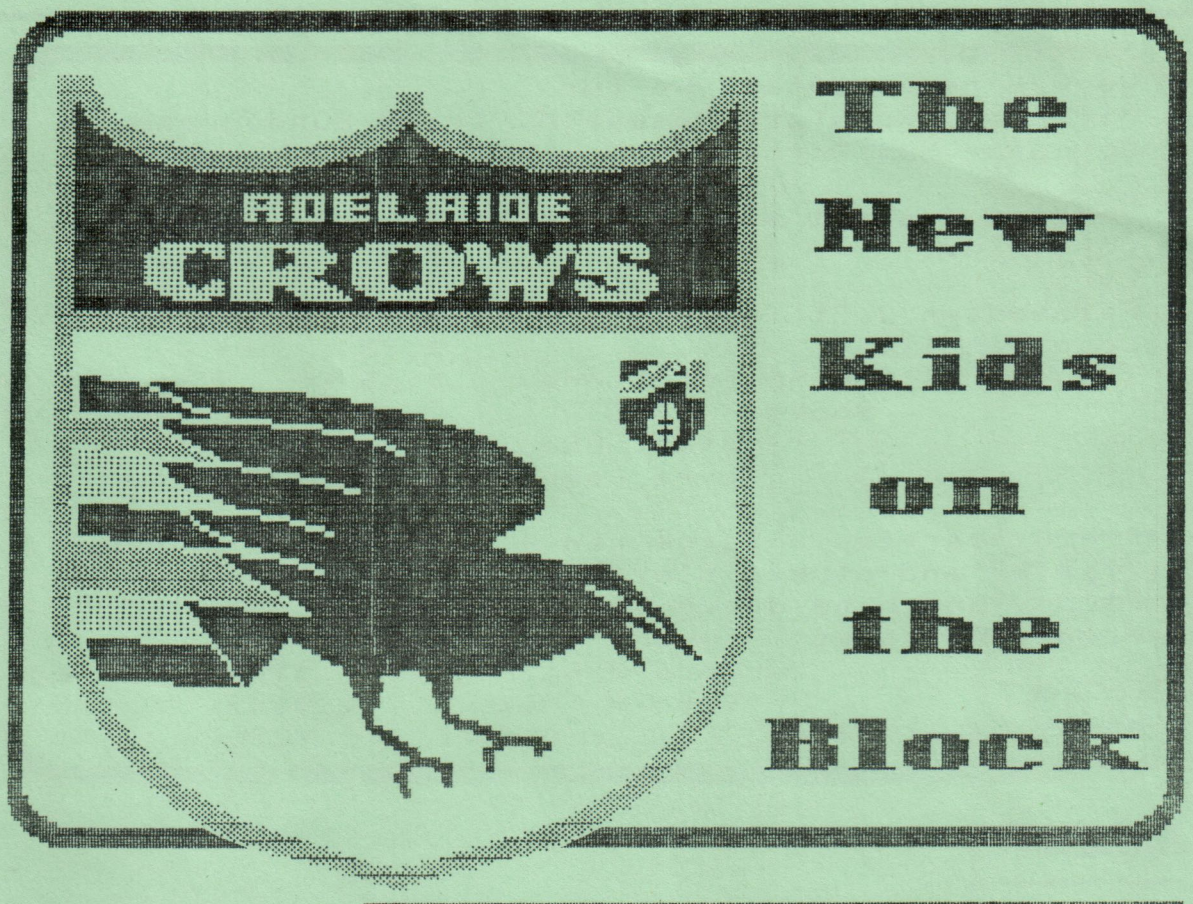
June/July 1991 Vol 4. No.3

COCO LINK

The Color Computer Magazine



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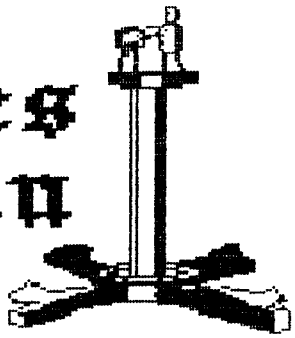
Robbies Column



SOS (Software Ordering service)
This month's magazine introduces our new software ordering Service (SOS). So named to try and save our subscribers the trouble of ordering US Software themselves. It is hoped that by offering this service we will be able to maintain the interest of those who only wish to use the Coco rather than programme it.
The service is outlined on page and we hope that it will be used. The continuation of the service will depend entirely on this factor.
We will attempt to offer programmes not readily available in Australia but at times we will be detailing programmes which may be available here. It is up to you to check just in case you can get a better price.
I have been asked to include Coco 2 programmes and also programmes for cassette users. This I will do whenever possible but it must be recognised that most new software in the USA is being produced for Coco 3. Most of the software available on cassette is already available from APD (See advert in this magazine).

****

UNFINISHED SERIES
I have had enquiries about series of articles which have been started but not followed through. I know it can be disconcerting for someone who has an interest in a subject to have it cut off midterm. It is no less disconcerting for the editor of a magazine trying for continuity.
It is not always possible to wait till all parts of a series are written before publication, but where this is possible we will try to conform to this in future.

****

ANOTHER SOS
Again I have to call on all you Cocoists out there to get behind this magazine by sending us your articles, programmes, hints, tips, suggestions or any thing else which may be of interest to the rest of our readers.
As stated many times before, the bulk of this magazine is provided by a mere handful of contributers. We desperately need more of you to contribute so as to give that extra variety that all magazines need to stay in print.
Make it a resolution to send us some of your work in the next two months.

****

NOW FOR THE BAD NEWS
Due to the increase in postal charges and the cost of just about everything else to do with the magazine we find the need to increase our subscription rate and the cost of our back issues (which have been sold at a virtual loss).
These increased charges will be:

Annual Subscription	$16.00 per annum
Back Issues	$3.00 each

The joining fee will remain the same at $8.00

These new charges will take effect from 1st August 1991. Anyone renewing their subscription before that date will get it at the old price of $14.00 per annum.

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BACK ISSUES
We now have no more back copies of Vol 2. These will no longer be printed. All of Vol 3 and up to the present issue are still available.
Before 1st August 1991 these can be purchased for $2.50 each or $14.00 set of six. This includes postage.

****

YOUR COMPUTER AND POWER
A computer is more vulnerable to damage when it is first switched on. However in most cases that risk is small. Sudden changes in current can damage a machine or damage data being transferred between disk and computer or between other devices. If you have a surge suppressor and your Coco is placed where there is reasonable ventilation there is no reason why your computer can not remain switched on all day. It is advisable to switch it off on days of electric storms.
The switching on and off of your computer frequently could possibly lead to problems.

The problem of your drives wearing out mechanically should not be a great worry to the average home user. Most of these devices are counted on having at least a 5 year life. (This is calculated at usage of about 3 to 5 hours per day, 5 days per week). The same goes for your keyboard.
If you leave your Coco switched on but do not intend to use it for a considerable time, it is advisable to switch of your monitor/TV as constant use fades the picture eventually and also the continual use of a particular screen can cause picture burn in the tube. (This means that the picture left on for very long periods will burn it's image on to the tube.

Another little hint regarding your computer and power is NOT to drink beverages over it. Computers, like other electical devices, do not take kindly to having tea or coffee spilt on them.

****

LATEST IN MEMORY TECHNOLOGY

Can you imagine slipping a couple of cards similar to your plastic credit card into a slot in your computer and thus give yourself memory equivalent to a hard disk. Memory that works faster and easier.

Although we will never see the likes of this for the Coco, it is already a fact although the highest capacity card at the moment is ONLY 4Meg. These "Flash Memory" cards, as they are known, are set to take the market by storm.

All that holds them back at the moment is the excessive cost. But, believe me, it won't take them long to alter that state of affairs.

****

LETTERS

A comment was made to me recently about some wrong information being supplied to subscribers via the letters pages in COCO-LINK.

Where information is sent to us as an article or programme, we try to ensure that the information therein is correct. The letter pages, on the other hand, are a forum for readers to expound their views and pass on any useful information. We do not verify or check that the information contained in a letter is correct (as long as it is not libelous).That is where the readers forum comes in to it.

We do not want to put people off from writing because they feel that their letters are being scrutinised for errors. We do edit letters on length considerations or where we feel the subject matter is not appropriate..

****

TAX TIME AGAIN

"Why haven't we published a programme to help people fill in their income tax forms?" That question was put to me recently. My reply was that as the government has seen fit to change the taxation system and the allowances just about every year for the last eight at least, it would seem to be a waste of time writing such a programme.

Just think, maybe a fortune could be made by writing this one programme and then charging for upgrades every year. There is probably someone out there who has writen such a programme. If so, send it in for us to have a look at.

****

Keep Hacking
Robbie

PUBLIC DOMAIN SOFTWARE

PD DISK No. 032 WINNERS APPLICATION

Winners is a racehorse handicapping system for serious punters. Winners can be used on a Coco 2 or 3. It requires two disk drives or a double sided drive which can be accessed as two separate drives.

The disk carries a test file of approximately 500 horses. This will allow you to try out the various features of the programme. This file will not win you any money as it is years out of date and is for trial purposes only.

A full explanation of the programme is contained on disk in the three articles which appeared in the pages of COCO-LINK. The PRINTDOC utility has been added to the file so as those who do not have a word processor can read the file.

The programme is contained on a single flippy disk. This will necessitate that you copy the data file over on to your personal disks in the format you prefer.

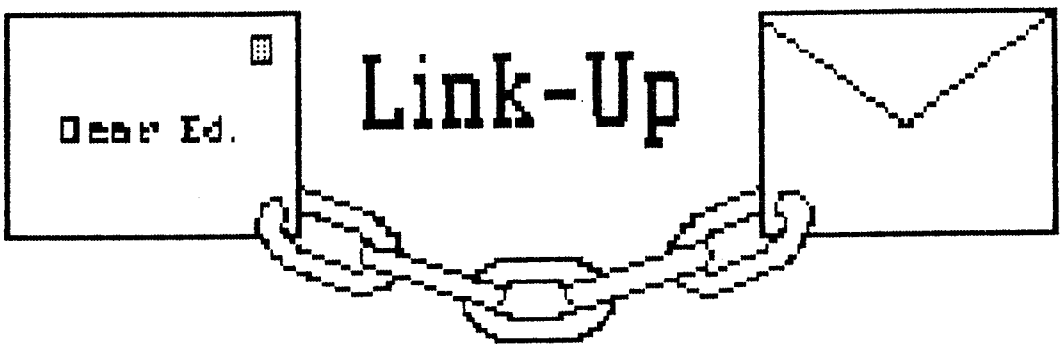
PD DISK No.042 COCO MAX III GRAPHICS

This flippy disk contains two sides full of COCOMAX III graphics. Some of these pictures have appeared in the pages of COCO-LINK magazine but not in glorious technicolor as on this disk.

Other pictures have been gathered from various sources to give a good selection of picture subjects.

NOTE: For those who do not have COCOMAX III this disk contains a programme called LOADER which gives you the ability to view the pictures.

COCO LINK



Dear Ed,
In my letter in the December issue, I suggested that you could substitute RND(0) for RND(-TIMER) in programs; but I take that back.
I tried RND(0) instead of RND(-TIMER) in my program for picking Lotto numbers, and discovered that RND(0) produced precisely the same Lotto card each time. Try RND(0) in the RND3 listing, and the first six numbers it will pick will be 7, 14, 15, 20, 22 and 29.
My apologies to anyone who was misled by this, but anyway, I learned something and I hope other readers did.
Keiren Kenny. Cremorne. NSW.

Thank you for this correction.
Ed.

****

Dear Ed,
A mutual friend Mr Tom Lehane, has shown me one of your issues of COCO-LINK, and I understand you wish contact numbers for the Penrith & Springwood CoCo groups.
I am one of the founders of the present Penrith CoCo group, which is called Riverlands Colour Computer Club, Tom is a member in good standing in our group. We meet the first Wednesday of each month, February through to November. Our December meet is held on a Saturday or Sunday, and is a BBQ?computer meeting which includes the whole family, and goes all day. There are no membership fees, meeting fees or requirements for attendance.
At our meetings, we teach OS9 programming, BASIC programming, assist beginners in learning how to use their machines, do repairs and/or modifications to hardware, new program tutorials, and generally meet to help each other.
We have a hard-core of 10-15 members, with others who come as needed, bringing our total membership to around 30. Our contact point is P.O. Box 1296, Penrith. 2751 or 047 21 3945.
We also act as clearing points for members and non-members wishing to buy or sell hardware/programs.
The Springwood group generally meet every Wednesday, but combine with us on our meeting nights. Their contact number is 047 53 6018 contact name is Peter Richardson. Their group operates basically the same as ours.
I hope this has helped you in reaching the CoCo community more fully since Tandy sold us down the river. We must fend and fight for ourselves and our fine computer, that has much more potential than was ever realized. Good luck on your magazine; several of our members purchase the magazine. It may yet reach our Club library on a regular basis.
Debbie Collier. Penrith Colour Computer Club.

Thank you for this information. The named clubs and contacts have been added to our growing clubs list.
As stated in my editorial column, we depend on our subscribers to keep the magazine going so as to continue to give help to the many Coco users out there who have no clubs near them.
Coco users are not a renewable resource since Tandy discontinued selling the machine. This means that our subscriber base will slowly diminish to the point where it is no longer feasible to continue publication, therefore, it is imperative that those who wish to read our magazine subscribe to it. It also means that by passing the magazine round to half a dozen or so friends you are depriving us potential subscribers.
It is noticeable that none of the persons named in the above letter are subscribers to COCO-LINK
Ed.

****

Dear Ed,
A little hint for anyone who may have a very early version of 'Dragon Slayer', a Tom Mix game. I originally purchased it when I had a CoCo2, but since going to a CoCo3 I found it would not work. The only way I could get it running was to LOAD ADOS3, then to disable, then to disable, then LOADM the game. It now works fine.
Gary Howarth. Ingleburn.

