 PRINT#-1, BREED$(A, 1), BREED$(
A, 2), BREED$(A, 3)
1320 NEXT: CLOSE#-1

1330 GOTO40
1340 OPEN"O", #-1, "BIRDRES": PRINT
#-1, FILE$
1350 PRINT#-1, L
1360 FORA=1TOL
1370 PRINT"WRITING RECORD"; A
1380 PRINT#-1, YOUNG$(A, 1), YOUNG$(
A, 2), YOUNG$(A, 3)
1390 NEXT: CLOSE#-1
1400 GOTO40
1410 PRINT: PRINT"PRESS ANY KEY T
O CONTINUE": EXEC44539
1420 RETURN
1430 PRINT"WRITING RECORD NO."; A
: RETURN
1440 CLS: PRINT" WHICH DO YOU WIS
H TO PRINT
                1) STOCK
                2) BREEDING P
AIRS          3) RESULTS
                4) ALL
                5) MAIN MENU
1450 INPUTS
1460 PRINT#-2, CHR$(27); CHR$(16);
CHR$(1); CHR$(75);
1470 PRINT#-2, CHR$(27); CHR$(14);
1480 PRINT#-2, CHR$(15)"BIRD REGI
STER"
1490 PRINT#-2, CHR$(27)CHR$(15); C
HR$(14)
1500 ONS GOTO1520, 1600, 1680, 1520
, 40
1510 PRINT#-2, CHR$(27); CHR$(13)
1520 PRINT#-2, CHR$(27); CHR$(16);
CHR$(1); CHR$(160); "STOCK"
1530 PRINT#-2, TAB(2)"RING NO." TA
B(30)"COLOUR" TAB(60)"SEX"

1540 PRINT#-2, CHR$(27); CHR$(13)
1550 FORA=1TOJ
1560 PRINT#-2, TAB(3) BIRD$(A, 1), T
AB(30) BIRD$(A, 2);
1570 PRINT#-2, TAB(60) BIRD$(A, 3)
1580 NEXT
1590 IFS=4 THEN1600ELSEGOTO40
1600 PRINT#-2, CHR$(27); CHR$(13)
1610 PRINT#-2, TAB(10)"MALE" TAB(5
0)"FEMALE"
1620 FORA=1TOK
1630 IFBREED$(A, 3)="MALE" THEN164
0ELSEGOTO1660
1640 PRINT#-2, TAB(8) BREED$(A, 1) C
HR$(32) BREED$(A, 2);
1650 GOTO1670
1660 PRINT#-2, TAB(50) BREED$(A, 1)
; CHR$(32) BREED$(A, 2)
1670 NEXT: IFS=4 THEN1680ELSEGOTO
40
1680 PRINT#-2, CHR$(27); CHR$(13)
1690 PRINT#-2, TAB(25)"RESULTS OF
MATING"
1700 PRINT#-2, TAB(5)"EGGS LAYED"
TAB(25)"EGGS HATCHED" TAB(45)"RIN
G NOS."
1710 FORA=1TOL
1720 PRINT#-2, TAB(10) YOUNG$(A, 1)
TAB(30) YOUNG$(A, 2) TAB(45) YOUNG$(
A, 3)
1730 NEXT: GOTO40

```





# MUSIC

by Mal McLauchlan

## Musical Additions to "Music+"



**Y**OU CAN imagine how pleased we Music+ fans were to find a further enhanced Music+ (I call it Music++) in the July 1986 issue of Australian Rainbow. Bob Ludlum has done some more work on that great program and brought out two further enhancements, which don't affect our earlier work except to make it more useful. By tping "H" the user can now dump the music data to the printer (see below), so other people can simply type it in without having to translate from sheet music. Also, typing "W"

allows us to experiment with the waveform to achieve other musical sounds besides the organ.

So all in all, it's a great program, and well worth experimenting with, even if you don't know much about reading music.

My two favorite peices over the years have been "Babay Elephant Walk" and "Kumbayah". Here is a dup of the data, which readers can type in after RUN-ning "Music+". It can then be saved to tape or disk and played back as often as you wish.

### The Listing:

COL:	LEN	V1	V2	V3	V4
1:	8.	F4	C3	F2	0
2:	16	A4	F4	0	0
3:	8	C5	G2#	0	0
4:	8	F5	A2	0	0
5:	8	A5	C3	F2	0
6:	8	G5	C3	F2	0
7:	8	F5	G2#	0	0
8:	8	D5	A2	0	0
9:	8	B4	C3	F2	0
10:	8	C5	C3	F2	0
11:	8	G2#	0	0	0
12:	8	A2	0	0	0
13:	8	C3	F2	0	0
14:	8	C3	F2	0	0
15:	8	G2	0	0	0
16:	8	A2	0	0	0
17:	8	F4	C3	F2	0
18:	16	A4	F4	0	0
19:	8	C5	G2#	0	0
20:	8	F5	A2	0	0
21:	8	A5	C3	F2	0
22:	8	G5	C3	F2	0
23:	8	F5	G2#	0	0
24:	8	D5	A2	0	0
25:	8	C5	C3	F2	0
26:	8	C5	C3	F2	0
27:	8	C5	G2#	0	0
28:	8	C5	A2	0	0
29:	4	C5	C3	F2	0
30:	8	D5	C3#	0	0
31:	8	G4#	D3	0	0
32:	8	G4#	F3	A2#	0
33:	8	G4#	F3	A2#	0
34:	8	G4#	C3#	0	0
35:	8	G4#	D3	0	0
36:	8	G4#	F3	A2#	0
37:	8	G4#	F3	A2#	0
38:	8	G4#	C3#	0	0
39:	8	D5	D3	0	0
40:	8	G4#	F3	A2#	0
41:	8	F4	F3	A2#	0
42:	8	C3#	0	0	0
43:	8	D3	0	0	0
44:	8	F3	A2#	0	0
45:	8	F3	A2#	0	0
46:	8	C3#	0	0	0
47:	8	D3	0	0	0
48:	8	F4	C3	F2	0
49:	16	A4	C3	F2	0
50:	8	C5	G2#	0	0
51:	8	F5	A2	0	0
52:	8	A5	C3	F2	0
53:	8	G5	C3	F2	0
54:	8	F5	G2#	0	0
55:	8	D5	A2	0	0
56:	8	B4	C3	F2	0
57:	8	C5	C3	F2	0
58:	8	G2#	0	0	0
59:	8	A2	0	0	0
60:	8	C3	F2	0	0
61:	8	C3	F2	0	0
62:	8	D3#	0	0	0
63:	8	C5	E3	0	0
64:	8	G5	G3	C3	0
65:	8	G5	G3	C3	0
66:	8	G5	D3#	0	0
67:	8	G5	E3	0	0
68:	8	E5	G3	C3	0
69:	8	C5	G3	C3	0
70:	8	D3	0	0	0
71:	8	C5	E3	0	0
72:	8	F5	F3	A2#	0
73:	8	F5	F3	A2#	0
74:	8	F5	C3	0	0
75:	8	F5	D3	0	0
76:	16	D5#	F3	A2#	0
77:	16	F5	F3	A2#	0
78:	16	D5#	F3	A2#	0
79:	16	C5	F3	A2#	0
80:	96	B4	F3	A2#	0
81:	8	G4#	F3	A2#	0
82:	8	B4	C3	F2	0
83:	8	B4	C3	F2	0
84:	8	B4	G2#	0	0
85:	16	B4	A2	0	0
86:	16	A4#	C3	F2	0
87:	16	B4	C3	F2	0
88:	16	A4#	C3	F2	0
89:	8	G4#	C3	F2	0
90:	8	F4	C3	F2	0
91:	8	C4	C3	F2	0
92:	8	D4#	C3	F2	0
93:	8	F4	C3	F2	0
94:	8	G2#	0	0	0
95:	8	A2	0	0	0
96:	8	C3	F2	0	0
97:	8	C3	F2	0	0
98:	8	G2#	0	0	0
99:	8	A2	0	0	0
100:	8	D4#	C3	F2	0
101:	8	F4	C3	F2	0
102:	8	D4	A2#	0	0
103:	8	D4	A2#	0	0
104:	8	C4	A2	0	0
105:	8	C4	A2	0	0
106:	8	B3	G2	0	0
107:	8	B3	G2	0	0
108:	8	A3	C3	F2	0
109:	8	C3	F2	0	0
110:	8	A5	F5	G2#	0
111:	8	A5	F5	A2	0
112:	8	C3	F2	0	0
113:	8	C3	F2	0	0
114:	8	G5	D5#	G2#	0
115:	8	G5	D5#	A2	0
116:	8	C3	F2	0	0

```

117: 8 ,C3 ,F2 ,0 ,0
118: 8 ,A5 ,F5 ,G2# ,0
119: 8 ,A5 ,F5 ,A2 ,0
120: 4 ,C3 ,F2 ,0 ,0
121: 8 ,0 ,0 ,0 ,0
122: 8 ,C4 ,C3 ,0 ,0
123: 4 ,F4 ,F3 ,0 ,0
124: 8 ,G4# ,G4# ,0 ,0
125: 8 ,F4 ,F3 ,0 ,0
126: 8 ,A4# ,A3# ,0 ,0
127: 4 ,G4# ,G3# ,0 ,0
128: 4 ,F5 ,A4# ,D4 ,0
129: 4 ,F5 ,A4 ,C4 ,0
130: 8 ,F5 ,A4# ,D4 ,0
131: 8 ,F5 ,A4# ,D4 ,0
132: 8 ,F5 ,A4 ,C4 ,0
133: 8 ,0 ,0 ,0 ,0
134: 4 ,F4 ,F3 ,0 ,0
135: 8 ,G4# ,G3# ,0 ,0
136: 8 ,F4 ,F3 ,0 ,0
137: 8 ,A4# ,A3# ,0 ,0
138: 8 ,A4# ,A3# ,0 ,0
139: 8 ,G4# ,G3# ,0 ,0
140: 8 ,F4 ,F3 ,0 ,0
141: 8 ,G4# ,G3# ,0 ,0
142: 8 ,A4# ,A3# ,0 ,0
143: 2 ,A4# ,A3# ,0 ,0
144: 8 ,F4 ,0 ,0 ,0
145: 8 ,A4 ,0 ,0 ,0
146: 8 ,G4# ,F3 ,A2# ,0
147: 8 ,G4# ,F3 ,A2# ,0
148: 8 ,G4# ,C3# ,0 ,0
149: 8 ,G4# ,D3 ,0 ,0
150: 8 ,G4# ,F3 ,A2# ,0
151: 8 ,G4# ,F3 ,A2# ,0
152: 8 ,G4# ,C3# ,0 ,0
153: 8 ,D5 ,D3 ,0 ,0
154: 8 ,G4# ,F3 ,A2# ,0
155: 8 ,F4 ,F3 ,A2# ,0
156: 8 ,C3# ,0 ,0 ,0
157: 8 ,D3 ,0 ,0 ,0
158: 8 ,F3 ,A2# ,0 ,0
159: 8 ,F3 ,A2# ,0 ,0
160: 8 ,C3# ,0 ,0 ,0
161: 8 ,D3 ,0 ,0 ,0
162: 8 ,F4 ,C3 ,F2 ,0
163: 16 ,A4 ,C3 ,F2 ,0
164: 8 ,C5 ,G2# ,0 ,0
165: 8 ,F5 ,A2 ,0 ,0
166: 8 ,A5 ,C3 ,F2 ,0
167: 8 ,G5 ,C3 ,F2 ,0
168: 8 ,F5 ,G2# ,0 ,0
169: 8 ,D5 ,A2 ,0 ,0
170: 8 ,B4 ,C3 ,F2 ,0

```

```

171: 8 ,C5 ,C3 ,F2 ,0
172: 8 ,G2# ,0 ,0 ,0
173: 8 ,A2 ,0 ,0 ,0
174: 8 ,C3 ,F2 ,0 ,0
175: 8 ,C3 ,F2 ,0 ,0
176: 8 ,D3# ,0 ,0 ,0
177: 8 ,C5 ,E3 ,0 ,0
178: 8 ,G5 ,G3 ,C3 ,0
179: 8 ,G5 ,G3 ,C3 ,0
180: 8 ,G5 ,D3# ,0 ,0
181: 8 ,G5 ,E3 ,0 ,0
182: 8 ,E5 ,G3 ,C3 ,0
183: 8 ,C5 ,G3 ,C3 ,0
184: 8 ,D3 ,0 ,0 ,0
185: 8 ,C5 ,E3 ,0 ,0
186: 8 ,F5 ,F3 ,A2# ,0
187: 8 ,F5 ,F3 ,A2# ,0
188: 8 ,F5 ,C3 ,0 ,0
189: 8 ,F5 ,D3 ,0 ,0
190: 16 ,D5# ,F3 ,A2# ,0
191: 16 ,F5 ,F3 ,A2# ,0
192: 16 ,D5# ,F3 ,A2# ,0
193: 16 ,C5 ,F3 ,A2# ,0
194: 96 ,B4 ,F3 ,A2# ,0
195: 8 ,G4# ,F3 ,A2# ,0
196: 2 ,F4 ,A4 ,D4 ,0
197: 2 ,0 ,0 ,0 ,0
198: 4 ,C4 ,C3 ,0 ,0
199: 4 ,D4 ,D3 ,0 ,0
200: 4 ,C4 ,C3 ,0 ,0
201: 2 ,D4# ,A3 ,C3 ,F2

```

```

20: 4 ,D4 ,B3 ,G3 ,0
21: 8 ,C4 ,0 ,0 ,0
22: 8 ,E4 ,0 ,0 ,0
23: 8 ,G4 ,E4 ,C4 ,C3
24: 16 ,G4 ,E4 ,C4 ,C3
25: 4 ,G4 ,E4 ,C4 ,C3
26: 4 ,G4 ,E4 ,C4 ,C2
27: 8 ,A4 ,F4 ,C4 ,F2
28: 8 ,A4 ,F4 ,C4 ,A2
29: 2 ,G4 ,E4 ,C4 ,C3
30: 4 ,G4 ,E4 ,C4 ,C2
31: 4 ,F4 ,A3 ,F2 ,0
32: 8 ,E4 ,G3 ,G2 ,0
33: 8 ,C4 ,G3 ,G2 ,0
34: 8 ,D4 ,B3 ,G2 ,0
35: 8 ,D4 ,B3 ,G2 ,0
36: 2 ,C4 ,E3 ,C3 ,0
37: 4 ,0 ,0 ,0 ,0
38: 8 ,C4 ,0 ,0 ,0
39: 8 ,E4 ,0 ,0 ,0
40: 8 ,G4 ,E4 ,C4 ,C3
41: 16 ,G4 ,E4 ,C4 ,C3
42: 4 ,G4 ,E4 ,C4 ,C3
43: 4 ,G4 ,E4 ,C4 ,C2
44: 8 ,A4 ,F4 ,C4 ,F2
45: 8 ,A4 ,F4 ,C4 ,A2
46: 2 ,G4 ,E4 ,C4 ,C3
47: 4 ,G4 ,E4 ,C4 ,C2
48: 8 ,C4 ,0 ,0 ,0
49: 8 ,E4 ,0 ,0 ,0
50: 8 ,G4 ,E4 ,C4 ,C3
51: 16 ,G4 ,E4 ,C4 ,C3
52: 4 ,G4 ,E4 ,C4 ,C3
53: 4 ,G4 ,E4 ,C4 ,C2
54: 8 ,F4 ,D4 ,B2 ,0
55: 8 ,E4 ,C4 ,C3 ,0
56: 2 ,D4 ,B3 ,G2 ,0
57: 4 ,D4 ,B3 ,G3 ,0
58: 8 ,C4 ,0 ,0 ,0
59: 8 ,E4 ,0 ,0 ,0
60: 8 ,G4 ,E4 ,C4 ,C3
61: 16 ,G4 ,E4 ,C4 ,C3
62: 4 ,G4 ,E4 ,C4 ,C3
63: 4 ,G4 ,E4 ,C4 ,C2
64: 8 ,A4 ,F4 ,C4 ,F2
65: 8 ,A4 ,F4 ,C4 ,A2
66: 2 ,G4 ,E4 ,C4 ,C3
67: 4 ,G4 ,E4 ,C4 ,C2
68: 4 ,F4 ,A3 ,F2 ,0
69: 8 ,E4 ,G3 ,G2 ,0
70: 8 ,C4 ,G3 ,G2 ,0
71: 8 ,D4 ,B3 ,G2 ,0
72: 8 ,D4 ,B3 ,G2 ,0
73: 2 ,C4 ,E3 ,C3 ,0

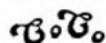
```

The Listing:

```

COL: LEN ,V1 ,V2 ,V3 ,V4
1: 8 ,C4 ,0 ,0 ,0
2: 8 ,E4 ,0 ,0 ,0
3: 8 ,G4 ,E4 ,C4 ,C3
4: 16 ,G4 ,E4 ,C4 ,C3
5: 4 ,G4 ,E4 ,C4 ,C3
6: 4 ,G4 ,E4 ,C4 ,C2
7: 8 ,A4 ,F4 ,C4 ,F2
8: 8 ,A4 ,F4 ,C4 ,A2
9: 2 ,G4 ,E4 ,C4 ,C3
10: 4 ,G4 ,E4 ,C4 ,C2
11: 8 ,C4 ,0 ,0 ,0
12: 8 ,E4 ,0 ,0 ,0
13: 8 ,G4 ,E4 ,C4 ,C3
14: 16 ,G4 ,E4 ,C4 ,C3
15: 4 ,G4 ,E4 ,C4 ,C3
16: 4 ,G4 ,E4 ,C4 ,C2
17: 8 ,F4 ,D4 ,B2 ,0
18: 8 ,E4 ,C4 ,C3 ,0
19: 2 ,D4 ,B3 ,G2 ,0

```



# Form Fill

continued from page 31

```

660 PRINT#-2,TAB(20)"LAST"TAB(40)
) "FIRST":GOSUB720
670 PRINT#-2,TAB(5)"ADDRESS:"TAB
(20)S$:GOSUB730
680 PRINT#-2,TAB(20)C$, "ST$" "
Z$:GOSUB730;GOSUB720
690 PRINT#-2,TAB(5)"TELEPHONE #:"
"TAB(20)"("T$)":GOSUB730;GOSUB7
20
700 PRINT#-2,TAB(5)"AGE:"TAB(12)
AG$TAB(20)"DATE OF BIRTH: "DA$/"
"MO$"/"YR$:GOSUB730
705 IF MID$(SE$,1)="M" THEN M$="

```

```

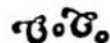
MALE" ELSE IF MID$(SE$,1)="F" TH
EN M$="FEMALE"
706 PRINT#-2,TAB(5)"SEX:"TAB(20)
M$:GOSUB730
710 END
720 FORT=1TO2:PRINT#-2," ":NEXTT
:RETURN
730 PRINT#-2,TAB(20)"-----
-----":
RETURN
800 CLEAR200,16352
810 FOR R=16352 TO 16380:READ P:
POKE R,P:NEXT R
820 DEFUSRO=16352
830 '
840 DATA 189, 179, 237, 31, 152,
142, 4, 0, 16, 142
850 DATA 4, 31, 237, 137, 1, 224
, 237, 164, 49, 168

```

```

860 DATA 32, 237, 129, 140, 4, 3
2, 38, 240, 57
870 CLS:BN=42
880 IF BN>32767 THEN GOTO870CLS
890 CLS RND(8):X=USRO(BN)
900 PRINT@110,"AN";
910 PRINT@170,"EXERCISE IN";
920 PRINT@232,"IN FORM FILLING";
925 PRINT@420,"PRESS ANY KEY TO
START";
930 X=USRO(BN)
940 FOR R=1 TO I:NEXT
950 X=USRO(BN-3)
960 FOR T=1 TO I:NEXT
970 IF I>1 THEN I=I-1 ELSE I=50
980 IF INKEY$="" THEN980
990 GOTO20

```



MC-10 ONLY

# mico music

by Brett Ross

**C**AN YOU pick the tune played by your MC10? When the tune is finished you are presented with a menu which will allow you a choice of 10 options.

You can also speed up or slow down the playing.

You should be able to compose your own music using this as a basis.

## The Listing: MICOMUS1

```

10 POKE38000,64:CLS
20 PP=30000:HH=1999:CM=PP:CP=231
  :NO=1:PS=1:NT=62
25 IFPEEK(PP+HH+1)=0THEN2500
30 IFPEEK(PP-40)<>0THEN50
40 PRINT"TUNE'S NAME":INPUTN$:IF
  N$="ORLEN(N$)>>30THEN40
45 FORX=1TOLEN(N$):POKEPP-41+X,A
  SC(MID$(N$,X,1)):NEXT
50 NP=PP-40:N$=""
55 NN=PEEK(NP):IFNN=0THEN70
60 N$=N$+CHR$(NN):NP=NP+1:GOTO55
70 NN=PEEK(PP-8)*256+PEEK(PP-7)
75 NN=PEEK(PP-5)*100+PEEK(PP-4)
80 T=PEEK(PP-3)
90 IFHH=0THENHH=PP:HN=1:T=16
200 CLS3:PRINT@11,"mico music":
  PRINT@80-LEN(N$)/2,N$:
210 PRINT@160,"NOTE 1 2 3
  4 5 6 ":PRINT@224,"LEN
  GT 0 0 0 0 0 0 VO
  ICE 0 0 0 0 0 0 ";
215 GOSUB600
220 IFCM>HMTHEHH=CM
225 HN=(INT(HM/2)*2-PP+2)/2
230 POKEPP-5,INT(HN/100):POKEPP-
  4,HN-INT(HN/100)*100
240 POKEPP-3,T
245 IFPEEK(PP+HH+1)<>82THENNEW
250 POKEPP-8,INT(HM/256):POKEPP-
  7,HN-INT(HM/256)*256
275 PRINT@320,"PLAY o SAVE
  :HN=";HN,"LOAD JUMP :HM="
  :HM,"INSERT REMOVE CH=";CM,"
  :TEMPO k COPY";
280 PRINT@448,"MOVE w ZERO
  :TEMPO=";T
290 I$=INKEY$
300 I$=INKEY$
305 PRINT@CP," ";
310 IFI$="S"THEN1200
315 IFI$="A"THEN1250
320 IFI$="W"THEN1300
325 IFI$="Z"THEN1350
330 IFI$=" " THEN1000
335 IFI$="P"THEN1400
340 IFI$="T"THEN1500
345 IFI$="M"THEN2300
350 IFI$="R"THEN1600
355 IFI$="I"THEN1700
360 IFI$="J"THEN1800
365 IFI$="V"THEN1900
370 IFI$="K"THEN2000
375 IFI$="O"THEN2100
380 IFI$="L"THEN2200
400 GOTO300
600 FORX=0TO5
610 PRINT@167+X*4,NO+X;
615 MM=PP+NO*2-2+X*2

```

