Merry
Xmas
and
a Happy
New Year

The All Australian Magazine

Including APD's latest catalogue
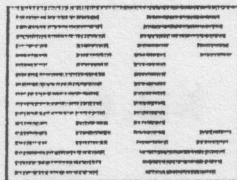
BLAXLAND COMPUTERS

Yes, Tandy have indeed done the deed and stopped carrying the CoCo series of computers. A sad day for all, but not the end of the world. For as long as it remains a viable proposition, Blaxland Computers intends to continue to support the CoCo user by importing software and hardware from the U.S.A.

Naturally, we will not always have exactly what you want in stock, but if we can get it for you we most certainly will. Please do not hesitate to telephone us or to write a letter explaining your problem. If we can help, we will. If we cannot help, we will endeavour to locate someone who can.

To give you some idea of the type of programmes which we are carrying, the following is a list of some of the software currently in stock. Note that supplies of each are limited, but that most can be obtained on your behalf should stock be sold out before you enquire.

SOFTWARE

MAX 10	$160.00
COCO MAX III	$135.00
WORD POWER 3.2	$159.95
VIP LIBRARY ii & iii	$119.95
WARGAME DESIGNER	$59.95
SIDEWISE	$33.95
LEISURE SUIT LARRY IN THE LAND OF THE LOUNGE LIZARD	$79.95
IN QUEST OF THE STAR LORD	$69.95
HINT SHEET for IQOTSL	$9.95
GANTLET II	$59.95
FORTH09	$295.00
PINBALL FACTORY	$72.95
SCREEN DUMP (GEMINI & EPSON)	$39.95

FONT DISC FOR MAX 10 (SET OF 2)	$59.95
FONT DISC FOR COCOMAX3 (SET 4)	$99.95
TW80 - USE TELEWRITER 64 WITH THE COCO III	$39.95
THE NEWSPAPER DESIGN SYSTEM	$99.95
WIZ (OS9 TERMINAL PROGRAMME)	$160.00
PRESTO PARTNER (USE UNDER OS9)	$49.95
BASIC FREEDOM	$39.95
COCO CHECKER (DIAGNOSTICS)	$39.95
A-DOS 3	$69.95
SPEED RACER	$69.95
ROMMEL 3D	$69.95
KUNG-FU-DUDE	$49.95
FURY	$59.95
OUTHOUSE	$39.95

ALSO FULL RANGE OF COMPUTER HUT PROGRAMMES AVAILABLE.

SERIAL TO PARALLEL INTERFACE

INCLUDES SWITCH TO ENABLE SERIAL OR PARALLEL TO BE ACTIVE

Been considering using a parallel printer on the computer, but the parallel interface has been the problem? Then here is the solution. Plug in the serial/parallel interface and you are in business. The unit includes a switch and socket so that there is no need to unplug everything should you decide to use the modem or some other serial device. Flick the switch and your serial output is redirected to the proper device.

OUR PRICE - JUST **129.00**

Where are we?

134 Great Western Highway, BLAXLAND

Write to us at:

P.O.Box 125 BLAXLAND 2774

Telephone us on:

047 393903 **'Fax' us, same number**

Contents

COCO LINK

COCO LINK

Dear Ed. Link-Up

Dear Ed,
I am writing firstly to congratulate you on a fine magazine and well deserved of the kudos that I have heard for COCO-LINK from many sources. Keep up the good work. My wishes for a long and successful career for COCO-LINK.

The second reason for this letter is to urge support and contact from people to form a new user group for Tandy Colour Computers. I realise that there are other groups,but Adelaide is spread over a large area and the two main groups are north and south.

Cocos' offer unbelievable opportunities for helping the disabled, the elderly, the learning disabled, the blind, the deaf and the socially disabled. People can be helped with overcoming learning problems, improving the quality of life, the challenge of learning new skills, solving the difficulties of living with disabilities, meeting new friends and we can help to raise funds for worthy causes.

What we have in mind is a group situated in the centre of Adelaide, or as near as possible, and aimed initially at beginners, older people and those with experience who wish to help develop exciting ideas for community service using computers. Because of the fact that some of the intending members are 60+, and many are beginners, it is proposed the new group be an adult group, That is preferably over 18 years of age. The reason for this is that many older people feel inept when learning from a very young person. Also, some of the projects attempted will demand maturity.

The oldest potential member is 75 so all you 25+ people contact us and help work out some concrete ideas.

Contact Laurie O'Shea on 08 363 2647 (I am best contacted in the evenings after 7-30PM or at weekends) or Glenys Ferres on 08 332 4264. You can also write to me at :
  PO Box 157. Kensington Park, S.A. 5068

The tentative name of the group is ADELAIDE COMMUNITY COMPUTER CLUB. We Coco owners stand at the crossroads now that Tandy has dropped the machine. Now we need to work together. Glenys and I have lots of enthusiasm and ideas. Contribute yours too.

Laurie O'Shea SA

Dear Laurie,
Thanks for the compliments. We do our best. I commend your attitude and enthusiasm and wish you the best of luck.
I wonder if you have considered visiting some of the Aged Persons Clubs to get reaction to your proposal. I am sure that this would be the sort of place and people who would jump at the idea.

Dear Ed,
I notice in the application for membership, you ask if I am a subscriber to BBS, Viatel or Rainbow magazine. I have been looking in the newsagents for computer magazines about Tandy or CoCo computers, but never have found any.
Could you tell me how I can subscribe to Rainbow magazine or either of the others and if they publish information on the TRS80 computer.

Ron Lidgard. QLD.

Dear Ron,
We are the only Australian magazine for Tandy computers. Rainbow is distributed by Gordon & Gotch and can be ordered through your local newsagent or you could contact Blaxland computer Service. N.S.W.

Dear Ed,
I wonder if any of the subscribers to COCO-LINK thought about printing out about 12 subscription forms and giving them to their local Tandy store. I gave 12 copies to our local store at Taree.

Arthur Williams NSW .

Dear Arthur,
I don't know if anyone other than yourself has had this thought but we sure do appreciate any help that is forthcoming from our readers. We will happily supply subscription forms to anyone who would like to do something similar to this.

Messieurs,
J'ai eu l'occasion de lire le numero d'Aout 1989 de votre
magazine COCO-LINK. Je l'ai bien aime. Je remarque
parmi les lettres a l'Editeur le nom de Keiran Kenny.
Comme M. Kenny est un contributeur regulier a Rainbow,
j'espere que vous l'inviterez a publier ses excellents
courts Logiciels dans votre Magazine.
J'ai surtout aime le logiciel DISK CATALOGUE que vous
publiez en page 8. Cependant j'ai remarque que le
logiciel avait ete amende en 1989. J'e suis surpris
qu'avec le grande valeur du COCO-3 pour Une excellente
presentation en couleur par PALETTE qu'on n'aie pas pense
a changer la presentation piteuse qu'on y fait des le
debut a MASTER MENU avec l'usage de CHR$(128).
        BONNE CHANCE A COCO-LINK.
                    Armand Belanger. CANADA.