****

Dear Ed,
Could you tell me the best DOS for the COCO3 and its price; or is it better to have a switchable DOS from TRS

to the applicable DOS.
S. Quinn. Orange. NSW.

I think everyone has his own preference (usually the one first purchased). I personally use RSDOS as it makes me more compatible with the readers of this magazine. Outside of this, ADOS seems to be the most popular.
Having your DOS switchable between RS and another is very handy as it can give you the best of both worlds while, at the same time, keep you compatible with most other users.
Ed.

****

Dear Ed,
Just a short note to let you know I am extremely interested in your SOS software ordering system. And everyone I have spoken to is interested also
I am interested in any area of software you can offer - Graphics, games, music, utilities, designers such as "First Prize" or "Maxwear".
I am also wondering whether you will consider a similar system for ordering hardware. Lastly, I have just finished my first issue of COCO-LINK and enjoyed it very much. Keep it up!
Bob Barker. Liverpool NSW

We have not looked into an SOS for hardware (shouldn't that be HOS?). I think we will wait to see the response to SOS as it stands.
From past experience I do not think it will be feasible as, to the best of my knowledge, hardware attracts import exise as well as sales tax. Still, we will wait and see.
Ed.

****

Dear Ed,
Your magazine has progressed quite a lot over the last 12 months. Keep at it, you're doing a good job.
In the last edition (April 1991) I mucked up some information I gave you.
In my letter I explained about the 200K above the HSCREEN PAGE. Well, the problem stems from my initial letter.
I wrote, and I quote,"the 2nd is to RUN any CocoIII game except "Those Darn Marbles" as it uses 200K above the HSCREEN2 page". It should have read, "to view the high score page type in POKE&HFF80,X. Change value X to find the high scores in "Those Darn Marbles", or just set up a little loop to do it for you.
I also like the idea of your SOS software ordering service. I personally prefer Coco III programmes. Some programmes which take my interest would definitely be MLBASIC2.0, Sinistaar, Chrystal City and To be Ninja.

I also found out why the Masterkey II does not work on the Coco 3. It tried to enable 64K mode and also looked into a register which is addressed straight to the GIME so it hangs up. I know of no cure for this at the present time.
Desmond Rae. Mt.Isa NSW

Thank you for your corrections and the information for MASTERKEY II users.
Our readers seem to like the idea of SOS. We look forward to seeing the response to our first try out in this magazine.
Ed.

****

HOW TO SUBMIT MATERIAL TO COCO-LINK
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PROGRAMMES: On tape or disk.
At least two copies should be on the tape/disk one of which should be saved in ASCII format.
Where possible include a description of your prodgramme saved as below for articles.

ML PROGRAMMES:
These require Source code saved on a suitable word processor. Two copies should be made.
A working copy of the programme should be included for checking by COCO-LINK.

ARTICLES:
At least one copy saved in ASCII format plus one copy on a commercial word processor where possible. (VIP Writer etc.)

HINTS AND TIPS:
Hand written or typed is acceptable.

LETTERS TO THE EDITOR:
Hand written letters will be accepted subject to the length. Long letters should be submitted on disk in the manner above for articles.

All disks and cassettes will be returned in due course.

Right Justification and NLQ for 'Running Writing'

By George McLintock

This article describes how Right Justification and Near Letter Quality printing can be added to your "Running Writing" programme.

RIGHT JUSTIFICATION

In the RUNNING WRITING programme which appeared in the December 1990 issue of COCO-LINK the early entry at line 360 allows an option to 'right justify' the text if you want to. Right justification involves lining up both the right and left margins. It is done in this magazine to produce an even edge to columns etc. The normal way of doing this is to vary the width of the spaces between the words so that the text 'fills' the line. More sophicated procedures can also add dot spaces to individual letters so that each one occupies a bit more space. Either procedure can be used here, but the first one is the easier to program.

As noted, the script in the 'Running Writing' programme is variable width, and the blank normally has a space of 8 dots. (Defined in K$(1)). The concept for right justification requires a variable width blank with a second blank also defined (assume it to be in K$(99). You calculate the number of blanks in the line, and the number of extra dot spaces required to exactly fill the line. You then calculate the width required for each blank so as to exactly fill the line. This value will normally not be an exact integer which is why you need two different blanks, with the second blank one dot wider than the first. You then change the blanks in the line so that the total line will now exactly fill the line.

As an example, if a line has 9 spaces in it, and would normally finish 22 dots from the right margin, then to fill up the line you would require 4 blanks to be 11 dots wide and 5 blanks to be 10 dots wide. To do this, you would change the first 4 blanks in the line to be character # 99 instead of character # 1. You would then change the definition of character #1 to be a blank 10 dots wide and of character # 99 to be a blank 11 dots wide. This can be done in the program itself with a command like K$(1) = CHR$(3) + CHR$(10) + STRING$(30,0). Then when the line is printed with these new definitions, it would exactly fill the line.

If included, the code for this option would logically be between line 360 and 380. The actual print line routine is entered at 360 when there is a full line of text to print. It is entered at line 380 when there is only a partial line to print. ie for the last line in a paragraph

NLQ TYPE GRAPHICS

Most newer printers have what is called a NLQ (near letter quality) mode for printing text, and a similar procedure can be applied for graphics printing as well. For 9 pin printers, NLQ text mode requires two passes of the print head for each row of text. The first pass prints some of the dots which form each character, and the second pass prints the rest. In between these two passes there is a small adjustment to the paper and print head positioning so that the dots for the second pass 'fill in' gaps left in the first pass. The effect of this is to produce a much higher effective dot density then

would otherwise be possible.

In graphics mode, at 1:1 aspect ratio, individual dots are printed so that the dot centres are 1/72 of an inch apart. The actual diameter of each dot is less than 1/72 of an inch so there will be a certain amount of white (or paper color) still showing on the paper. The general concept for NLQ printing is that the dot centres for the second pass of the print head are offset by half a dot width in both directions so that they print in the centre of the white spaces left by the first pass of the print head

The procedure used to produce each graphics row for printing makes it fairly easy to do this sort of thing. At a simple level, the complete row of dots for a line of print is held in strings. It is printed once for the first pass, the print head is moved half a dot width, and the same row of dots is printed again.

A minor problem with the Star and some other printers is that they don't provide a command to offset dots by 1/144 of an inch (half a dot width), but they will allow offsets of less than 1/72 of an inch, so the general effect is much the same. Most Epson type NLQ printers will allow a vertical line feed of 1/216 of an inch and a horizontal offset of 1/120 of an inch, so these are the offsets used here. If you have a DMP-132 or some others that allow movements of 1/144 of an inch in both directions then you can change the control codes to suit.

The vertical offset for the second pass is obtained with a line feed (LF) command. LF commands come in various forms and most printers provide a range to choose from. Some perform an immediate LF of a specified distance, but don't change the normal LF setting (like the CHR$(27) + "J" + CHR$(n)), while others change the LF spacing that will be used for all subsequent LF commands, but the command itself does not move the paper. You can use either of these forms but the program logic for each type will be different. The program logic here is based on the second type and uses the command CHR$(27) + "3" + CHR$(n), where n specifies the LF distance as n/216 of an inch.

For NLQ printing we require two separate LF distances. After printing the first pass, we do a LF of 1/216 of an inch and then print the second pass. To move the paper to the correct starting position for the next row of graphics we now do a LF of 23/216 of an inch. A normal graphics LF is 8/72 of an inch, and the sum of 1/216 + 23/216 = 24/216 which is the same total distance.

The horizontal offset for the second pass is obtained from a normal graphics print command. These printers handle all graphics commands independently and the print head moves to perform each one in the sequence they are received. A CR command moves the print head back to the left margin, and the first pass of NLQ printing starts from there. For the second pass, we simply print a single graphics column of zero dots at 120 dots per inch before printing our normal graphics row again. This will move the print head 1/120 of an inch to the right, and it will start printing the normal graphics row from there. With the effect that all dots will move 1/120 of an inch to the right, relative to where they were printed on the first pass. If you use a larger horizontal offset, like 1/60 of an inch, you can produce an effect that is a bit like a wide nib in a fountain pen.

The extra code required in the script program to actually do this is a lot less then you might think from this description. To provide this option, you need to add the following lines to the SCRIPT (Running Writing) program.

```
 72 DIM LQ$(2): LQ$(0) = "": LQ$(1) = CHR$(27) + "3" +
CHR$(1)
 74 LQ$(2) = CHR$(27) + "3" + CHR$(23) + CHR$(27) + "L" +
CHR$(1) + CHR$(0) + CHR$(0)
 76 INPUT "NLQ Quality Mode (Y/N) ";A$
 78 IF A$="Y" OR A$="y" THEN LQ=1 ELSE LQ = 0
 464 PL$(0) = LQ$(LQ) + PL$(0) 'Add NLQ code
 484 IF LQ > 0 THEN IF LQ = 1 THEN LQ = 2: GOTO 460  ELSE
LQ = 1 'Repeat
 634 IF LQ > 0 THEN LPRINT LQ$(1) 'Adjust LF distance
```

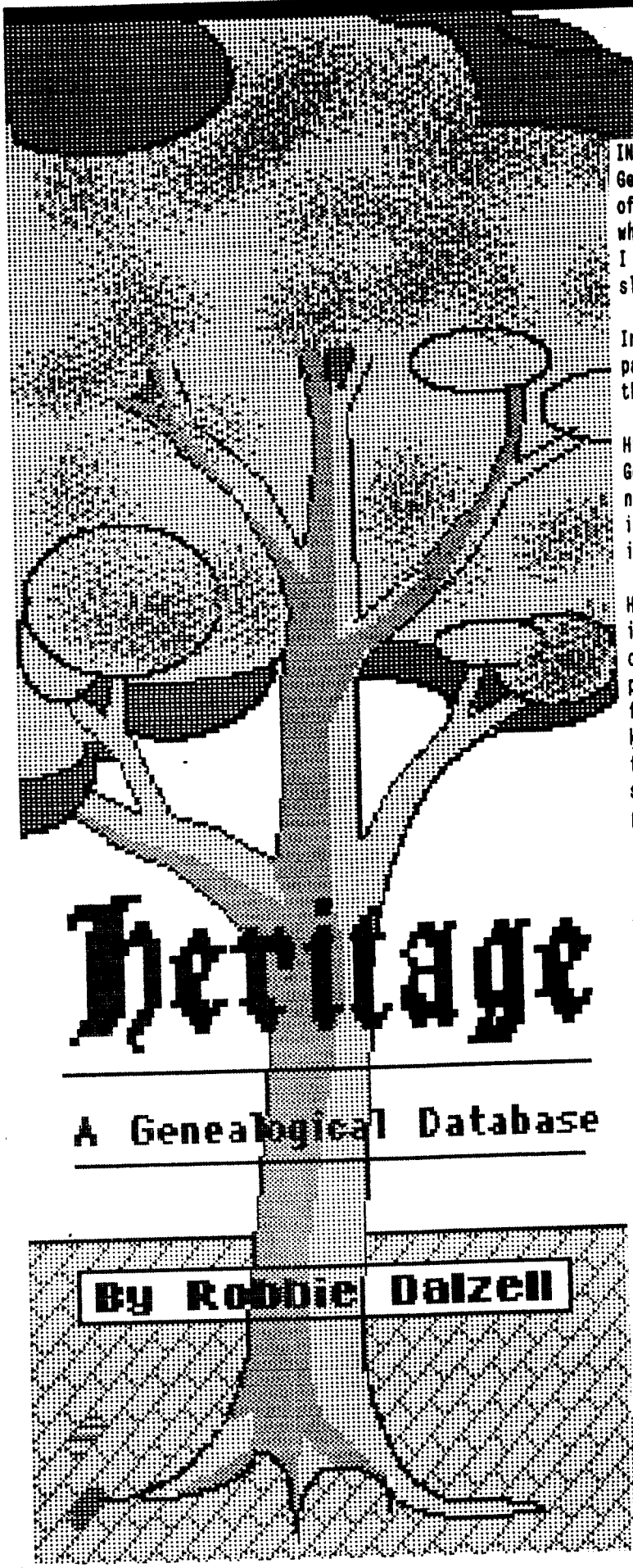
The value of the parameter LQ controls NLQ printing. If LQ = 0 then this extra code has no effect. For the first pass of NLQ printing LQ = 1 and the extra control codes in LQ$(1) is sent to the printer so that the next CR/LF will only advance the paper by 1/216 of an inch. For the second NLQ pass, LQ = 2 and the extra control code in LQ$(2) is sent to the printer. This changes the LF distance for the next CR/LF to 23/216 of an inch, and moves the print head 1/120 of an inch to the right before the graphics string is printed the second time

You probably would have noticed that the NLQ print produced so far is really only half way there. The script being printed is still a draft quality style being printed in a NLQ mode. If you want a full NLQ quality script then you should, in fact, design a script to suit so that the dots printed on the second pass can be different to the ones printed on the first pass

This is fairly simple to do, but requires some more work to design the script. If you do it, then the programming changes are fairly simple. You change the K$() array to be DIM K$(2,90), where K$(0,90) contain the draft script, K$(1,90) contains the dots for the first pass of the NLQ quality print, and K$(2,90) contain the dots for the second pass. Other changes are required to change all references to K$(x) to be K$(LQ,x). The only other change required is to make line 484 return to line # 390 for the second pass instead of to line number 460. This will automatically build the correct row of dots for each pass.

END

Coco 1,2&3 Disk/Tape — Application



INTRODUCTION

Genealogy is the popular study of ones roots. The pastime of trying to find out where ones ancestors originated and what they did for a living is truly fascinating.
I caught the bug many years ago and on and off have slowly extended my knowledge of my ancestors.