```

620 FORY=1TONT+1:READR$:READI:IF
  R=PEEK(MM+1)THEN630
625 NEXTY
630 PRINT@231+X*4,PEEK(MM):PRIN
  T@264+X*4,R$:" ";
640 RESTORE
650 NEXTX
690 RETURN
700 PRINT@PC,"??? ";
705 I$=INKEY$:I=VAL(I$):IFI$="T
  HEN705
710 PRINT@PC,I$;
715 I$=INKEY$:I1=VAL(I$):IFI$="
  THEN715
720 PRINT@PC+1,I$;IFI$=" "THEN7
  50
725 I$=INKEY$:I2=VAL(I$):IFI$="
  THEN725
730 PRINT@PC+2,I$;IFI$=" "THEN1
  =I*10+I1:GOTO750
735 I=I*100+I1*10+I2
740 IFPEEK(PP+HH+2)<>83THENNEW
750 IFI>HH/2-40RI<1THEN700
755 I$=INKEY$:IFI$=" "THEN755
760 IFI$="M"THEN200
770 RETURN
1000 PRINT@CP," ";
1005 IFCP<256THEN1100
1010 I$=INKEY$:IFI$=" "THEN1010
1013 IFI$="O"THENI=255:PRINT@CP+
  1,"O";:GOTO1050
1014 IFI$=" " THEN200
1015 I=ASC(I$):IFI<65ORI>71THEN1
  010
1020 PRINT@CP+1,I$;
1025 I1$=INKEY$:I1=VAL(I1$):IFI<2
  ORI>5THEN1025
1027 PRINT@CP+2,I1$;
1030 I2$=INKEY$:IFI2$=CHR$(13)TH
  ENI$=I$+I1$:GOTO1050
1032 IFPEEK(PP+HH+3)<>66THENNEW
1035 IFI2$<>"#ANDI2$<>"- "THEN10
  30
1045 I$=I$+I1$+I2$:PRINT@CP+1,I$
  ;
1050 FORX=1TONT:READR$:READI:IFI
  $=R$THEN1060
1055 NEXT:RESTORE:GOTO1000
1060 RESTORE:POKECM,I
1065 GOTO300
1100 I$=INKEY$:I=VAL(I$):IFI=0TH
  EN1100
1105 PRINT@CP+1,I$;
1110 I$=INKEY$:I1=VAL(I$):IFI$="
  W"ORI$="R"ORI$="Z"ORI$="S"ORI$="
  "THENPOKECM,I:GOTO305
1115 IFI$=" " THEN1110
1120 PRINT@CP+2,I$;
1125 I=I*10+I1:IFI>32THEN1000
1130 POKECM,I
1135 GOTO300
1200 CM=CM+2:IFCM>PP+HMTHEHH=CM
  -2:GOTO300
1205 IFCP=251ORCP=283THENNO=NO+1
  :GOSUB600:GOTO220
1230 PRINT@CP," ";:CP=CP+4:GOTO2
  20
1250 CM=CM-2:IFCM<PPTHEHH=CM+2:
  GOTO300
1255 IFCP=231ORCP=263THENNO=NO-1
  :GOSUB600:GOTO220
1280 PRINT@CP," ";:CP=CP-4:GOTO2
  20
1300 IFCP<256THEN300
1310 PRINT@CP," ";:CP=CP-32:CM=C
  M-1:GOTO220

```

```

1350 IFCP>256THEN300
1360 PRINT@CP," ";:CP=CP+32:CM=C
  M+1:GOTO220
1400 CLS2:POKE38000,0:PRINT@240-
  INT(LEN(N$)/2),N$;
1410 FORX=PP-2+PS*2TOHMTSTEP2
1415 N=PEEK(X+1):L=PEEK(X)
1417 IFL=0THEN1450
1420 L=32/L*1/32:IFL<1THENL=1
1425 IFN=0THEHH=255
1430 SOUNDN,L
1440 NEXT
1450 RUN
1500 PRINT@473,"??"
1505 I$=INKEY$:I=VAL(I$):IFI=0TH
  EN1505
1510 PRINT@473,I$;
1515 I$=INKEY$:IFI$=" "THEN1515
1520 IFI$="W"ORI$="R"ORI$="Z"ORI
  $="S"ORI$=" " THEN1550
1525 I=I*10+VAL(I$)
1530 IFI>64THEN1500
1550 T=I
1555 GOTO220
1600 PRINT@CP," ";:IFHH>PP+1T
  HENHH=HH-2
1610 FORX=INT(CM/2)*2TOHH+2STEP2
1615 POKEX,PEEK(X+2):POKEX+1,PEE
  K(X+3)
1620 IFPEEK(X)=0THEN200
1625 NEXT
1630 GOTO200
1700 PRINT@CP," ";
1705 P3=0:P4=0
1710 FORX=INT(CM/2)*2TOHH+2STEP2
1715 P1=PEEK(X):P2=PEEK(X+1)
1720 POKEP3+POKEP4+1,P4
1725 IFP1=0THEN1750
1730 P3=P1:P4=P2
1735 NEXTX
1750 IFX+2>HMTHEHH=X+2
1760 GOTO200
1800 PC=361:GOSUB700
1805 NO=I:CM=NO*2+PP-2:CP=231
1810 GOTO200
1900 CLS8:PRINT@166,"ARE YOU SHU
  RE (Y/N)";
1905 I$=INKEY$:IFI$="N"THEN200
1910 IFI$="Y"THEN1920
1915 GOTO1905
1920 PRINT@234,"PLEASE WAIT";
1930 FORX=PP-40TOHM
1935 POKEX,0
1940 NEXT
1950 RUN
2000 PC=425:PRINT@424,"S";:GOSUB
  700
2005 C1=I:PRINT@424,"E";:GOSUB70
  0
2010 C2=I:PRINT@424,"P";:GOSUB70
  0
2020 FORX=C1-C1TOC2-C1
2025 POKEPP+I*2+X*2-2,PEEK(PP+C1
  *2+X*2-2):POKEPP+I*2+X*2-1,PEEK(
  PP+C1*2+X*2-1)
2030 NEXT
2035 IFI*2+PP+X*2-2>HMTHEHH=I*2
  +PP+X*2-2
2040 GOTO200
2100 CLS2:INPUT"PRESS <PLAY> AND
  <RECORD> PRESS <ENTER> WH
  EN READY";I$
2105 SS=PP-41:POKE17004,INT(SS/2
  56):POKE17005,SS-INT(SS/256)*256
2110 POKE17007,INT(SS/256):POKE1
  7008,SS-INT(SS/256)*256
2115 SS=HH+1:POKE17009,INT(SS/25
  6):POKE17010,SS-INT(SS/256)*256
2120 POKE17002,0:POKE17003,0:POK
  E16999,2
2125 EXEC64603 N$
2150 RUN
2200 CLS2:INPUT"TUNE'S NAME";N$:
  PRINT"POSITION TAPE AND PRESS <P
  LAY>"

```

# DEC-HEX

by Jim Simpson

**I**NSTRUCTIONS are included at the start of this program to convert either Decimal/Hex - Hex/Decimal. After the "again" query give a 'Y' or 'N' answer. A handy quick conversion reference.

The Listing: DEC-HEX

```

5 CLS0
10 POKE49151,64
20 DATA99,131,163,164,165,133,10
1,100
30 DATA66,98,130,162,194,195,196
,197,198,166,134,102,70,69,68,67
40 DATA33,65,97,129,161,193,225,
226,227,228,229,230,231,199,167,
135,103,71,39,38,37,36,35,34
50 PRINT@132,CHR$(128);
60 A#=CHR$(191):B#=CHR$(207):C#=
CHR$(175)
65 G#=CHR$(143)
70 FORN=1T08:READA:PRINT@A,A#;:N
EXT:FORN=1T016:READB:PRINT@B,B#;
:NEXT:FORN=1T024:READC:PRINT@C,C
#;:NEXT
71 FOR2=1T0300:NEXT:RESTORE:FORN
=1T08:READA:PRINT@A,G#;:NEXT
72 FORN=1T016:READB:PRINT@B,G#;
:NEXT
73 FORN=1T024:READC:PRINT@C,G#;
:NEXT
74 PRINT@132,CHR$(143);
75 IFW<>1THEN95
80 PRINT@74,"square wheel softwa
re";:PRINT@114,"and";:PRINT@139,
"belly button fluff";:PRINT@171,
"collection service";
85 PRINT@204,"canberra 1984";
90 PRINT@330,"HEX TO DECIMAL";:P
RINT@362,"DECIMAL TO HEX";
94 PRINT@448,"***PRESS ANY KEY T
O CONTINUE ***";
95 FOR2=1T0285:NEXT:RESTORE:W=1
96 I#=INKEY#:IFI#=""THEN20
97 POKE49151,0:CLS
98 PRINT"DEC. NO'S NOT TO EXCEED
65535":PRINT:PRINT"HEX NO'S MUS
T HAVE LEADING ZEROSFOR EXAMPLE
00E3 --NOT E3"
99 FORJ=1T0INT(5678*8^(1/3)):NEX
T
100 CLS:PRINT:PRINT:PRINT"HEX TO
DECIMAL----- ENTER H":PRINT:P
RINT" OR":PRINT:P
RINT"DECIMAL TO HEX----- ENTER
D"
105 M#=INKEY#:IFM#=""THEN105
110 IFM#<>"H"THEN100
115 CLS:PRINT"##### ENTER HEX
NUMBER #####":X=1
117 PRINT" HEX ";
120 H#=INKEY#:IFH#=""THEN120
123 PRINTH#;
125 IFH#="A"THENH#="10"
130 IFH#="B"THENH#="11"
135 IFH#="C"THENH#="12"
140 IFH#="D"THENH#="13"
145 IFH#="E"THENH#="14"
150 IFH#="F"THENH#="15"

```

```

155 ON X GOSUB200,300,400,500
160 IF X=5THEN700
165 GOTO120
200 H1=VAL(CH#)*4096
207 X=2
210 X=2:RETURN
300 H2=VAL(CH#)*256
304 X=3
305 RETURN
400 H3=VAL(CH#)*16
404 X=4
405 RETURN
500 H4=VAL(CH#)
600 PRINT"#####DECIMAL"H1+H2+H3+H4
603 X=5
605 RETURN
700 PRINT"AGAIN?"
710 O#=INKEY#:IFO#=""THEN710
720 IFO#<>"N"THENCLS:GOTO115
730 CLS:PRINT:PRINT:PRINT:PRINT:
PRINT" DO YOU WANT TO EXIT (E)
":PRINT:PRINT:PRINT"
OR":PRINT:PRINT:PRINT" GO TO
DECIMAL TO HEX (D)":REM BIG LIN
E."?"=PRINT,
740 Z#=INKEY#:IFZ#=""GOTO740
750 IFZ#="D"THEN1000
760 CLS:END
1000 REM
1005 CLS:PRINT:PRINT:PRINT"
##### ENTER DECIMAL NUMBER ####
#"
1010 INPUT"DECIMAL";D#
1015 PRINT" =HEX ";
1020 D=VAL(D#)
1025 H=INT(D/4096)
1030 GOSUB1100
1035 D=D-(H*4096)
1040 H=INT(D/256)
1045 GOSUB1100
1050 D=D-(H*256)
1055 H=INT(D/16)
1060 GOSUB1100
1065 H=D-(H*16)
1070 GOSUB1100
1075 PRINT"AGAIN?"
1080 R#=INKEY#:IFR#=""THEN1080
1082 IFR#="Y"THEN1000
1084 CLS:PRINT:PRINT:PRINT:PRINT
:PRINT" DO YOU WANT TO EXIT (E)
":PRINT:PRINT:PRINT"
OR":PRINT:PRINT:PRINT" GO T
O HEX TO DECIMAL (D)"
1086 R#=INKEY#:IFR#=""THEN1086
1088 IFR#="H"THEN100
1090 IFR#="E"THENCLS:END
1100 IFH=0THENA#="0"
1105 IFH=1THENA#="1"
1110 IFH=2THENA#="2"
1115 IFH=3THENA#="3"
1120 IFH=4THENA#="4"
1125 IFH=5THENA#="5"
1130 IFH=6THENA#="6"
1135 IFH=7THENA#="7"
1140 IFH=8THENA#="8"
1145 IFH=9THENA#="9"
1150 IFH=10THENA#="A"
1155 IFH=11THENA#="B"
1160 IFH=12THENA#="C"
1165 IFH=13THENA#="D"
1170 IFH=14THENA#="E"
1175 IFH=15THENA#="F"
1180 PRINTA#;
1185 RETURN

```

```

2205 FORX=PPT0HM:POKEX,0:NEXT
2210 CLOADM#
2215 RUN
2300 FC=449:GOSUB700
2305 PS=1:GOTO220
2500 CLS2:PRINT@43,"mico music";
:PRINT@105,"BY BRETT ROSS ";:PRI
NT@138,"OCTOBER 1984";
2510 PRINT@234,"PLEASE WAIT ";:P
RINT@268,"A MOMENT";
2520 FORX=1TONT#2+2:READA#;NEXT
2523 POKEPP+HH+1,PEEK(16498):POK
EPP+HH+2,PEEK(16500):POKEPP+HH+3
:PEEK(16526)
2530 FORX=PP-40TOPP+101
2535 READA:POKEX,A
2540 NEXT
2550 PRINT@230,"HERE'S A LITTLE
TUNE";:PRINT@268,"";:PRI
NT@291,"CAN YOU GUESS WHAT IT IS
?";
2560 HM=30101:T=24:POKE30000,0
2570 GOTO1410
3000 DATA0,255,0,0,F2,5,G2,32,A2
,58,B2,78,C3,89,D3,108,E3,125,F3
,133,G3,147,A3,159,B3,170,C4,176
,D4,185,E4,193,F4,197,G4,204,A4
3001 DATA210,B4,216,C5,218,D5,22
3,E5,227,F5,229,G5,232,A5,236,B5
,238
3002 DATAF2#,20,G2#,46,A2#,70,C3
#,99,D3#,117,F3#,140,G3#,153,A3#,
165,C4#,181,D4#,189,F4#,201,G4#,
207,A4#,213,C5#,221,D5#,225
3003 DATAF5#,231,G5#,234,A5#,237
3004 DATAG2-,20,A2-,46,B2-,70,D3
-,99,E3-,117,G3-,140,A3-,153,B3-,
165,D4-,181,E4-,189,G4-,201,A4-,
207,B4-,213,D5-,221,E5-,225
3005 DATAG5-,231,A5-,234,B5-,237
3010 DATA83,72,69,39,76,76,32,66
,69,32,67,79,77,73,78,39,,,,,
,,,,,117,149,,,51,24,,
3020 DATA8,125,8,133,8,159,8,159
,8,159,8,133,8,125,8,89,8,
125,2,159,4,255,8,159,8,170,8,17
6,8,176,8,176,8,176,8,193,8,176
3030 DATA8,170,8,159,2,170,4,255
,6,193,16,185,8,176,8,176,8,176,
8,176,8,170,8,159,8,159,8,159,8,
133,8,133,8,133,8,133,8,170,8
3040 DATA159,8,147,8,133,8,125,8
,125,6,159,16,170,8,176,8,170,8,
133,8,147,2,159

```



MC-10 ONLY

# Typing Teacher

by Grahame Pollock

This is another excellent program from Grahame Pollock in which you can, with practice, teach yourself to touch type. A diagram of your keyboard is shown on the screen with a sample sentence to copy.

If you hit a wrong key nothing happens except you lose time in your words per minute. Immediately you have completed the sample sentence your score showing average speed and words per minute is displayed. A new sentence is then displayed for you to continue your practice. Go to it and get to 200 w.p.m.

## The Listing: TYPTCH

```

1 REM "TYPING TEACHER" BY G.POLL
2 CLEAR200:GOTO10
3 FORSV=1T03:FOR T=1T03000:NEXT T:
4 CSAVE"TYPTCH":PRINTSV:NEXTSV:END
10 FOR I=1T010:CLSRND(8):PRINT@23
4,"TYPING TEACHER":SOUND100+RND
(100),RND(5):NEXT I
15 DIMA(26):GOSUB700
20 GOSUB200:CLS:GOSUB500
25 GOSUB300
30 PRINT@64," ":PRINTS#
40 PRINT@426," ";
50 I#=#INKEY#:IFI#=""THEN50
60 IF I#<>" "THEN50
62 PRINT@426," ";
65 PRINT@64," ":SOUND200,1
70 FOR I=1TOLEN(S#)
80 L#=#MID$(S#,I,1)
85 IFL#="" THENPOKE16448+I,128:P
RINT@426," ":GOTO100
90 POKE16448+I,ASC(L#)-64
94 FN=A(ASC(L#)-64)
96 PRINT@FN,CHR$(ASC(L#)+32);
100 I#=#INKEY#:T=T+1:IFI#=""THEN1
00
110 IF I#<>L#THEN100
120 SOUND200,1
125 IF I#="" THENPOKE16448+I,143:
PRINT@426," ":GOTO140
130 POKE16448+I,ASC(L#)
135 PRINT@FN,L#;
140 NEXT I
145 SC=INT(9#8000/T)
150 CLS:PRINT"SCORE=";SC;"W.P.M.
";
155 R=R+1:AV=INT((AV+(R-1)+SC)/R
)
160 PRINT" AVE=";AV;"W.P.M."
170 FOR T=1T03000:NEXT T:T=0
175 GOSUB500
180 GOTO25
200 CLS:PRINT"PRESS SPACE BAR TO
BEGIN TYPING"
210 PRINT"EACH SENTENCE"
215 PRINT"PRINT"TIMING WILL NOT
START TILL SPACEBAR IS PRESSED"
220 INPUT"PRESS ENTER";EN#

```

```

230 RETURN
300 REM SELECTING SENTENCE
305 S#=""
310 FOR X=0T08
315 IF X=0THEN330
320 FOR I=1T04#X:READA#:NEXT I
330 GOSUB370
340 S#=#A#
350 IF X=8THENRETURN
360 S#=#A#":NEXT X:RETURN
370 FOR I=1TORN(4):READA#:NEXT I:
RESTORE:RETURN
380 DATA THE,A,THIS,THAT
390 DATA QUICK,SLOW,BIG,SLEEK
400 DATA BROWN,RED,BLACK,GREEN
410 DATA FOX,MOUSE,CAT,RAT
420 DATA JUMPED,RAN,HOPPED,SKIPP
ED
430 DATA OVER,AROUND,BESIDE,WITH
440 DATA THE,A,THIS,THAT
450 DATA LAZY,SLEEPY,TIRED,WET
460 DATA DOG,RABBIT,FISH,SNAKE
500 PRINT@128,"":GOSUB630
510 PRINT"1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9
";
520 GOSUB630
530 PRINT"6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
";
540 GOSUB630
550 PRINT"1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
";
560 GOSUB630
570 PRINT"CTL 2 X C V B N M .
";
580 GOSUB630
590 PRINT"
";
600 GOSUB630
610 PRINT"KEEP YOUR EYES ON THE
SCREEN";
620 RETURN
630 PRINT"
";RETURN
700 A(1)=293
710 A(2)=366
720 A(3)=362
730 A(4)=297
740 A(5)=233
750 A(6)=299
760 A(7)=301
770 A(8)=303
780 A(9)=243
790 A(10)=305
800 A(11)=307
810 A(12)=309
820 A(13)=370
830 A(14)=368
840 A(15)=245
850 A(16)=247
860 A(17)=229
870 A(18)=235
880 A(19)=295
890 A(20)=237
900 A(21)=241
910 A(22)=364
920 A(23)=231
930 A(24)=360
940 A(25)=239
950 A(26)=358
960 RETURN

```

## HI-RES DRAW

by Scott Ferrero

16K CoCo  
or MC-10

This program simulates the DRAW command in HI-RES on the MC10. The program is a combination of "HOW TO EXTEND COLOR BASIC PART 4 DRAW" by Alex Hartman (Sept 85) and ROM1.1. That gave COLOR BASIC the DRAW command but on the MC10 in only worked in the text mode. Then since Grahame Pollock was kind enough to give us ROM 1.1 I thought I would alter the original "DRAW" program so that it would work in one of the HI-RES screens on the MC10. I used several of Grahame's routines which I found in his HI-RES programs so really I didn't write any of this program at all--I just composed it.

## TO USE THE PROGRAM.

Firstly it must be used with ROM1.1.

Then type in the program as is and then fill in lines 30 to 4997 with your strings. Just follow the example.

With the DRAW command you can start anywhere and then move up, down, left, right or diagonally. Your limit of movement is between x 0 to 127 and y 0 to 191. You may only use one color with this program but if I get any response I will alter it to include colors.

Type in the following to move the cursor: BMxy starts at xy. otherwise it starts at 0,0.

Dx : Goes down x squares  
 Ux : Goes up x squares  
 Rx : Goes right x squares  
 Lx : Goes left x squares  
 Ex : Goes diag up right x times  
 Fx : " " down right x times  
 Gx : " " down left x "  
 Hx : " " up left x "

## Example is:-

```

A$=BM23,12;U6;R30;
D5;L30;" :GOSUB5000

```

The BM23,12 starts to draw at 23 on the x axis and at 12 on the y axis and then go up to 6, right 30, down 5, and left 30. Make sure to put the ";" between each direction and at the end then

close the quotes and GOSUB5000. To clear the screen in HI-RES type Z=USR(0).

Refer to Alex Hartman's DRAW command and let us see some HI-GRADE games.

The Listing: HIREDRAW