(translation)

Sirs,
I had the occasion to read the August edition of your
magazine COCO-LINK. I liked it. I see in the letters to
the editor the name of Keiran Kenny. Mr Kenny is a
regular contributor to Rainbow. I hope that you will
invite him to publish his excellent programmes in your
magazine.
Furthermore, I liked the programme DISK CATALOGUE which
you published on page 8. I noticed that the programme
had been ammended in 1989. It surprises me that, with
the value presented by COCO-3 for excellent presentations
in colour using PALETTE, they did not think to change the
poor presentation of the MASTER MENU at the beginning
where they used CHR$(128).
    GOOD LUCK TO COCO-LINK.

                    Armand Belanger. Canada

Dear Armand,
I hope my translation is a true reflection of what you
were meaning. I haven't done french since high school.
(Which was a few years ago!!!)
Thank you for contacting us from so far away.

Dear Ed,
Your article on COCO MAX 3 was interesting reading. I
have Max 3 and Max 10 and, for a while I spent a lot of
time playing with them. Max 3 is all that you say it is,
and more, but generally I have not found any specific use
for them as you have in your position.
However, I have had one difficulty with Max 3. When I
move the pointer close to the right hand edge of the
screen it flutters furiously. It is very difficult to
select the three or four right handcolours or patterns.
Also in the displays for set colours and cycle colours,
the colour patches do not fit neatly into their
rectangles. Do you know fixes for these problems?

I got nowhere with using TRANSLAT to convert PMODE4 pix
to CM3 at first. Then I discovered an error in the
TRANSLAT program. Line 425 should read....: IF A=0 THEN
EX$="":RETURN It read...: IF A=0 THEN EX$=":RETURN with
the result that the return did not execute and the
program crashed through to the following line.
Somebody may find this useful.

                    Keiran Kenny. NSW

Dear Kieran,
I am sure your problem with the pointer jumping about in
COCO MAX at particular spots on the screen is caused by
your joystick.
With potentiometer driven joysticks any flaw on the
carbon track causes a sudden change in resistance and
produces this problem.
I had the same problem but since changing to a mouse have
had no further trouble.

The displays for set colours and cycle colours are offset
due to the 50 - 60Hz difference between Australia and the
US. Because the system used in the programme to show 64
colours at the same time requires the computer to do some
pretty fast switching of banks of memory, the timing gets
upset due to the different frequency rate. I don't know
of any fix for this but maybe someone out there has the
answer.

Thanks for the tip on the TRANSLAT programme. I know one
person it will help!!!

Dear Ed,
I am glad you liked my programme "Computer Tote", yes it
would have been hard because of the binary screens to
reproduce it in COCO-LINK. However I had no objection to
you placing it in your PD library with description in the
magazine.
Sorry about the printer codes not being documented, I
didn't give it a thought. I use a CPA-80 and I list below
the line numbers with codes that may conflict with other
types of printers:-

8	CHR$(27) "O"		RESETS SKIP OVER PERFORATION
27	CHR$(27) "!"	CHR$(32)	ENLARGE MODE
29	CHR$(27) "!"	CHR$(32)	ENLARGE MODE
30	CHR$(27) "!"	CHR$(32)	ENLARGE MODE
		CHR$(1)	ELITE MODE
		CHR$(4)	CONDENSED MODE
70	CHR$(27) "!"	CHR$(4)	CONDENSED MODE
		CHR$(18)	TURNS OFF CONDENSED MODE

I hope that this will clarify the situation and of course
the PMODE4 screens can be replaced by ones of the users'
choice. As I said before, wehad some very entertaining
and profitable evenings thanks to the versatility of the
Coco.

Robbies Column

SEASON'S GREETINGS
I would like to take this opportunity to wish you all a Merry Xmas amd a Happy new Year. I would also like to thank you for your support in this our first year of publication.

****

NEW CLUB
It is good to see that there are still some people out there with faith in the Color Computer. Laurie O'Shea and Glenys Ferres are in the throes of forming a new club in Adelaide. (See LINK-UP letter from Laurie O'Shea).

The idea of setting up a computer club specifically for the older element in the community with a bent towards helping the disabled definitely appeals to me.
Here at COCO-LINK we wish Laurie and Glenys our best wishes in this venture.
(See also CLUB NOTICEBOARD).

****

ADVERTISERS
Our three main advertisers.....John Belshaw at Blaxland, John Poxon of APD and Nickolas Marentes software all assure me of their continuing support for the Color Computer.
If we wish to retain that support we must in turn support them.

****

LOOKING TO THE FUTURE
With the discontinuance of the Coco by Intertan Australia we look into the future with the knowledge that no new Coco machines will be sold here. That, in turn, means that here at COCO-LINK we do not have a renewable source from which to glean subscribers for the magazine. This means that only your enthusiasm and support will keep us going into the future years.
WE urge you to persuade your Coco User friends to support us by subscribing to COCO-LINK.

****

NOW FOR THE BAD NEWS......
Due to the rise in price of just about everything in connection with the magazine plus the fact that we are working from a smaller subscriber base than we had envisaged.......I have to announce a rise in the annual subscription rate from $12.00 to $14.00. The joining fee for new subscribers will remain at $8.00.
The bad news continues with the rise in advertising rates. Our new rates are as follows:-

                    $12.00.....per full page
                    $ 8.00.....per half page
                    $ 5.00.....per 1/4 page

The cost of our service of making up advertising copy to specification rises from $5.00 to $8.00.

These new rates will apply from 1st December 1989.

We deeply regret having to increase these charges but in order to keep the magazine financially viable they are a necessity.

****

NEW IN COCO-LINK
We receive quite a few graphics programmes here at COCO-LINK. While we do not feel that generally our readers wish to see the LINE and DRAW listings for such programmes, I am quite sure that there are many people who are interested in seeing the end results.
We have instigated the "GRAPHICS BY....." page to take care of this thoroughly enjoyable area of computing.

Although we are not able to print these pictures in colour I am sure that you will be delighted and in some cases surprised at the versatility of Coco graphics.

****

THE BIG "A"
I just read that AMSTRAD won an award for being Australias biggest selling computer with 17.1% of the market. They won this by agressive advertising.
I wonder how well a company with 400 of its own outlets could sell computers if it used any reasonable sort of advertising?

****

A "B" FOR THE OTHER BIG "A"
In the Profile Disk Drive manual for APPLE computers:
"Your Profile Drive is packed in a cardboard shipping carton. After you open the carton, remove the top layer of thick, foam material and you will find a small cardboard box lying on top of the drive. The box contains this manual."

****

SYDNEY VISIT

I had a break from work and COCO-LINK at the beginning of October and visited Sydney. I would have liked to have known earlier that I was making the trip as I would then have been able to announce it in COCO-LINK and then possibly have met a few of the Sydneyside subscribers.

As it was I was able to stop and see John Belshaw of Blaxland Computer Services on the way in. He informed me that he has every intention of continuing support for the Coco.

He also told me that he is looking into importing a new Coco magazine. This is another US publication and the copy I looked at seemed very good. When he has further information on this he will pass it on through the pages of COCO-LINK.

While in Sydney I also had the pleasure of meeting Kieran Kenny. We spent a pleasant hour talking about our favourite subject.

You will see a bit more about Kieran elsewhere in this magazine

In future when travelling to foriegn parts, I will endeavour to put prior notice in COCO-LINK. In this way I should be able to prearrange to meet some of you and possible attend a few club meetings.