In my endeavours I managed to accumulate many pieces of paper with bits of information. This prompted me to write this programme to collate the main items of information.

HERITAGE is a dedicated Database programme for Genealogical information. It can print out the lists of names with the pertinent information. Facility has been incorporated to draw a family tree using the data stored in the programme.

HERITAGE uses a system I devised for sorting the personel into order and for drawing the chart. It is not compatible with any other system used by genealogy programmes. This could be looked on as a drawback but the fact is that the programme was written before I had any knowledge of systems used generally in the genealogy field. Anyone who feels the need to have a compatible system can change it to their hearts content. I personally have continued to use the programme as is as it does all that I require of it.

This Database has all the regular features associated with this type of programme. Data can be added, changed and deleted. The system is menu driven and requires no special skills.

THE PROGRAMME

This is a DATA BASE written for the express purpose of collating genealogical information. The information that can be stored on each individual, is as follows:-

1) Name
2) Date of birth
3) Place of birth
4) Occupation
5) Married to
6) Date of marriage
7) Date of death
8) Number of children
9) Code

The programme is user friendly being MENU driven

throughout. It allows the following options:-

1) ALTER FILE
2) PRINT LISTING
3) SORT FILE
4) PRINT CHART
5) REVIEW RECORDS
6) END

Option 1) ALTER DATA displays a sub menu.
This gives you the following options:-

1) ADD TO FILE
2) DELETE A RECORD
3) CHANGE A RECORD
4) RETURN TO MAIN MENU

The ADD DATA option directs you to the input mode for new data. This will ask you to input the following information in order.

1) Name
2) Date of birth
3) Place of birth
4) Occupation
5) Married to
6) Date of marriage
7) Date of death
8) Number of children
9) Code

Should you wish to leave any portion of the list blank; press ENTER.
To quit ADD DATA mode print "ZZZ" for name.

The CODE (No9) will be explained in later.

The CHANGE A RECORD option asks you which record you wish to change by name.
You will be prompted as to whether the record shown is the correct one. If not the programme will carry on a search until it either finds your record or informs you that the record is not on file.
On finding the correct record you will be asked which line you wish to alter.
After each alteration you will be asked whether this is correct, and whether you wish to make any other changes.

The DELETE A RECORD option is similar to the change option except that on confirmation of the correct record you will be prompted as to whether you wish to delete the record.

Option 2) of the MAIN MENU allows you to PRINT A LISTING of all records. A printed listing of all files is produced in double column and numbered by column (ie numbered vertically).

Part listings are in double column but are numbered across the page; (ie numbered horizontally).
(PLEASE READ SECTION ON PRINTER CODES).

Option 3) SORT FILE sorts the stored records by using the codes. (See section on codes).

Option 4) PRINT CHART will print a chart of up to eight (8) predecendants (ancestors). On entry of the name of the person who's chart you require, you will be shown details of that person and be prompted as to whether this is the correct person. On an affirmative answer the chart will be drawn, otherwise the programme will continue searching until the correct person is found, or indicates that the name required is not on file.

Option 5) REVIEW RECORDS. This allows you to review records on file on screen, starting at any record number you choose.

Option 6) END. finds a sub-menu with these choices:-

1) BACKUP
2) RETURN TO MENU
3) END

BACKUP will save your file to disk/tape.
END closes all files and returns you to Basic.

CODE SYSTEM.
It is possible to use any code system you wish, subject to certain conditions.
These are that, in the HERITAGE programme, the SORT and CHART functions are dependent on the code.

The code devised for use with HERITAGE is as follows:-

D/1/M/1

Name / Generation / Branch / Position.

The first code "D" is the initial of the family name eg DALZELL.
The second code "1" is the generation number; we have counted the generations from the present to make it easier to add generations as research progresses. eg normally the compiler would count him/her self as generation 1.
The third code "M" is one of two codes used in this position. "M" stands for Main Branch of tree, and "S" stands for Side Branch of tree. This code is important in searching direct lines for the chart option. e.g. the main head of the family and his spouse would be coded "M" brothers and sisters would be coded "S".
The fourth code "1" is the positional number alloted to each person. eg the head of the family and spouse should be numbered "1" and "2" respectively.
Should the male head of the family remarry, his second wife would be numbered "3".
Brothers and sisters would be numbered from "1" normally by age on the code.

Again, these codes need not be rigidly adhered to, but any deviation must take into account the needs of the sort and chart functions. Experimentation is suggested for those who wish to suit the codes to individual needs.

HOW TO USE THIS PROGRAMME.
HERITAGE a data base programme which saves the data in a

sequential file. It will save approximately 230-270 records in a 32/64K machine.

A backup copy of heritage should be made, and the master disk kept in a safe place.
It is preferable to keep files on a separate disk.

TO LOAD DISK: RUN"HERITAGE"

On start up the programme will ask "Is this a new file? (Y/N)". On a "Y" you will be informed of the total capacity available, and asked to enter the data. On entry of data the main menu will appear on screen.

In the case of a new file option 1) of the main menu would be chosen. This would give you the sub menu for UPDATING FILE.
Again option 1) would be chosen, putting you into the record input mode.

On answering "N" to the "new file" prompt you will be asked for the name of the file required. eg "FAMILY".
On entry the file will be loaded. Please be sure you have the correct DATA disk in readiness.
The date will be required, then you will be at the main menu. Should you not require the date press ENTER.

PRINTER.
The printer routines in your HERITAGE were written for a RADIO SHACK LP VIII; they may not be compatible with the codes of other printers.

Set out below is a list of the LPIII codes and the functions they perform.

HEX	DEC	CODE	FUNCTION
1B	27	ESC	SELECT CONDENSED CHARACTER
14	20	DC4	
1B	27	ESC	SELECT ORDINARY CHARACTER
13	19	DC3	
1B	27	ESC	SET FULL FORWARD LINE FEED
36	54	6	
1B	27	ESC	SET 3/4 FORWARD LINE FEED
38	56	8	

Should the above codes not comply with the codes in your printer handbook for like functions, the programme will have to be altered to suit.

The codes can be found on the following line numbers:-
Condensed Char 27;20 : 1260, 1450, 1460, 1470, 1480, 1630
Ordinary Char 27;19 : 1290, 1300, 1560 1605, 1680, 1700 1740
Full forward L/F 27;54 : 1560, 1610
3/4 forward L/F 27;56 : 1340