```

0 CLS
1 PRINT"DRAW STATEMENT IN HI-RES
  BY          SCOTT FERRERO"
2 GOT010
3 FORSV=1T03:FOR T=1T03000:NEXT:C
  SAVE"HR-DRAW":PRINTSV:NEXTSV:END
10 PRINT"THIS PROGRAM MUST BE US
  E WITH ROM 1.1"
15 REM CLS
16 X=28672-14
17 CLEAR25,X
18 X=28672-14
19 FORZ=XT0X+13
20 READA
21 POKEZ,A:NEXT
22 POKE20501,126
23 POKE20502,INT(X/256):POKE2050
  3,X-INT(X/256)*256
24 GOT028
25 DATA 206,64,0,134,0,167,0,8,1
  40,76,0,38,248,57
28 POKE36782,116:SOUND100,1
29 Z=USR(0):REM SIMULATES "CLS"
  WHEN IN ONE OF THE HI-RES SCREEN
  S
30 REM FOR EXAMPLE A$="BM60,140;
  U5;R30;D5;L30:"GOSUB5000
32 REM USE FROM 30 TO 4997 TO DO
  THIS IN
4998 M$=INKEY$:IFM$=""THEN4998
4999 POKE36782,0:SOUND1,1:END
5000 IFA$=""THENRETURN
5005 FORI=1TOLEN(A$):IFMID$(A$,I
  ,1)<>"":THENS$=S$+MID$(A$,I,1):G
  OT05000
5006 S$=""
5008 C$=MID$(S$,1,1):D$=S$
5010 IFC$="U"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):Y=Y-1:GOSUB10
  002:NEXT:GOT010000
5012 IFC$="D"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):Y=Y+1:GOSUB10
  002:NEXT:GOT010000
5014 IFC$="L"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X-1:GOSUB10
  002:NEXT:GOT010000
5016 IFC$="R"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X+1:GOSUB10
  002:NEXT:GOT010000
5018 IFC$="E"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X+1:Y=Y-1:G
  OSUB10002:NEXT:GOT010000
5020 IFC$="F"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X+1:Y=Y+1:G
  OSUB10002:NEXT:GOT010000
5021 IFC$="G"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X-1:Y=Y+1:G
  OSUB10002:NEXT:GOT010000
5022 IFC$="H"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X-1:Y=Y-1:G
  OSUB10002:NEXT:GOT010000
5023 IFC$="I"THENFORA=1TOVAL(RIG
  HT$(D$,LEN(D$)-1)):X=X+1:Y=Y-1:G
  OSUB10002:NEXT:GOT010000
10000 NEXT:RETURN
10002 IFX>127 THENX=127
10004 IFX<0THENX=0
10006 IFY<0THENY=0
10008 IFY>191THENY=191
10010 X1=INT(X/8)
10012 X2=X-(X1*8)
10014 P=(16*X1)+X2
10016 P=16384+P
10018 X3=2^(7-X2)
10020 X3=INT(X3)
10022 P1=PEEK(P)ORX3
10024 POKEP,P1:RETURN

```

16K CoCo or MC-10

# EDUCATION

## mathematics

by Darren Yates

This is a simple educational tool for young children starting school. The program asks to add and subtract numbers from 1 to 10.

The total number of questions asked and the number answered correctly are displayed at the top of the screen with a prompt message at the bottom of the screen advising if the answer is correct. With any incorrect answer the question will remain until it is correctly answered. There is no need to press ENTER after each answer.

The Listing: MATHS

```

1 GOT01000
10 CLS3:FORA=15T048:FORB=13T017:
  SET(A,B,1):NEXTB,A
20 FORA=0T025:FORB=0T08:SET(A,B,
  1):NEXTB,A
30 FORA=38T063:FORB=0T08:SET(A,B
  ,1):NEXTB,A
35 FORA=0T063:FORB=20T026:SET(A,
  B,1):NEXTB,A
37 PRINT0," NUMBER OF":PRINT0
  32," QUESTIONS":PRINT022,"CORR
  ECT":PRINT054,"ANSWERS":
40 PRINT0485,"ELEMENTARY MATHEMA
  TICS":
50 A=RND(10):B=RND(10):C=RND(2)
51 IFC=2ANDR(B)THEN50
52 IFA=10ANDB=10THEN50
55 PRINT0235," "
60 IFC=1THENPRINT0234,A "+" B "="
  "
70 IFC=2ANDR(B)THENPRINT0234,A "-"
  B "=":
83 PRINT0101,0:Q=Q+1:PRINT0120,
  R)
85 A$=INKEY$:IFA$=""THEN85
88 D=VAL(A$)
91 IFC=1ANDR(B)<100RC=2ANDR(B)<10T
  HENPRINT0243,D:GOT0400
93 IFC=2THENPRINT0243,D:GOT0400
100 B$=INKEY$:IFB$=""THEN100
110 E=VAL(B$)
120 PRINT0243,D*X10+E
400 IFC=20RC=1ANDR(B)>9THEN420
410 IFD=A+BTHENPRINT0352," EXCE
  LLENT! THE ANSWER WAS "D"
  TRY AGAIN!":R=R+1

```

```

411 IFD<>A+BTHENPRINT0320," YOU
  R ANSWER OF "D" IS WRONG! I
  T SHOULD HAVE BEEN "A+B"!
  TRY AGAIN"
415 IFD<>A+BTHEN455
418 FORZ=0T03000:NEXTZ:PRINT0320
  ,
  "
419 PRINT0384,"

```

```

" :PRINT0243," "
GOT050
420 IFC=1ANDD*X10+E=A+BTHENPRINT0
  352," EXCELLENT! THE ANSWER WAS
  "A+B" TRY AGAIN!":R=
  R+1:GOT0418
430 IFC=2ANDD=A-BTHENPRINT0352,"
  TERRIFIC!! THE ANSWER WAS "A-B
  " HAVE ANOTHER GO":R=R+1
  :GOT0418
440 IFC=1ANDD*X10+E<>A+BTHENPRINT
  0320," YOUR ANSWER OF "D*X10+E"
  IS WRONG THE ANSWER SHOULD B
  E "A+B" TRY AGAIN"
445 IFC=1ANDD*X10+E<>A+BTHEN455
450 IFC=2ANDD<>A-BTHENPRINT0320,
  " YOUR ANSWER OF "D" IS WRONG!!
  THE ANSWER SHOULD BE "A-B"
  TRY AGAIN"
455 FORTE=1T02000:NEXTTE
460 PRINT0320,"
  "
470 PRINT0384,"
  "
480 PRINT0243," "
600 GOT060
1000 CLS3:PRINT0224,"":PRINT0256
  ,""
1010 A$="BEGINNER'S MATHS":B$="B
  Y DARREN YATES"
1020 A0=A0+1:IFA0=1THENM$=A$:Z=2
  55:S=233
1030 IFA0=2THENM$=B$:Z=287:S=265
1040 FORQ=ZTOSSTEP-1
1050 K=K+1
1060 X$=LEFT$(M$,K)
1070 PRINT00N,X$
1080 IFK>LEN(M$)THENPRINT00N+LEN
  (M$)," "
1090 FORQ0=1T0100:NEXTQ0
1100 NEXTQ0
1110 K=0
1120 IFA0<2THEN1020
1125 FORZX=1T0500:NEXTZX
1130 A0=0:GOT010

```

16K CoCo or MC-10



# CHEMISTRY

by Darren Yates

As Darren says this program is meant for all you hopefuls taking Chemistry for the HSC and it is hoped that it will be a quick reference and study guide for the first fifty elements of the Periodic Table. Unfortunately as he only has a 4K he could not go beyond the first fifty. The program begins by asking a series of questions about an element but if you can't answer just press ENTER. All answers are given on the screen. For those with a 20K ram they may extend this list from a copy of the Periodic Table with the following alterations:

1. Line 400 becomes line 3000
2. Remaining element information goes into lines 350-499 in the following manner: data (element) (symbol) (atomic number) (atomic weight) (electron configuration)
3. The line that reads For PT= 1 to 50 becomes For PT=1 to 103
4. The line following the atomic number question becomes IF AN> 103 THEN 3000.

### The Listing: P-TABLE

```
10 CLS:PRINT@224,"":PRINT@256,"
"
20 A$="VIDEO PERIODIC TABLE":B$="
BY DARREN YATES"
30 A0=A0+1:IFA0=1THENM$=A$:Z=255
:S=231
40 IFA0=2THENM$=B$:Z=287:S=265
50 FORQ=2TOSSTEP-1
60 K=K+1
70 X$=LEFT$(M$,K)
80 PRINT@Q,X$;
90 IFK>LEN(M$)THENPRINT@Q+LEN(M$
),":
100 FORNE=1T0100:NEXTNE
105 NEXTQ
107 K=0
110 IFA0<2THEN30
120 FORZ=1T0500:NEXTZ
125 CLS
130 PRINT"IF THERE ARE ANY QUEST
IONS YOU CAN'T ANSWER,PLEASE PR
ESS ENTER"
140 PRINT:INPUT"CHEMICAL NAME":C
N$
150 INPUT"CHEMICAL SYMBOL":CS$
160 INPUT"ATOMIC NUMBER":AN:IFAN
>50THEN400
170 INPUT"ATOMIC WEIGHT":AW
180 INPUT"ELECTRON FORMATION":EF
$
190 DATAHYDROGEN,H,1,1.008,1,HEL
IUM,HE,2,4,2,LITHIUM,LI,3,6.9,2,
```

```
1,BERYLLIUM,BE,4,9,2,2,BORON,B,5
,10,8,2,3,CARBON,C,6,12,2,4
200 DATANITROGEN,N,7,14,2,5,XYG
EN,0,8,16,2,6,FLUORINE,F,9,19,2,
7,NEON,NE,10,20,2,2,8,SODIUM,NA,
11,23,2,8,1
210 DATAMAGNESIUM,MG,12,24,3,2,8
,2,ALUMINIUM,AL,13,27,2,8,3,SILI
CON,SI,14,28,1,2,8,4,PHOSPHORUS,
P,15,31,2,8,5
220 DATASULPHUR,S,16,32,1,2,8,6,
CHORINE,CL,17,35,5,2,8,7,ARGON,A
R,18,39,9,2,8,8,POTASSIUM,K,19,3
9,1,2,8,8,1
230 DATACALCIUM,CA,20,40,1,2,8,8
,2,SCANDIUM,SC,21,45,2,8,9,2,TIT
ANIUM,TI,22,47,9,2,8,10,2,VANADI
UM,V,23,50,9,2,8,11,2
240 DATA CHROMIUM,CR,24,52,2,8,1
3,1,MANGANESE,MN,25,54,9,2,8,13,
2,IRON,FE,26,55,9,2,8,14,2,COBAL
T,CO,27,58,9,2,8,15,2
250 DATANICKEL,NI,28,58,7,2,8,16
,2,COPPER,CU,29,63,5,2,8,18,1,ZI
NC,ZN,30,65,4,2,8,18,1,GALLIUM,G
A,31,69,7,2,8,18,3
260 DATAGERMANIUM,GE,32,72,6,2,8
,18,4,ARSENIC,AS,33,74,9,2,8,18,
5,SELENIUM,SE,34,79,2,8,18,6,BRO
MINE,BR,35,79,9,2,8,18,7
270 DATAKRYPTON,KR,36,83,8,2,8,1
8,8,RUBIDIUM,RB,37,85,5,2,8,18,8
,1,STRONTIUM,SR,38,87,6,2,8,18,8
,2,YTRIUM,Y,39,88,9,2,8,18,9,2
280 DATAZIRCONIUM,ZR,40,91,2,2,8
,18,10,2,NIOBIUM,NB,41,92,9,2,8,
18,12,1,MOLYBDENUM,MO,42,95,9,2,
8,18,13,1
290 DATATECHNETIUM,TC,43,99,2,8,
18,13,2,RUTHENIUM,RU,44,101,1,2,
8,18,15,1,RHODIUM,RH,45,102,9,2,
8,18,16,1
300 DATAPALLADIUM,PD,46,106,4,2,
8,18,18,SILVER,AG,47,107,9,2,8,1
8,18,1,CADMIUM,CD,48,112,4,2,8,1
8,18,2
310 DATAINDIUM,IN,49,114,8,2,8,1
8,18,3,TIN,SN,50,118,7,2,8,18,1
8,4
320 GOTO500
400 PRINT"HERE IS NO ROOM FOR I
NFORMATION IN THE MEMORY OF A 4K
MACHINE ABOVE THE 50TH ELEMENT
":GOTO160
500 FORPT=1T0103
510 READA$,B$,C,D,E$
520 IFA$=CN$ORB$=CS$ORC=ANORD=AW
ORE$=EA$THEN540
530 NEXTPT
540 CLS
550 PRINT"CHEMICAL NAME: ";A$
560 PRINT"CHEMICAL SYMBOL: ";B$
570 PRINT"ATOMIC NUMBER: ";C
580 PRINT"ATOMIC WEIGHT: ";D
590 PRINT"ELECTRON FORMATION: ";E$
595 PRINT:RESTORE
600 GOTO130
```

16K CoCo or MC-10

# OHMS

by Jason Krah

■ WAS given about 500 resistors of about 40 different types. Because they were unlabelled as to their value I wrote this program to work out the value from the colour bands.

Just type in the colour in answer to the query and ENTER and the resistance and tolerance are given. This may only work for 4 or 5 banded resistors.

### The Listing: OHMS

```
0 DATA BLAC,BROW,RED,ORAN,YELL,G
REE,BLUE,PURP,GREY,WHIT
5 FORI=0T09:READA$(I):NEXT
6 CLS:INPUT"NO. OF RESISTORS":NO
:
7 IFNO=0THENEND
8 I=1
9 ZZ=ZZ+1
10 PRINT"ENTER COLOR #":INPUTC
$
15 IFC$="":THEN100
20 C$=LEFT$(C$,4)
21 IFI<3THEN30
22 IFC$="GOLD"THENX$(I)="-1":GOT
050
24 IFC$="SILV"THENX$(I)="-2":GOT
050
30 FORU=0T09:IFC$<>A$(U)THENNEXT
:GOTO10
40 X$(I)=STR$(U)
50 I=I+1
55 SOUND200,1
60 GOTO10
100 I=I-1
110 IFI>4THEN200
130 X=VAL(X$(1)+X$(2))
140 R=X*10^VAL(X$(3))
150 T=VAL(X$(4))
160 IFT=-1THEN=5
170 IFT=-2THEN=10
180 R$=STR$(R)
183 IFR>1000THENR$=STR$(R/1000)+
"K"
185 IFR>1000000THENR$=STR$(R/10
0000)+"M"
190 PRINT"RESISTANCE=";R$;" OHMS
"
195 PRINT"TOLERANCE=";T%;"
197 IFNO=ZZTHENEND
199 GOTO7
200 X$(1)=X$(1)+X$(2)
210 FORI=2T04:X$(I)=X$(I+1):NEXT
220 GOTO130
```



# ROBOT WAR

# TABLES

by Jason Krah

I give you this game to work out for yourselves.

A fence is built and you must type in a number, you are then asked if you want a map (Y/N).

From there on I was either destroyed by a "luck" computer or I touched a fence.

This is a prime example of the trouble caused by no instructions being included in the listing. However go ahead and see what you can do with it.

## The Listing: ROBOTWAR

```

1 CLS
160 REM----ROBOT WAR-----
170 PRINT
199 REM SET UP THE GAME
200 DIM A(10,20),E(21),F(21)
210 G=0:Z7=1
220 FOR B=1 TO 10
230 FOR C=1 TO 20
240 A(B,C)=0
250 IF B<>1 THEN 260
251 A(B,C)=1
260 IF B<>10 THEN 270
261 A(B,C)=1
270 IF C<>1 THEN 280
271 A(B,C)=1
280 IF C<>20 THEN 290
281 A(B,C)=1
290 NEXT C
300 NEXT B
310 FOR D=1 TO 21
320 B=INT(RND(8)*8)+2
330 C=INT(RND(8)*18)+2
340 IF A(B,C)<>0 THEN 320
350 A(B,C)=1
360 IF D=6 THEN 370
361 A(B,C)=2
370 IF D<>6 THEN 380
371 A(B,C)=3
380 E(D)=B
390 F(D)=C
400 NEXT D
499 REM PRINT PATTERN
500 FOR B=1 TO 10
510 FOR C=1 TO 20
520 IF A(B,C)<>0 THEN 530
521 PRINT " ";
530 IF A(B,C)<>1 THEN 540
531 PRINT "X";
540 IF A(B,C)<>2 THEN 550
541 PRINT "+";
550 IF A(B,C)<>3 THEN 560
551 PRINT "*";
560 NEXT C
570 PRINT
580 NEXT B
599 REM MAKE MOVE
600 B=E(6)
610 C=F(6)
620 A(B,C)=0
630 INPUT Y

```

```

640 IF Y=0 THEN 800
650 ON Y GOTO 660,660,660,690,68
0,680,680,690,1400
660 B=B-1
670 GOTO 690
680 B=B+1
690 ON Y GOTO 700,800,720,720,72
0,800,700,700
700 CA C=C-1
710 GOTO 800
720 C=C+1
799 REM CALCULATE THE RESULTS
800 IF A(B,C)=1 THEN 1500
810 IF A(B,C)=2 THEN 1600
820 A(B,C)=3
830 E(6)=B
840 F(6)=C
850 FOR D=1 TO 5
860 IF A(E(D),F(D))<>2 THEN 960
870 A(E(D),F(D))=0
880 IF E(D)=B THEN 890
881 E(D)=E(D)+1
890 IF E(D)<=B THEN 900
891 E(D)=E(D)-1
900 IF F(D)>=C THEN 910
901 F(D)=F(D)+1
910 IF F(D)<=C THEN 920
911 F(D)=F(D)-1
920 IF A(E(D),F(D))=3 THEN 1600
930 IF A(E(D),F(D))=0 THEN 940
931 G=G+1
940 IF A(E(D),F(D))<>0 THEN 950
941 A(E(D),F(D))=2
950 IF G=5 THEN 1700
960 NEXT D
970 PRINT "MAP";
980 INPUT Y#
990 IF Y#="Y" THEN 500
995 GOTO 600
1025 Z7=Z7+1
1400 PRINT "SORRY TO SEE YOU QUI
T"
1410 GOTO 1710
1500 PRINT "YOU TOUCHED THE FENC
E"
1501 Z9=Z9+1
1510 GOTO 1710
1600 PRINT "YOU HAVE BEEN DESTRO
YED BY A LUCK COMPUTER"
1601 Z9=Z9+1
1610 GOTO 1710
1700 PRINT "**YOU DESTROYED THE
ENEMY**"
1701 Z8=Z8+1
1710 PRINT "DO YOU WANT TO PLAY
AGAIN (TYPE Y OR N)"
1720 INPUT Y#
1730 IF Y#="Y" THEN 210
1731 PRINT "COMPUTER WON:";Z9;" "
;"THE HUMAN WON:";Z8
1732 PRINT "COMPUTERS AVERAGE:";
Z9/Z7;"THE HUMANS AVERAGE:";Z8/Z
7
1733 PRINT
1740 PRINT "HOPE YOU DON'T FEEL
FENCED IN"
1750 PRINT "TRY AGAIN SOMETIME."
1760 END

```

THIS is a race against the clock for the young and those a bit older to learn and test their knowledge of the times tables.

The rules enclosed in the listing are simple and the timer and score are displayed on the screen.

## The Listing: TABLES

```

0 CLS:X#=""
1 GOSUB6000
2 IFHS=0THENHS=20
5 GOSUB1000
7 IF HS=0THENHS=30
9 GOTO300
10 A#="INKEY#";
15 IF A#="0" THEN35
20 A=VAL(A#)
22 IF A#="CHR$(13)ANDV=1THENX=X/1
0
25 IF A#="CHR$(13) THEN100
30 IF A=0THEN200
35 IF V=2THENGOSUB2000
40 V=V+1;
60 IF V=1THENX=X+A#*10
70 IFV=2THENX=X+A
80 IFV=2THENPRINT@173,X;
85 IFV=1THENPRINT@173,X/10;
90 GOTO 10
100 V=0:IFX<>0THENX=0:GOTO2000
110 IF X=CTHENSOUND200,1;
115 X=0
120 S=S+1:GOSUB1000:GOTO300
200 T=T+.1:IFT>=60THEN5000
210 T=T+.03
220 GOSUB 1000
250 GOTO 10
300 A=RND(9):L=RND(9):C=A#B
400 PRINT@165,A;"X";B;"="
500 GOSUB1000:GOTO10
1000 PRINT@0,"*****";
1010 PRINT@32,"# S=";S;
1020 PRINT@40,"*";
1030 PRINT@64,"*****";
1040 PRINT@288,"*****";
1050 PRINT@320,"# HIGH=";HS
1060 PRINT@331,"*";
1070 PRINT@352,"*****";
1080 PRINT@15,"*****";
1090 PRINT@47,"# T=";INT(T);
1092 PRINT@54,"*";
1094 PRINT@79,"*****";
1100 RETURN
1200 PRINT@128,"*****";
;
1300 PRINT@111,"*";
2000 PRINT@172,"wrong";SOUND1,1
2010 PRINT@172,"WRONG";SOUND1,1
2020 PRINT@172," ";
2030 X=0
2040 V=0
2050 GOTO 10
5000 FORU=1TO10:SOUND1,1:NEXT

```



16K CoCo or MC-10

# BIG MATHS

by John Nyveld

**T**HIS program was written specifically to prevent my young son from becoming bored with his maths.

Large coloured numbers and flashing lights with easy problems help to keep his attention. So does the tune which is played for all correct answers.

## The Listing: BIGMATHS

```
1 CLS@: PRINT@102," B I G M
A T H S ";:PRINT@238," BY ";:PR
INT@357," JOHN NYVELD 11JAN86 "
;
2 A#=" HIT ANY KEY "
3 PRINT@489, A#;:GOSUB9
4 FORD=1T0200:NEXT A#="
":GOSUB9:PRINT@489,A#;:FORD
=1T0200:NEXT GOT02
9 OR#="INKEY#;IFOR#=""THENRETURN
10 RESTORE:CLS@
20 A=RND(5):H=14:ONAGOSUB1000,20
00,3000,4000,5000
30 REMDRAW+
31 FORI=23T027:SET(I,13,6):NEXTI
:FORT=1T05:FORY=11T015:SET(25,V,
6):NEXTV:NEXTT
40 B=RND(4):H=30
45 ONBGOSUB1000,2000,3000,4000
90 REMDRAW=
91 FORI=39T043:SET(I,12,7):SET(I
,14,7):NEXTI
94 H=47
95 FORT=1T07:FORI=1T05:SET(H+I,T
+9,8):NEXTI,T
100 C=A+B
110 C#="STR$(C)
120 A#="INKEY#;IFR#=""THEN120
130 H=47
145 IFVAL(A#)=CTHEN200
150 FORD=1T014:READZ:SET(Z,26,4)
```