Also, for any of you travelling to Adelaide, don't forget to look us up.

****

COMPETITIONS

Well, I am sorry to say that we received only one entry for our competitions. This saddens me but at least lets me know that our readers are not interested in this sort of function. We will no longer attempt to run this sort of competition.

To show you what you might have done I have included a short story from last year's Noarlunga Club competition in these pages.

Read about our competition entrant on page   of this magazine.

****

THE COCO-LINK AWARDS

In lieu of the above we have decided to inaugurate the COCO-LINK AWARDS.

These will be awarded on overall and continuing service to the Coco community in Australia. The decision on the winner or winners each year will be a function of Garry and I at COCO-LINK.

The fist of these awards is announced elsewhere in this magazine.

Seasons Greetings Robbie

Link-Up Continued

Dear Ed.

If anyone requires any further information please drop me a line and I will endeavour to answer.

Good luck to you and the magazine.

> Peter Hughes
> 54 Princeton St.
> Kenmore. 4069

Dear Peter,

This information will be of great help to those who make use of the Computer Tote programme which appears on PD Disk #012. It really is a good idea to indicate the printer and codes used in programmes for publication. It means that those with different printers will be able to alter where necessary to gain the full benefit of the programme.

Dear Ed,

Just received back numbers of the magazine; thank you very much, very entertaining both in an educational and an entertaining sense.

Lots of questions arise, but I will settle for just one this time. In Vol 2. No 5. Geoff Donge's letter to the Editor (page 26) referred to using the FD-502 disk drive as a double sided disk drive.

I tried the commands suggested, but nothing happened. Does this work, and is it applicable to CoCo 1 & 2 or only CoCo 3?

Also, (sorry I couldn't resist another question), how is a "flippie" made?

> Bill Killen. VIC.

Dear Bill,

Tandy's FD502 Drive is a double sided drive. It can be used in the way described but if you are using a straight Tandy RS-DOS controller it would have to be modified to allow it to access the reverse side of the drive.

Using ADOS, BDOS or one of many upgraded RS-DOSs it is possible to access the reverse side with no hardware modifications. It is a good idea to have one of the other DOSs along with Tandy DOS in your controller. This gives you the best both worlds.

If you are near a club there will likely be someone there who will be able to do this upgrade for you at a small cost.

To make normal single sided disks into "Flippies" entails duplicating the holes and notch on the disk cover on the opposite side of the centre hole.

A notching tool used to be available through Tandy stores. The round holes should be done with a single hole punch.

you must make sure you don't mark the surface of the disk when you do this. I usually just slip a piece of paper in over the disk surface before inserting the hole punch.
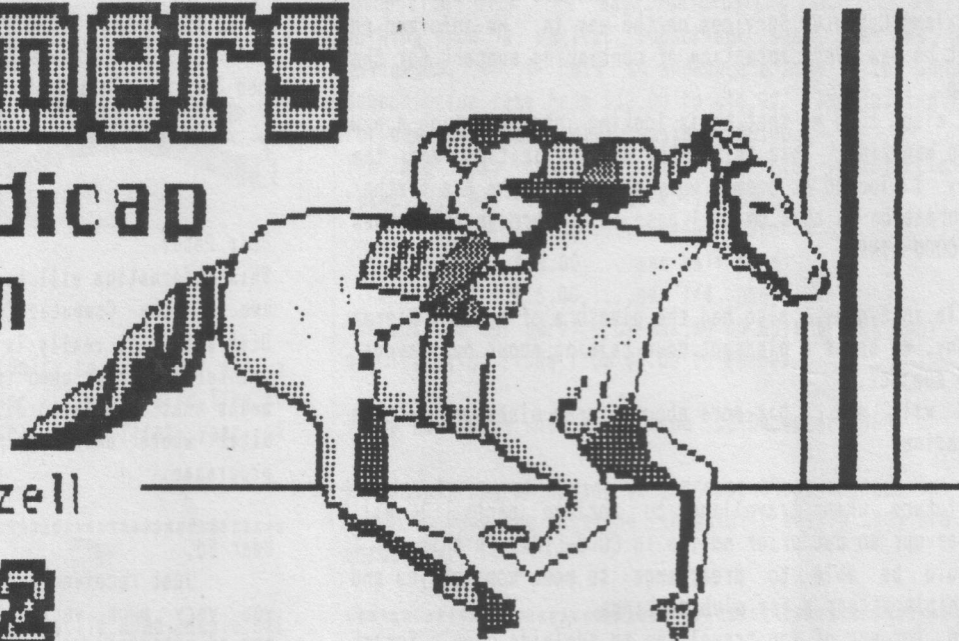
Coco 2&3 Double Disk   Application

Winners
A Handicap System
By
Robbie Dalzell
Part 2

Part one of this series of articles explained the Hash Filing system and gave you the initial menu.

Before we can make use of the handicap system we must build up a file of data that can be used. To this end the first menu selection we will work on is the "YESTERDAYS RACES" selection. This involves collating the data from the previous days' (or before) races.

The YESTERDAY'S RACES module of the WINNERS programme gives a horse a Performance Rating. This rating is based on various factors and is the standard the horse showed in this particular race. It is possible for a horse to have the highest Performance Rating in a race but still not be the winner. This is because the horses are rated on the premise of all factors being equal. Therefore, this gives us a true indication of the horses form.

The DATA required by this section can all be gleaned from the results section of a racing paper or daily newspaper. To obtain the best results from the system all races of chosen horses should be entered. In my use of the programme I have stuck to Adelaide races only. I would recommend that, especially for starters, you should stick to races in one state or capital city. It may be a good idea overall, to keep seperate files for each state.

The information neccessary for this section is varied and is split into 4 main sections. The information you are required to input in this module is as follows:

```
STATE               MONTH
PROVINCIAL OR MIDWEEK MEETING
LIMIT WEIGHT
------------------------------------
TYPE OF RACE
------------------------------------
HORSE NAME                    AGE
POSITION                   JOCKEY
MONTH LAST RACED
------------------------------------
WEIGHT CARRIED     LOSING MARGIN
CHECKS, BLOCKS ETC.
```

Not all of this information is required for the horses rating figure. Some items are saved so as to give a fuller overall picture of the horse's form. The more information you have on a horse the easier it is to make the final decision on whether to risk losing your shirt. Other neccessary information is calculated automatically by the programme.

The programme is user friendly and will ask you for the required information in sequence. Your input consists of:

GENERAL INFORMATION
****

STATE: This directs the programme to the correct ****** data for the Base Run Rate for that particular State and type of race.

MONTH: This is the present month and is recorded for ****** later use.

PROVINCIAL OR MIDWEEK MEETING: This provision was ***************************** included to give a blanket cover for all races outside of weekend metropolitan races. This cut out the need to save the required data for each individual non-metropolitan track.

LIMIT WEIGHT: This is usually recorded along with the ************* results of the race in the newspaper but if not, is usually the lowest handicap weight in the race before any apprentices allowance has been deducted.

RACE TYPE
****

TYPE OF RACE: AGE........The first menu gives you the ************* choice of 2,3 year old or open races.