NOTE
Another feature included in the programme is the ability to SAVE or LOAD using disk or tape. This Lets tape users have access to the programme and is an extra bonus for disk users who also have a cassette recorder. It allows them to make tape backups of important records

```
0 ' ****************
1 ' **  HERITAGE  **
2 ' ****************
3 ' **      BY      **
4 ' *ROBBIE DALZELL*
5 ' ****************
6 ' **    V1:2      **
7 ' **   c 1985     **
8 ' ****************
10 GOTO100
40 GOSUB45
41 IFZW=1THENRETURN
42 CLS:PRINT@230,"PRINTER IS NOT
 READY":SOUND100,5
43 PRINT@451,"PRESS ANY KEY WHEN
 READY"
44 I$=INKEY$:IFI$=""THEN44ELSE40
45 IFPEEK(65314)/2=INT(PEEK(6531
4)/2)THENZW=1ELSEZW=0
46 RETURN
50 ZJ=0:ZK=0:ZL=0:ZN=1
51 GOSUB64:CLS:ZP=INT((32-LEN(ZT
$))/2)
52 PRINT:PRINTTAB(ZP)ZT$:PRINTTA
B(ZP)STRING$(LEN(ZT$),CHR$(128))
53 IF INSTR(ZD$,"/")=0THENRETURN
54 GOSUB64:ZK=ZK+1
55 IFLEN(ZT$)>ZL THENZL=LEN(ZT$)
56 ZT$(ZK)=ZT$:IFZQ<>0THENZL=LEN
(ZT$)
57 ZM=INT((27-ZL)/2):ZG$=STRING$
(ZM," ")
58 IFZK<>ZY THEN54
59 FORZX=1TO(10-ZK)/2:PRINT:NEXT
60 FORZX=1TOZK:PRINTZG$;ZX"- ";Z
T$(ZX):NEXT
61 PRINT@419,"";:INPUT"CHOOSE SE
LECTION NUMBER";ZI
62 IFZI<1 OR ZI>ZK THENSOUND100,
2:GOTO61
63 PRINT@143,STRING$(15," ");:RE
TURN
64 ZQ=INSTR(MID$(ZD$,ZN),"/")
65 IFZQ=0THENZT$=MID$(ZD$,ZN):GO
TO67
66 ZT$=MID$(ZD$,ZN,ZQ-1):ZN=ZN+Z
Q
67 RETURN
```

```
100 AV=80:M=MEM-700:T=INT(M/(AV*
10)):POKE1024,T:POKE1025,AV:CLEA
R(M-T*50):T=PEEK(1024)*10:AV=PEE
K(1025):CLS:Z=RND(-TIMER)
110 H$="HERITAGE":B$=STRING$(32,
32):S$=STRING$(30,"="):CH$="\"
120 DIM M$(T)
130 GOSUB 150:PRINT" IS THIS A N
EW FILE? (Y/N)":GOSUB160: IF I$="
Y" THEN320
140 GOSUB 250:GOTO320
150 CLS:PRINT@42,H$:PRINT@65,S$:
PRINT:RETURN
160 I$=INKEY$:SOUND200,1:SOUND18
0,1
170 I$=INKEY$:IF I$<>""THENRETUR
N ELSE170
180 RETURN
190 FOR L=1 TO 1200:NEXT L:RETUR
N
220 PRINT@L,STRING$(31,32):PRINT
@L,"";:RETURN
230 CLS:PRINT@202,"PLEASE WAIT":
GOTO1330
240 ' LOAD FROM DISK
250 GOSUB 150:LINEINPUT" WHAT IS
 THE FILE NAME:";XY$:D$=LEFT$(XY
$,1):PRINT:PRINTTAB(7)"READING T
HE FILE"
260 OPEN"I",#1,XY$
270 IF EOF(1)=-1 THEN CT=0:RETUR
N
280 LINE INPUT#1,A$:LD$=A$
290 FOR X=1 TO T:IF EOF(1)=-1 TH
EN CT=X-1:X=T:GOTO310
300 LINE INPUT#1,M$(X)
310 NEXT X:CLOSE:RETURN
320 GOSUB 150:PRINTCT;"RECORDS":
PRINT" CAPACITY IS";T;"RECORDS":
PRINT" LAST UPDATE: ";LD$:PRINT"
 ENTER THE DATE AS DD/MM/YY":INP
UT" ==> ";DA$:IF DA$=""THEN DA$=
LD$:M$(0)=LD$ ELSE M$(0)=DA$
330 ZD$="HERITAGE/UPDATE FILE/PR
INT LISTING/SORT FILE/PRINT CHAR
T/REVIEW RECORDS/END"
340 ZY=6:GOSUB50
350 ON ZI GOTO580,1175,1760,410,
2515,1890
410 ZZ=1:GOTO605
420 ' UNFORMATTED DISPLAY
430 GOSUB150
440 PRINT@97,"1:";TT$:PRINT@129,
"2:";GN$:PRINT@161,"3:";LN$:PRIN
T@193,"4:";A1$:PRINT@225,"5:";A2
$:PRINT@257,"6:";CS$:PRINT@289,"
7:";PH$:PRINT@321,"8:";KD$:PRINT
@353,"9 (CODE FIELD)=";CD$:RETUR
N
450 ' FORMATTING ROUTINE
453 M1$=" ":M2$=" ":M3$=" ":M4$=
" ":M6$=" ":M7$=" ":M8$=" ":M9$=
" ":MA$=" ":RETURN
455 M1$=TT$:M2$=GN$:M3$=LN$:M4$=
A1$:M6$=A2$:M7$=CS$:M8$=PH$:M9$=
KD$:MA$=CD$:RETURN
460 L1$=TT$:L2$=GN$:L3$=LN$:L4$=
A1$:L6$=A2$:L7$=CS$:L8$=PH$:L9$=
KD$:LA$=CD$:RETURN
470 R$=TT$+CH$+GN$+CH$+LN$+CH$+A
1$+CH$+A2$+CH$+CS$+CH$+PH$+CH$+K
D$+CH$+CD$:RETURN
480 GOSUB560:TT$=LEFT$(R$,P-1):G
OSUB550:GN$=LEFT$(R$,P-1):GOSUB5
50:LN$=LEFT$(R$,P-1):GOSUB550:A1
$=LEFT$(R$,P-1):GOSUB550:A2$=LEF
T$(R$,P-1):GOSUB550:CS$=LEFT$(R$
,P-1):GOSUB550:PH$=LEFT$(R$,P-1)
:GOSUB550:KD$=LEFT$(R$,P-1)
490 GOSUB550:CD$=R$:R$="":RETURN
500 IFUC<>1THENRETURNELSEF1=1:FO
RW=1TOLEN(R$)-10
510 CH=ASC(MID$(R$,W,1)):IFCH<65
 OR CH=92THENF1=1:GOTO540
520 IFF1=0 AND CH<91THENCH=CH+32
:MID$(R$,W,1)=CHR$(CH)
530 F1=0
540 NEXT:RETURN
550 R$=RIGHT$(R$,LEN(R$)-P)
560 P=INSTR(1,R$,CH$):RETURN
570 ' UPDATING FILE
580 ZD$="UPDATING FILE/ADD TO FI
LE/DELETE A RECORD/CHANGE A RECO
RD/RETURN TO MAIN MENU"
585 ZY=4:GOSUB50
590 ON ZI GOTO 970,890,610,330
600 ' RECORD CHOICE
605 GOSUB40
610 IFZZ=1THENGOSUB150:PRINT" WH
O'S PRECEDENTS DO YOU WANT?":PRI
NT:GOTO640
620 GOSUB150:PRINT" CHANGING A R
ECORD":PRINT
640 PRINT" ENTER NAME";:INPUT N$
650 FOR X=1 TO CT:P=1
660 P=INSTR(P,LEFT$(M$(X),20),N$
)
670 IF P=0THEN 730
680 IF X>CT THEN GOSUB150:PRINT"
 NOT FOUND":GOSUB190:GOTO580
690 R$=M$(X):GOSUB480:GOSUB430:P
RINT@449,"THIS ONE? (Y/N OR Q)":
GOSUB 160
700 IFZZ=1 AND I$="Y"THEN230
710 IF I$="Y" THEN GOSUB1110:GOS
UB470:M$(X)=R$
720 IF I$="Q"THEN X=CT
730 NEXT X:GOSUB150:PRINT" SEARC
```

```
H ENDED":GOSUB190:GOTO580
740 GOSUB150:IFZZ=1THENZZ=2:GOSU
B1960:GOTO760
750 GOSUB1940
760 FORX=1TOCT
770 R$=M$(X):IF R$=""THEN 850ELS
EGOSUB1980:IFHIT=0THEN850
780 GOSUB480:GOSUB430
790 IFZZ=2 AND I$="Y"THENZZ=1:GO
TO1330
800 IFZZ=1THENRETURN
810 PRINT@449,"THIS ONE? (Y/N OR
 Q)":GOSUB160
820 IFZZ=1 AND I$="Y"THEN1330
830 IF I$<>"Y" THEN 840 ELSE GOS
UB1110:GOSUB470:M$(X)=R$
840 IF I$="Q"THEN X=CT
850 NEXT X:IFZZ=1 THEN860ELSE870
860 R$=M$(X-1):CD$=RIGHT$(R$,10)
:CN$=MID$(CD$,3,1):M1$=D$+"/"+CN
$+"/M/1":ZZ=3:RETURN
870 GOSUB150:PRINT" SEARCH ENDED
":GOSUB190:GOTO580
880 ' DELETING RECORD
890 GOSUB150:PRINT" DELETING A R
ECORD":PRINT:PRINT" ENTER NAME":
INPUT N$:GOSUB150
900 FOR X=1 TO CT:P=1:P=INSTR(P,
LEFT$(M$(X),20),N$)
910 IF P=0 THEN NEXTX
920 IF X>CT THEN GOSUB150:PRINT"
 NOT FOUND":GOSUB190:GOTO580
930 R$=M$(X):GOSUB480:GOSUB430:P
RINT@449,"THIS ONE? (Y OR N)":GO
SUB160
940 IF I$="Y" THEN L=449:GOSUB22
0:PRINT" DELETING":FOR Y=X TO CT
-1:M$(Y)=M$(Y+1):NEXT Y:M$(CT)="
":X=CT:CT=CT-1:NEXTX:GOTO580
950 NEXT X:GOSUB150:PRINT" NOT F
OUND":GOSUB190:GOTO580
960 ' ADDING TO FILE
970 CT=CT+1:R$=STRING$(8,"\"):GO
SUB480:GOSUB430:GOSUB990:GOSUB 1
000:GOSUB980:GOSUB1010:GOSUB1020
:GOSUB1030:GOSUB1040:GOSUB1045:G
OSUB1050:GOSUB1060
980 PRINT@417,"LOCATION?":LINE I
NPUT">";LN$:GOSUB430:RETURN
990 PRINT@417,"NAME?":LINE INPUT
">";TT$:GOSUB1080:GOSUB430:RETUR
N
1000 PRINT@417,"DATE OF BIRTH?":
LINEINPUT">";GN$:GOSUB430:RETURN
1010 PRINT@417,"OCCUPATION?":LIN
EINPUT">";A1$:GOSUB430:RETURN
1020 PRINT@417,"MARRIED TO?":LIN
EINPUT">";A2$:GOSUB430:RETURN
1030 PRINT@417,"DATE?":LINEINPUT
">";CS$:GOSUB430:RETURN
1040 PRINT@417,"DIED?":LINEINPUT
">";PH$:GOSUB430:RETURN
1045 PRINT@417,"NO. OF CHILDREN?
":LINEINPUT">";KD$:GOSUB430:RETU
RN
1050 PRINT@417,"CODE FIELD (10 P
OSITIONS MAX)":LINEINPUT">";CD$:
CD$=LEFT$(CD$+B$,10):GOSUB430:RE
TURN
1060 GOSUB1110:GOSUB470:M$(CT)=R
$:GOTO970
1080 IFTT$="ZZZ"THENCT=CT-1:GOTO
580
1090 RETURN
1100 ' CHANGE ROUTINE
1110 PRINT@449,"CHANGE ANYTHING?
 (Y/N)":INPUT">";I$
1120 IF I$="N" THEN CLS:RETURN
1130 IF I$="Y" THEN GOSUB 430:PR
INT@449,"WHAT LINE NEEDS CHANGIN
G?":INPUT">";I$
1140 I=VAL(I$):IF I<1 OR I>9 THE
N GOSUB 430:GOTO1110
1150 GOSUB430:ON I GOSUB 990,100
0,980,1010,1020,1030,1040,1045,1
050
1160 GOTO1110
1170 ' PRINT ROUTINE
1175 GOSUB40
1180 GOSUB150:PRINT" PRINT FILE
LISTING":GOSUB1810
1190 GOSUB150:GOSUB1940:GOSUB150
:PRINTCT;"RECORDS ARE ON THE FIL
E":GOSUB1300
1195 IFX<>1THENPRINT@229,"PRESS
enter ON TONE                TO EN
D PRINTOUT"
1200 IFLL<>1THENX=1:FORL=LL TO C
T STEP2:GOTO1211
1210 X=6:FOR L=LL TO CT
1211 IFL=LL*6+1THENL=(LL*12)*((L
-1)/6)+1:FORK=1TO12:PRINT#-2:NEX
T
1212 IFM$(L)<>""THENR1$=M$(L) EL
SE1280
1214 IFM$(L+X)=""THEN Z=1:PRINT@
449,"RECORD #"L"       ":GOTO1255
1215 R2$=M$(L+X):IFM$(L+X)=""THE
N1257
1220  PRINT@449,"RECORDS #"L"AND
"L+X
1255 R$=R1$:GOSUB500:GOSUB480:GO
SUB460
1256 IFZ=1THENZ=0:GOSUB453:GOTO1
260
1257 R$=R2$:GOSUB500:GOSUB480:GO
SUB455
1260 PRINT#-2,CHR$(15);TAB(10)"N
```

```
AME"TAB(20)": "L1$;TAB(70)"NAME"
TAB(80)": "M1$:PRINT#-2,TAB(10)"
D.O.B."TAB(20)": "L2$;TAB(70)"D.
O.B."TAB(80)": "M2$:PRINT#-2,TAB
(10)"LOCATION"TAB(20)": "L3$;TAB
(70)"LOCATION"TAB(80)": "M3$
1262 PRINT#-2,TAB(10)"OCCUPATION
"TAB(20)": "L4$;TAB(70)"OCCUPATI
ON"TAB(80)": "M4$:PRINT#-2,TAB(1
0)"MARRIED"TAB(20)": "L6$;TAB(70
)"MARRIED"TAB(80)": "M6$
1264 PRINT#-2,TAB(10)"DATE"TAB(2
0)": "L7$;TAB(70)"DATE"TAB(80)":
 "M7$:PRINT#-2,TAB(10)"DIED"TAB(
20)": "L8$;TAB(70)"DIED"TAB(80)"
: "M8$
1266 PRINT#-2,TAB(10)"Children"T
AB(20)": "L9$;TAB(40)LA$;TAB(70)
"Children"TAB(80)": "M9$;TAB(100
)MA$:PRINT#-2," ":LN=LN+9
1270 SOUND150,10:GOSUB2500
1280 NEXTL:PRINT@449,"END OF LIS
TING":GOSUB1290:GOTO330
1290 FOR X=LN TO 65:PRINT#-2," "
:NEXT X:PRINT#-2,CHR$(27);CHR$(1
9):RETURN
1300 PRINT#-2,CHR$(18):PRINT#-2,
" ":PRINT#-2," ":PRINT#-2,TAB(10
)"HERITAGE FILE LISTING" TAB(70-
LEN(DA$))DA$:PRINT#-2:PRINT#-2:L
N=6:RETURN
1320 ' CHART PRINT-FIRST ENTRY
1330 GOSUB1610:C1=1:C2=1:C3=3:C4
=12:A=0:AA=1:CN$=MID$(CD$,3,1):N
N=VAL(CN$):IN$=CN$:CN=VAL(CN$)+6
1340 PRINT#-2,CHR$(27);CHR$(48)
1350 CN$=STR$(CN):CN$=MID$(CN$,2
):CC=CN-NN:MM$=D$+"/"+CN$+"/M/1"
:GOSUB760:GOSUB1410
1360 IFZZ=3THENZZ=1:GOTO1350
1370 IFAA=1THENAA=0:GOTO1350
1380 CN$=STR$(CN):CN$=MID$(CN$,2
):CC=CN-NN:MM$=D$+"/"+CN$+"/M/2"
:GOSUB760:GOSUB1410
1390 IFA=6THEN330ELSE1350
1400 ' CHART PRINTOUT
1410 IFCN$=IN$THENA=4:C2=0
1420 IFZZ=3THENCN$=MID$(CD$,3,1)
.:CN=VAL(CN$):RETURN
1430 IFA=4THENPRINT#-2,TAB(7+(6*
CC)+1);":";TT$:GOSUB1690:GOTO145
0
1440 PRINT#-2,TAB(7+(6*(CC-C1)+1
));"------: ";TT$:GOSUB1690
1450 PRINT#-2,CHR$(15);"D.O.B.
: "GN$:GOSUB1690
1460 PRINT#-2,CHR$(15);"MARRIED
: "A2$:GOSUB1690
1470 PRINT#-2,CHR$(15);"DIED
: "PH$:GOSUB1690
1480 PRINT#-2,CHR$(15);"CHILDREN
: "KD$:GOSUB1690
1490 PRINT#-2:A=A+1
1500 ON A GOTO1510,1520,1530,154
0,1550,1560
1510 CN=CN-1:C1=1:C2=1:C3=0:C4=6
:RETURN
1520 CN=CN+1:C1=1:C2=2:C3=3:C4=1
8:RETURN
1530 CN=CN-2:C1=1:C2=1:C3=0:C4=6
:A=1:RETURN
1540 CN=CN+1:C2=0:C3=3:C4=6:RETU
RN
1550 CN=CN+1:C4=6:RETURN
1560 CN=0:PRINT#-2,CHR$(18);CHR$
(27);CHR$(50):RETURN
1605 PRINT#-2,CHR$(18)
1610 PRINT#-2,CHR$(27);CHR$(50)
1620 FORL=2TO4:PRINT#-2,TAB(20+(
6*L));" X";L;:NEXT
1630 PRINT#-2,CHR$(15)
1640 FORL=1TO4:PRINT#-2,TAB(36+(
10*L));":  GREAT";:NEXT:PRINT#-2
1650 FORL=1TO5:PRINT#-2,TAB(26+(
10*L));":  GRAND";:NEXT:PRINT#-2
1660 PRINT#-2,TAB(16);":  PERSON
 ";
1670 FORL=1TO6:PRINT#-2,TAB(16+(
10*L));":  FATHER";:NEXT
1680 PRINT#-2:PRINT#-2,CHR$(18):
RETURN
1690 IFA=5THEN1740
1700 PRINT#-2,CHR$(18);TAB(6+(6*
(CC-C2)+3));":";
1710 IFA=4THEN1730
1720 IFC3<3THENPRINT#-2,TAB(6+(6
*(CC+C3)+3));":";
1730 FORK=1TOC4:PRINT#-2," ";:NE
XT:RETURN
1740 PRINT#-2,CHR$(18);TAB(6+(6*
CC)+1);" ";:GOTO1730
1750 'SORT ROUTINE
1760 GOSUB150:PRINT" SORTING THE
 FILE":N=1
1770 N=N+1:C=0:FOR X=CT TO N STE
P-1
1780 M$=CD$
1790 IF RIGHT$(M$(X-1),10)<=RIGH
T$(M$(X),10) THEN 1800 ELSE M$=M
$(X):M$(X)=M$(X-1):M$(X-1)=M$:C=
C+1
1800 NEXTX:PRINT@93,"PASS NUMBER
";N:PRINT C;"SWAPS":IF C>0 THEN
1770 ELSE 330
1810 PRINT:PRINT" PRESS ANY KEY
BUT Q WHEN READY":GOSUB 160:IF I
$="Q" THEN 330 ELSE RETURN
1830 ' SAVE TO DISK
1840 GOSUB150:PRINT" FILE IS UPD
ATED TO ";DA$:PRINT:LINEINPUT" W
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Continued on page 15

Life after CoCo

By Johanna Vagg

Is CoCo dead? The grass always looks greener on the other side of the fence. Should you jump the fence.. or water the grass on your side? You have to make the decision for yourself, but I might be able to give you some food for thought by telling you my story.

In December 1983 - yes, over 7 years ago - we were a little bored with CoCo. Luckily we discovered the Australian Rainbow that month and ever since then I have had that feeling which Robbie spoke of in the February 1991 issue of CoCoLink: "I do not have enough time to try all the things I want to do."

We bought our greycase CoCo with tape recorder and one Program Pak - Maths Bingo - in early August 1983, when my kids were 5, 7, 8 and 9. We had some fun, but I was disappointed when it seemed that the only programs were expensive ones. The Vic-20 (forerunner of the Commodore 64) and the programs for it were less expensive. There were also magazines for the Vic-20 in the local Newsagencies. The Rainbow was not available in Forbes. I found it at Mt Druitt when I was 'at home' with my parents for Christmas. Greg Wilson reprinted large sections of the American Rainbow, and tried to add some Australian news. He also produced a monthly tape - CoCoOz - of Australian programs.

Before Greg died in mid 1984, he had put some of my programs on CoCoOz. He had also asked for Australian authors to write articles for a completely Australian magazine. I was typing my first articles - on a typewriter because I didn't have a printer - in mid 1984. Greg never saw them. I thought my 'writing career'e had ended before it began. In August, Graham Morphett rang me to ask if it was okay to print my articles in the Australian CoCo, which he planned to produce. My first article appeared in the first issue of CoCo - September 1984.

Although I now have a Tandy 1000HX, I have not had a chance to get bored with CoCo. I have found that my involvement with the magazines has ensured that my hobby has not become stale. At times it has seemed too much like hard work, but when I have been able to sort out a problem for someone who has written to me, it is all worthwhile. I know that my 'work' has helped some of you. I like to think that it has helped more people than those who have corresponded with me.

Robbie has found that learning OS9 and C has put new life into his computing. Without knowing anything about OS9 or C, I have been able to find new purpose and fun quite a few times by adding to my system. In 1985 we bought a printer and went back through the magazines looking for articles and programs for it. In November 1984 I had another baby, so by late 1985 I had the involvement with the magazines, CoCo with printer, and five children... add all this together and you should understand why I had that feeling of never having enough time to do everything I wanted to do.

In 1986, Graham talked me into coming to CoCoConf. There

I was awarded the Voice and EARS. Soon after that I bought a CoCo3. In 1987 I finally 'went disk' - I got two double sided drives. It was time to get out all the magazines again to find articles about disk drives. Later in 1987 I went to another CoCoConf. That time I came home with a Multi-Pak and I spent some time working out how to get the Voice and EARS working together - I needed the Multi-Pak as both the Voice and EARS use a ROM PAK. If you read my article 'My CoCo3 Talks to Me' you will realise that it was not a simple matter! Once I worked out HOW to make them work, I went on to other things... leaving the Voice and EARS until I have more time!! There is still a lot more I want to do with them. In September 1988 we bought another printer - a DMP106. Then there was CONF88 and a Tandy 1000HX. Before the end of 1988 we had an extra disk drive for the HX. The next purchase was a memory upgrade for the HX in mid 1990. In September 1990, there was another addition... to the family! I had a baby girl. Now, in 1991 I have a CoCo3 with two double sided disk drives; a 1000HX with two disk drives; a DMP106 which is used by both systems; and six kids... and some involvement with CoCoLink. I also have a number of computer penfriends.. who still present me with debugging jobs at times. Add all these together, and what do I get? Very little time to try all the things I want to do!

Somewhere along the way I also got MUSICA, SYMPHONY12 and a piano keyboard for CoCo. Maybe one day I will find time!

I think that a lot of computers did not get much use and have ended up in wardrobes and under beds. My greycase CoCo and DMP110 are under the computer table - but not because we were bored with them. I won't go so far as to say that they are there so that they will feel at home near the other computers...

If we had another TV/monitor, we might even use the greycase again, but we would use only ROM PAKs in it. I am not prepared to fight with tapes again. I don't regret the three and a half years during which I had only tapes, but enough is enough.

Would I have bought an IBM compatible computer if the 1000HX had not been awarded to me? I don't know if I would have 'gone IBM', but I probably would have bought another computer by now. I almost got a Commodore once when one model was on special. I heard that the Commodore computers had an inbuilt music synthesizer. CoCo can play good music too, but you need extras. The Amiga has speech capabilities... built in. I have the Voice for CoCo, but it requires a ROM PAK and a machine language program. This means that unless you are prepared to fiddle with tapes, you need a Multi-Pak.

Robbie says that it is nearly as difficult to learn MS-DOS as it is to learn OS9. I don't know anything about OS9, except that it too is an extra - an expensive extra. IBM compatible machines come with MS-DOS. I believe that to learn all about MS-DOS will take some doing, but if you just want to play (non-BASIC) games, you only need to type the name of the game, press ENTER, and Voila! You don't need to learn a lot about MS-DOS to use the computer, just like you didn't really need to be able to program CoCo to use it.

As with all things, you will have to weigh up the pros and cons, check the bank balance, and then decide.

In case you missed my hints, let me state that getting involved with CoCoLink may be all you need! The magazine cannot continue without input from its readers.

HERITAGE Continued