```
:NEXTQ:DATA26,30,32,33,34,36,37,
38,40,41,42,44,45,46
152 FORD=1T011:READZ:SET(Z,27,4)
:NEXTQ:DATA26,28,30,32,34,36,38,
40,41,42,44
153 FORD=1T011:READZ:SET(Z,28,4)
:NEXTQ:DATA26,28,30,32,33,36,38,
40,42,44,46
154 FORD=1T011:READZ:SET(Z,29,4)
:NEXTQ:DATA27,28,29,32,34,36,38,
40,42,44,46
155 FORD=1T012:READZ:SET(Z,30,4)
:NEXTQ:DATA27,29,32,34,36,37,38,
40,42,44,45,46:FORSO=100T01STEP-
10:SOUNDSO,2:NEXTSO
156 FORT=1T07:FORI=1T05:SET(H+I,
T+9,8):NEXTI,T:FORD=1T0500:NEXT
157 FORD=336T0510:PRINT@WP," ";
:NEXT
160 RESTORE:GOT095
200 CO=CO+1
210 FORI=1T05:FORTH=10T016:RESET
(H+I,TH):NEXTTH:NEXTI
490 REM GET ANSWER DISPLAY
500 C=VAL(A#):ONCGOSUB1000,2000,
3000,4000,5000,6000,7000,8000,90
00
930 ON CO GOSUB9905,9905,9910,99
15,9920,9925,9930,9935,9940
950 IFCO=9THEN9945
999 GOT010
1000 FORT=1T07:FORY=10T016:SET(H
+3,V,5):NEXTV:NEXTT
1001 FORI=2T04:SET(H+I,16,5):NEX
TI:SET(H+2,11,5)
1002 RETURN
2000 FORT=2T04:SET(H+I,10,5):NEX
TI:SET(H+1,11,5):SET(H+5,11,5):S
ET(H+5,12,5):SET(H+3,13,5):SET(H
+4,13,5):SET(H+2,14,5)
2001 SET(H+1,15,5):FORD=1T05:SET
(H+I,16,5):NEXTI
2002 RETURN
3000 FORT=1T05:SET(H+I,10,5):SET
(H+I,13,5):SET(H+I,16,5):NEXTI
```

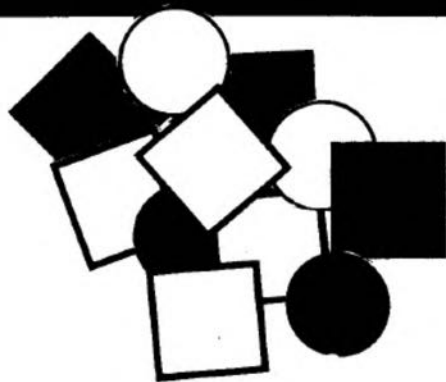
```
3001 FORT=1T07:FORY=10T016:SET(H
+5,V,5):NEXTV,T
3002 RETURN
4000 FORI=1T05:SET(H+I,14,5):NEX
TI:SET(H+4,10,5):SET(H+5,10,5)
4001 SET(H+3,11,5):SET(H+2,12,5)
:SET(H+1,13,5):SET(H+4,13,5):SET
(H+4,15,5):SET(H+4,16,5)
4002 RETURN
5000 FORT=1T05:SET(H+I,10,5):SET
(H+I,13,5):SET(H+I,16,5):NEXTI
5001 SET(H+1,11,5):SET(H+1,12,5)
:SET(H+5,14,5):SET(H+5,15,5)
5002 RETURN
6000 FORT=1T05:SET(H+I,16,5):SET
(H+I,13,5):SET(H+I,10,5):NEXTI
6001 SET(H+1,11,5):SET(H+1,12,5)
6002 SET(H+1,14,5):SET(H+1,15,5)
:SET(H+5,14,5):SET(H+5,15,5):RET
URN
7000 FORT=1T05:SET(H+I,10,5):NEX
TI
7001 SET(H+5,11,5):SET(H+4,12,5)
:SET(H+3,13,5):SET(H+2,14,5):SET
(H+1,15,5):SET(H+1,16,5)
7002 RETURN
8000 FORT=1T05:SET(H+I,10,5):SET
(H+I,13,5):SET(H+I,16,5):NEXTI
8001 FORT=1T07:FORY=10T016:SET(H
+1,V,5):SET(H+5,V,5):NEXTV,T
8002 RETURN
9000 FORT=1T05:SET(H+I,10,5):SET
(H+I,13,5):SET(H+I,16,5)
9001 NEXTI:FORT=1T07:FORY=10T016
:SET(H+5,V,5):NEXTV,T
9002 SET(H+1,11,5):SET(H+1,12,5)
:RETURN
9905 SOUND147,4:SOUND125,4:SOUND
147,8:RETURN
9910 SOUND159,4:SOUND147,4:SOUND
133,6:RETURN
9915 SOUND125,4:SOUND108,4:SOUND
125,4:SOUND133,6:RETURN
9920 SOUND125,2:SOUND133,2:SOUND
147,4:SOUND89,6:RETURN
9925 SOUND89,2:SOUND89,2:SOUND89
,6:RETURN
9930 SOUND89,2:SOUND108,2:SOUND1
25,2:SOUND133,2:SOUND147,8:RETUR
N
9935 SOUND147,4:SOUND108,4:SOUND
108,6:RETURN
9940 SOUND133,4:SOUND125,4:SOUND
108,4:SOUND89,10:RETURN
9945 CLS:FORD=1T0250:NEXT
9950 FOR CL=1T08:FORSO=100T0200
STEP10:SOUNDSO,1:NEXTSO:CLSCL:NE
XTCL:CO=0
9960 PRINT@141,"HIT ANY";:PRINT@
207,"KEY";:PRINT@268,"TO START"
;:PRINT@334,"AGAIN";
9970 IFINKEY#=""THEN9970
9980 GOT010
```

```
5100 IFS<=HSTHENPRINT@300,"GAME
OVER";:PRINT@448;:GOT05550
5150 IF S=HSTHEN#-100
5200 CLS
5300 PRINT"YES YOU BEAT THE HIGH
SCORE";HS
5400 PRINT"NEW HIGH=";S;
5500 HS=S
5550 I=#:S=#:X=#:
5600 PRINT"PLAY AGAIN Y=N";
5700 A#="INKEY#;IFR#="Y"THENCLS:G
OT05
5800 IF A#<>"N"THEN5700
5850 PRINT
5900 PRINT"SPoil SPoRT!!!!"
5950 FORI=1T0500:NEXT
5960 GOT00
6000 CLS:
6010 A#=" WELCOME TO --TABLES
```

```
--...THE GAME WHERE A 12 YEAR OL
D CAN HAVE A GO OR AN ADULT TRY
TO BEAT THE CLOCK.;"
6020 CLS:GOSUB7800
6030 CLS
6100 B#="*****":C#="*
*"
6200 A=11:B=491:C=224:D=255
6300 FORD=1T012
6700 PRINT@A,...
6710 PRINT@B,...
6720 PRINT@C,...
6750 IFR<192THENA=A+32
6800 IFR<288THENB=B-32
6850 IFC<235THENC=C+1
6900 D=C
7000 PRINT@A,B#;PRINT@B,B#
7500 PRINT@C,C#;PRINT@D,C#
7600 SOUNDU#10,1
```

```
7700 NEXTU
7750 GOT0 7900
7800 FORD=1T060:PRINT"--TABLES-";
:SOUNDU#4,1:NEXT
7850 RETURN
7900 PRINT@A,B#;:PRINT@B,B#;:PRI
NT@C,C#;
8000 FORD=1T0LEN(A#)
8010 PRINT@480,"PRESS '@' TO PLA
Y";
8020 IFR#="@"THENCLS:RETURN
8050 M#="MID$(A#,U,8)
8100 PRINT@236,M#;
8110 FORD=1T020
8115 X#="INKEY#
8120 IFR#="@"THENCLS:GOT05
8150 NEXT
8200 NEXT U
8300 GOT0 8000
```

# VARIATIONS ON PYE



by Michael Bell

HAVEN'T had much to do lately - as a matter of fact I started learning the maths functions. At school we've been working on the significance of PI in maths, so if I started potting around with PI (alias PYE the greek symbol for 3.14159265). Obviously not too many people are wrapped in educational programs - I'm not really myself - so I worked out a few programs that draw nice pretty pictures.

Listing 1 is a simple nine line program that draws a circle by setting the points worked out by pye. Big deal, huh? Yes, with a little bit of working out it can easily be changed.

You could use the positions plotted and instead of just setting them you could "PUT" something there like a planet orbiting something.

```
Listing 1: Pi for a circle
3 REM
5 PI=3.14159265
10 PMODE4,1:SCREEN1,1:PCLS1:COLOR0,1
20 FORL=0TO359
30 X=128+30*SIN(PI/180*L)
40 Y=96+30*COS(PI/180*L)
50 PSET(X,Y,0)
60 NEXTL
70 GOTO70
```

Ever pondered on how to draw a spiral? Well I have and I asked the teacher at school if pye had any similarity - equation wise to a spiral. So he gave me an equation and I converted it. Listing 2 draws a spiral - you might never use a spiral - but it's nice to know how to do it if you ever do!

```
Listing 2: Spiral
10 PI=3.1415
11 X1=128:Y1=96
20 PMODE4,1:SCREEN1,1:PCLS1:COLOR0,1
25 FORL=0TO3000STEP20
30 N=N+.6:K=L-INT(L/360)*360
35 X=128+N*SIN(PI/180*K)
40 Y=96+N*COS(PI/180*K)
45 LINE(X,Y)-(X1,Y1),PSET:X1=X:Y1=Y:NEXT
50 GOTO50
```

Listing 3 is just an all round nice little picture - have fun with that one, it'll hit you between the eyes!

```
Listing 3: Nice
2 PMODE4,1:SCREEN1,1:PCLS1:COLOR0,1
3 LINE(0,0)-(255,191),PSET,B
5 FORL=0TO128STEP10:LINE(0,L*.6667)-(
  (128-L,0),PSET
6 LINE(0,191-L*.6667)-(128-L,191),PSET
7 LINE(255,L*.6667)-(128+L,0),PSET
8 LINE(255,191-L*.6667)-(128+L,191),PSET
9 PI=3.1415
10 NEXT:X1=128:Y1=96:X2=X1:Y2=Y1
```

```
11 FORL=0TO120STEP10:X2=128:FORN=0TO360
  STEP15
12 M=L:IF M>80THENM=80
13 X=128+L*SIN(PI/180*M)
14 Y=96+80*COS(PI/180*M)
15 LINE(X1,Y1)-(X,Y),PSET:X1=X:Y1=Y
16 IF L>80THEN25
17 X=128+120*SIN(PI/180*M)
18 Y=96+M*COS(PI/180*M)
19 LINE(X,Y)-(X2,Y2),PSET:X2=X:Y2=Y
25 NEXTN,L
50 GOTO50
```

I think listing 4 + 5 will probably be the most liked. Listing 4 draws a triangle and rotates it as it gets larger and once it is about half drawn you see the pattern forming.

```
Listing 4: Triangular program
10 REM
20 PI=3.1415
30 PMODE4,1:SCREEN1,1:PCLS1:COLOR0,1
40 FORL=0TO15STEP5:MM=MM+.005
50 N=N+3+NN:NN=NN+MM:K1=L-INT(L/120)*120.
60 K2=K1+120:K3=K1+240
70 X1=128+N*SIN(PI/180*K1)
80 Y1=96+N*COS(PI/180*K1)
90 X2=128+N*SIN(PI/180*K2)
100 Y2=96+N*COS(PI/180*K2)
110 Y3=96+N*COS(PI/180*K3)
120 X3=128+N*SIN(PI/180*K3)
130 LINE(X1,Y1)-(X2,Y2),PSET:LINE(
  X2,Y2)-(X3,Y3),PSET
140 LINE(X1,Y1)-(X3,Y3),PSET:NEXT
150 GOTO50
```

Listing 5 does the same only it uses a square instead of a triangle.

```
Listing 5: Square Program
20 PI=3.1415
30 PMODE4,1:SCREEN1,1:PCLS1:COLOR0,1
40 FORL=0TO140STEP5:MM=MM+.005
50 N=N+3+NN:NN=NN+MM:K1=L-INT(L/90)*90
60 K2=K1+90:K3=K1+180
70 X1=128+N*SIN(PI/180*K1)
80 Y1=96+N*COS(PI/180*K1)
90 X2=128+N*SIN(PI/180*K2)
100 Y2=96+N*COS(PI/180*K2)
110 Y3=96+N*COS(PI/180*K3)
120 X3=128+N*SIN(PI/180*K3)
122 K4=K1+70
123 X4=128+N*SIN(PI/180*K4)
124 Y4=96+N*COS(PI/180*K4)
130 LINE(X1,Y1)-(X2,Y2),PSET:
  LINE(X2,Y2)-(X3,Y3),PSET
135 LINE(X3,Y3)-(X4,Y4),PSET
140 LINE(X1,Y1)-(X4,Y4),PSET:NEXT
150 GOTO150
```

# QUADSOLVE

by Mal McLauchlan

HERE IS A program that allows you teachers, students, etc to check your work after you have solved a quadratic equation. As you know, there are several methods such as factorizing, completing the square, using the quadratic formulae, or constructing a graph. In this program, I have used the latter two methods.

Programs line 770 to 990 use the quadratic formulae to calculate the solution and you may learn a lot about maths and about computing if you can follow the logic of those lines.

A problem with putting programs to printer for use in the magazine comes when one wants to write 'x squared' etc. One has to put 'x \* x' or 'x (up arrow) 2'. Then the up arrow doesn't get printed, so I have used 'x \* x' for 'x squared'.

Here I have added a couple of printed examples of solutions obtained by graphing the equations. The solutions are the points where the graph intersects the x-axis.

By the way, I have added a high-speed poke in line 1245 which can be removed if you wish.

For starters, here are some easy-to-solve equations for you to do and check using the computer. I have even added the answers.

1.  $x^2+6x+5=0$  (-1,-5)
2.  $2x^2+8x+8=0$  (-2,-2)
3.  $x^2+x-6=0$  (-3,+2)
4.  $x^2+5x+6=0$  (-3,-2)
5.  $x^2-8x+12=0$  (+6,+2)

## The Listing:

```

0 GOTO10
1 '***** QUADSOLVE *****
  **** MAL MCLAUCHLAN*****
3 SAVE"QUADSOLV:3":END
10 'TWO WAYS OF SOLVING QUADRATIC
  EQUATIONS WITH THE COMPUTER***
20 'AN EDUCATIONAL PROGRAMME FOR
  HIGH SCHOOL MATHEMATICS CLASSES
30 'BY MAL MCLAUCHLAN, 11 HUNTER
  STREET, BOONAH. Q.4310*****
40 '*****TITLE SCREEN FOLLOWS***
*****
50 A$="D4BU4U4R8D4L8BR8D4BU4"
60 C$="U4R5BD8L5U4BR8"
70 D$="D4BU4U4R6F2D4G2L6BU4BR6"
80 E$="D4BU4U4R6BD4L6BD4R6BU4"
90 G$="U4R6BL6BD4D4R6U4L2R3L1"
100 I$="U4BD4D4BU4"
110 L$="U4BD4D4R4BU4"
120 M$="D4U8F4E4D8BU4"
130 N$="D4U8F8U8BD4"
140 O$="D4U8R8D8L8BU4BR8"
150 Q$="D4U8R8D8L8R8F2H4BF2BU4"
160 R$="D4U8R8D4L8BR4F5BU4"
170 S$="U4R4BD4L4BR4D4L4BR4BU4"
180 T$="D4U8L3R6BD4"
190 U$="U4D8R6U8BD4"
200 V$="BU4D4F4E4U4BD4"
210 W$="U4D8B6F6U8BD4"
220 AB$="BM+6,+0" '***SPACE*****
230 PMODE3,1:SCREEN1,0:PCLS4

```

```

240 DRAW"S8;C2;BM20,20;"+"Q$+AB$+
  U$:DRAW AB$+A$+AB$+D$
250 DRAW AB$+R$+AB$+A$:DRAW AB$+
  T$+AB$+I$+AB$+C$
260 DRAW"BM20,60;"+"E$+AB$+Q$+AB$
  +U$+AB$+A$
270 DRAW AB$+T$+AB$+I$+AB$+O$+AB
  $+N$+AB$+S$
280 DRAW"S4;BM60,96;R5":FOR N=1
  TO 12:DRAW"D5R5U5R5":NEXT N
290 DRAW"S3;BM20,180;"+"G$+AB$+I$
  +AB$+V$+AB$+E$:DRAW AB$+AB$+M$+A
  B$+E$
300 DRAW AB$+AB$+E$+AB$+Q$+AB$+U
  $:DRAW AB$+A$+AB$+T$+AB$+I$:DRAW
  AB$+O$+AB$+N$
310 DRAW AB$+"R10"+AB$+W$:DRAW A
  B$+I$+AB$+L$+AB$+L$
320 DRAW AB$+AB$+S$+AB$+O$+AB$+L
  $:DRAW AB$+V$+AB$+E$
330 FOR DL=1 TO 2000:NEXT DL
340 GOSUB 1410
350 PRINT@33," QUADRATIC EQU
  ATIONS";
360 PRINT@65," -----";
370 PRINT@130," A QUADRATIC EQUA
  TION CAN BE";
380 PRINT@162,"WRITTEN IN THE FO
  RM AX+X+BX+";
390 PRINT@194,"C=0, AND IS SOLVE
  D BY USING";
400 PRINT@226,"THE COEFFICIENTS

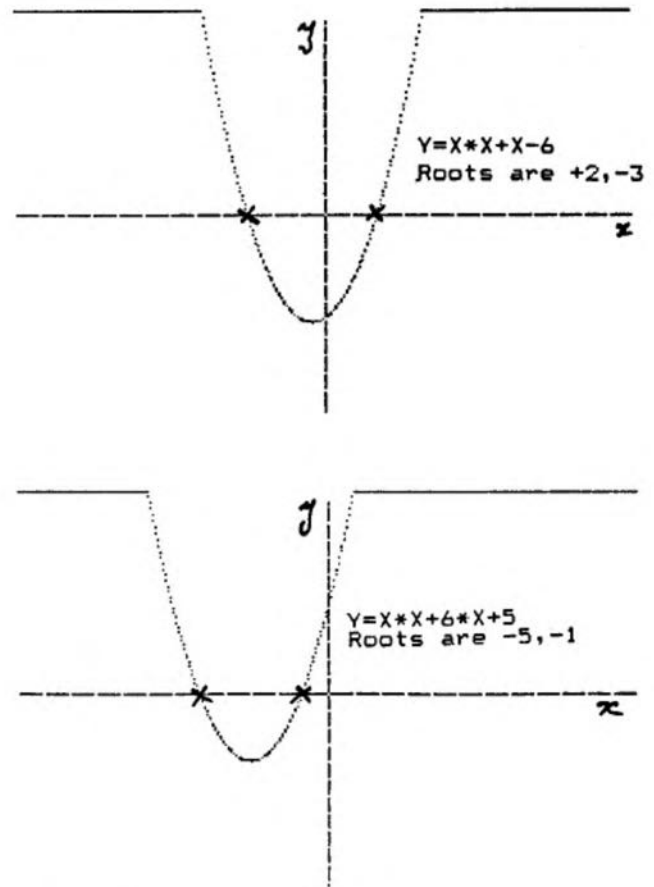
```

```

A, B, AND C.";
410 PRINT@258,"BY TYPING IN A, B,
  AND C FROM";
420 PRINT@290,"ANY SUCH EQUATION
  , THE COM-";
430 PRINT@322,"PUTER WILL SOLVE
  THE EQUATION";
440 PRINT@354,"MATHEMATICALLY.";
450 PRINT@422,"<any key to conti
  nue>";
460 I$=INKEY$:IF I$="" THEN 460
  ELSE IF I$<>" THEN GOSUB 1410
470 PRINT@34,"IF YOU WISH, COCO
  WILL GRAPH";
480 PRINT@66,"THE EQUATION IF YO
  U WRITE";
490 PRINT@98,"IT IN THE FORM Y=A
  X+BX+C.";
500 PRINT@130,"THE VALUE OF X (O
  FTEN TWO);:PRINT@162,"VALUES) CA
  N BE SEEN WHERE";
510 PRINT@194,"THE GRAPH CUTS TH
  E X AXIS.";:PRINT@226,"THIS PROG
  RAMME IS NOT DESIGN-";
520 PRINT@258,"ED TO TEACH YOU H
  OW TO SOLVE";:PRINT@290,"SUCH EQ
  UATIONS, BUT TO CHECK";
530 PRINT@322,"YOUR ANSWERS AFTE
  R YOU HAVE ";:PRINT@354,"WORKED
  THEM OUT. IT ALSO GIVES";
540 PRINT@386,"A VISUAL IDEA OF
  QUADRATICS";:PRINT@418,"IN GRAPH
  ICAL FORM.";

```

EDUCATION 16K ECB



# CLASS OF '86

```

550 PRINT@454,"<any key to conti
nue>";
560 I$=INKEY$:IF I$="" THEN 560
ELSE IF I$<>"" THEN GOSUB 1410
570 PRINT@34,"YOU WILL BE ASKED
WHETHER YOU";PRINT@66,"WANT THE
COMPUTER TO SOLVE";
580 PRINT@98,"YOUR EQUATION AND
LIST THE";:PRINT@130,"ROOTS ON T
HE SCREEN, OR TO ";
590 PRINT@162,"SHOW YOU THE ANSW
ER GRAPHIC-";:PRINT@194,"ALLY. J
OT DOWN THE FOLLOWING";:PRINT@22
6,"TO TRY OUT:-";
600 PRINT@258,"FOR ROOTS TO BE P
RINTED OUT:-";:PRINT@291,"X*X-X-
12=0 (A=1,B=-1,C=-12)";
610 PRINT@354,"FOR GRAPH TO BE D
RAWN";:PRINT@388,"Y=X*X-X-12";
620 PRINT@454,"<any key to conti
nue>";
630 I$=INKEY$:IF I$="" THEN 630
ELSE IF I$<>"" THEN GOSUB 1410
640 PRINT@98,"DO YOU WISH THE CO
MPUTER TO";:PRINT@130,"PROVIDE A
SOLUTION TO YOUR";
650 PRINT@162,"QUADRATIC EQUATIO
N IN:-";:PRINT@232,"1. NUMERICAL
FORM";:PRINT@296,"2. GRAPHICAL
FORM";
660 PRINT@354,"TYPE '1' OR '2' T
HEN <ENTER>";
670 I$=INKEY$:IF I$="" THEN 670
ELSE IF I$="1" THEN 680 ELSE IF
I$="2" THEN 1020
680 GOSUB 1410
690 PRINT@37,"-QUADRATIC EQUATIO
NS-";:PRINT@70,"SOLUTION BY FORM
ULA";:PRINT@102,"-----
-----";
700 PRINT@130,"AS YOU HAVE PROBA
BLY LEARNED,";:PRINT@162,"ANY EQ
UATION OF THE FORM";
710 PRINT@194,"A*X*X+B*X+C=0 CAN
BE SOLVED";:PRINT@226,"USING TH
E FORMULA X=-B PLUS";
720 PRINT@258,"AND MINUS THE SQU
ARE ROOT OF";:PRINT@290,"B*B-4*A
*C ALL DIVIDED BY 2*A.";
730 PRINT@322,"REMEMBER THAT ONE
? COCO CAN ";:PRINT@354,"DO THI
S EASILY IF YOU TELL";
740 PRINT@386,"IT THE VALUES OF
A,B AND C.";:PRINT@455,"<any key
to go>";
750 I$=INKEY$:IF I$="" THEN 750
ELSE IF I$<>"" THEN 770
760 '***USING QUADRATIC FORMULA
TO PROVIDE SOLUTION*****
770 CLS:PRINT:PRINT" TYPE IN TH
E 3 COEFFICIENTS A,B,C WHEN
PROMPTED, AND <ENTER> EA
CH ONE.":PRINT
780 INPUT "A";A
790 INPUT "B";B
800 INPUT "C";C
810 IF A<>0 THEN 850
820 PRINT
830 PRINT"NOT A QUADRATIC EQUATI
ON. TRY AGAIN!":FOR T=1 TO 100
0:NEXT T
840 GOTO 680
850 D=B*B-4*A*C
860 IF D<>0 THEN 890
870 PRINT"BOTH ROOTS ARE EQUAL,
AND HAVE THE VALUE:";-B/(2*A)
880 GOTO 1000

```