TYPE.......The second menu lists the various types of races in the age category. This is not a fully comprehensive list but covers the main categories. Along with the state this information lets the programme select the correct base run rate for this particular race. The base run rate is the initial starting point for the calculation of the rating for this particular race.

HORSE INFORMATION
****

HORSE'S NAME: Using the Hash File included in the code, ************* the horse will be allotted a number. The system will check to see if it is already on file.

AGE: The horses age in years is required for later use **** in the calculation of Age Allowance.

POSITION: The position the horse finishes at is recorded ********* for information only. You will be able to see the horses last 8 finishes from the HORSES file printout. (The Horses file will be the subject of a future part of this series).

JOCKEY: Each jockey has a rating which is stored on the ******* Jockey file. The Jockey file will be built by the user and it's upkeep is entirely up to the user. (This file will be the subject of a future part of this series).

Until a Jockey file has been established you should press <ENTER> when asked for the jockey's name. This will delegate a nominal rating for the jockey and allow calculations to proceed.

MONTH LAST RACED: This information can be found in the ***************** form guide for the race under scrutiny. This information is saved for information purposes and covers the times all the horses' starts have not been documented.

RACE INFORMATION
****

WEIGHT CARRIED: This is the actual weight carried during *************** the race. This figure is used in calculating the Performance Rating.

LOSING MARGIN: This is recorded in lengths and is found ************* with the race results. The figure is converted from the MARGIN file and used in the calculating the Performance Rating.

CHECKS AND BLOCKS ETC.: This input is left to the user's ************************* discretion. The figure used is usually between 1 and 4. and is a calculation in lengths. The information should be based on the stewards report or a race report. This can be an important factor in fine tuning the ratings of your horses.

When all input has been entered the programme will ask if all is correct. If so, it will then calculate the horse's Performance Rating and display it on screen. It is then transferred to disk. If the horse is already on file the DATA will be added to the existing data. Each record will save up to eight (8) races. When the DATA has been saved you are then ready to enter the result for your next horse.

Before saving any DATA from this module to disk, you must have a specially formatted second disk (or reverse side of your master disk if you are using ADOS or BDOS) using the CREATE A NEW FILE option from the HORSES file which will be the subject of the next part of this series.

THE PROGRAMME

Line 99 to 270 comprise the menu routine. This is the same menu routine as used in the Hash File in Part 1 of this series.

Line 15000 to 20060 comprise of the parts of the Hash File required for this module.

Both of these files could be merged from last issue's Hash File thus saving a considerable amount of typing. (That is if you went to the trouble of typing in the Hash file in the first place!).

Line 999 to 1055 input the DATA required from separate data files. The files loaded are the "State" and "Margin" files.

Line 1059 to 3160 is the general input section.

Line 3169 to 3177 calculate the performance rating.

Line 3179 to 3395 OPEN's the HORSES file (which should have been formatted before starting using the programme) and saves all the information to disk.

Line 3400 to 3470 are options on whether to continue etc.

Line 21000 to 22510 are formulae which change the information into usable DATA for saving to disk

Line 3180 Saves the DATA to Drive#2. This is the revese side of Drive#0 on systems using ADOS, BDOS or similar. For those using two separate single sided drives this line should read:

    3180 OPEN"D",#1,"HORSES:1",80

NB. This should be saved to a specially formatted disk as specified above.

When typed in, YESTERDAY'S RACES should be saved to the master disk along with the MAIN MENU (MOD1) and named MOD2. Your associated DATA files should also be saved to this disk.

MAKING THE DATA FILES

The following short programme can be used to save the various DATA files required by the WINNERS programme. The first files we require are the STATES and MARGIN files.
At this time only three states have been documented. These are SA, VIC, and NSW. Each of these files is 72 records long.
The MARGIN file is 56 records long.

```
5 DIMYY(X)
10 FORK=1TOX
20 PRINTK;"   ";:INPUTYY(K)
30 NEXT
40 OPEN"O",#1,"XXXX"
50 FORK=1TOX
60 WRITE#1,YY(K)
70 NEXT
80 CLOSE#1
100 CLS:END
```

The file LOADER programme is used by tailoring it to suit the data you wish to save.
For example, to save the MARGIN file follow these steps:

1) Change all YY's to the required variable. In this case LM.
2) Change all the X's to the number of records required. In this case 56.
3) Change the file name "XXXX" to the required file name. In this case "MARGIN".

You then run the programme and enter the MARGIN data as shown below. When all the data has been entered the programme will save a file to your master disk and name it "MARGIN".
The other files can be saved in a similar fashion.
The required file names and variables etc. are shown at the top of each set of DATA displayed below.

As previously stated, this programme is aimed at the serious punter. As can be seen from this article the user must contribute a fair amount of time and concentration into upkeeping his records. For those who continue to follow this series it should lead to better results in their betting performance.

There is a long way to go, so stay tuned.

FILE NAME: NSW   VARIABLE NAME: S   NO. OF RECORDS: 72

44	44	45	46	47	48	49	39	40	41	42	43	
46	46	47	47	48	49	50	39	40	42	44	45	45
45	46	46	47	48	49	38	39	41	43	44	53	54
55	55	55	56	56	50	50	51	51	52	52	53	54
54	54	55	55	49	49	50	50	51	49	39	43	0
54	0	54	56	58	61	63	66					

FILE NAME: VIC   VARIABLE NAME: S   NO. OF RECORDS: 72

45	46	47	48	49	50	51	40	41	42	43	44	
45	46	47	48	49	50	51	39	41	42	43	44	44
45	46	47	48	49	50	38	40	41	42	43	55	56
57	57	57	58	58	52	52	53	53	54	54	55	56
56	56	57	57	51	51	52	52	53	52	43	46	0
54	0	51	58	61	62	64	67					