```
HAT IS THE FILE NAME:";XY$
1850 GOSUB1810
1860 OPEN"O",#1,XY$:PRINT:PRINT"
 WRITING THE "XY$" FILE"
1870 FOR X= 0 TO CT:IF M$(X)<>""
 THEN PRINT#1,M$(X)
1880 NEXTX:CLOSE:RESTORE
1890 ZD$="HERITAGE/BACKUP/RETURN
 TO MENU/END"
1900 ZY=3:GOSUB50
1910 ON ZI GOTO1840,330,1920
1920 CLS:CLOSE:END
1930 ' PRINT ROUTINE CHOICE
1940 PRINT@129,"DO YOU WANT ALL?
 (Y/N)";:GOSUB160
1950 IF I$="Y" THEN LL=1:RETURN
1960 PRINT:INPUT" START AT RECOR
D NUMBER";LL:RETURN
1980 HIT=0:CD$=RIGHT$(R$,10):FOR
SL=1TO10-LEN(MM$)
1990 IFMID$(CD$,SL,LEN(MM$))=MM$
THENHIT=1:SL=10
2000 NEXT:RETURN
2499 'REVIEW RECORDS
2500 I$=INKEY$:IFI$=CHR$(13)THEN
L=CT+1
2510 RETURN
2515 CLS:GOSUB150:PRINTCT;"RECOR
DS ARE ON FILE"
2517 PRINT:INPUT" START AT RECOR
D NUMBER";KK
2520 FORK=KK TO CT
2525 IF K>CT THENGOSUB150:PRINT"
 NOT FOUND":GOSUB190:GOTO330
2530 R$=M$(K):GOSUB480:GOSUB430:
PRINT@454,"cONTINUE OR rETURN";
2540 I$=INKEY$:IFI$="C"THENNEXT
2550 IFI$="R"THENCLS:GOTO330
2560 IFI$=""THEN2540
2570 GOSUB150:PRINT" REVIEW ENDE
D":GOSUB190:GOTO330
```

Those of us who play Yahtzee know the cost of score sheets.

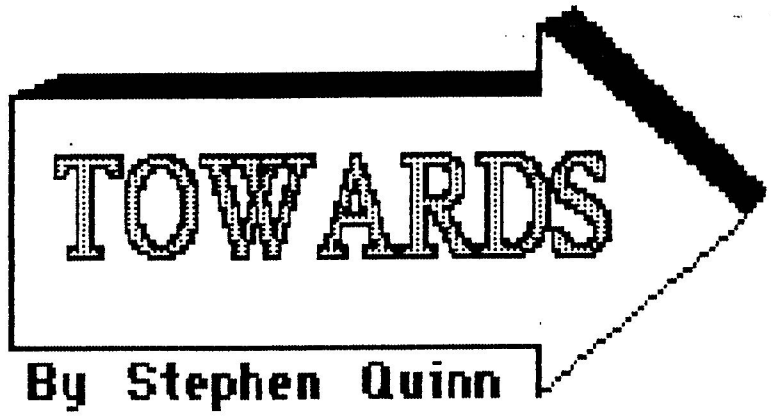
This program allows us to use the back of old sheets to print out our score sheets. The program also allows you to print out two score sheets in condensed form or four sheets in Subscript.

The program is very easy to use. Just set the paper to the top of the printer and then follow the on screen instructions.

Line 36 sets the baud rate to 2400. Remember to change this line to suit your printer baud rate if necessary.

```
10 '*****************************
15 '*          YAHTZEE          *
20 '*       SCORE CARD          *
25 '*           BY              *
30 '*       A MURRELLS          *
35 '*****************************
36 POKE149,0:POKE150,18
37 DIMN$(20):GOSUB400
40 CLS:PRINT:PRINT@0,"THIS PROGR
AM WILL PRINT OUT      YAHTZEE SC
ORE SHEETS EITHER      TWO SHEETS
 PER PRINT OUT IN      CONDENSED
FORM.                  OR FOUR SH
EETS PER PRINT OUT     IN SUBSCRI
PT FORM":PRINT:PRINT"
ANY KEY TO CONTINUE"
41 K$=INKEY$:IF K$="" THEN 41 EL
SE 42
42 CLS:PRINT@0,"DO YOU WANT (C)O
NDENSED OR (S)UBSCRIPT FORMS?";:
B$=INKEY$:IF B$=""THEN 42 ELSE I
F B$="C" THEN GOTO 100 ELSE IF B
$ ="S" THEN GOTO 102
100 PRINT#-2,CHR$(27);CHR$(14);C
HR$(27)CHR$(20);TAB(10)"YAHTZEE
                          YAH
TZEE":PRINT#-2,CHR$(27);CHR$(15)
;CHR$(27);CHR$(54):GOTO103
102 PRINT#-2,CHR$(27);CHR$(14);C
HR$(27);CHR$(83);CHR$(01);TAB(10
)"YAHTZEE
       YAHTZEE":PRINT#-2,CHR$(27
);CHR$(15);CHR$(27);CHR$(28):GOT
O103
103 CLS:PRINT:PRINT"PRESS SPACE
BAR TO COMMENCE":A$=INKEY$:IF A$
="" THEN 103 ELSE 105
105 GOSUB260
110 PRINT#-2,"!         !    1    !
   2    !    3    !    4    !    5    !
   6    !         !         !    1    !
   2    !    3    !    4    !    5    !
   6    !"
115 GOSUB260
200 FORX=1TO20
210 IFX=10THENGOSUB260
220 PRINT#-2,"!";N$(X);:PRINT#-2
,TAB(10);"!         !         !
  !         !         !         !";
230 PRINT#-2,TAB(63);"!";N$(X);:
PRINT#-2,TAB(73);"!         !
  !         !         !         !
  !"
240 GOSUB260
250 NEXT
255 GOTO330
260 PRINT#-2,STRING$(58,"-");STR
ING$(5," ");STRING$(58,"-"):RETU
RN
330 PRINT#-2,CHR$(27);CHR$(19);C
HR$(27);CHR$(88)
335 CLS:PRINT"DO YOU WANT ANOTHE
R SHEET? Y/N"
340 A$=INKEY$:IF A$=""THEN GOTO3
40
345 IF A$="Y"THEN GOTO 42 ELSE I
F A$="N" THEN END
400 FORX=1TO20:READN$(X):NEXT:RE
TURN
410 DATA ACES,TWOS,THREES,FOURS,
FIVES,SIXES,TOTAL SC,BONUS,TOTAL
,3 OF,4 OF,FULL,SM /STR,LRG/STR,
YAHTZEE,CHANCE,BONUS,TOTAL/BT,TO
TAL/TP,TOTAL/GO

          END
```



Better BASIC Part 15

By Stephen Quinn

Hints, Pokes and Stuff

The following is a compendium of hints and tips I have picked up from various sources over a period of time. I have not been able to check out all the following under all conditions so some of the pokes or hints listed below may not work on individual systems

Despite this possible drawback and the fact that many of you will have seen most of them before, I feel that it is about time they were aired again.

PRINTER
=======

```
300  Baud Poke 149,0:Poke 150,180
600  Baud Poke 149,0:Poke 150,87
1200 Baud Poke 149,0:Poke 150,41
1800 Baud Poke 149,0:Poke 150,25
2000 Baud Poke 149,0:Poke 150,23
2400 Baud Poke 149,0:Poke 150,18
3600 Baud Poke 149,0:Poke 150,10
4800 Baud Poke 149,0:Poke 150,7
7200 Baud Poke 149,0:Poke 150,3
9600 Baud Poke 149,0:Poke 150,1
```

Printer online! YES if result is EVEN Peek 65314

All text to printer	Poke 360,162:Poke 361,191
Restores above in ECB	Poke 360,115
Restores above in DECB	Poke 360,203:Poke 361,74

DISK
====

Radio Shack BW HI-res Screen Print Utility (26-3121) may have a problem loading into a 64K Coco giving an FC error.
SOLUTION. CLEAR 200,31232 <ENTER> then. CLOADM"BWDUMP",16384

DISK POKES
==========

Hardcopy of Directory.	Poke 111,254:DIR
Verify on.	Poke 2439,255
Verify off.	Poke 2439,0
Turn off drive Number.	Poke 65344,0
Turn off DECB commands.	Poke 298,0:Poke 303,0
Restore above.	Poke 298,25 :Poke 303,14
Returns drive number last used.	Peek (235)
Returns trk No. last accessed.	Peek (236)
Returns sect No. last accessed.	Peek (237)
Dsk system attached? Yes if=68.	Peek (49152)
Warmstart DECB 1.0.	Exec 49384
Warmstart DECB 1.1.	Exec 49383
Same as DIR in DECB 1.0.	Exec 52175
Same as DIR in DECB 1.1.	Exec 52393
Copy with fewer swaps.	Poke 113,0: Exec 44539

Test to see if A$ exists on disk.
SOLUTION. A$="filename/ext": Exec&H065F
A = PEEK(&H973). Variable "A" returns "0" if file not present.

Verify disk and lists all bad track/sectors.
SOLUTION:

```
  Poke 234,2: Poke238,6:Poke239,0:
  ForI=0 to 34:ForJ=1 to 18: Poke
  236,1: Poke 237,j: Exec