```

890 PRINT
900 IF D>0 THEN 930
910 PRINT"THIS EQUATION DOES NOT
HAVE REAL ROOTS."
920 GOTO 1000
930 D=SQR(D)
940 IF B=0 THEN 970
950 R1=(-B+D)/(2*A)
960 GOTO 980
970 R1=(-B-D)/(2*A)
980 R2=C/(A*R1)
990 PRINT"THE TWO ROOTS ARE";R1;
"AND";R2
1000 PRINT@453,"<any key to conti
nue>"
1010 I$=INKEY$:IF I$="" THEN 101
0 ELSE IF I$<>"" THEN CLS:GOTO 6
50
1020 '
1030 GOSUB 1410
1040 '***GRAPHICAL SOLUTION***
*****
*
1050 PRINT@37,"QUADRATIC EQUATIO
NS";:PRINT@69,"GRAPHICAL SOLUTIO
NS";:PRINT@101,"-----
-----";
1060 PRINT@130,"AN INTERESTING W
AY OF SOLVING";:PRINT@162,"A QUA
DRATIC EQUATION IS TO";
1070 PRINT@194,"FIND OUT THE VAL
UE (OFTEN 2";:PRINT@226,"VALUES)
OF X WHEN Y=0.T0 VIEW";
1080 PRINT@258,"THIS GRAPHICALLY
IT'S CONVEN-";:PRINT@290,"I ENT
TO REWRITE THE EQUATION";
1090 PRINT@322,"Y=A*X*X+BX+C, AN
D THE COMPUT-";:PRINT@354,"ER CA
N PLOT X AGAINST Y.";
1100 PRINT@386,"SO LET'S LOOK AT
OUR GRAPH";:PRINT@418,"PLOTTER:
-";:PRINT@454,"<any key to conti
nue>";
1110 I$=INKEY$:IF I$="" THEN 111
0 ELSE IF I$<>"" THEN GOSUB 1410
1120 PRINT @ 34,"TO MAKE A GRAPH
OF YOUR";:PRINT@66,"QUADRATIC B
QUATION, TYPE IT";
1130 PRINT@98,"INTO LINE 910, US
ING THE FORM";:PRINT@130,"Y=A*X*
X+B*X+C. THEN run 830";
1140 PRINT@162,"AND SEE IT BEING
PLOTTED. THE";:PRINT@194,"ROOTS
OF THE EQUATION CAN BE";
1150 PRINT@226,"READ OFF WHERE T
HE GRAPH CUTS";:PRINT@258,"THE Y
AXIS. FOR EXAMPLE,";
1160 PRINT@290," TYPE IN Y=X*X+X
-12 AND YOU";:PRINT@322,"THEN SE
E THAT THE SOLUTIONS";
1170 PRINT@354,"ARE X=-4 AND +3.
";
1180 PRINT @ 453,"<any key to co
ntinue>";
1190 I$=INKEY$:IF I$="" THEN 119
0 ELSE IF I$<>"" THEN GOSUB 1410
1200 PRINT @ 130,"SO...";:PRINT
@194,"1. <BREAK>";:PRINT@226,"2.
TYPE EQUATION IN LINE 1310";:PR
INT@258,"3. <ENTER>";:PRINT@290,
"4. RUN 1230";
1210 PRINT @ 489," <let's go!> "
;
1220 I$=INKEY$:IF I$="" THEN 122
0 ELSE IF I$<>"" THEN 1230
1230 '***GRAPH DRAWING PROGRAMME
STARTS HERE*****

```

```

*
1240 PMODE 4,1:PCLS:SCREEN 1,1
1250 '****THE NEXT LINE SETS THE
AXES*****
*
1260 LINE(127,5)-(127,185),PSET:
LINE(7,95)-(247,95),PSET
1270 FOR X=7 TO 247 STEP 10:PRES
ET(X,95):NEXT X
1280 FOR Y=7 TO 182 STEP 8:PRESE
T(127,Y):NEXT Y
1290 FOR X=-12 TO 12 STEP .05
1300 '*****
*USE NEXT LINE FOR TYPING IN YOU
REQUATION E.G. Y=X*X-X-12*****
1310 Y=COS(X)*SIN(X)
1320 X1=10*X+127
1330 IF X1<0 THEN X1=0:IF X1>255
THEN X1=255
1340 Y1=95-8*Y
1350 IF Y1<0 THEN Y1=0
1360 IF Y1>191 THEN Y1=191
1370 PSET(X1,Y1,1)
1380 NEXT X
1390 GOTO 1390
1400 '***YELLOW TEXT BORDER***
*****
1410 CLS:CLS:FORX=1024TO1055:POK
EX,159:NEXTX
1420 FORY=1056TO1504STEP32:POKEY
,159:NEXTY
1430 FORY=1087TO1535STEP32:POKEY
,159:NEXTY
1440 FORX=1505TO1534:POKEY,159:N
EXTX
1450 RETURN

```

# Spelling Quota

by Johanna Vagg

16K ECB



**Q**UOTA (August 1986 CoCo) was written for a boy who does not have ECB. For those with ECB I planned to incorporate a HI-RES SCREEN because I believe that kids have a better chance of learning to spell if they can practise with a program which shows them the words the way they normally see them, ie in lowercase letters. To me, part of being able to spell, is recognising whether or not a word 'looks right' and words do not look right when viewed in all uppercase letters!

Some months ago there was considerable talk of HI-RES SCREENS. I 'found' several. I showed them to three people. Although they all read CoCo and Rainbow, none of them knew such things existed. Colin Bartlett has one in September 1986 CoCo but I have not tried it yet. I have three different ones.

One of them is part of HOMOPHONE by Bob Horne from September 1985 Rainbow. Perhaps you have the magazine but only saw the program as an educational one for kids.. You may even have the program without realising that you can BREAK and then stay in the HI-RES SCREEN, with 24 lines of 42 characters, including lowercase letters.

If you have the magazine (and a 32K or 64K CoCo) and cannot see any use for the full program, do what I did originally.. type:

```
10 CLEAR800,31918
20 FOR X=31919 TO 32767
30 READA$:POKEX,VAL("&H"+A$)
40 NEXT X
50 EXEC31919:PMODE4:SCREEN1,1
```

Then type in the DATA lines. (1050 - 1210)

CSAVE this program before you RUN. When you have it right and it RUNs OK, LIST to get the idea of what it looks like.. notice the slow list? You can then type NEW and write a program while in the PMODE4 SCREEN. I suggest you read the article which accompanies the program for the special features.

April 1985 Rainbow has the 51-column SCREEN. (for 16K ECB too!) This is not presented as a BASIC program. You could type it in as a BASIC program or you might like to get RAINBOW ON TAPE. If you do it that way, you will also get a number of other interesting programs including 'a Night of Horrors

in LURKLEY MANOR', a graphics logic puzzle with 16 screens and 11 characters. (for 32K ECB)

The third SCREEN is the one which is the easiest to use in that you can PRINT@ as it has 16 lines of 32 characters. This program is by Les and David Thurbon and is in August 1985 Rainbow. (16K ECB and up) It is LISTING 1 of AREA and VOLUME. If you type it in as is, it won't work. Change line 2 to this:

```
2 FOR I=15364 TO 16383
```

I tried all sorts of things to make it work.. the most logical being a long way down the list. It turned out that the EXEC address was right and the start and end had to be adjusted. You'll have to ask the gremlins why they were wrong..

This third SCREEN is the one I have combined with QUOTA for a lowercase spelling practice program. One slight drawback is that it does not have a cursor. After you type this program in correctly (and CSAVE it!!) RUN it, then you can NEW it and write your own program. The QUOTA part of the program is not long so you could easily type it in to see the SCREEN in action. There are some special characters. You can see all of the characters by typing:

```
FOR X=33 TO 127:CHR$(X);:NEXT
```

Bob Horne's program does have a cursor, but you cannot return to the 'ordinary' SCREEN (as far as I can tell). With the Thurbon's program you can switch between SCREENS. Type SCREEN 0,0 for the green screen or SCREEN 0,1 for the orange screen. This can be done within a program too. To return to the HI-RES SCREEN, type PMODE4:SCREEN1,1 (or 1,0). PCLS will clear the screen to black; PCLS1 to white, without 'homing' the OK prompt.

To clear and home, use PCLS1:CLS. You can CLOAD another program while in this screen. However, the screen will not clear nor show the S or F in the corner. The name of the program will appear on the top line. You can then adapt your programs to this screen. The CLS's will need to be changed.. and you will want some lowercase letters.. and you could put HI-RES boxes or circles or whatever on your 'TEXT'.

The Listing:

```

0 REM THIS IS A CHARACTER SET
  BY THE THURBONS. IT WAS IN
  AUGUST 1985 RAINBOW. THE
  ADDRESSES WERE WRONG FOR TAPE.
1 'AFTER SEVERAL HOURS OF HEAD
  SCRATCHING, I DISCOVERED THE
  RIGHT ADDRESSES. THE EXEC
  ADDRESS WAS RIGHT... SO I
  ADJUSTED THE OTHERS
  ACCORDINGLY.
2 GOTO10 'note THIS MAY ONLY BE
  RUN ON A TAPE BASED SYSTEM.
  ATTEMPTING TO RUN THIS WITH A
  DISK CONTROLLER ATTACHED WILL
  CAUSE THE PROGRAM TO BE LOST!!
  - ED
3 SAVE"QUOTA2:3":END
10 CLS
20 PRINT"RUN AGAIN WHEN SCREEN C
  HANGES"
30 CLEAR200,15364
40 FOR I=15364 TO 16383
50 READ Q$:POKEI,VAL("&H"+Q$):NE
  XTI
60 EXEC 15364
70 PMODE4:SCREEN1,1:PCLS1:CLS
80 DATA 8E,3C,B,BF,1,68,39,34,36
  ,81,8,10,27,0,8E,81,D,27,1C,C6,4
  0,10,8E,3C,D1,A1,A0,27,38,31,27,
  5A,26,F7,C6,1F,A1,A0,27,13,31,29
  ,5A,26,F7,35,B6,DC,88,10,83,5,E0
  ,24,2,20,F4,20,75,8D,1E,C6,9,F7,
  3C,8E,C6,39,F7,3C,9D,8D,34,C6,7
  90 DATA F7,3C,8E,C6,A7,F7,3C,9D,
  20,D8,8D,4,8D,24,20,D2,DC,88,10,
  83,5,FF,27,46,34,4,44,56,54,54,5
  4,54,86,C,3D,86,20,3D,1F,1,35,4,
  C4,1F,3A,30,89,6,0,39,C6,2,86,FF
  ,A7,84,30,88,20,5A,26,F8,C6,7,A6
  ,A0,A7,84,30,88,20,5A,26,F6,86
100 DATA FF,A7,84,A7,88,20,39,8D
  ,BC,30,1F,10,8E,3C,D2,8D,D6,20,8
  4,32,62,8E,1C,9F,8D,CD,8E,7,80,A
  6,80,A7,89,FE,7F,8C,1D,FF,23,F5,
  8E,1C,60,86,FF,A7,80,8C,1D,FF,23
  ,F9,16,FF,60,20,FF,FF,FF,FF,FF,F
  F,FF,21,E7,E7,E7,E7,E7,FF,E7,22,
  D7,D7,D7
110 DATA FF,FF,FF,FF,23,D7,D7,83
  ,D7,83,D7,D7,24,EF,C3,AF,C7,EB,8
  7,EF,25,9B,9B,F7,EF,DF,B3,B3,26,
  EF,D7,D7,EF,D5,BB,C5,27,EF,E7,E7
  ,FF,FF,FF,FF,28,F7,EF,DF,DF,DF,E
  F,F7,29,DF,EF,F7,F7,EF,DF,2A,
  EF,AB,C7,EF,C7,AB,EF,2B,FF,EF,EF
  ,83,EF,EF
120 DATA FF,2C,FF,FF,FF,E7,E7,F7
  ,EF,2D,FF,FF,FF,81,FF,FF,FF,2E,F
  F,FF,FF,FF,FF,E7,E7,2F,FB,FB,F7,
  EF,DF,BF,BF,30,C7,BB,B3,AB,9B,BB
  ,C7,31,EF,CF,EF,EF,EF,EF,C7,32,C
  7,BB,FB,F7,EF,DF,83,33,C7,BB,FB,
  E7,FB,BB,C7,34,F7,E7,D7,83,F7,F7
  ,F7,35,83
130 DATA BF,87,FB,FB,BB,C7,36,F7
  ,EF,DF,87,BB,BB,C7,37,83,FB,F7,E
  F,DF,BF,BF,38,C7,BB,BB,C7,BB,BB,
  C7,39,C7,BB,BB,C3,F7,EF,DF,3A,FF
  ,E7,E7,FF,E7,E7,FF,3B,E7,E7,FF,E
  7,E7,F7,EF,3C,FB,F7,EF,DF,EF,F7,
  FB,3D,FF,FF,81,FF,81,FF,FF,3E,DF
  ,EF,F7,FB
140 DATA F7,EF,DF,3F,C7,BB,FE,F7
  ,EF,FF,EF,40,C7,BB,6D,55,63,BF,C
  
```

```

3,41,EF,D7,BB,BB,83,BB,BB,42,87,
  DB,DB,C7,DB,DB,87,43,C7,BB,BF,BF
  ,BF,BB,C7,44,87,DB,DB,DB,DB,8
  7,45,83,BF,BF,87,BF,BF,83,46,83,
  BF,BF,87,BF,BF,BF,47,C7,BB,BF,B3
  ,BB,BB,C7
150 DATA 48,BB,BB,BB,83,BB,BB,BB
  ,49,C7,EF,EF,EF,EF,EF,C7,4A,C3,F
  B,FB,FB,FB,BB,C7,4B,BB,B7,AF,9F,
  AF,B7,BB,4C,BF,BF,BF,BF,BF,83
  ,4D,BB,93,AB,BB,BB,BB,4E,BB,9
  B,AB,B3,BB,BB,BB,4F,C7,BB,BB,BB,
  BB,BB,C7,50,87,BB,BB,87,BF,BF,BF
  ,51,C7,BB
160 DATA BB,BB,AB,B7,CB,52,87,BB
  ,BB,87,AF,B7,BB,53,C7,BB,BF,C7,F
  B,BB,C7,54,83,EF,EF,EF,EF,EF,EF,
  55,BB,BB,BB,BB,BB,C7,56,BB,BB
  ,BB,D7,D7,EF,EF,57,BB,BB,AB,A
  B,93,BB,58,BB,BB,D7,EF,D7,BB,BB,
  59,BB,BB,D7,EF,EF,EF,5A,83,FB
  ,F7,EF,DF
170 DATA BF,83,5B,FF,FF,FF,81,DB
  ,DB,DB,5C,C3,BD,66,6E,66,BD,C3,5
  D,FF,FF,C7,BB,BB,D7,93,5E,EF,C7,
  AB,EF,EF,EF,EF,5F,E7,DF,EF,D7,EF
  ,F7,CF,60,EF,D7,EF,83,6D,AD,EF,D
  7,BB,61,FF,FF,CF,F7,C7,B7,CB,FF,
  FF,62,BF,BF,87,BB,BB,87,FF,FF
  ,63,FF,FF
180 DATA C7,BB,BF,BB,C7,FF,FF,64
  ,FB,FB,C3,BB,BB,BB,C3,FF,FF,65,F
  F,FF,C7,BB,83,BF,C7,FF,FF,66,F7,
  EB,EF,C7,EF,EF,EF,FF,FF,67,FF,FF
  ,C7,BB,BB,C3,FB,BB,C7,68,BF,BF,A
  7,9B,BB,BB,FF,FF,69,EF,FF,CF,
  EF,EF,EF,C7,FF,FF,6A,FB,FF,F3,FB
  ,FB,FB,FB
190 DATA BB,C7,6B,BF,BF,B7,AF,9F
  ,AF,B7,FF,FF,6C,CF,EF,EF,EF,E
  F,C7,FF,FF,6D,FF,FF,D7,AB,AB,BB,
  BB,FF,FF,6E,FF,FF,A7,9B,BB,BB,
  ,FF,FF,6F,FF,FF,C7,BB,BB,C7,F
  F,FF,70,FF,FF,A7,9B,BB,BB,87,BF,
  BF,71,FF,FF,CB,B3,BB,BB,C3,FB,FB
  ,72,FF,FF
200 DATA A7,9B,BF,BF,BF,FF,FF,73
  ,FF,FF,C7,BF,C7,FB,C7,FF,FF,74,E
  F,EF,C7,EF,EF,EB,F7,FF,FF,75,FF,
  FF,BB,BB,BB,B3,CB,FF,FF,76,FF,FF
  ,BB,BB,BB,D7,EF,FF,FF,77,FF,FF,B
  B,BB,AB,AB,D7,FF,FF,78,FF,FF,BB,
  D7,EF,D7,BB,FF,FF,79,FF,FF,BB,BB
  ,BB,C3,FB
210 DATA BB,C7,7A,FF,FF,83,F7,EF
  ,DF,83,FF,FF,7B,0,FF,0,FF,0,FF,0
  ,FF,0,7C,0,FF,0,FF,0,FF,0,7
  D,0,FF,0,FF,0,FF,0,7E,0,FF
220 PRINT@224,"RUN AGAIN NOW"
225 PRINT:PRINT"Or see which cha
  racters you get with the shifted
  arrows!"
230 DEL-230' IF THIS IS NOT LIN'
  230, THEN CHANGE THE DEL
  WHATEVER LINE THIS IS.
240 'JOHANNA VAGG
  9 BELAH STREET
  FORBES NSW 2871
250 PCLS1:CLS
260 CLS:PRINT" Quota Spelling
  Program"
270 PRINT:PRINT" By Johann
  a Vagg":PRINT
280 FOR T=1 TO 500:NEXT:PCLS1:CL
  S:INPUT "What is your name";N$
290 PRINT@102,N$,":INPUT" Have
  you entered your words
  
```

```

Y/N)";X$
300 IF X$="Y" OR X$="y" THEN 310
  ELSE 520
310 INPUT"How many words";W:INPU
  T"How many seconds do you want t
  o see each word";S:IF S>10 THEN
  S=10
320 POKE282,0
330 PCLS1:CLS
340 PRINT@68,"Here is your word"
350 SOUND RND(100)+100,1
360 DATA
370 N=RND(V)
380 FOR X=1 TO N
390 READ A$
400 NEXTX
410 RESTORE
420 PRINT@132,A$;
430 FOR T=1 TO S*500:NEXT
440 PCLS1:CLS
450 INPUT"Can you spell it";B$
460 IF B$=A$ THEN 480
470 IF B$(<>A$) THEN 510
480 SOUND200,2:SOUND150,2:FORX=1
  TO9:PRINT@99+X,CHR$(96);:NEXT:PR
  INT@132,"That's it";
490 FOR T=1 TO 600:NEXT
500 GOTO330
510 SOUND100,2:SOUND50,2:PRINT@2
  32,"Try again";:FORT=1 TO 1000:G
  OTO420
520 PCLS1:CLS
530 PRINT@140,N$,"";
540 PRINT@163,"Type in your quot
  a words";
550 PRINT@202,"like this:";
560 PRINT@288,"360 DATA word, wor
  d,word,word";
570 POKE282,0
  
```



CoCo

# softgold

Editor: Barry Cawley

Finally Golddisk 2 is released! We thank all of you who purchased Golddisk 1 and helped with the problems, we've learn't what you need & we think this one should be bug free (Ha!!).

Golddisk 2 has all the programs which have appeared in the Softgold for the last three months.

Check the Goldsoft pages at the back of this magazine for ordering details.

Tandy have improved their position in the NSW Education system in the last few months with some significant sales of Tandy 10000's to schools.

The New Software source book is also now available, and it reflects the huge range of software available for the T1000.

We've been looking at a comparison of the three most used software packages on Viatel, and we intend to give you our judgements next month!

Viatelliing with a PC can be fun, but many of the packages leave a REAL lot to be desired!

Next month we will be concentrating on Graphics and the mouse. So for all of you Graphic freaks that should make a nice issue with which to sit down over Christmas!

Also we have found out that many of you are getting very bored typing in other people's listings. So the routines next month are set up so you can include them in your own programs.

Of course when you have finished, we would like to see them in Softgold!

Finally, in the new year it is likely that this part of the magazine will be released as a separate unit, we therefore need to get more material from you ... so come on, get those fingers going, let's see what programs you can create!

## PRIME NUMBERS

by Bob Delbourgo

This program was originally written by Bob Delbourgo for the Colour Computer. The program provides a list of the prime numbers from 0 to the number you specify.

I thought this routine would be very useful for anyone with school age children, and therefore worth converting.

The listing as-is will also give you the option of a printout of the numbers, so that you can have a permanent record.

The method for finding and checking these numbers should also prove very useful for other applications you may have.

### The Listing:

```
10 CLS
20 PRINT "PRIME NUMBERS";:PRINT "BOB DEL
BOURGO, HOBART, TASMANIA";:PLAY"P1P1"
30 CLS:INPUT"PRIME NUMBERS UP TO";N:N=IN
T(N):DIM A(N):PRINT"WAIT FOR THEM!"
```

```
40 IF N<2 THEN 30
50 IF N>16000 THEN 30
60 FOR I=2 TO N:A(I)=I:NEXT
70 FOR J=2 TO INT(SQR(N)):IF A(J)=0 THEN
110
80 FOR K=J+1 TO N
90 IF A(K)=A(J)*INT(A(K)/A(J)) THEN A(K)
=0
100 NEXT K
110 NEXT J
120 FOR I=2 TO N
130 IF A(I)<>0 THEN PRINT A(I);:SOUND 20
0,1
140 NEXT I:PRINT "PRESS <P> TO PRINT";
150 P$=INKEY$:IF P$="" THEN 150
160 IF P$="P" THEN 180
170 RUN 30
180 LPRINT"Prime Numbers upto ";N
190 FOR I=2 TO N
200 IF A(I)<>0 THEN LPRINT A(I);
210 NEXT I:LPRINT
220 GOTO 150
```

# GOLDDISK

## \$10.95

# DISK ORGANISER

by Barry Cawley

**T**his program is called Disk Organiser and my original version was published in Softgold May 1986. This is what I call an update, but to put it in the common vernacular it is version 1.1 (or something like that!).

The reason for this update .. excuse me, latest release is that after the original version went into print, I received some correspondence to the effect that while the program worked as stated, it was not the bees knees!

So I've taken what I consider to be the best of those comments and done some more coding, and also corrected a few minor bugs in the original.

For those of you that already have the original version, I would suggest you check for the changes and make the corrections! You can also skip the rest of this writeup which will briefly cover what the program does.

If of course you do not want to make the changes then you can always get them from Golddisk. The latest one will be out in November (ready for Christmas - hmm should make a nice Christmas present).

For those of you that do not know the original Disk Organiser, I will very briefly cover the basic points for you. If you find this is not enough information for you, then I would suggest that you look at the May 1986 issue of Softgold.

The main reason for writing Disk Organiser was quite simply the need to track my files and programs that I have on Diskettes, and as I fervently hate typing I did not want to type the names, dates, filesizes and other miscellaneous information that I require onto the files in a database.

So I thought, "why can't the computer do it for me?"

Disk Organiser is the result.

To give you an idea of the speed improvement I ran a test on the original to catalog 40 Diskettes. To do this manually in a database would take forever - in fact I gave up after 5 or 6 diskettes

## The Listing:

```

1 ' _____
2 ' |
3 ' |           Disk Organiser
4 ' |           (C) 14 May 1986
5 ' |           by
6 ' |           Barry Cawley
7 ' |
8 ' |_____

```

and about 1 hour of wasted time!

With this program, I entered all the information I needed from the 40 diskettes in 18 minutes (the amount of information entered was 35950 bytes long).

This works out to a typing speed of around 332 words per minute! I think that is an improvement of note!

Now onto the program and some information on how to run it.

Step 1: Format a new diskette and copy diskorg onto it. This is so that as your collection grows, you will have room to move - it also makes your directory files easy to find.

Step 2: Copy the contents of the directory (of the diskette that you wish to catalogue) onto the directory diskette with the extension of .RAW. NOTE this is done within the program using the SHELL command and the PC.DOS command: DIR>A:NO#.RAW

For the initial setup of your directory diskette, I would suggest you do this in PC.DOS as it takes a while to load the SHELL of PC.DOS, into Basica. (The option in the program is really only for updating, once the initial files have been created, but of course may be used for the initial setup as well).

Step 3: Transfer the contents of the .RAW file into a .DIR file while changing it slightly. This also updates the housekeeping files on the disk. Now you are ready to go ahead and print the directories or whatever.

The remainder of the program is self explanatory and keeps you well informed with menus so at this point I will not explain it any further, but rather let you find the treasures for yourself.

The last thing I would like to mention is that the program is set up for colour and there are quite a few colour statements throughout. If you do not have a colour monitor then I would suggest that you take them out as you type in the program.

```

10 ' screen 0=main screen   screen 1=he
11 ' lp screen   screen 2=select dir screen
12 ' screen 3=directory screen
20 CLS:KEY OFF:DIM A$(200):DIM DIR$(100)
30 SCREEN 0,,0,0
40 COLOR 3,0:LOCATE 2,20:PRINT" _____
50 LOCATE 3,20:PRINT      "      " |
60 LOCATE 4,20:PRINT      "      " |_____
70 COLOR 5,0:LOCATE 9,20:PRINT " _____
80 LOCATE 10,20:PRINT     "      " |
90 LOCATE 11,20:PRINT     "      " |

```



```

100 LOCATE 12,20:PRINT " "
110 LOCATE 13,20:PRINT " "
120 LOCATE 14,20:PRINT " "
130 LOCATE 15,20:PRINT " "
140 LOCATE 16,20:PRINT " "
150 LOCATE 17,20:PRINT " "
160 LOCATE 18,20:PRINT " "
170 LOCATE 19,20:PRINT " "
180 LOCATE 20,20:PRINT " "
190 LOCATE 21,20:PRINT " "
200 COLOR 5,0:LOCATE 22,20:PRINT"
210 LOCATE 3,27:COLOR 6,0:PRINT"Director
y organiser"
215 COLOR 9,0
220 LOCATE 10,25:PRINT"Please select ...
"
225 COLOR 6,0
230 LOCATE 12,23:PRINT"1...Create RAW da
ta File"
240 LOCATE 13,23:PRINT"2...Create/Update
a Directory"
250 LOCATE 14,23:PRINT"3...Erase directo
ry"
260 LOCATE 15,23:PRINT"4...List director
ies"
270 LOCATE 16,23:PRINT"5...Print all dir
ectories"
280 LOCATE 17,23:PRINT"6...Print Selecte
d directories"
290 LOCATE 18,23:PRINT"7...Print Other f
iles"
300 LOCATE 19,23:PRINT"8...Help"
310 LOCATE 20,23:PRINT"0...End program"
320 ANS$=INKEY$:IF ANS$="" THEN 320
330 IF ANS$=CHR$(27) THEN BEEP:GOTO 320
340 A=VAL(ANS$)+1:ON A GOTO 3470,2570,36
0,990,1450,1900,2430,2730,3440
350 GOTO 320
360 POINTER=0:CLS:COLOR 3,0
370 GOSUB 6010
390 COLOR 6,0:LOCATE 3,25:PRINT "Convert
Input file"
395 COLOR 4,0
400 GOSUB 6040
430 LOCATE 7,25:INPUT"Disk no#";NO$
435 COLOR 5,0
440 GOSUB 6100
470 LOCATE 11,25:INPUT"Disk volume";NAM$
480 NAM$=LEFT$(NAM$+"
",12)
490 A=0:OPEN "a:diskinde.dat" FOR INPUT
AS 1
500 IF EOF(1) THEN 540
510 A=A+1
520 INPUT #1,A$(A)
530 GOTO 500
540 CLOSE 1:GOSUB 3400
550 COLOR 7,0
560 GOSUB 6220
580 IF POINTER =0 THEN GOTO 630
590 LOCATE 19,25:PRINT"Do you want to co
ntinue"
600 ANS$=INKEY$:IF ANS$="" THEN 590
610 IF ANS$="Y" OR ANS$="y" THEN 630
620 A=0:CLS:GOTO 40
630 LOCATE 19,25:PRINT"Now converting da
ta"
640 A=0:OPEN NO$+".raw" FOR INPUT AS 1
650 IF EOF(1) THEN 700
660 A=A+1
670 INPUT #1,A$(A)
680 IF A=<4 GOTO 660
690 GOTO 650
700 CLOSE #1
710 'out
720 OPEN "a:"+NO$+".dir" FOR OUTPUT AS 1
730 PRINT #1,"Date of last update of thi
s file ";DATE$:PRINT #1," "
740 FOR B=5 TO A-1:PRINT #1,NO$;" ";NAM$
;" ";A$(B):NEXT
750 PRINT #1,A$(A)
760 CLOSE #1
770 'KILL NO$+".raw"
780 A=0:OPEN "a:"+NO$+".Dir" FOR INPUT A
S 1
790 IF EOF(1) THEN 840
800 A=A+1
810 INPUT #1,A$(A)
820 IF A=<4 GOTO 800
830 GOTO 790
840 CLOSE 1
850 B$=MID$(A$(5),4,12):C$=MID$(A$(5),1,
3):D$=LEFT$(A$(A),2):E$=MID$(A$(A),12,10
)
860 OPEN "a:diskinde.dat" FOR APPEND AS
1
870 PRINT #1,C$,B$
880 CLOSE #1
890 OPEN"a:diskno.dat" FOR APPEND AS 1
900 PRINT #1,C$
910 CLOSE #1
920 OPEN "a:diskfree.DAT" FOR APPEND AS
1
930 'out
940 PRINT #1,DATE$,C$,B$,,D$,E$
950 CLOSE 1
960 CLOSE #1
970 RESTORE:CLS:GOTO 40
980 'Erase an entry from the disk
990 CLS:COLOR 3,0
1000 GOSUB 6010
1020 LOCATE 3,21:COLOR 6,3:PRINT" ERASE
A DIRECTORY FROM DISK "
1030 COLOR 9,0
1040 GOSUB 6070
1060 LOCATE 9,21:COLOR 6,3:PRINT" Whic
h directory to erase "
1070 COLOR 9,0
1075 LOCATE 11,30:PRINT"
"
1080 LOCATE 12,30:PRINT"|
"
1090 LOCATE 13,30:PRINT"
"
1100 LOCATE 12,31:COLOR 6,3:PRINT"
.DIR "
1110 COLOR 3,0:LOCATE 12,31:INPUT"";KLL$
1120 GOSUB 6300
1180 FOR LOOP=1 TO C:IF KLL$=LEFT$(DIR$(
LOOP),3) THEN 1300
1190 NEXT
1200 BEEP
1210 COLOR 4,0
1215 LOCATE 17,30:PRINT"
"

```

```

1220 LOCATE 18,30:PRINT" |
    |
1230 LOCATE 19,30:PRINT" _____
    |
1240 LOCATE 18,31:COLOR 2,4:PRINT KLL$+"
.DIR NOT FOUND"
1250 COLOR 4,9
1255 LOCATE 21,30:PRINT" _____"
1260 LOCATE 22,30:PRINT" _____"
1270 LOCATE 23,30:PRINT" _____"
1280 LOCATE 22,33:COLOR 2,9:PRINT " R /
M "
1290 GOTO 1380
1300 COLOR 4,0:LOCATE 15,20:PRINT" _____
    |
1310 LOCATE 16,20:PRINT" |
    |
1320 COLOR 4,0:LOCATE 17,20:PRINT" _____
    |
1330 LOCATE 16,21:COLOR 4,9:PRINT" ARE Y
OU SURE YOU WANT TO DELETE "
1340 COLOR 4,0
1345 LOCATE 18,20:PRINT" _____
    |
1350 LOCATE 19,20:PRINT" |
    |
1360 LOCATE 20,20:PRINT" _____
    |
1370 LOCATE 19,23:COLOR 4,9:PRINT LEFT$(
DIR$(LOOP),15):LOCATE 19,48:PRINT"Y/N/M"
1380 ANS$=INKEY$:IF ANS$="" THEN 1380
1390 IF ANS$="Y" OR ANS$="y" THEN COLOR
3,0:GOTO 1420
1400 IF ANS$="M" OR ANS$="m" THEN COLOR
3,0:RUN
1410 GOTO 990
1420 LOCATE 23,20:PRINT KLL$+".dir"; "ha
s now been killed (but not really)"
1430 IF INKEY$="" THEN 1430
1440 RUN
1450 SCREEN 0,,3,3:CLS
1460 COLOR 3,0
1470 GOSUB 6010
1490 COLOR 6,0:LOCATE 3,25:PRINT"Directo
ry files on Disk"
1500 COLOR 9,0
1505 LOCATE 7,20:PRINT" _____
    |
1510 LOCATE 8,20:PRINT" |
    |
1520 LOCATE 9,20:PRINT" _____
    |
1530 COLOR 6,0:LOCATE 8,25:PRINT"Do you
require :- "
1540 COLOR 4,0
1550 GOSUB 6160
1570 COLOR 6,0:LOCATE 13,25:PRINT"1 ...
Files ending in DIR "
1580 COLOR 4,0
1600 GOSUB 6190
1610 COLOR 6,0:LOCATE 17,25:PRINT"2 ...
Files ending in RAW "
1620 COLOR 4,0
1630 GOSUB 6250
1650 COLOR 6,0:LOCATE 21,25:PRINT"3 ...
Completed files"
1660 ANS$=INKEY$:IF ANS$="" THEN 1660
1670 A=VAL(ANS$):ON A GOTO 1860,1870,173
0
1680 GOTO 1660
1690 CLS:COLOR 3,0
1700 GOSUB 6010
1720 COLOR 6,0:LOCATE 3,25:RETURN
1730 GOSUB 1690:PRINT"Completed files"

```

```

1740 LO=5
1750 GOSUB 6300
1810 LO=5
1820 FOR LOOP=1 TO C STEP 3:LO=LO+1:LOCA
TE LO,1:PRINT DIR$(LOOP),
1830 LOCATE LO,25:PRINT DIR$(LOOP+1),
1840 LOCATE LO,50:PRINT DIR$(LOOP+2):NEX
T
1850 GOTO 1880
1860 GOSUB 1690:PRINT"Files ending in di
r":FILES"a:k.dir":GOTO 1880
1870 GOSUB 1690:PRINT"Files ending in ra
w":FILES"a:k.raw"
1880 ANS$=INKEY$:IF ANS$="" THEN 1880
1890 C=0:SCREEN 0,,0,0:GOTO 320
1900 AAA=0:A=0:PAG=1:'print
1910 GOSUB 6370
1970 FOR LOOP= 1 TO AAA:CLS:LOCATE 10,10
:PRINT"now working on disk ";DIR$(LOOP)
1980 GOTO 3480
1990 'read in correct file and print out
and update diskfree.dat file
2000 'in
2080 B$=MID$(A$(5),4,12):C$=MID$(A$(5),1
,3):D$=LEFT$(A$(A),2):E$=MID$(A$(A),12,1
0)
2090 PTOT=INT(A/50)+1
2100 LPRINT"-----
-----"
2110 LPRINT"Disk No# ";C$;"          Volu
me Name=";B$;"   Files=";D$;"          ";VAL(
E$);"Free"
2120 LPRINT "Directory Last updated ";RI
GHT$(A$(1),10);"          Printed ";DATE$;
"          Page";PAG;"of";PTOT
2130 LPRINT"-----
-----"
2140 FOR B=3 TO A-1:LPRINT MID$(A$(B),16
,LEN(A$(B))-15)
2150 IF INT(B/50)=B/50 THEN GOSUB 2300
2160 NEXT: PAG=1
2170 LPRINT CHR$(12)
2180 LPRINT"-----
-----"
2190 LPRINT"          Fil
es from Last Year"
2200 LPRINT"-----
-----"
2210 LPRINT"Disk No# ";C$;"          Volu
me Name=";B$;"   Files=";D$;"          ";E$;"
Free"
2220 LPRINT "Directory Last updated ";RI
GHT$(A$(1),10);"          Printed ";DATE$;
"          Page";PAG;"of";PTOT
2230 LPRINT"-----
-----"
2240 FOR B=3 TO A-1:EX=VAL(MID$(A$(B),46
,2)):IF EX<84 THEN LPRINT MID$(A$(B),16
,14);"          ";Z=Z+1
2250 NEXT
2260 LPRINT ""':LPRINT ""':LPRINT "files t
hat require looking at = ";Z
2270 LPRINT CHR$(12)
2280 A=0:Z=0:NEXT
2290 RESTORE:CLS:GOTO 40
2300 PAG=PAG+1:LPRINT CHR$(12):LPRINT"---
-----"
2310 LPRINT"Disk No# ";C$;"          Volu

```

```

me Name=";B$;" Files=";D$;" ";VAL<
E$);"Free"
2320 LPRINT "Directory Last updated ";RI
GHT$(A$(1),10);" Printed ";DATE$;
" Page";PAG;"of";PTOT
2330 LPRINT"-----
-----"
2340 RETURN
2350 OPEN "a:DIRINDE.DAT" FOR INPUT AS 1
2360 IF EOF(1) THEN 2410
2370 A=A+1
2380 INPUT #1,A$(A)
2390 IF A=<4 GOTO 2370
2400 GOTO 2360
2410 CLOSE 1
2420 ' IN HERE GOES THE ROUTINE TO PRINT
2430 AAA=1:A=0:PAG=1:CLS:COLOR 3,0
2435 LOCATE 2,20:PRINT"
"
2440 LOCATE 3,20:PRINT" |
"
2450 LOCATE 4,20:PRINT" |
"
2460 LOCATE 3,21:COLOR 6,3:PRINT" PRIN
T SELECTED DIRECTORY "
2470 COLOR 9,0
2475 LOCATE 8,20:PRINT" |
"
2480 LOCATE 9,20:PRINT" |
"
2490 LOCATE 10,20:PRINT" |
"
2500 LOCATE 9,21:COLOR 6,3:PRINT" Whic
h directory to print "
2510 COLOR 9,0
2515 LOCATE 11,30:PRINT" |
"
2520 LOCATE 12,30:PRINT" |
"
2530 LOCATE 13,30:PRINT" |
"
2540 LOCATE 12,31:COLOR 6,3:PRINT"
DIR "
2550 COLOR 3,0:LOCATE 12,31:INPUT"";DIR$
(1)
2560 GOTO 1970
2570 SCREEN 0,,3,3:CLS
2580 COLOR 3,0
2585 LOCATE 2,20:PRINT" |
"
2590 LOCATE 3,20:PRINT" |
"
2600 LOCATE 4,20:PRINT" |
"
2610 COLOR 6,0:LOCATE 3,25:PRINT"Create
a RAW file"
2620 COLOR 9,0
2625 LOCATE 7,20:PRINT" |
"
2630 LOCATE 8,20:PRINT" |
"
2640 LOCATE 9,20:PRINT" |
"
2650 COLOR 6,0:LOCATE 8,23:PRINT"For con
version to a directory"
2660 COLOR 4,0
2665 LOCATE 16,20:PRINT" |
"
2670 LOCATE 17,20:PRINT" |
"
2680 LOCATE 18,20:PRINT" |
"
2690 COLOR 6,0:LOCATE 17,25:PRINT"Input

```

```

Disk number:--
2700 LOCATE 17,45:INPUT"";RAW$
2710 b""DIR B:>"+RAW$+".raw"
2720 CLS:GOTO 40
2730 SCREEN 0,,3,3:CLS
2740 COLOR 3,0
2745 LOCATE 1,20:PRINT" |
"
2750 LOCATE 2,20:PRINT" |
"
2760 LOCATE 3,20:PRINT" |
"
2770 COLOR 6,0:LOCATE 2,25:PRINT"Directo
ry files on Disk"
2780 COLOR 9,0
2785 LOCATE 5,20:PRINT" |
"
2790 LOCATE 6,20:PRINT" |
"
2800 LOCATE 7,20:PRINT" |
"
2810 LOCATE 8,20:PRINT" |
"
2820 LOCATE 9,20:PRINT" |
"
2830 COLOR 6,0:LOCATE 6,25:PRINT"Do you
wish to print :--"
2840 COLOR 0,3:LOCATE 8,21:PRINT" 0 .
.. Return to menu "
2850 COLOR 4,0
2855 LOCATE 12,20:PRINT" |
"
2860 LOCATE 13,20:PRINT" |
"
2870 LOCATE 14,20:PRINT" |
"
2880 COLOR 6,0:LOCATE 13,25:PRINT"1 ...
Diskindex"
2890 COLOR 4,0
2895 LOCATE 16,20:PRINT" |
"
2900 LOCATE 17,20:PRINT" |
"
2910 LOCATE 18,20:PRINT" |
"
2920 COLOR 6,0:LOCATE 17,25:PRINT"2 ...
Diskfree"
2930 COLOR 4,0
2935 LOCATE 20,20:PRINT" |
"
2940 LOCATE 21,20:PRINT" |
"
2950 LOCATE 22,20:PRINT" |
"
2960 COLOR 6,0:LOCATE 21,25:PRINT"3 ...
Diskno"
2970 ANS$=INKEY$: IF ANS$="" THEN 2970
2980 A=VAL(ANS$)+1:ON A GOTO 3390,3000,3
130,3260
2990 GOTO 2970
3000 LOCATE 13,21:COLOR 0,6:PRINT" 1
... Dirindex "
3010 LPRINT"-----
-----"
3020 LPRINT" Directory Index
Printed ";DATE$;" at ";LEFT
$(TIME$,5)
3030 LPRINT"-----
-----"
3040 A=0:OPEN "diskinde.dat" FOR INPUT A
S 1
3050 IF EOF(1) THEN 3090

```

**softgold**