FILE NAME: SA   VARIABLE NAME: S   NO. OF RECORDS: 72

39	39	40	41	42	43	44	34	35	36	37	38	
41	41	42	43	44	45	46	36	37	38	39	40	40
40	41	42	43	44	45	35	36	37	38	39	50	51
52	52	52	53	53	47	47	48	48	49	49	50	51
51	51	52	52	46	46	47	47	48	49	40	46	49
53	50	51	52	55	58	60	65					

```
0 '**************
1 '*** MOD 2 ***
2 '** YESTERDAY **
3 '**************
4 CLEAR1000
5 DIMS(72),LM(56)
6 SS=0
10 CLS:GOTO1000
99 'MENU ROUTINE
100 ZJ=0:ZK=0:ZL=0:ZN=1
110 GOSUB240:CLS:ZP=INT((32-LEN(
ZT$))/2)
120 PRINT:PRINTTAB(ZP)ZT$:PRINTT
AB(ZP)STRING$(LEN(ZT$),CHR$(128)
)
130 IF INSTR(ZD$,"/")=0THENRETUR
N
140 GOSUB240:ZK=ZK+1
150 IFLEN(ZT$)>ZL THENZL=LEN(ZT$
)
160 ZT$(ZK)=ZT$:IFZQ<>0THENZL=LE
N(ZT$)
170 ZM=INT((27-ZL)/2):ZG$=STRING
$(ZM," ")
180 IFZK<>ZY THEN140
190 FORZX=1TO(10-ZK)/2:PRINT:NEX
T
200 FORZX=1TOZK:PRINTZG$;ZX"- ";
ZT$(ZX):NEXT
210 PRINT@419,"";:INPUT"CHOOSE S
ELECTION NUMBER";ZI
220 IFZI<1 OR ZI>ZK THENSOUND100
,2:GOTO210
230 PRINT@143,STRING$(15," ");:R
ETURN
240 ZQ=INSTR(MID$(ZD$,ZN),"/")
250 IFZQ=0THENZT$=MID$(ZD$,ZN):G
OTO270
260 ZT$=MID$(ZD$,ZN,ZQ-1):ZN=ZN+
ZQ
270 RETURN
999 'INPUT DATA
1000 PRINT:INPUT"STATE (SA:VIC:N
SW)";S$
1010 OPEN"I",#1,S$
1020 FORK=1TO72
1025 IFEOF(1)=-1THEN1050
1030 INPUT#1,S(K)
1040 NEXT
1050 CLOSE#1
1051 OPEN"I",#1,"MARGIN"
1052 FORX=1TO56
1053 INPUT#1,LM(X)
1054 NEXT
1055 CLOSE#1
1059 'INPUT GENERAL INFORMATION
1060 PRINT:INPUT"MONTH (1 TO 12)
";MT
```

```
1070 PRINT:PRINT"   IS THIS A
PROVINCIAL        OR A MIDWEEK
MEETING (Y/N)"
1072 I$=INKEY$:IFI$=""THEN1072
1073 IFI$="Y"THENCC=1
1075 PRINT:INPUT"LIMIT WEIGHT";W
L
1077 FORX=1TO1000:NEXT
1080 ZD$="TYPE OF RACE/2 YEAR OL
D/3 YEAR OLD/OPEN"
1090 ZY=3
1100 GOSUB100:ON ZI GOTO1200,130
0,1400
1200 ZD$="2 YEAR OLDS/RESTRICTED
 HCP/MAIDEN/FILLIES/OPEN,COLTS A
ND GELDINGS/QUALITY"
1210 ZY=5
1220 GOSUB100:ON ZI GOTO1250,129
0,1270,1260,1280
1250 CF=S(MT):GOTO2010
1260 CF=S(12+MT):GOTO2010
1270 CF=S(24+MT):GOTO2010
1280 CF=S(12+MT)+2:GOTO2010
1290 CF=S(62):GOTO2010
1300 ZD$="3 YEAR OLDS/MAIDEN/RES
TRICTED HCP/FILLIES/OPEN,COLTS A
ND GELDINGS/QUALITY"
1310 ZY=5
1320 GOSUB100:ON ZI GOTO1390,135
0,1370,1360,1395
1350 CF=S(61):GOTO2010
1360 CF=S(36+MT):GOTO2010
1370 CF=S(48+MT):GOTO2010
1380 CF=S(62):GOTO2010
1390 CF=S(63):GOTO2010
1395 CF=S(36+MT)+2:GOTO2010
1400 ZD$="OPEN/GRADUATION/RESTRI
CTED/MARES/WELTER/OPEN DIST. HCP
/SPRINT/FEATURE HCP"
1410 ZY=7
1420 GOSUB100:ON ZI GOTO1450,146
0,1470,1480,1490,1500,1510
1450 CF=S(67):GOTO2010
1460 CF=S(65):GOTO2010
1470 CF=S(68):GOTO2010
1480 CF=S(69):GOTO2010
1490 CF=S(70):GOTO2010
1500 CF=S(71):GOTO2010
1510 CF=S(72):GOTO2010
2010 CLS:INPUT"HORSES NAME ";H1$

2013 H=LEN(H1$):H1=20-H
2015 H2$=H1$+STRING$(H1," ")
2016 INPUT"AGE";AG:IFAG>9THENAG=
9
2017 PRINT@47,"";:INPUT"POSITION
";PS
2018 IFPS>9THENPS=0
```

```
2020 INPUT"JOCKEY (S.I)";J1$
2025 INPUT"MONTH LAST RACED";LR:
PRINTSTRING$(32,"*");
2027 IFCC=1THENCF=CF-4
2030 PRINT"CLASS FIGURE
";CF
2032 J=LEN(J1$):J1=15-J
2034 J2$=J1$+STRING$(J1," ")
2040 OPEN"D",#2,"JOCKFILE:2",25
2050 FIELD#2,5 AS K$
2060 FIELD#2,15 AS J$,5 AS JN$
2070 GET#2,1
2080 K=CVN(K$)
2090 FORX=2TO K
2100 GET#2,X
2110 IFJ$=J2$THEN2130
2120 NEXT:JJ=3:GOTO2140
2130 JN=CVN(JN$)
2135 GOSUB21000
2140 CLOSE#2
2150 PRINT"JOCKEYS SKILL FACTOR
"JJ
3000 INPUT"WEIGHT CARRIED
";WC
3010 PRINT"LIMIT WEIGHT
";WL
3020 WR=WC-WL
3030 PRINT"RELATIVE WEIGHT
"WR
3040 INPUT"LOSING MARGIN (LGTH)
";LM
3045 IFLM>13.75THENLM=13.75
3100 X=LM/.25
3110 PRINT"LOSING MARGIN (KILOS)
"LM(X)
3115 LM=LM(X)
3120 INPUT"CHECKS,BLOCKS ETC.(1-
4) ";CB
3130 PRINT@448,STRING$(32,"*");:
PRINT@485,"IS THIS CORRECT (Y/N)
";
3140 I$=INKEY$:IFI$="Y"THEN3170
3150 IFI$="N"THEN2010
3160 IFI$=""THEN3140
3169 'CALCULATE PERFORMANCE RATI
NG
3170 RR=CF+JJ+WR-LM+CB
3175 PRINT@416,STRING$(32,"*");:
PRINT"PERFORMANCE RATING: "RR:PR
INT@480,STRING$(31,"*");:FORX=1T
O2000:NEXT
3176 PS=PS*100:AG=AG*1000:MM=MT*
10000:LR=LR*1000000
3177 RP=RR+PS+AG+MM+LR
3179 'SAVE TO DISK
3180 OPEN"D",#1,"HORSES:2",80
```

```
3190 FIELD#1,5 AS F$,5 AS PR$,20
AS H$,5 AS P$(1),5 AS P$(2),5 A
S P$(3),5 AS P$(4),5 AS P$(5),5
AS P$(6),5 AS P$(7),5 AS P$(8),5
AS CP$,5 AS BP$
3200 GET#1,1
3210 FS=CVN(F$):PR=CVN(PR$)
3220 GOSUB19000
3230 GOTO3395
3270 FORX=1TO8:P(X)=CVN(P$(X)):N
EXT
3311 CP=CVN(CP$):BP=CVN(BP$)
3320 PP=P(1):P(1)=P(2):P(2)=P(3)
:P(3)=P(4):P(4)=P(5):P(5)=P(6):P
(6)=P(7):P(7)=P(8):P(8)=RP
3321 GOSUB22000:GOSUB22500
3324 IFPP(8)=0THEN3335
3326 IFMT-LR/1000000<0THENMR=MT+
12
3327 IFMR-LR/1000000=>2THENBP=CP
:CP=PP(8):GOTO3335
3330 IFPP(8)>CP THENCP=PP(8)
3335 LSETH$=H1$
3340 LSETP$(1)=MKN$(P(1))
3350 LSETP$(2)=MKN$(P(2))
3360 LSETP$(3)=MKN$(P(3))
3370 LSETP$(4)=MKN$(P(4))
3380 LSETP$(5)=MKN$(P(5))
3382 LSETP$(6)=MKN$(P(6))
3384 LSETP$(7)=MKN$(P(7))
3385 LSETP$(8)=MKN$(P(8))
3386 LSETCP$=MKN$(CP)
3387 LSETBP$=MKN$(BP)
3390 PUT#1,RR:CLOSE#1:RETURN
3395 P(1)=0:P(2)=0:P(3)=0:P(4)=0
:P(5)=0:P(6)=0:P(7)=0:P(8)=0:BP=
0:CP=0
3400 CLS:ZD$="DO YOU WISH TO:-/C
ONTINUE ON THIS RACE/START ON NE
W RACE/RETURN TO MAIN MENU/END S
ESSION"
3410 ZY=4
3420 GOSUB100
3430 ON ZI GOTO3445,3450,3460,34
70
3445 GOTO2010
3450 CC=0:CLS:PRINT@264,"SAME ST
ATE (Y/N)";
3451 I$=INKEY$:IFI$="Y"THENCLS:G
OTO1060
3452 IFI$="N"THEN1000ELSE3451
3460 CC=0:CLOSE:RUN"MOD1
3470 CLOSE:CLS:END
15000 I$=INKEY$:IFI$=""THEN15000
ELSERETURN
16998 '*** s8 ***
16999 '*** hash function ***
17000 H=0
17010 K=ASC(LEFT$(H1$,1))^2
17020 FORN=1TOLEN(H1$)
17030 H=H+ASC(MID$(H1$,N,1))*K
17040 NEXT
17050 K=INT(H/PR):HR=INT(H-K*PR)

17060 IFHR=0THENHR=1
17070 RETURN
17998 '*** s9 ***
18997 '*** s10 ***
18998 '*** store record ***
18999 'REQUIRES:- S8,S11,S6,INKE
Y$
19000 GOSUB17000:RR=HR
19010 GOSUB20000:IFTR=0THENGOSUB
3320:GOTO19100
19020 IFTR=-1THENGOSUB3270:GOTO1
9100
19030 RR=RR+1
19040 IFRR>FS THEN RR=1
19050 IFRR=HR THENPRINT"REJECTED
: FILE FULL":GOSUB15000:GOTO191
00
19090 GOTO19010
19100 RETURN
19998 '*** s11 ***
19999 '*** check keyfield unique
***
20000 GET#1,RR
20030 TR=1
20040 IF H$=CHR$(94)+STRING$(19,
" ") OR H$=CHR$(42)+STRING$(19,"
") THENTR=0
20045 H1$=H1$+STRING$(20-LEN(H1$
)," ")
20050 IF H1$=H$ THEN TR=-1
20060 RETURN
21000 AA=INT(JN/10000)/10
21010 O=INT((JN-AA*100000)/10)/1
0
21020 JJ=INT((JN-AA*100000-O*100
)*10)/10
21030 RETURN
22000 FORK=1TO8:LR(K)=INT(P(K)/1
000000)
22010 M(K)=INT((P(K)-LR(K)*10000
00)/10000)
22020 AG(K)=INT((P(K)-LR(K)*1000
000-M(K)*10000)/1000)
22030 PS(K)=INT((P(K)-LR(K)*1000
000-M(K)*10000-AG(K)*1000)/100)
22040 PP(K)=INT((P(K)-LR(K)*1000
000-M(K)*10000-AG(K)*1000-PS(K)*
100)*100)/100
22050 NEXT:RETURN
22500 CC=CP-INT(CP/100)*100:CC=I
NT(CC*100)/100
22510 RETURN
```