  Peek(&HC004)*256+Peek(&HC005):
```

```
If Peek(240)<>0 THEN PRINT"TRACK"
I "SECTOR" J:NEXTJ,I ELSENEXTJ,I
```

To disable Disk Basic without unplugging the cartridge.
SOLUTION: Type Poke 298,25: Poke 303,14. Pressing the reset button will not restore everything.

To save Screen 4 HI-res graphics.
SOLUTION. Type Savem"NAME",1536,7679,40999

COMPUTER
========
Playing some games here are some pokes to give you more men.
X = number of men

Astro blast	&H190F,x	Double back	&H10E9,x
Electron	&H136C3,x	Frogger	&H22E2,x
Ghost Gobbler	&H2373,x	Lunar Rover	&H5761,x
Katerpillar	&H29F3,x	Mr. Dig	&H5439,x
Mudpies	&H441D,x	Whirlybird	&H2078,x
Trapfall	&H2CBC,x	Space Invaders	&H1DFA,x
Planet Invasion	&H1D16,x	Zaxxon	&H6418,x
Riverts	&H3259,10	Elevators	&H3259,2
Conveyor	&H3259,18		

RND(n) is not really random. On each start of a programme using RND the sequence starts from the same point.
SOLUTION: At start of programme enter X=RND(-TIMER). This sets the RND to a truly randon number.

Line too long to type in? You can only enter 240 characters per line, when entering characters in a basic listing.
SOLUTION: Type in as many characters as possible, then edit that line press X to get to the end of line. You can now enter the extra characters.

The use of the TIMER function can give a result in seconds, making it suitable to time operator response. Australia uses 50HZ Mains frequency, where as in the U.S. it is 60HZ.
Basic programmes written for the U.S. market use the TIMER/60 function to approximate seconds. If this formula is used in Australia, slower times than normal will result.
SOLUTION: You must convert the formula to TIMER/50 to suit.

If you type in a programme from a magazine it is a good idea to put in a REM at the begining of the programme to identify the publication it came from.

If your KEYBOARD goes dead remove your joysticks. If this retifies the problem check your fire buttons. One of them may be stuck in.

EXEC 35337 will renum any basic programme in increments of 10. ECB ONLY.

SPEED POKES
===========

Slow Script for ECB	Poke 359,60:
Slow Script DECD	Poke 359,60: Poke 361,37
Double Speed	Poke 65495,0
Normal Speed for above	Poke 65494,0
Triple Speed (Coco3)	Poke 65497,0
Normal Speed for above	Poke 65496,0

COLD START
==========
Cold Start Poke 113,0: Exec 40999: Cold Start Exec 113 (press <reset>)

To Freeze the key board Poke 359,255

DIFFERENT STYLE SCREENS
=======================
Note: To use the following, Type POKE 359,57 first.
To get out of this Mode, type POKE 359,126.

Orange	Screen0,1
Green	Screeen0,0
Look at Graphics	Screen1,1

For Coco 3:

Black on Orange	Poke 65314,8
Black on Green (lowercase)	Poke 65314,16
Black on Orange (lowercase)	Poke 65314,24
Inverted Green Script	Poke 65314,32
Inverted Orange script	Poke 65314,40
Inverted Green (lowercase) Script	Poke 65314,48
Inverted Orange (lowercase) Script	Poke 65314,56
Inverted Green Script, NO BORDER	Poke 65314,64
Inverted Orange Script, NO BORDER	Poke 65314,72
Invested Grn, Scrpt, lrcase NO Brd	Poke 65314,80
Inverted Ogn, Scrpt, lrcase NO Brd	Poke 65314,88

KEY BOARD/SCREEN
================

Uppercase	Poke 282,255
Lowercase mode	Poke 282,0
ASCII Screen	Poke 359,74:Poke 360,57
More colours Graphics	Poke 179,n

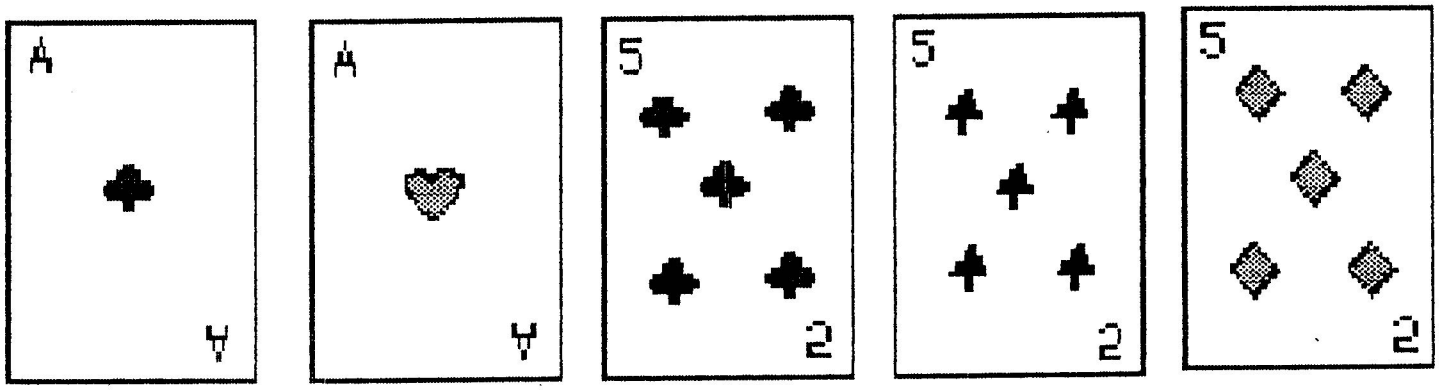
ML UTILITIES
============

Disable list Commamd	Poke 383,57
Restore	Poke 383,126

Break Key Disable:

```
Poke 248,50:Poke 249,98:Poke 251
,175:Poke 252,126:Poke 253,173:P
oke 254,165:Poke 410,126:Poke 41
1,0:Poke 412,248
```

Continued on page 21



Draw Poker

By Keiran Kenny

This is not really a game, but an experiment. The problem was to deal a hand of 5 cards chosen at random without dealing the same card twice, and then discard cards and draw new cards making sure that the cards you draw have not been already dealt or discarded. There is a routine in the CoCo 3 handbook (page 253) that ensures a deal without repetition. Adaptions of this routine are used in the deal routine (lines 670 - 800) and draw routine (lines 920 - 990) in the listing.

The loop in line 50 reads the card values (Ace to Two) and stores them in arrays labelled F$(1 - 13). Lines 670 - 700 establish a unique value for each combination in the double array K(S,N). S is the suit and N the value of the card. Each time a card is dealt, K(S,N) is equated to zero, thus ensuring it will not be called again.

After the title and credit screen, the rules and payments are displayed on the screen. The subroutine in lines 80 - 140 will HPRINT a long text (as in lines 550 and 560). The line length, LL=80, is established in line 40. B is the horizontal coordinate and C the vertical. If the length of the string, ZL$, is longer than 80 characters the routine will give you wraparound.

Normally, HGET and HPUT statements execute fairly slowly on HSCREEN4 but the use of "speed" parameters can increase the speed at which they execute. The rectangles for the cards are drawn with the left and upper coordinates a multiple of eight and the right and lower coordinates one less that a multiple of eight. The same parameter ratios are used in the HGET and HPUT statements. The PSET option is not necessary.

I have not included an in-program scoring routine, but you can input the amount of payment for a winning hand manually. The input subroutine in lines 150 - 280 will HPRINT whatever you type. If you want to use this routine in your own programs, to have what you type follow a prompt, put your prompt into a string labelled ZL$ as in line 1030 followed by GOSUB150. Otherwise, to input anywhere on the screen, set the horizontal coordinate, P, vertical, C, and GOSUB160. Text is returned as V$ and values as V.

I tried unsuccessfully to put an in-program scoring routime together. If you can devise one that is not intolerably long and slow, I would be glad to hear from you.

```
0 'DRAWPOKR' by Keiran Kenny,
  2/45 Cremorne Road,
  Cremorne NSW 2090
10 POKE65497,0
20 CLEAR2000
30 DIMF$(13),K(4,13)
40 LL=80:ST=100
50 FORI=1TO13:READF$(I):NEXT
60 DATA A,K,Q,J,10,9,8,7,6,5,4,3
,2
70 GOTO290
80 IFLEN(ZL$)<=LL THEN120
90 FORT=LL TO1STEP-1:IFMID$(ZL$,
T,1)=" "THEN110
100 NEXTT:GOTO120
110 P$=LEFT$(ZL$,T):W$=P$:GOSUB1
30:ZL$=RIGHT$(ZL$,(LEN(ZL$))-T):
C=C+1:GOTO80
```

```
120 W$=ZL$
130 HPRINT(B,C),W$
140 RETURN
150 P=B+LEN(ZL$)
160 PB=P:V$=""
170 K$=INKEY$:IFK$=""THEN170
180 IFK$=CHR$(13)THEN280
190 IFK$=CHR$(8)THEN200ELSE240
200 HPUT(P*8-8,C*8)-(P*8,C*8+7),
5,PSET
210 P=P-1:IFP<PB THENP=PB:GOTO17
0
220 V$=LEFT$(V$,LEN(V$)-1)
230 GOTO170
240 IFP>78THEN170ELSEHPRINT(P,C)
,K$
250 V$=V$+K$
260 P=P+1
270 GOTO170
280 V=VAL(V$):RETURN
290 PALETTE0,0:PALETTE2,63
300 ONBRKGOTO1090
310 HSCREEN4
320 FORBF=1TO5:HBUFFBF,1024:NEXT
330 HGET(0,0)-(63,63),5
340 HCOLOR2:FORX=0TO576STEP192:H
LINE(X,0)-(X+63,63),PSET,BF:NEXT
350 HCOLOR1:HDRAW"BM32,14M+22,+1
5M-22,+15M-22,-15M+22,-15"
360 HPAINT(32,40),3,1
370 HGET(0,0)-(63,63),1
380 HDRAW"BM224,24E8R8F8D4M-24,+
15M-24,-15U4E8R8F8"
390 HPAINT(224,30),3,1
400 HGET(192,0)-(255,63),2
410 HCIRCLE(416,22),14:HCIRCLE(4
30,34),14:HCIRCLE(404,34),14
420 HPAINT(416,22),0,1:HPAINT(43
0,34),0,1:HPAINT(404,34),0,1:HPA
INT(416,30),0,1
430 HDRAW"BM416,34M+12,+12M-24,+
0M+12,-12"
440 HPAINT(416,45),0,1
450 HGET(384,0)-(447,63),3
460 HDRAW"BM608,16R8M-8,+12E8R8F
8D4M-24,+12M-24,-12U4E8R8F8M-8,-
12R8"
470 HPAINT(608,20),0,1:HPAINT(60
8,40),0,1
480 HGET(576,0)-(639,63),4
490 HCOLOR1:HPRINT(36,12),"Draw
Poker"
500 HPRINT(30,14),"Copyright Kei
ran Kenny"
510 HPRINT(35,16),"Sydney, 1990"
520 HPRINT(35,20),"Press any key
."
530 EXEC44539:K$=INKEY$:HCLS
540 HCOLOR2:HPRINT(34,0),"INSTRU
CTIONS"
550 HCOLOR1:B=0:C=1:ZL$="Your in
itial stake is $100. Each hand c
osts one dollar. If your stake r
uns out, press any key to play a
gain.":GOSUB80
560 C=C+1:ZL$="Use the left/righ
t arrow to move the arrow under
your hand. Press the SPACEBAR to
 discard a card. Press CLEAR to
draw cards. Press ENTER if you d
o not wish to discard and draw."
:GOSUB80
570 HCOLOR2:HPRINT(36,6),"PAYMEN
TS."
580 HCOLOR1:HPRINT(0,7),"ROYAL F
LUSH (AKQJ10 of a suit): $100"
590 HPRINT(40,7),"STRAIGHT FLUSH
 (run of 5 of a suit): $40"
600 HPRINT(0,8),"FOUR OF A KIND:
 $20"
610 HPRINT(40,8),"FULL HOUSE: $1
0"
620 HPRINT(0,9),"FLUSH (all same
 suit): $5"
630 HPRINT(40,9),"STRAIGHT (any
run of 5): $4"
640 HPRINT(0,10),"3 OF A KIND: $
3"
650 HPRINT(40,10),"2 PAIR: $2"
660 HPRINT(53,10),"PAIR: $1"
670 FORS=1TO4
680 FORN=1TO13
690 K(S,N)=(S-1)*13+N
700 NEXTN,S
709 '***Deal Cards***
710 X=96:Y=96
720 FORT=1TO5
730 N=INT(RND(-TIMER)*13)+1
740 S=INT(RND(-TIMER)*4)+1
750 IFK(S,N)=0THEN730
760 HPUT(X,Y)-(X+63,Y+63),S
770 HCOLOR0:HPRINT(X/8+1,Y/8+1),
F$(N):HPRINT(X/8+6,Y/8+6),F$(N)
780 K(S,N)=0
790 X=X+96
800 NEXT
809 '***Discards***
810 X=16:Y=20
820 HCOLOR1:HPRINT(X,Y),"^"
830 K$=INKEY$:IFK$=""THEN830
840 IFK$=CHR$(8)ANDX=16THEN830
850 IFK$=CHR$(9)ANDX=64THEN830
860 IFK$=CHR$(32)THENQX=QX+1:PX(
QX)=X*8-32:HPUT(PX(QX),96)-(PX(Q
X)+63,159),5
870 IFK$=CHR$(12)THEN920
880 IFK$=CHR$(13)THEN1000
890 IFK$=CHR$(8)THENHCOLOR0:HPRI
```

Continued overleaf