```

3060 A=A+1
3070 INPUT #1,A$(A)
3080 GOTO 3050
3090 CLOSE #1
3100 FOR B=1 TO A:LPRINT A$(B):NEXT
3110 LPRINT CHR$(12)
3120 COLOR 6,0:GOTO 2730
3130 LOCATE 17,21:COLOR 0,6:PRINT"    2
... Diskfree
3140 LPRINT"-----
-----"
3150 LPRINT"    Directory Free
    Printed ";DATE$;" at ";LEFT
$(TIME$,5)
3160 LPRINT"-----
-----"
3170 A=0:OPEN "diskfree.dat" FOR INPUT A
S 1
3180 IF EOF(1) THEN 3220
3190 A=A+1
3200 INPUT #1,A$(A)
3210 GOTO 3180
3220 CLOSE #1
3230 FOR B=1 TO A:LPRINT A$(B):NEXT
3240 LPRINT CHR$(12)
3250 COLOR 6,0:GOTO 2730
3260 LOCATE 21,21:COLOR 0,6:PRINT"    3
... Diskno
3270 LPRINT"-----
-----"
3280 LPRINT"    Directory Numbers
    Printed ";DATE$;" at ";LEFT
$(TIME$,5)
3290 LPRINT"-----
-----"
3300 A=0:OPEN "diskno.dat" FOR INPUT AS
1
3310 IF EOF(1) THEN 3350
3320 A=A+1
3330 INPUT #1,A$(A)
3340 GOTO 3310
3350 CLOSE #1
3360 FOR B=1 TO A:LPRINT A$(B):NEXT
3370 LPRINT CHR$(12)
3380 COLOR 6,0:GOTO 2730
3390 RESTORE:CLS:GOTO 40
3400 FOR B=1 TO A
3410 IF NOS$=LEFT$(A$(B),3) THEN LOCATE 1
4,25:PRINT "duplicate diskett no":POINTE
R=1
3420 IF NAM$=MID$(A$(B)+",5,12
) THEN LOCATE 16,25:PRINT "duplicate dis
kett name":POINTER=1
3430 NEXT:RETURN
3440 SCREEN 0,,1,1
3450 IF INKEY$="" THEN 3450
3460 SCREEN 0,,0,0:GOTO 320
3470 CLS:COLOR 6,0:PRINT"Disk organiser
is finished"
3480 PRINT "Screen or Printer"
3490 INS$=INKEY$:IF INS$="" THEN 3490
3500 IF INS$="s" OR INS$="S" THEN GOTO 3
520
3510 IF INS$="P" OR INS$="p" THEN GOTO 1
980
3520 OPEN "a:"+DIR$(LOOP)+".Dir" FOR INP
UT AS 1
3530 IF EOF(1) THEN 3580
3540 A=A+1
3550 INPUT #1,A$(A)
3560 IF A=<4 GOTO 3540
3570 GOTO 3530
3580 CLOSE 1
3590 B$=MID$(A$(5),4,12):C$=MID$(A$(5),1
,3):D$=LEFT$(A$(A),2):E$=MID$(A$(A),12,1
0)
3600 PTOT=INT(A/50)+1
3610 PRINT"-----
-----"
3620 PRINT"Disk No# ";C$;"    Volum
e Name=";B$;"    Files=";D$;"    ";VAL(E
$);"Free"
3630 PRINT "Directory Last updated ";RIG
HT$(A$(1),10);"    Printed ";DATE$;"
Page";PAG;"of";PTOT
3640 PRINT"-----
-----"
3650 FOR B=3 TO A-1:PRINT MID$(A$(B),16,
LEN(A$(B))-15)
3660 IF INT(B/20)=B/20 THEN GOSUB 3830
3670 NEXT:PAG=1
3680 IF INKEY$="" THEN 3680
3690 PRINT CHR$(12)
3700 PRINT"-----
-----"
3710 PRINT"    File
s from Last Year"
3720 PRINT"-----
-----"
3730 PRINT"Disk No# ";C$;"    Volum
e Name=";B$;"    Files=";D$;"    ";E$;"F
ree"
3740 PRINT "Directory Last updated ";RIG
HT$(A$(1),10);"    Printed ";DATE$;"
Page";PAG;"of";PTOT
3750 PRINT"-----
-----"
3760 FOR B=3 TO A-1:EX=VAL(MID$(A$(B),46
,2)):IF EX<84 THEN PRINT MID$(A$(B),16,
14);"    ";Z=Z+1
3770 NEXT
3780 PRINT ""':PRINT ""':PRINT "files that
require looking at = ";Z
3790 RESTORE
3800 IF INKEY$="" THEN 3800
3810 RESTORE:CLS:GOTO 40
3820 PRINT "Directory Last updated ";RIG
HT$(A$(1),10);"    Printed ";DATE$;"
Page";PAG;"of";PTOT
3830 IF INKEY$="" THEN 3830 ELSE RETURN
3840 'search for filename or matching pa
rt
3850 GOSUB 6370
3920 INPUT"name to search for";SEARCH$
3930 Z=LEN(SEARCH$)
3940 FOR LOOP=1 TO AAA
3950 OPEN "a:"+DIR$(LOOP)+".dir" FOR INP
UT AS 1
3960 IF EOF(1) THEN 4010
3970 INPUT #1,A$
3980 IF SEARCH$=MID$(A$,18,Z) THEN PRINT
A$
3990 GOTO 3960
4000 '
4010 CLOSE #1
4020 NEXT
6000 ' subroutines
6001 'BOX LOCATED AT 2 - 4
6010 LOCATE 2,20:PRINT"

```

```

6020 LOCATE 3,20:PRINT" |
6030 LOCATE 4,20:PRINT" |
6035 RETURN
6039 'BOX LOCATED AT 6 - 8
6040 LOCATE 6,20:PRINT" |
6050 LOCATE 7,20:PRINT" |
6060 LOCATE 8,20:PRINT" |
6065 RETURN
6069 'BOX LOCATED AT 8 - 10
6070 LOCATE 8,20:PRINT" |
6080 LOCATE 9,20:PRINT" |
6090 LOCATE 10,20:PRINT" |
6095 RETURN
6099 'BOX LOCATED AT 10 - 12
6100 LOCATE 10,20:PRINT" |
6110 LOCATE 11,20:PRINT" |
6120 LOCATE 12,20:PRINT" |
6125 RETURN
6129 'BOX LOCATED AT 11 - 13
6130 LOCATE 11,30:PRINT" |
6140 LOCATE 12,30:PRINT" |
6150 LOCATE 13,30:PRINT" |
6155 RETURN
6159 'BOX LOCATED AT 12 - 14
6160 LOCATE 12,20:PRINT" |
6170 LOCATE 13,20:PRINT" |
6180 LOCATE 14,20:PRINT" |
6185 RETURN
6189 'BOX LOCATED AT 16 - 18

```

```

6190 LOCATE 16,20:PRINT" |
6200 LOCATE 17,20:PRINT" |
6210 LOCATE 18,20:PRINT" |
6215 RETURN
6219 'BOX LOCATED AT 18 - 20
6220 LOCATE 18,20:PRINT" |
6230 LOCATE 19,20:PRINT" |
6240 LOCATE 20,20:PRINT" |
6245 RETURN
6249 'BOX LOCATED AT 20 -22
6250 LOCATE 20,20:PRINT" |
6260 LOCATE 21,20:PRINT" |
6270 LOCATE 22,20:PRINT" |
6275 RETURN
6300 OPEN "diskinde.dat" FOR INPUT AS 1
6310 IF EOF(1) THEN 6350
6320 C=C+1
6330 INPUT #1,DIR$(C)
6340 GOTO 6310
6350 CLOSE #1
6360 RETURN
6370 OPEN "a:diskno.dat" FOR INPUT AS 1
6380 IF EOF(1) THEN 6420
6390 AAA=AAA+1
6400 INPUT #1,DIR$(AAA)
6410 GOTO 6380
6420 CLOSE 1
6430 RETURN
6440 OPEN "a:"+DIR$(LOOP)+".Dir" FOR INP
UT AS 1
6450 IF EOF(1) THEN 6500
6460 A=A+1
6470 INPUT #1,A$(A)
6480 IF A<4 GOTO 6460
6490 GOTO 6450
6500 CLOSE 1
6510 RETURN

```

# number sort

by Barry Cawley

This routine demonstrates how a sort works. There are 2 delays built into the program, so to get a better idea of the real speed of the program, remove or change the remark statements lines 140 and 260.

If you compile this program, speed will be further improved.

## The Listing:

```

10 CLS
20 INPUT"HOW MANY NUMBERS";N
30 PRINT"ENTER"N"NUMBERS ONE BY ONE"
35 DIM LI(N)
40 FOR J=1 TO N
50 INPUT LI(J)
60 NEXT J
70 CLS
80 PRINT"HERE GOES"
90 FOR J=1 TO N

```