FILE NAME: MARGIN   VARIABLE NAME: LM   NO. OF RECORDS: 56

```
.5    1    1    1.5    2    2.5    2.5    3    3.5    4    4    4.5
5    5.5    5.5    6    6.5    7    7    7.5    8    8.5    8.5    9    9.5
10    10    10.5    11    11.5    11.5    12    12.5    13    13    13.5    14    14.5
14.5    15    15.5    16    16    16.5    17    17.5    17.5    18    18.5    19    19
19.5    20    20.5    20.5    20.5
```

END OF PART 2

OS9 scroll fix

By Bob Devries

Here's a patch to stop the RGB monitor and some televisions from scrolling when you boot OS9. At offset $27 in REL is the byte that is copied to the GIME chip's register at $FF98. Change this byte from $00 to $08 and the 50Hz will be selected instead of the 60Hz. Don't forget to verify the module and then use cobbler to resave it.

```
      OFFSET     OLD     NEW
        27        00      08
```

Here's a Disk Basic programme to modify the two (selectable) modules and change their CRC's to suit, for those who find it easier this way.

```
10 'PATCH FOR OS9 LEVEL 2 BY BOB DEVRIES PH (07) 3727816
THIS IS PUBLIC DOMAIN!
20 CLEAR1000
30 CLS:PRINT:PRINT" DO YOU WANT TO PATCH FOR "
40 PRINT:PRINT"(1) ANTI-SCROLL, OR"
50 PRINT:PRINT"(2) 6MS STEPPING, OR"
60 PRINT:PRINT"(3) BOTH"
70 PRINT
80 INPUT TP
90 PRINT:PRINT" INSERT DISK IN DRIVE 0 "
100 LINEINPUT" AND PRESS (ENTER) ";A$
110 IF TP<1 OR TP>3 THEN 30
120 ON TP GOTO 150,240,150
130 PRINT:PRINT" DONE....":SOUND 200,10
140 END
150 DSKI0,34,1,A$,B$
160 MID$(A$,46,1)=CHR$(8)
170 DSKO$0,34,1,A$,B$
180 DSKI$0,34,2,A$,B$
190 MID$(A$,46,1)=CHR$(177)
200 MID$(A$,47,1)=CHR$(248)
210 MID$(A$,48,1)=CHR$(108)
220 DSKO$0,34,2,A$,B$
230 IF TP=1 THEN 130
240 DSKI$0,34,3,A$,B$
250 MID$(B$,45,1)=CHR$(16)
260 MID$(B$,126,1)=CHR$(141)
270 MID$(B$,127,1)=CHR$(4)
280 MID$(B$,128,1)=CHR$(150)
290 DSKO$0,34,3,A$,B$
300 GOTO 130
```

Let's C what's next

By Robbie Dalzell

The fact that TANDY has discontinued the Coco in Australia does not mean that it's the end of the road for Coco owners. Whether they realise it or not, TANDY left us with a machine which is capable of as much as larger expensive machines. The Coco has the ability to expand and include procedures which MSDOS machines are not capable of.

Did I hear you say that to expand to this high level stage with the Coco costs money? This is true, but it is equally true of IBM and compatibles. Each new feature you need you pay for.....That's life.