```
NT(X,Y),"^":X=X-12:HCOLOR1:HPRIN
T(X,Y),"^"
900 IFK$=CHR$(9)THENHCOLOR0:HPRI
NT(X,Y),"^":X=X+12:HCOLOR1:HPRIN
T(X,Y),"^"
910 GOTO830
919 '***Draw Cards***
920 FORTX=1TOQX
930 N=INT(RND(-TIMER)*13)+1
940 S=INT(RND(-TIMER)*4)+1
950 IFK(S,N)=0THEN930
960 HPUT(PX(TX),96)-(PX(TX)+63,1
59),S
970 HCOLOR0:HPRINT(PX(TX)/8+1,13
),F$(N):HPRINT(PX(TX)/8+6,18),F$
(N)
980 K(S,N)=0
990 NEXT
1000 HCOLOR0:HPRINT(X,Y),"^"
1010 POKE282,255:HCOLOR1:HPRINT(
35,21),"WIN? Y/N"
1020 L$=INKEY$:IFL$<>"Y"ANDL$<>"
N"THEN1020
1030 IFL$="Y"THENB=28:C=22:ZL$="
HOW MUCH: ":GOSUB80:GOSUB150:ST=
ST+V:HPRINT(P+1,22)," : Stake ="
+STR$(ST)
1040 IFL$="N"THENST=ST-1:HPRINT(
34,22),"Stake ="+STR$(ST)
1050 IFST THEN1070
1060 FORX=96TO480STEP64:HPUT(X,1
60)-(X+63,191),5:HPRINT(12,23),"
YOU'RE BROKE! GO HOME, OR PRESS
ANY KEY TO TRY AGAIN.":ST=100:GO
TO1080
1070 HCOLOR1:HPRINT(33,23),"PRES
S ANY KEY."
1080 EXEC44539:K$=INKEY$:FORX=96
TO480STEP96:HPUT(X,96)-(X+63,159
),5:NEXT:FORX=96TO480STEP64:HPUT
(X,160)-(X+63,191),5:NEXT:QX=0:G
OTO670
1090 WIDTH32:RGB:POKE65496,0:END
```

PD TAPE Continued From Page 25

George McLintock,
7 Logan Street,
NARRABUNDAH,
ACT 2604.

Telephone (06) 295 6590.
Weekends and 8.30 - 10.30 p.m. week nights.

THIS TAPE CAN BE PURCHASED DIRECT FOR $10.00 FROM GEORGE AT THE ABOVE ADDRESS. MAKE SURE OF GETTING THIS BARGAIN BY GETTING IN QUICK. THIS OFFER WILL ONLY LAST TILL THE ISSUE OF THE NEXT MAGAZINE

End

BETTER BASIC Continued

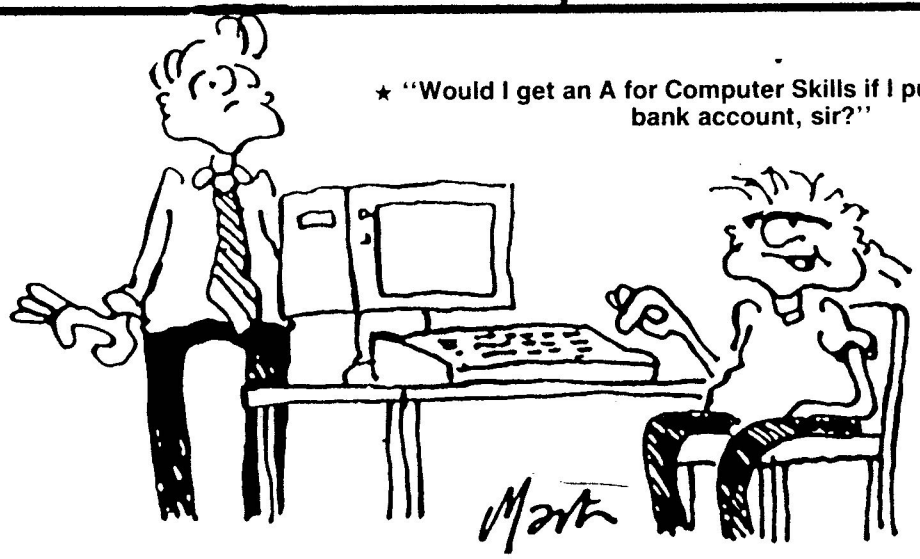
To read programme saved with HIGH speed. POKE 65495,0
To read with normal speed.
Poke 143,8:Poke 144,24:Poke 145,4
To read with computer in HIGH speed.
Poke 143,13:Poke 144,24:Poke 145,6

The following will centre a title or a string on a line.
Print Tab((32-len(A$))/2)A$
Where A$ is string to be centred
By changing the 32 to 40 or 80 it can be used in COCO 3 Hi-res text

True lowercase Coco 3 Poke &H95C9,&H39:Poke &HFF22,&H34

To copy a Pmode 4 pix to CM3. (coco max 3)
Load Translate and check line 425 it should read.
If A=0 then EX$="":Return

To find a ML ADDRESS:
SOLUTION. Peek (487)*256+ Peek (488) (ENTER) ' START
Peek (126)*256+ Peek (127)-1 (ENTER) ' END
Peek (157)*256+ Peek (158) (ENTER) ' EXEC
END



★ "Would I get an A for Computer Skills if I put $20,000 in your bank account, sir?"

Software Ordering Service

The following are the conditions for use of the COCO-LINK Software Ordering System:

1) Only the programmes listed each COCO-LINK issue can be ordered.
2) Prices are listed in Australian Dollars. These prices include all postage and other costs.
3) Orders must be received by the date shown. Cheques/Money orders must accompany orders.
4) All programmes will be checked at COCO-LINK to make sure they function as advertised.
5) No returns will be accepted by COCO-LINK and no refunds will be given on returned programmes.
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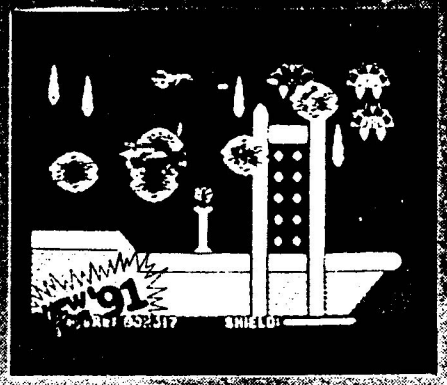
Crystal City



The superior technology of the evil Overlords has smeared yet another innocent planet; however, this one contains the Crystal City, bastion of democracy, and independence. Earth has had enough! Break through level upon level of their virtually invulnerable defenses, defeat the end guardians, and make your way ever closer to freeing the slaves of the Crystal City! This amazing arcade game is an achievement in its own right. Full 128K/512K utilization! Super fast horizontal hardware scrolling on the 128K computer! Wild digital sound effects and background music score! 30 minutes, or over 30 megabytes, of non-repeating 320x200 resolution, 16 color graphics! This game has it all; order a demo disk to see it first! Can you save the Crystal City from unbeatable foes? Req. 128K CoCo 3, disk drive, and joystick.

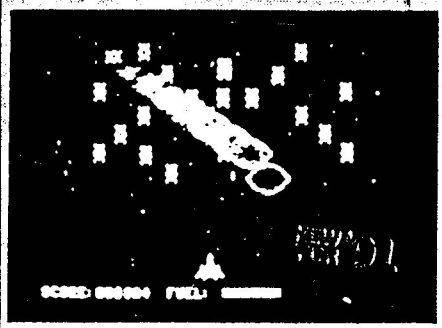
$55.00

Contras

In the year 2671, a mysterious object landed on Earth, heralding the alien invasion of the Red Falcon. Only two courageous soldiers have a hope of stemming this alien infestation. Armed with your military training and the latest weapon technology, you and a friend must fight back the horde. Sundog Systems presents our second 512K game, The Contras. You'll see why we decided to use 512K on this project! Amazing graphics with 320x225 resolution, 16 color full screen animation and horizontal smooth scrolling! Background digital sound effects and real-time music! One or two player action AT THE SAME TIME! You'll agree that this is one of the best arcade games yet for your 512K CoCo 3. Needless to say, playing hero won't be easy; playing The Contras will be tougher! Req. 512K CoCo 3, disk drive, and 2-button joystick.

$55.00

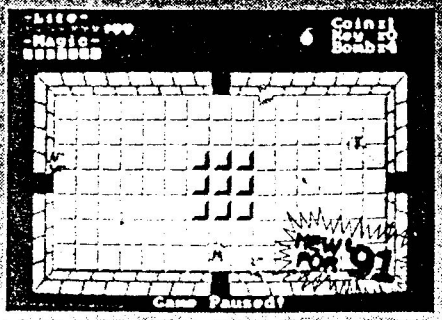
Zenix



You have been chosen to pilot the spacecraft wielding the plutonium plasma laser against the nefarious Insectoids, the Zenians. These bugs have been ripping off the space trade lines for years; now they're about to find a victim who can fight back! Beat back the swarm of pests to their home planet Zenix, and use the laser to end the menace once and for all. Zenix is a lightning fast arcade game for the 128K CoCo 3. The 320x225 16 color graphics are amazing, as are the digital background music score and effects, all on a 128K computer! The fast action and game play will astound you in this GALAGA of extermination. Plug in your joystick and strap in for the ride of your life! Call to order a demo disk to see the action before you buy! Req. 128K CoCo 3, disk drive, and joystick.

$48.00

The Quest for THELDA



Better men than you have failed the quest, but the hand of the good princess Thelda is too much to resist! Stolen by the evil necromancer Divinax, she has been secreted far from prying eyes and it is now up to you to regain the pieces of the mystical Life Force and save the fair lady. The Quest for Thelda is an outstanding arcade program that combines action and adventure to bring you an incredible video game playing experience. Travel throughout over 500 different screens searching for magical objects and spells, fighting horrible creatures, and gathering the various parts of the Life Force guarded by ever-increasing terrors. You'll enjoy the highest quality 320x200 resolution 16 color graphics and digital sound effects that you've come to expect from Sundog Systems. The game play is fast and furious, and only you can rescue the princess and complete the LEGEND OF THELDA! Req. 128K CoCo 3, disk drive, and joystick. (2-button joystick supported).

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Studio Works Pro

NEW! CD Quality audio samples up to 35k by 8 bits! Supports up to 1 MEG memory!

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W/cable **$95.00**

(SEE REVIEW PAGE 27)

Those Darn Marbles

This incredible 3D marble game features extra smooth screen scrolling, great sound effects, graphics, and action! For 512k CoCo 3, joystk & disk ...

$50.00

CoCo 3 Wheel

Great family fun! CoCo 3, disk ...

$30.00

Bowl Me Over

Excellent bowling fun for all! ...

$30.00

Super Public Domain Offer for Tape Users

Submitted by George McLintock

This tape contains the programs from the April PD disk plus a few 'extras' which have been added to fill up the tape a bit more. My offer to provide these on tape is largely in memory of my early days with the CoCo before I got a disk drive. Disk drives are relatively cheap these days and well worth considering if the CoCo is your 'main' computer. (SEE notes on end re problems with tapes etc.).

Files on tape are listed below. Parameters associated with each file name are : approximate tape counter for my machine, file type (as extension for disk files) and a short description of what it is. Extensions (file types) are:
BAS Normal Basic programs. CLOAD and RUN.
ASM Assembler source. In CLOADM format for XCOM.
BIN Binary files in CLOADM format.
MGE Graphic screen files for MGEFILES,
TXT ASCII text files in CLOADM format for XCOM.

To print out (or display) the TXT and ASM files from tape, you MUST use XCOM. Load the files as 5 (tape operations) on main menu, then 4 (CLOADM files) on the tape menu. See TXT file for XCOM if you want to change the ASM files to load into EDTASM. The text files are put on tape in this format so that they will occupy less space than would be required for a normal ASCII file. (See text with MGE for reasons). You can use XCOM to convert them to normal ASCII text files on tape if you wish.

The print options for XCOM are set for paper with 66 lines per page (and 80 columns wide). To alter, use 8 (other options) on main menu and then 2 (change print parameters) on the sub-menu. With XCOM you can display a full screen of text at a time by using

As a general principle, none of my programs change the baud rate or the screen width setting. Screen width is only altered when a particular mode is required. In other cases it will operate on your normal screen. If you run your printer at a non standard baud rate, I assume you have a procedure to set it up each time you use it. Once set, it remains at that value and does not need to be reset by each program run. For other aspects of 'normal' use of XCOM you should change the program to suit your own requirements. An exception is getting data from the serial port. If you want to have data displayed you need to be in WIDTH 32.

The actual file names on tape may end with a 1, 2 or 3 after the name shown here. This is internal to XCOM and you should enter the file name as shown here at the menu. Alternatively, if the tape is in the correct position, just press enter to load the 'next' file (see XCOM text for more info.).

A problem with a tape CoCo 3 is that certain disk Basic tokens in a program will cause the program to 'hang up' if you try to LIST, LLIST, EDIT or execute a line containing them. (This does not happen with the old CoCO). The programs here have been modified to avoid the problem (with DELTOKEN). However, if I've missed any, or you have the problem with other programs, you can use DELTOKEN (on tape here) to overcome the problem. For completeness, the first copy of XCOM on side 1 has been modified to LIST, but the second copy is unaltered and will work with disks on a disk system.

Also note that the simple procedure for a tape system to merge extra code onto the end of a program in memory (by changing the pointers in Locs 25 - 27) will not work with programs that have ML code embedded at the end of them (like XCOM). An extra step is required for these, and I have included a routine in DELTOKEN to overcome this problem. List DELTOKEN for further details. Also you can't save such programs in ASCII and then reload them, as this will remove the embedded ML code. There may be another PD disk/tape later that will explain these aspects in more detail.

A BIT EXTRA ON THE PROGRAMS.
The SCRIPT/CHANGE group are in their original form (mostly). (See CHANGES.TXT or more info. - the text that

was in the magazine is NOT included here as a single file). There is more text here but it is not all specific to the CoCo; you might find some of it useful. Only two programs, TANDYSCP and TANDYCHG, have been modified for tape operations. The COCO2CHG is still set up for disk. If you have a different CoCo or printer you will need to do the other mods yourself.

For Patience, there is also more text here than appeared in the magazine. Parts were deleted to fit in the magazine.

The MKI programs have no direct relevance to tape unless you are into direct read to/write from the cassette buffer, and/or handling data files along the lines of MGEFILES. If you are using these techniques with your own programs then you will know how to incorporate these ML routines as well. These basic routines can also be used for passing multiple FP parameters between Basic and ML routines. If this doesn't make sense, there is no need to worry about it.

POSSIBLE PROBLEMS WITH TAPES

Cassette tapes provide a very reliable and secure form of program and data storage. They are normally more reliable than disks. The most common problem associated with them concerns the head alignment. If the head in your tape recorder is out of alignment, you may have difficulty in reading tapes which have been written by a normal recorder. You can adjust the alignment with a small screwdriver through the small hole above the read/write heads. If you have problems with all the files on this tape, I suggest you try adjusting the head on your tape recorder.

ALSO NOTE: It takes around 3 hours of my time to produce this tape, with approximately another hour of machine time to SKIPF if. (I have no automatic equipment. It is all done directly from the keyboard!. The tape will NOT be replaced lightly. If you can't read any of the files after adjusting the heads, send the tape back to me and I will have a look at it. Under these circumstances, I offer no guarantee of a replacement. Tell me your story with the returned tape, and send me a copy of a tape that you have saved some files onto as well, so that I can try it in my recorder. You will get the tapes back.

If you find a limited number of files that you cannot read, send me a tape and a list of the files, and I will send you another copy of those files only.

I repeat that cassette tapes are normally a very reliable form of storage and should not cause any problems. However, I have no control over the head alignment in your recorder, so if you have problems, check the alignment.

SIDE 1 - Backup files from the Tape.