```

100 PRINT LI(J);
110 NEXT J
120 PRINT
130 FOR I=N-1 TO 1 STEP -1
140 FOR K=1 TO 500:NEXT K
150 FOR J=1 TO I
160 IF LI(J)<=LI(J+1) THEN 270
170 'SWITCH THESE TWO
180 LT=LI(J)
190 LI(J)=LI(J+1)
200 LI(J+1)=LT
210 CLS
220 PRINT
230 FOR K=1 TO N
240 PRINT LI(K);
250 NEXT K
260 FOR K=1 TO 500:NEXT K
270 NEXT J
280 NEXT I

```

# User Group Contacts

(Stop between numbers = b.h. else  
a.b.; but, hyphen between = both.)

ACT:  
CANBERRA NTH JOHN BURGER 062 58 3924  
CANBERRA STH LES THURBON 062 88 9226

NSW:  
SYDNEY:  
BANKSTOWN CARL STERN 02 646 3619  
BLACKTOWN KEITH GALLAGHER 02-627-4627  
CARLINGFORD ROSKO MCKAY 02 624 3353  
CHATSWOOD BILL O'DONNELL 02 419 6081  
CLOYTON HERMAN FREDRICKSON 02 6236379  
FAIRFIELD ARTH PITTARD 02 72 2881  
GLADESVILLE MARK ROTHWELL 02 817 4627  
HILLS DIST ARTHUR SLADE 02 622 8940  
HORNSBY ATHALIE SMART 02 848 8830  
KENTHURST TOM STUART 02 654 2178  
LEICHHARDT STEVEN CHICOS 02 560 6207  
or GORGE ECHEGARAY 02 560 9664  
LIVERPOOL LEONIE DUGGAN 02-607-3791  
MACQUARIE FIELDS  
BARRY DARNTON 02 618 1909  
SUTHERLAND IAN ANNABEL 02 528 3391  
SYDNEY EAST JACKY COCKING 02 344 9111  
ALBURY RON DUNCAN 060 43 1031  
ARMIDALE DOUG BARBER 067 72 7647  
BLAXLAND BRUCE SULLIVAN 047 39 3903  
BROKEN HILL TERRY NOONAN 080 88 2382  
CAMDEN KEVIN WINTERS 046.66.8068  
COFFS HARBOUR BOB KENNY 066 51 2205  
COOMA ROSS PLATT 0648 23 065  
COORANBONG GEORGE SAVAGE 049 77 1054  
COOTAMUNDRA CHERYL WILLIS 069 42 2264  
DENILIQUIN WAYNE PATTERSON 058 81 3014  
DUBBO GRAEME CLARKE 068 89 2095  
FORBES JOHANNA VAGG 068 52 2943  
GOSFORD PETER SEIFERT 043 32 7874  
GRAFTON PETER LINDSAY 066 42 2503  
GUYRA MICHAEL J. HARTMANN 067 79 7547  
JUNEE PAUL MALONEY 069 24 1860  
KENPSEY RICK FULLER 065-62-7222  
LEETON BRETT WALLACE 069-53-2081  
LISMORE ROB HILLARD 066 24 3089  
LITHGOW DAVID BERGER 063 52 2282  
MAITLAND BILL SNOW 049 66 2557  
MOREE ALF BATE 067 52 2465  
MUDGE BRIAN STONE 063-72-1958  
NAMBUCCA HDS WENDY PETERSON 065 68 6723  
NARROMINE GRAEME CLARKE 068 89 2095  
NEWCASTLE LYN DAWSON 049 49 8144  
NOWRA ROY LOPEZ 044 48 7031  
ORANGE JIM JAMES 063 62 8625  
PARKES DAVID SMALL 068 62 2682  
PORT MACQUARIE RON LALOR 065 83 8223  
SPRINGWOOD DAVID SEAMONS 047 51 2107  
TAMWORTH ROBERT WEBB 067 65 7256  
TAHMOOR GARY SYLVESTER 046 81 9318  
UPPER HUNTER TERRY GRAVOLIN 065 45 1698  
URALLA FRANK MUDFORD 067 78 4391  
WAGGA WAGGA CES JENKINSON 069 25 2263  
WYONG JOHN WALLACE 043 90 0312

NT:  
DARWIN BRENTON PRIOR 089.81.7766

QLD:  
BRISBANE:  
BIRKDALE COLIN NORTH 07 824 2128  
BRASSALL BOB UNSWORTH 07 201 8659  
CLAYFIELD JACK FRICKER 07 262 8869  
IPSWICH MICK MURPHY 07 271 1777  
FINE RIVERS BARRY CLARKE 07 204 2806  
SOUTH WEST BOB DEVRIES 07 375 3161  
SANDGATE MARK MIGHELL 07 269 3846  
SCARBOROUGH PETER MAY 07 203 6723  
WOODRIDGE BOB DEVRIES 07 375 3161  
AIRLIE BEACH GLEN EVANS 079 46 1264  
BIGGENDEN ALAN MENHAM 071 27 1272

BOWEN TERRY COTTON C/O 077 86 2220  
BUNDABERG RON SIMPKIN C/O TANDY  
CAIRNS GLEN HODGES 070 54 6583  
DALBY MERRICK TANISKY 074.62.3228  
GLADSTONE CAROL CATHCART 079 78 3594  
GOLD COAST GRAHAM MORPHEIT 075 51 0015  
GYMPIE BERT LLOYD 071 8219100  
HERVEY BAY LESLEY HORWOOD 071 22 4989  
MACKAY LEN MALONEY 079511333x782  
MARYBOROUGH JOHN EFFER 071 21 6638  
MT ISA JACK RAE 077 43 3486  
MURGOON PETER ANGEL 071 68 1628  
ROCKHAMPTON KEIRAN SIMPSON 079 28 6162  
TARA STEVEN YOUNGBERRY  
TOOWOOMBA LEN GERSEKOWSKI 076 35 8264  
TOWNSVILLE JOHN O'CALLAGHAN 077 73 2064  
WHITEROCK GLEN HODGES 070 54 6583

SA:  
ADELAIDE JOHN HAINES 08 278 3560  
NORTH STEVEN EISENBERG 08 250 6214  
GREENACRES BETTY LITTLE 08 261 4083  
MORPHEITVALE KEN RICHARDS 08 384 4503  
PORT NOARLUNGA ROB DALZELL 08 386 1647  
SEACOMBE HTS GLENN DAVIS 08 296 7477  
PORT LINCOLN BILL BOARDMAN 086 82 2385  
PORT PIRIE VIC KNAUERHASE 086 32 1230  
WHYALLA MALCOLM PATRICK 086 45 7637

TAS:  
HOBART BOB DELBOURGO 002 25 3896  
KINGSTON WIM DE PUIT 002 29 4950  
LAUNCESTON BILL BOWER 003 44 1584  
WYNYARD ANDREW WYLLIE 004 35 1839

VIC:  
MELBOURNE:  
MELBOURNE CCC JOY WALLACE 03 277 5182  
DANDENONG DAVID HORROCKS 03 793 5157  
DONCASTER JUSTIN LIPTON 03 857 5149  
FRANKSTON BOB HAYTER 03.783.9748  
NARRE WARREN LEIGH EAMES 03 704 6680  
NTH EASTERN PETER WOOD 03 435 2018  
MELTON MARIO GERADA 03 743 1323  
RINGWOOD IVOR DAVIES 03 758 4496  
SUNBURY JACK SMIT 03.744.1355  
BAIRNSDALE COLIN LEHMANN 051 57 1545  
BALLARAT MARK BEVELANDER 053 32 6733  
CHURCHILL GEOFF SPOWART 051 22 1389  
DAYLESFORD DANNY HEDJI 054 24 8329  
GEELONG DAVID COLLEN 052 43 2128  
HASTINGS MICHEAL MONCK 059 79 2879  
MAFFRA MAX HUCKERBY 051 45 4315  
MOE JIMMY WELSH 051 27 6984  
MORWELL GEORGE FRANCIS 051 34 5175  
SALE BRYAN McHUGH 051 44 4792  
SHEPPARTON ROSS FARRAR 058 25 1007  
SMYTHESDALE TONY PATTERSON 053 42 8815  
SWAN HILL BARRIE GERRAND 050.32.2838  
TONGALA TONY HILLIS 058 59 2251  
TRARALGON MORRIS GRADY 051 66 1331  
WONTHAGGI LOIS O'NEARA 056 72 1593  
YARRAWONGA KEN SPONG 057 44 1488

WA:  
PERTH IAN MACLEOD 09 448 2136  
GIRRAWHEEN HANK WILLEMSEN 09 342 7639  
KALGOORLIE TERRY BURNETT 090.21.5212

CANADA - CoCo:  
Ontario Richard Hobson 416 293 2346

# special interest groups

BUSINESS:  
BRIZBIZ BRIAN BERE-STREETER 07 349 4696

OS9 GROUPS:  
NATIONAL OS9 USERS' GROUP  
GRAEME NICHOLS 02 451 2954

NSW  
SYDNEY  
BANKSTOWN CARL STERN 02 646 3619  
CARLINGFORD ROSKO MCKAY 02 624 3353  
GLADESVILLE MARK ROTHWELL 02 817 4627  
SYDNEY EAST JACKY COCKING 02.344.9111  
COOMA FRED BISSELING 0648 23263

QLD  
BRISBANE JACK FRICKER 07 262 8869

VIC  
LATROBE VLY GEORGE FRANCIS 051 34 5175

WA  
KALGOORLIE TERRY BURNETT 090.21.5212

MC-10 GROUPS:  
LITHGOW DAVID BERGER 063 52 2282  
ORANGE DAVID KEMP 063 62 2270  
PORT LINCOLN BILL BOARDMAN 086 82 2385  
WARRANBOOL GARY FURR 055 62 7440

TANDY 1000 / MS DOS:

QLD:  
BRISBANE  
NORTH BRIAN DOUGAN 07 30 2072  
SOUTH BARRY CAWLEY 07 390 7946  
GOLD COAST GRAHAM MORPHEIT 075 51 0015

VIC:  
MELBOURNE TONY LLOYD 03 500 0878

NSW:  
GLADESVILLE MARK ROTHWELL 02 817 4627  
SYDNEY WEST ROGER RUTHER 047.39.3903  
WYONG JOHN WALLACE 043 90 0312

PORH:  
BRISBANE JOHN POXON 07 208 7820  
PORT LINCOLN JOHN BOARDMAN 086 82 2385  
SYDNEY JOHN REDMOND 02 85 3751

ROBOTICS:  
BOWEN TONY EVANS 077 86 2220  
GOLD COAST GRAHAM MORPHEIT 075 51 0015  
TAMWORTH ROBERT WEBB 067 65 7256  
WAGGA WAGGA CES JENKINSON 069 25 2263

CHRISTIAN USERS' GROUP:  
COLLIE RAYMOND L. ISAAC 097 34 1578

300 BAUD BULLETIN BOARDS  
SYDNEY:  
INFOCENTRE 02 344 9511  
TANDY ACCESS 02 625 8071  
THE COCOCONNECTION 02 618 3591  
DAIL DUBBO (6pm - 8am) 068 82 5011

1200/75 BAUD TANDY INFORMATION  
GOLDLINK VIATEL #642#  
VTX 4000 03 329 2936

OTHER TANDY USERS ON VIATEL  
GOLDLINK VIATEL #642#  
BLAXLAND COMPUTER SERVICES VIATEL #64263#  
COMPUTER HUT SOFTWARE VIATEL #64262#  
PARIS RADIO VIATEL #64268#  
POWER CODE VIATEL #64265#  
TANDY VIATEL #64261#

ALLAN BEALE 726353300  
FRED BISSELING 648232630  
JACK FRICKER 726288690  
JOHN GRIGSBY 945872030  
BOB KENNY 665122050  
JUDY RUTLEDGE 285350000  
ARTHUR THOMPSON 262289400  
ALLAN THOMPSON 838155830  
DARCY O'TOOLE 755105770

**GOLDSOFT**  
Hardware & Software for your TANDY computer.

**HARDWARE**

**The CoCoConnection:**

Connect your CoCo to the real world and control robots, models, experiments, burglar alarms, water reticulation systems — most electrical things.

Features two MC 6821 PIAs; provides four programmable ports; each port provides eight lines, which can be programmed as an input or output; comes complete with tutorial documentation and software; supplied with LED demonstration unit. Switchable memory addressing allows use with disk controller or other modules via a multipack interface; plugs into Cartridge Slot or Multipack, uses gold plate connectors; a MUST for the hardware designer and debugger!

\$206.00

**Video-Amp:**

Connects simply to your CoCo to drive a Colour or Mono monitor.

With instructions

With instructions and sound

\$25.00

\$35.00

**The Probe:**

A temperature measuring device which attaches to the joystick port of your CoCo or T1000, or to the joystick port of your CoCo Max.

Comes with programs to start you thinking, and is supported monthly in Australian CoCo magazine.

\$39.95

**SOFTWARE**

**Magazines:**

Australian Rainbow Magazine — THE magazine for advanced CoCo users!  
Australian CoCo Magazine — THE magazine for the new user of a Tandy computer.  
Also suits owners of CoCos, MC 10s, Tandy 1000s, 100s, 200s & 2000s.

Australian Rainbow 1986 \$4.95

1982 — 1985 \$2.50

Australian CoCo 1986 \$3.75

Sept 1984 — 1985 \$3.00

each \$1.00

each \$2.00

**Back Issues:**

Australian Rainbow Magazine. (Dec '81 to now.) **Please Note:** Some months out of stock.  
Australian CoCo Magazine. (Aug '84 to now.) **Please Note:** Some months out of stock.  
CoCoBug Magazine. For CoCo — usually 8 programs in each magazine. (Sep '84 to Oct '85)  
Australian MiCo Magazine. For Tandy MC 10 computers. (Dec '83 to Jul '84)

**CoCoOz, on Tape or Disk:**

The programs you see listed in Australian CoCo Magazine are available on CoCoOz!  
No laborious typing — just (C)LOAD and Go!

Each Tape \$9.50

Subscription, 6 months \$42.00

12 months \$75.00

Each DISK \$10.95

Subscription on disk, 12 months \$102.50

Back issues of CoCoOz are always available

**Rainbow on Tape, or Disk:**

Australian. The programs you see listed in Australian Rainbow Magazine are available on tape. A boon if you don't understand the language!  
American. We also supply the programs found in American Rainbow on tape.  
Please specify either Australian or American.

Each Tape \$15.00

Subscription, 12 months \$144.00

**NEW for 1986 ONLY** Each DISK \$15.00

Subscription on disk, 12 months \$172.00

**MiCoOz:**

The programs in the MiCo section of Australian CoCo Magazine. (For MC 10 computers only)  
Back issues of CoCoOz and MiCoOz are always available

Each Tape \$9.50

**GOLDDISK 1000** — programs from 'softgold' for your Tandy 1000 on disk, and,

\$10.95

**Goldlink**

Goldlink is our very special service on Viatel 642# which you can access with a 1200/75 Baud modem and the appropriate software.  
Goldlink may be accessed at no charge, but access to our BBS on Goldlink costs 15/30c each time or \$36.00 annually. Later we will also provide software for you to download, and members will be able to obtain this at no further charge or at reduced charges.

Subscription

12 months

\$36.00

**Books:**

HELP: A quick reference guide for CoCo users.  
BYTE: Guide for new CoCo users.  
MiCo HELP: A quick reference for owners of MC 10 computers.

\$9.95

\$4.00

\$9.95

**Say the Wordz:** by Oz Wiz & Pixel Software

Two curriculum based speller programs for your Tandy Speech/Sound Pack.

Tape 32K ECB

\$29.95

**Bric a Brac:**

Blank tapes . . . 12 for \$18.00 or \$1.70 each.  
Cassette cases . . . . . 12 for \$3.50  
Disks . . . (they work!) . . \$2.50 each or \$25.00 per box of 10.

**HOW TO ORDER**

Option 1: Use the subscription form in this magazine.

Option 2: Phone and have ready your Bankcard, Mastercard or Visa number.

Option 3: Leave an order on Viatel, but be sure to include your Name, Address, Phone Number, Credit

Card Number and a clear indication of what you require, plus the amount of money you are authorising us to bill you.

# WHAT'S ON THE BEST OF CoCoOz

## Best of CoCoOz #1. EDUCATION

ROADQUIZ ..... ROB WEBB  
 HANGMAN ..... ALEPH DELTA  
 AUSTGEOG ..... P. THOMAS  
 SPELL ..... IAN LOBLEY  
 FRACTUT ..... ROBBIE DALZELL  
 ICOSA ..... BOB WALTERS  
 TAXMAN ..... TONY PARFITT  
 MARKET ..... ALEPH DELTA  
 TOWNQUIZ ..... ROB WEBB  
 ALFABETA ..... RON WEBB  
 TANK ADDITION ..... DEAN HODGSON  
 TABLES ..... BARRIE GERRAND  
 KIDSTUFF ..... JOHANNA VAGG  
 FLAGQUIZ ..... ROB WEBB

## Best of CoCoOz #2 part 1. 16K GAMES.

LE-PAS ..... Wrongsoft  
 COCOMIND ..... STEVE COLEMAN  
 OILSLICK ..... JEREMY GANS  
 CCMETEOR ..... BOB THOMSON  
 BATTACK ..... JEREMY GANS  
 PROBDICE ..... BOB DELBOURGO  
 CHECKERS ..... J & J GANS  
 PYTHON ..... ?  
 POKERMCH ..... GRAHAM & MATTHEWS  
 SPEEDMATH ..... DEAN HODGSON  
 LNDATTCK ..... ALDO DEBERNARDIS  
 INVADERS ..... DEAN HODGSON  
 RALLY ..... TONY PARFITT  
 FOURDRAW ..... JOHANNA VAGG

## Best of CoCoOz #2 part2. 32K GAMES.

TREASURE ..... DAVISON & GANS  
 MASTERMIND ..... GRAHAM JORDAN  
 ANESTHESIA ..... MIKE MARTYN  
 OREGON TRAIL ..... DEAN HODGSON  
 ADVENTURE ..... STUART RAYNER  
 SHOOTING GALLERY ..... TOM DYKEMA  
 GARDEN ..... DAVE BLUHORN  
 YAHTZEE ..... KEVIN GOWAN  
 BATTLESHIP ..... CHRIS SIMPSON  
 ANDROMIDA ..... MAX BETTRIDGE

## Best of CoCoOz #3. UTILITIES

PAGER ..... ?  
 HI ..... ALEX. HARTMANN  
 SPOOL64K ..... WARREN WARNE  
 CREATITL ..... BRIAN FERGUSON  
 FASTEXT ..... OZ-WIZ  
 DATAGEN ..... ROBIN BROWN  
 SPEEDCTR ..... PAUL HUMPHREYS  
 PRNTSORT ..... PAUL HUMPHREYS  
 BIGREMS ..... BOB T  
 DIR ..... PAUL HUMPHREYS  
 COPYDIR ..... THOMAS SZULCHA  
 LABELLER ..... J.D.RAY  
 SCRPRRT ..... TOM DYKEMA  
 MONITOR ..... BRIAN FERGUSON  
 BEAUTY ..... BOB T  
 PCOPY ..... B. DOUGAN  
 RAMTEST ..... TOM DYKLEMA  
 DISKFILE ..... B. DOUGAN  
 LABEL ..... F. BISSELING

## Best of CoCoOz #4. BUSINESS.

HI ..... ALEX. HARTMANN  
 (Disk Directory manager)  
 BANKSTAT ..... BARRY HATTAM  
 (Statement annal & store)  
 INSURE ..... ROY VANDERSTEEN  
 (Analyse home contents)  
 SPOOL64K ..... WARREN WARNE  
 (Printer spooler req 64K)  
 2BC ..... WARREN WARNE  
 (Hold 2 sep progs in mem)  
 DATABASE ..... PAUL HUMPHREYS  
 (THE tape database)  
 RESTACC ..... DUNG LY  
 (Tape restaurant accounts)  
 PRSPDSHT ..... GRAHAM MORPHETT  
 (Disk print out SPDSHEET)  
 PERSMAN ..... PAUL HUMPHREYS  
 (Personal finance management)  
 CCS ..... GRAHAM MORPHETT  
 (Sales Invoicing-tape sys)  
 COCFILE ..... BRIAN DOUGAN  
 (Tape data base)  
 DPMS ..... PAUL HUMPHREYS  
 (Disk Program Management Sys)  
 40KGREY ..... RAY GAUVREAU  
 (40K Basic for grey 64K CoCo)  
 TAXATION ..... ?  
 (Calc tax payable)  
 SPDSHEET ..... GRAHAM MORPHETT  
 (Disk 22 column spreadsheet)  
 ACS3 ..... GREG WILSON  
 (Multi disk data base)

## Best of CoCoOz #5. ADVENTURES.

ADV 32K ..... S. RAYNER  
 QUEST ..... TONY PARFITT  
 LABYRINT ..... JAMES REDMOND  
 ADV ..... SEAN LOWE  
 CRYSTAL ..... C & K SPRINGETT  
 PRISON ..... TIM ALTON  
 OPALTON ..... IAN CLARKE  
 WIZARD ..... DARRELL BERRY  
 TREASURE ..... C. DAVISON  
 LOST ..... ALEX. HARTMANN

## Best of CoCoOz #6. PRESCHOOL.

ALPHABET ..... STUART DAWSON  
 HATDANCE ..... JOHANNA VAGG  
 AUSTSONG ..... McDERMOTT FAMILY  
 ADVANCE ..... McDERMOTT FAMILY  
 WALTZING ..... McDERMOTT FAMILY  
 TIMEKANG ..... McDERMOTT FAMILY  
 BAND ..... McDERMOTT FAMILY  
 KIDSTUFF ..... JOHANNA VAGG  
 MATCHER ..... ?  
 LETTERS ..... JACK FINNEN  
 BABYSIT ..... JOHANNA VAGG  
 SPELLING ..... JOHANNA VAGG  
 SPEEDTAB ..... DEAN HODGSON  
 10 FACES ..... JOHANNA VAGG

## Best of CoCoOz #7. GRAFIX.

LIL'COCO ..... ANDREW WHITE  
 THE ROOM ..... H. FREDRIKSON  
 BACK ST ..... JOY WALLACE  
 LOCO ..... MIKE D'ESTERRE  
 COCO ART ..... SANDY MCGREGOR  
 KANGA ..... JOHANNA VAGG  
 THE BOAT ..... SANDY MCGREGOR  
 SAD COCO ..... F. BOLLE  
 TOWER ..... C.A. SYMS  
 WINDYDAY ..... SARAH LAW  
 SAILING ..... STEVE YOUNGBERRY  
 OUTHOUSE ..... STEVE YOUNGBERRY  
 SMURF ..... JOHANNA VAGG  
 SUNSTATE ..... STEVE YOUNGBERRY  
 HELICOPT ..... ANDREW WHITE  
 MARTHA ..... ANDREW WHITE  
 BAD MOON ..... STEVE YOUNGBERRY  
 MCC ..... J. WALLACE  
 EAGLE ..... ?  
 BLASTER ..... PAUL YOULD  
 FOGHORN ..... PAUL STEVENSON

## Best of CoCoOz #8. GAMES.

ALIEN ..... STUART SANDERS  
 QWERL ..... DARRELL BERRY  
 TANK ..... CRAIG STEWART  
 SHOOTOUT ..... CRAIG STEWART  
 SHUTTLE ..... CRAIG STEWART  
 FROG ..... DARREN OTTERY  
 FROGRACE ..... TOM LEHANE  
 KIMMAT ..... TOM LEHANE  
 GRANDPRI ..... DOUG GREY  
 WATERWAR ..... JUSTIN LIPTON  
 CATERPIL ..... JUSTIN LIPTON  
 DETECT ..... VAL STEPHEN  
 BREAKOUT ..... WHY/BILT

## Best of CoCoOz #9. 32K GAMES.

TRIOMINO ..... BOB DELBOURGO  
 TALKHANG ..... ?  
 MATCHEM ..... C. BARTLETT  
 GO ..... BOB DELBOURGO  
 NARZOD ..... MAX BETTRIDGE  
 CHOMPER ..... MAX BETTRIDGE  
 POPBALL ..... MAX BETTRIDGE  
 LUDO ..... WHY/BILT  
 SABRE ..... ANDREW SIMPSON  
 MOVEABOUT ..... KEVIN GOWAN  
 JIGSAW ..... C. BARTLETT  
 ROCKFALL ..... T.J. DAVIES

## Best of CoCoOz #10. EDUCATION2.

METEOR ..... DEAN HODGSON  
 DRIVTEST ..... ANDREW SIMPSON  
 SALE ..... JUSTIN LIPTON  
 TABLES ..... PAT KERMODE  
 OPALTON ..... IAN G. CLARKE  
 CAPITAL LETTERS ..... BOB HORNE  
 TEST MATCH ..... JEFF SHEEN  
 SENT END ..... BOB HORNE  
 ESCAPE ..... DEAN HODGSON  
 RAILMATH ..... BOB HORNE  
 COUNTDOWN ..... DEAN HODGSON  
 WHATZIT ..... BOB HORNE  
 HOMOPHONE ..... BOB HORNE  
 COMPWORDS ..... BOB HORNE

**TAPE \$10 each**

**DISK \$16 each**



# GOLDSOFT

P.O. BOX 1742, SOUTHPORT. QLD. 4215 Phone (075) 510 015

## ORDER FORM

AUSTRALIAN RAINBOW	12 mnths	\$ 45.00	.....
	6 mnths	\$ 27.95	.....
	1 mnth	\$ 4.95	.....
AUSTRALIAN CoCo	12 mnths	\$ 35.00	.....
	6 mnths	\$ 21.35	.....
	1 mnth	\$ 3.75	.....
CoCoOZ on tape	12 mnths	\$ 75.00	.....
	6 mnths	\$ 42.00	.....
	1 mnth	\$ 10.00	.....
CoCoOZ on Disk	12 mnths	\$118.26	.....
	6 mnths	\$ 59.50	.....
	1 mnth	\$ 10.95	.....
MiCoOZ on Tape	12 mnths	\$ 75.00	.....
	6 mnths	\$ 42.00	.....
	1 mnth	\$ 10.00	.....
RAINBOW ON TAPE (AUST/US)	12 mnths	\$144.00	.....
	6 mnths	\$ 81.00	.....
	1 mnths	\$ 15.00	.....
RAINBOW ON DISK (AUST/US)	12 mnths	\$172.00	.....
	6 mnths	\$ 86.00	.....
	1 mnths	\$ 15.50	.....

Or charge my credit card monthly  
TAPE/DISK ONLY

CoCoOZ on Tape	.....	\$ 10.00	.....
CoCoOZ on Disk	.....	\$ 10.95	.....
MiCoOZ on Tape	.....	\$ 10.00	.....
Rainbow on Tape (AUST/U.S)	.....	\$ 15.00	.....
Rainbow on Disk (AUST/U.S)	.....	\$ 15.50	.....

**Additional Requirements:**

Sub No: 

--	--	--	--	--	--	--	--	--	--

 or  New Subscription

Name: 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Address: 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

 P.C.

Phone No.: 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please find enclosed:-

CHQ / MONEY ORDER / NO CASH

Please charge my:-

MASTERCARD / BANKCARD / VISA

Authorised amount \$ .....

Signed : .....

## *Goldsoft Gift Certificate*

**NOW AVAILABLE !**

***For Christmas, Birthdays etc***

**Give a subscription to:-**

Australian Rainbow Magazine

Australian CoCo Magazine

CoCoOz on tape or disk

Australian Rainbow on tape or disk

or The Best of CoCoOz series on tape or disk.

**— IN FACT anything we sell !! —**

**SO ORDER NOW**



## MARTHA's Trading Post

FOR SALE

Dataphone II 300 Baud Modem. Has full duplex attached PB phone with holder. Comes complete with lead suitable for connection to CoCo's RS232 port. \$140.00 ONO.

Michael Horn. Contact Goldsoft, 075 51 0015.

Rainbow Bits 300 Baud modem. Comes with its own phone and attaches to your CoCo through the ROM port. Also has inbuilt terminal package. \$170.00 ONO

Andrew B. Simpson. 074 62 3228 (Weekdays)  
074 27 1430 (Weekends).

Rainbow Bits 300 Baud modem. Complete with own phone and terminal package. \$130.00 ONO.

Contact Goldsoft, 075 51 0015.

One Rainbow Bits 4 slot expansion pack, Mark II model. With original instructions & more recent instructions for modifying the unit addresses. \$50 ONO.

S. Tatham 15 High St., Bombala 2632 0648 83544

64K ECB White Case CoCo 2B Complete with 2 joysticks, all cables, books, manuals, about 200 programs from Australian Rainbow and Australian CoCo all in perfect condition. \$375 ONO

Victor Ross 03 561 4475

For Sale: Colour Computer 2 64K ECB, Colour Computer Drive & Controller, DMP 110 Printer, plus Deskmate, Scriptsit, Color Dictionary, Dynacalc, 7 Games, Business Utilities, Full disk of 64K Games. \$1100

Stephen Fildes 075 38 7050

64K ECB White Short Case CoCo 2 \$200  
Jack Fricker 07 262 8869

C30 Audio Telex Mastering Tapes.  
Slightly used 80c ea or \$5 for box of 10  
Workshop manual for DMP 110 \$5  
Super Screen Machine, Tape version \$30  
John Poxon 07 208 7820

5 Cartridges & 2 tape games, includes Time Bandit, King tut, Project Nebula, Canyon Climber, Microbes, Roman Checker & Stellar Lifeline. Will sell for \$25 ea or \$150 the lot.

Victor Koss 8 Viewmount Rd Vic. 3150 03 561 4475

Video digitiser. Micron eye, for CoCo. GC, \$250  
Carl Cranstone V838451030

Tandy 16K CoCo inc cassette, joysticks, & a heap of other gear. One of the good grey case models, ideal for hacking or control work.

Denise Veerber V

Wanted: Any software for the Model 1  
Glen McBride V063003170

# DIRectory

Insertions in this Directory cost \$160.00 for six months or \$300.00 for twelve months per frame. Changes to Insertions incur a further charge.

If you sell Soft or Hardware for Tandy computers, you need to be listed in this quick reference guide.

Remember! Tandy owners READ this magazine!

## N.S.W. Gunnedah

Eather's Sports & Electronics  
166 Conadilly St.,  
Gunnedah N.S.W. 2380  
(Tandy Dealer 9223)

**Agricultural  
Computing Specialists**  
For Friendly Service to  
the man on the land, or  
for fast accurate help to  
the town dwellers

**067-42-2230**

## N.S.W.

### Leeton

Leeton Record Centre  
121 Pine Avenue,  
(P.O. Box 758)  
Leeton, N.S.W. 2705

**The Mid-State Tandy  
Dealer for Expert  
Computer and  
Software Attention**  
Mail Orders Accepted  
Bankcard Welcome

**069-53-2081**

## N.S.W. Lismore

Decro Electronic Services  
12 Carrington St.,  
Lismore, N.S.W. 2480  
(Tandy Dealer 9225)

**Best range of Computers  
and Computing Equipment  
in Summerland.**  
Whether you live on the  
North Coast, or are just on  
holidays, you can't afford  
not to call and see us!

**066-21-4137**

This  
Space  
for  
Sale!!

Wanted: CoCo Disk Drive will pay to \$350 ONO  
Wilson Hines V625890240

TRS-80 Videotex Terminal Software for Model 1, 3 & 4. Prints frames to disk or printer. Including Manual for \$75.  
L Groeneveld V332929160

TRS-80 Model 1 includes 2 DSDD 80 track drives, 5Mb Hard drive, clock speed up, real time clock with battery back up, DD controller with operating system. Scriptsit, Viatel, Visicalc, Profile, Mailing list, inventory control & more. \$1400  
L Groeneveld V332929160

Wanted: CoCo Vertical Drive (#1) Make me an offer!  
Alex Hartmann C/o Goldsoft 075 51 0577

**N.S.W. Narrabri**

North West Electronics  
75 Maitland St.,  
Narrabri N.S.W. 2390

**Computer Specialists**

★ *Farm Management Systems*

★ *Business Systems*

★ *Home & School Systems*

**Advice & Aftersales Services**

**Training & Installation**

**067-92-3274**

**N.S.W.****Richmond**

Ed's Electronics  
Paull's Plaza,  
14 Bosworth St.,  
Richmond, N.S.W. 2753

**Full Range of Tandy Computers and Accessories**

**Also Agents for Epson & Dick Smith**

**Try us for our Mail & Phone Order Service**

**045-78-4101**

**N.S.W. Blaxland**

Blaxland Computer Service  
76A Murphy St.,  
Blaxland, N.S.W. 2774  
(Tandy Dealer 9254)

- **GREAT PRICES**
- **GREAT SERVICE**
- **GREAT RANGE**
- **GREAT ACCESSORIES**

**047-39-3903**

**N.S.W.****Central Coast**

Computer Wizardry  
P.O. Box 979,  
Gosford N.S.W. 2250

- ★ *Educational Software*
- ★ *Communicating Software Hardware*
- ★ *Agents for Computer Hut*
- ★ *Agents for Speech Systems*
- ★ *Prompt, Courteous Service*
- ★ *Phone or Write for Catalogue*

Bankcard & Visa Card Welcome

**043-24-7293**

**Victoria****Blackburn**

D & L Wilson & Co Pty. Ltd.  
6 Stafford St.,  
Blackburn, Vic. 3130

Serving Melbourne's East  
Software — Hundreds of titles

Hardware — Drives, Printers

Service — Upgrades

**03-898-4521**

**Victoria****Rosebud**

Bayne & Trembath  
3 Boneo Rd.,  
Rosebud, Vic. 3940  
(Tandy Dealer 9320)

- ★ *Best Prices*
- ★ *Free Delivery*

**059-86-8288**

**South Australia****Adelaide**

Robble Dalzell  
R.D.L. Software  
31 Nedland St.,  
Pt. Noarlunga 5167.

**Do You Need Software?**

**Come & See Us!**

We've Got

- ★ Lottery Analysis
- ★ CoCo Trivia
- ★ Australian Geography
- ★ Genealogy (Family Tree)

Also we are Dealers for  
Computer Hut  
Give us a call

**08-386-1647**

**Tasmania****Hobart**

The Delbourgos  
15 Willowdene Ave.,  
Sandy Bay  
Hobart, Tas. 7005

- ★ *Expanded Basic — a better Basic for your CoCo*
- ★ *The Proportioner — a utility to provide equal gaps between proportional letters on Tandy's DMP200 printer*
- ★ *Mathematical function database*

**002-25-3896**

**Queensland****Blackwater**

Blackwater Games  
Blackwater Town Centre  
Blain St.,  
Blackwater Qld. 4717

**Come & See Bev & Annie for all your computer requirements**

**079-82-6931**

**Queensland****Brisbane**

Queensland Colour  
Software Supplies  
P.O. Box 306  
Clayfield, Qld. 4011

- ☆ *64k & 128K upgrades*
- ☆ *80 column cards*
- ☆ *Y cables*
- ☆ *Games*
- ☆ *Terminal programs*

**07 - 262 - 8869**

A/H

**Queensland****Burpengary**

St. Marys Software  
11 Gleeson Rd.,  
Burpengary, Qld 4505

**Ring Us For all your Software & Hardware needs. (Please ask for a Free Catalogue).**

**Try us for prices on disk drives, etc.**

**We'll even arrange for things that are hard to get!**

**Our Mail Order Service is the best there is.**  
Sydney: 02-625-7742  
Brisbane: 07-204-2806

**07-204-2806**

**Queensland****Cannonvale**

Coastal Computer Services  
9 Woomerah Avenue,  
Cannonvale, Qld 4802

**Ask about our New Stock Control System designed for the Tandy 1000**  
**Comprehensive & Easy To Use**  
**\$399.95**

**079-46-6249**

**Queensland****Strathpine**

Custom Electronics  
28 Sterling St.,  
Strathpine Qld. 4500

★ *I.B.M. Compatibles*  
★ *P.C.X.T. & Peripherals (cards)*

★ *Disk Drives — Double & Single sided*

★ *Monitors*  
★ *Extensive Range of Software for your Colour or I.B.M. Compatible*

★ *Full Range of American Speech Systems Products e.g. Ears, Supervoice etc.*

PLUS Much Much More So Phone or Write For our Free Catalogue

**07-205-4941**

**Queensland****Sunshine Coast**

- ★ Caloundra 071-91-4270
- ★ Maroochydore 071-43-1611
- ★ Nambour 071-41-3011

*Tandy Computers Hardware & Software Best Prices & Quick Delivery*

**071-91-4270**

**071-43-1611**

**071-41-3011**

**Queensland****Townsville**

North Queensland  
Colour Software  
9 Durham Crt.,  
Kirwan, Qld. 4814

**Software & hardware for your Tandy Colour Computer & Tandy 1000**

**077-73-2064**

**Queensland****Warwick**

Audvislon  
P.O. Box 323,  
Warwick Village Shopping Centre  
Warwick Qld 4370  
(Tandy Dealer 9401)

**Australian Rainbow & Aust. CoCo Stockists Full Range of Tandy Accessories & Software Computer Stockists**  
**Mail orders a Specialty**  
**Bankcard, Mastercard & Visa card Welcome**

**076-61-3131**

# GOLDDIINK

a Goldsoft Service

ON



\*642 #

AUSTRALIAN RAINBOW MAGAZINE

Registered by Australia Post -

Publication No. QBG 4009

AUSTRALIAN CoCo / softgold

Publication No. QBG 4007

P.O. BOX 1742

SOUTHPORT. QLD. Australia. 4215.

POSTAGE  
PAID  
AUSTRALIA