Just adding OS9 to your Coco opens up the way to a whole new world of computing. OS9 is the cheapest most powerful multi-tasking multi-user system available for any home computer. Again, did I hear a voice say that it is hard to learn? Of course it is hard to learn. Any powerful operating system is hard to learn, but like most other systems it is only neccessary to learn as much as you need to be able to carry out the functions you require.

With OS9 and your Coco you can open the door to programming in higher level languages such as BASIC O9, FORTH, PASCAL and C.

I have made a personal decision to learn to programme in "C". This seems to me to be the best way to carry on using my Coco into the future. It is my intention to record my progress on this project in these pages in a simple format so as you can follow the ups and downs of my learning cycle. In doing this I hope to enthuse some of you to follow my lead into a new era of Coco computing.

OK. Let's get started!

Why did I choose the "C" language?

The basic reason is that "C" is a compiled language which is truly portable. By this I mean that programmes written in "C" on the Coco can be run on any other computer which has access to a "C" compiler.

"C" is a modular language. This means that it is made up of many smaller routines. Most computers have a version of "C" in their software library and in each version the modules are configured so as to work on that particular machine. With "C", what you actually write is called the

source code. This source code is then 'compiled' into the fast running programme you intended. The source code is the part which is transportable. As the modules in "C" do the same things on each different computer, this means that source code written on one machine can be compiled and run by any other machine with a "C" compiler.

You can surely see the opening this gives to the humble Coco.

So what do we need to get started?
Minimum requirements are a Coco 2 or 3, OS9 level 1 or 2, a disk drive and a "C" compiler for the Coco. A printer is optional but would be hard to do without.
The preferred option would be to have a 512K Coco 3 with 2 disk drives, OS9 Level 2 and the Microsoft "C" Compiler, plus a suitable printer.

I already have preferred option. I feel that I am going to need some other literature on the "C" language to get me started, as the manual with the compiler is purely a description of the modules and has no tutorial value. The manual recommends a book called "The C programming language" by Kernighan and Ritchie. There are other books just as suitable on the market. A good place to look is your public library.

So there you have a brief description of "C" as I understand it. I hope it is enough to make some of you decide to move into this popular programming environment. With luck, we may be able to get a forum started where we can help each other. I have always felt that sharing problems is the best way to learn.

As I have not yet mastered the rudiments of OS9, I am going to spend the next two months familiarising myself with this system before moving on to the "C" language.

"C" you then!
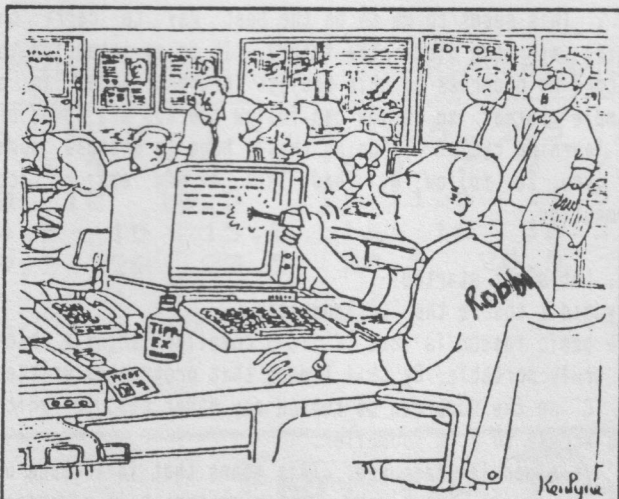
"He still hasn't mastered the technology."

Competion Result
Winner
Richard Vagg

As we had only one entrant to our competitions the prize goes to Richard Vagg for his BUILD programme based on the Elevators competition.
The prize is two games for the Coco 3 kindly donated by :

Although Richard was our only entrant he is a deserving winner. At 13 years old and writing his first major programme he has shown courage and dedication.

Due to the length of Richard's "BUILD" programme, which he has made compatible for both COCO 2 and 3, we will not be able to feature it in the pages of our magazine but it has been included on our special games PD disk for this issue.

To give you an Idea of the work Richard has put into his programme here is a view of the game screen.

A great effort Richard. I hope we can now lookm forward to you submitting programmes for these pages in the future.
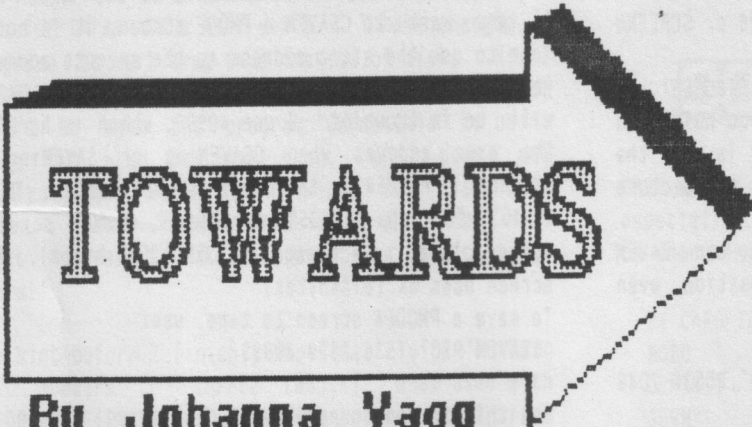Thank you.

Better BASIC Part 7

TOWARDS

By Johanna Yagg

I would like to elaborate on something Joseph Hester said in Link-Up in the August 1989 issue of CoCo-Link. He said that with RSDOS1.0 he could use side 2 of his disk drive with POKE55212,65. I assume he has a CoCo3. If you have a CoCo2, you need to run a ROM to RAM program before the POKE. If you have RSDOS1.1 you need POKE 55455,65.

In December 1987 CoCo, on page 54, there was a little program by Jason Hall. The program 'takes care' of everything for you. It checks whether you have a CoCo2 or CoCo3 AND whether you have 1.0 or 1.1. There is one small, easily-fixed problem with the program - there is a mistake in line 150. It should read EXEC32512, not EXEC323512. If the program is RUN as is, it works for a CoCo3 because the routine at 32512 is the ROM to RAM routine which is by-passed - because it is unnecessary - on a CoCo3. If you fix that one small bug, it will work on a CoCo2.

Joseph didn't mention that if you have a Tandy FD502 disk drive, you have a double sided drive. Tandy does not mention this either (except for use with OS-9).
I have told a number of the people to whom I write, that the 'single sided 502 drive' is really a double sided drive. One of my penfriends asked, "Are DSKINI2, DIR2 and BACKUP 0 to 2 the only commands available for its use?"

I hope that the following information will help.
You can type DRIVE2. Then, when you SAVE or LOAD, you will be SAVEing/LOADing to/from side 2.
If you don't type DRIVE2 first, you can still use side 2 with:

```
  SAVE"NAME:2     or   SAVE"NAME:2",A
  LOAD"NAME:2
  RUN"NAME:2
```

Notice that the colon and 2 are inside the inverted commas if you use the closing inverted commas.
If you made side 2 the default, use SAVE"NAME:0 to SAVE to side 0.