```
XCOM          5 BAS Program to read/print text files (see
                    above).
COMSBUF      22 BAS To set up ML routine for XCOM.
DIVERT       28 BAS Duplicate all screen output to printer.
ERASDEMO     32 BAS Demo of erase routine.
MGEFILES     36 BAS Handles MGE graphic files.
ANGEL        46 MGE Picture to load with MGEFILES.
BAMBY        64 MGE Another one.
MKI          80 BAS Conversion floating point/integar.
TRANSFER     85 BAS Transfer fron PMODE screeb ti HCREEN.
PRINTDOC     91 BAS PD Disk program to print doc files (no
                    use here).
XCOM         96 TXT Doc files to describe XCOM.
COMSBUF     122 TXT DescrIbes COMSBUF.
COMS1       155 TXT More description.
DIVERT      177 TXT Describes DIVERT program.
DIVERT      188 ASM Assembler source for.
ERASE       193 TXT Describes program.
MGEFILES    198 TXT Describes program.
MGEFILES    213 ASM Assembler source.
MKI         222 TXT Describes program.
MKI         233 ASM Assembler source.
TRANSFER    239 TXT Describes program.
TRANSFER    246 ASM Assembler source.
PATIENCE    253 TXT Describes progran.
SCRIP       297 TXT Describes program series.
SCRIP1      339 TXT Continues description.
CHANGES     373 TXT Describes changes to scrip.
COCOSCP     399 TXT Describes changes for Tandy printers
                    and CoCo.
XCOM        426 BAS Second copy of this program.
XCOM ends   460 Tape ends approximately 500.

SIDE 2
WATERX        5 BAS Program to display falling waterfall.
WATF1-4      10 BIN Are graphic screen loaded by WATERX.
GARFIELD     56 BAS Graphic picture. To help fill tape.
FOOTY        78 BAS Another one. LIST 1 - 20 for source.
PATIENCE    108 BAS Plays the game.
LINKOCT     120 BAS Referred earlier magazine.
TANDYSCP    125 BAS Prints graphic script to Tandy printers
TANDYCHG    143 BAS Changes characters for Tandy script.
CHANGE      164 BAS Changes characters for Epson script.
SCRIP       185 BAS Prints graphic script for Epson prnters
DEDTOKEN    205 BAS For CoCo 3 tape systems
COCO2SCP    212 BAS Uses PMODE screen to change script.
SNOOPY      235 BAS Another cartoon.
CARTOONS    246 BAS More cartoons.
XCOM        274 BAS Saved in ASCII (Not usable).
MGEFILES    323 BAS Another copy for here.
BUDDIES     338 MGE Another MGE file.
DWARVES     365 MGE Another one to fill tape.
ALOHA       400 MGE And still another one.
```

If you have any problems, queries etc. on these programs and associated bits, then please contact me as per below. Please note the comment above on head alignment for your tape recorder, and a phone call in off peak times can often be quicker and easier than a letter, without being too expensive. It can frequently define the problem a lot better as well.

Continued on page 21

Club Noticeboard

CLUB CONTACTS

Adelaide.....Laurie O'Shea
. 08 363 2647
. (after 7.30pm)
. Glenys Ferres
. 08 332 4264

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. Ian Taffs
. 051 275 751

OS9 User Group....Gordon Bentzen
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Peninsula CCC.....Bob Charleston
. 059 791 922
. Greg McKenzie
. 059 837 255
. Gordon Chase
. 059 711 553
. Robert Hillis
. 03 563 3553

Penrith CC Users..Debbie Collier
. 047 213 945

Springwood Users..P.Richardson
. 047 536 018

Whyalla.....Fred Porter
. 086 450 607

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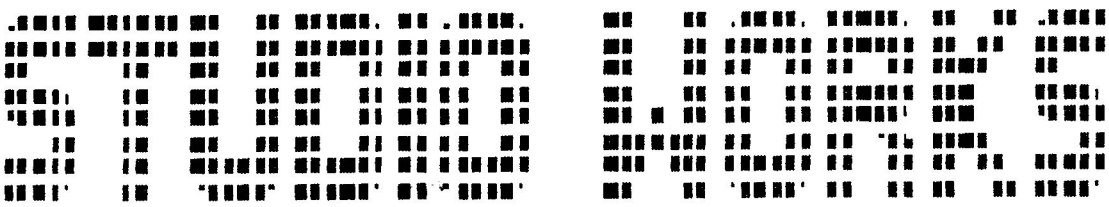
WANTED URGENTLY

Programmes, Articles, Hints and tips for COCO-LINK Magazine.



A digital Sound Editing System

By Desmond Rae

REQUIREMENTS:

*128k/256K/512k/1024k CoCo3
*1 Disk Drive
*Walkman or Stereo with a 1/8" Ear phone jack
*A connecting cable (you may order this when purchasing or if you own another Digitizer such as Max Sound ,Sound Trax, Super Sound, Vocal Freedom, you may use that cable instead or if your a bit of a Hardware Hacker, you could build one from the schematic included in the manual)
*A pointing device either a Joystick or a mouse.
*A monitor with a speaker, or a Stereo connected to Audio out on the rear of your CoCo3
*HI RESOLUTION JOYSTICK INTERFACE IS NOT REQUIRED!

I will cover the aspects for a 512K Coco 3 as this is the version I have, at least until I get some money together for 1024k (1 Meg).

WHAT WILL STUDIO WORKS DO FOR YOU?

Studio Works is a Digital Sound Editing System. This means that you can record any sound, no matter what it is or where it is from. eg. Your local Radio Station, Television, Speech, Music, animals etc.etc.
It will record the sound sample at the quality at which it is received, with only a very,very, small loss in quality when using the maximun record rate, which is 14.92 kHz using Six (6) Bit digitization.
You can also use Five (5) Bit Digitization at 17.05 kHz.

WHAT IS THE MAXIMUN LENGTH OF SOUND YOU CAN RECORD?

The longest sample the CoCo will record is 88.4 seconds! But before you start jumping over the moon with excitement, there is one thing you have to watch. Although the CoCo will record for 88.4 seconds, it is doing this at the SLOWEST record rate, which is 5.19 kHz. This rate is just great for speech, but if you want to record say, Tina Turner singing "The Best ... ", well forget it (or at least at this record rate anyway). If you want to record music and get a good reproduction of the original sound, well this is where the 14.92 kHz rate comes in. It sounds just great, but It will only record for 30.07 seconds. So, as you can see, the trade off for longer recordings, is the reproduction and quality of sound afterward.

HOW IS SOUND RECORDED?

The cable that comes with Studio Works is plugged in to your left joystick port. Then a pointing device, whether it be a mouse or a joystick, is plugged in to the right joystick port. On the end of the "Capture Cable" (the one that is supplied) is a 1/8" mono plug to be inserted in to either a Walkman, a Home Stereo or whatever.
Then, once the program is loaded, (after seeing a boring title page with a speaker that looks as if two year old drew it using CoCoMax 3), we are finally presented with a well thought out main menu. From this menu we can do any of the following or, as you slowly get used to how different parts work, use all at once.
You have control over the following after your sample is loaded:

Stuttering
Echoing
Overlaying two samples (provided there is enough memory left to do such a thing: It is easy to chew up too much memory).
Repeat a section of a sample or the whole thing.
Reverse a section of a sample or the whole thing
Cut and paste sections of a sample to make it sound entirely different from the original first loaded.
Complete volume control over ANY piece of recording.
Sequencing

Data compression
Clipboards
A VU Meter for better recordings.
Insert.

WHAT CAN YOU DO NOW?
Well, after you have "Captured" a sound, you can do the many things to it mentioned above. Lets say you listen to a great drum solo by the Shadows and you want to do your own. Well all you need is just one beat of the drum to make up your own drum solo.
How can I make up a drum solo from one beat?
Well, on the main screen, the sample will appear either as a row of dots as peaks on the screen or you may connect all of the dots and make it look like a graph. You may set this to your own preference.
Ok, now what? On the left and right of the shown music is a single bar which may be moved. You can move the left bar to the start of the drum sound, and the right to the end of the drum sound and press the loop icon. Now when you press play it will repeat that drum as long as you hold down the fire button!
OK, but I dont want to sit in front of my CoCo for an eternity holding my finger on the fire button. There must be an easier way to repeat something. And of course, as always, there is.
You may want to delete any non-required sound both before and after the drum beat. Shift the two bars to the part you want deleted, press BLOCK DELETE, and in a fraction of a second its gone. But be warned, there is NO undo function so be careful! Now with the drum on its own, you may copy it to a clipboard. Do this by moving the bars to surround the sample and copy it to the clipboard. You may now click on the "Clipboard Insert" and place the drum from the clipboard behind the drum beat already in the score. So now we have two drum beats exactly the same!
Yes, but I want an echo on the first beat just like the professional sound recording studios do. Well that's easy enough. Seeing that we already have the drum in the clipboard, we can now click the icon for Overlay. Now our cursor changes to a little "o" and we can offset the "Clipboard" sample in to our score and have an echo. How far away we place the clipboard drum beat determines how much echo will be achieved. You can do this several times if required.
Now that we have this in clipboards we can use the sequencer in memory to play the music back. We dont have to use the fire button all the time.
OK, you now have the recording you wanted. So you want to save it. It can be saved in two different ways. You may save the sample as a Binary file. By doing so, you will be able to load the file into either a BASIC or ML program for your own use (as I have done), or save it a compressed file for use only with Studio Works. In this case you won't be able to load it from Basic or ML.
The compression method is a little slower to save and load than Binary but it saves you a lot of disk space. This is important as you can easily fill 4 disks with one sound file. (I have done this with the Complete sound file for Miami Vice).

NOW IT'S SAVED WHAT CAN YOU DO WITH IT?
Well, on the Studio Works disk, there is a program called, "plylodsw". It will allow you to load the sample you just saved in to a Basic or ML program for special effects. You could have a bit of a sound demo running with the drums playing. You can also alter the tempo of the drums at will. This can be done in Basic, ML or Studio Works. You have, when you save, 56 X 8K blocks to save a sample to, and consequently this means that when you load a sample to Basic or ML your are restricted to one full disk of sound which is about 156k of sound. This is because, if any more space in memory was taken up, there would be no more memory left for graphics! Seems a bit strange that we can access about 490k for programs and if we minus 32k for one Hscreen2 page, about 100k for a real program, and 160k for sound that leaves us with 198k of wasted memory! But don't despair, you can fit a lot of sound in to 160k so don't knock it, not yet anyway.

DO YOU HAVE TO BE A PROGRAMMER TO USE IT?
Of course not. You may use it for any thing at all whether it be for serious programming in games or just for fun.

WHAT CAN YOU OUTPUT THE SOUND THROUGH?
Well, if you connect a Home Stereo to the Audio Out on the rear of the CoCo 3 you can play the sound that way. The sound is a lot better when played through a stereo, plus you can also get the sould a LOT louder.
Ever wanted to have a car starting in your living room, do a burn out and then disappear down the street waking the neighbours in the process? Well Studio Works is what you want!
You can also do a lot of composing using different sounds, but it all takes time and of course memory. It is also dependant on how you recorded it.

CONCLUSION
So the bottom line is. Is it worth the $84 I paid for it? Well they could have whacked about $120 on it, and it would still be worth having! So yes, it is worthy of purchase. It is a great tool for programmers on the game side of the CoCo3 and also people who just want to do something different with their spare time.
But be warned, Recording can suddenly become contagious and you will find your pile of 40 blank disks suddenly drop to less than 3 in just under 2 weeks! But yes, it is a great program and I thoroughly recommend it for any bodys Sofware collection because, at $84, this program is a steal and NOTHING comes even close to matching it in power, speed, ability, and ease of use. It is a very user friendly program.

REVIEW CONTINUED

SO WHERE CAN YOU GET THIS MAGNIFICENT PROGRAM?
Either from COCO-LINK with its wonderful new service, (Introduced in this issue..ED), called SOS (Software Ordering System) or,
Australian Peripheral Developments,
118 Parfrey Road, Rochedale, Queensland 4123.
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There are quite a few other functions that this marvelous system will do, but space does not permit me to explain all aspects of it.

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END

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