Some programs won't work from side 2 because they were written for a single sided drive, probably by someone who has never used a double sided drive. There could be commands in the program which specifically direct the program to drive 0.
For example, DSKI$0,17,I,A$(A),A$(A+1) appeared in a directory printing program. I changed the 0 to D, where I asked the user to INPUT which drive - variable D. You might also see a FREE(0) in some programs. There are other commands - I don't KNOW them, but when a program appears to go to drive 0, I look for the 'offending' command and change it to use a variable. I told you there are good reasons to use variables! This is especially true for those with 4 drives (2 double sided drives - that's what I have) I don't have RSDOS. I bought my disk drives from Jack Fricker. The drives have always worked as double sided drives, without POKEs. I wonder why I had a tape based system for three and a half years?

Someone else asked if there was a way to COPY a machine language program from side 0 of one disk, to side 2 of another disk. I am not sure if there is a simpler way than this one:
RUN"FIND ADD to find the start, end and exec addresses of a machine language program on your disk - there is no need to LOADM the program. (See FIND-ADD listing at the end of this article).

LOADM"PROGRAM then swap disks and:
SAVEM"PROGRAM:2",st,en,ex
(where st, en and ex are the addresses you 'found' with FIND ADD.)

While I'm writing about these addresses, I would like to comment on one of the hints on page 6 of August CoCo-Link. The third hint says, in part, "EXEC will display the saved pictures". I don't agree. The EXEC address used is &HA027. This is used because it is harmless. 'Tranlated' to decimal it is 40999 (reset). If you use the start address as the EXEC address, strange

things WILL happen. However, using &HA027 will not make the picture appear on the screen. You can 'go to' the PMODE4 screen by typing:
PMODE4:SCREEN1:EXEC44539 (any key to leave the PMODE)
or
POKE359,57:PMODE4:SCREEN1
To return to the text screen, type POKE359,126 or SCREEN0

I was also asked how to 'capture the THREE STOOGES' - the picture which you see on a CoCo3 when you hold down CTRL and ALT and press reset. The picture is on the PMODE4 screen. After you press reset again, the picture is intact.
Type POKE359,57:PMODE4:SCREEN1 to see it. You can SAVEM this SCREEN. The picture will be in disk position, even if you have tape.
(C)SAVEM"TRIO",3584,9727,40999
To CLOADM this into tape position CLOADM"TRIO",65536-2048
You could then CSAVEM"TRIO",1536,7679,40999

One of the questions received about saving programs in machine language wanted to know if there was a way to copy (tape) MUSIC+ files to another tape without loading these files into the program MUSIC+ (a Rainbow program). If you CLOADM a MUSIC+ file, you can find the start, end and execute addresses of this file. If you LOADM such a file from disk, you can't find the start and end addresses in the same way.. but you don't need to find them, you can just use COPY. (The execute address CAN be found with these PEEKs). Someone said that he just 'used any numbers' because he didn't understand. It is important to use the right numbers when copying machine language. Look at it this way: you want your friend to read page 10 of a magazine.. would you send him/her page 9 or 11 or 20? Would it be necessary to send the WHOLE magazine? No! Page 10 is all that is required.

 To find the start address of a machine language program which has been CLOADMed from tape, type:
    ?PEEK(487)*256+PEEK(488)
 To find the end address, type:
    ?PEEK(126)*256+PEEK(127)-1
 To find the execute address, type:
    ?PEEK(157)*256+PEEK(158)

Then CSAVEM"file",start,end,execute, substituting the numbers you found when you PEEKed. The execute address is very important. CoCo needs directions. You will find that all MUSIC+ files will have the same start and execute address (ie the start is not the same as the exec, but the start is the same as the start is the same as the start...etc!) Once you know these numbers, you will only have to find the end address of each one. Beware of files which YOU have not saved from MUSIC+.. they could have been OFFSET loaded.. but that's another story! For those of you who know how to OFFSET load, here's a tip.. use multiples of 256 only. The forerunner of MUSIC+ was the CoCo Composer. 'Composer' files use different addresses. The message is: don't take anything for granted. The easiest way to copy a

Music+ (tape) file, is to load the file into MUSIC+ and then save it on another tape. (If you try to load a 'Composer' file into MUSIC+ it won't look right.)

When copying machine language games, you will often find that the start address is the same as the exec address. If you want to CSAVEM a PMODE screen, it is not a good idea to use the start address as the execute address. If you do, and you accidentally EXEC after you CLOADM, you will be in trouble! I use 40999, which is harmless, as the exec address when CSAVEMing or SAVEMing PMODE screens. PMODE4 is the one I use most often. It starts at 1536 for tape and 3584 for disk. A full screen is 4 'pages' long. Each page is 1.5K (1536 bytes). A PMODE4 screen uses 6K (6144bytes)
To save a PMODE4 screen to tape, use:
 CSAVEM"PIC",1536,7679,40999

Use this if you do not have a disk drive plugged in as well.. If you have a disk drive plugged in to your CoCo, your PMODE screen begins at 3584 even if your disk drive is not turned on. To save, to tape, a screen which is in 'disk position', use:
 CSAVEM"PIC",3584,9727,40999
 To save it to disk, use:
 SAVEM"PIC",3584,9727,40999

You do not need to save the whole screen. You may have some pictures which only extend to the 64th pixel (0-63) down the screen. To SAVE this and save disk space, use:
 SAVEM"pic",3584,5631,40999   Using 5631 is enough for a picture 64 pixels deep. Your file then takes only 1 granule on your disk instead of 3.   The end address can be increased a little without going over the 1 granule.. 72 pixels deep is the limit for a one granule SAVE.

Before we leave this topic of PMODEs, try this little program:

```
    10 IF PEEK(49152)=68 then ST=3584 else ST=1536
    20 PMODE0:SCREEN1,1:PCLS
    30 FORP=0 TO 1535 STEP8
    40 POKEST+P,RND(255):NEXT
    100 GOTO100
```

RUN it. Notice that the PMODE0 screen has two stripes, from top to bottom. Insert 50 EXEC44539 and 60 PMODE2:SCREEN1 and RUN again. Now press any key.. and what happens? Take it further. Use 70 EXEC44539 and 80 PMODE4:SCREEN1.
   PMODE0 equals 16 by 96 POKES or 1536 bytes
   PMODE2 equals 16 by 192 POKES or 3072 bytes
   PMODE4 equals 32 by 192 POKES or 6144 bytes
One PMODE0 screen equals one 'page', equals half a PMODE2 screen, equals one quarter of a PMODE4 screen... or one PMODE2 screen equals 2 'pages' and one PMODE4 screen equals 4 'pages'.

Here is anotherm useful piece of information. If you see the command PRINT#-2, the information is to be printed on

the printer; if you see PRINT by itself, it is printing to the screen. You could also see PRINT#DV. In that case you have to find the value of DV (or perhaps another variable). If DV=-2 that's for the printer; if DV=0, that's the screen. To further confuse matters, DV could equal 1 or -1... 1 for disk, and -1 for tape! Yes, I had tape, for three and a half years. I have changed a few programs to work from tape instead of disk. Now I have to change programs the other way.. The best way of course, is to make the program 'adjustable' by using variables; but when one has tape, one does not necessarily know what is required for disk (and vice-versa, I guess).. AND, even if one did know how, one might not want to make life even less difficult for disk users!!

One more hint before I finish: experiment with POKEing different numbers to &HFF22 (65314) when used with POKE&H95C9,&H39 (POKE38345,57) - see second CoCo3 hint in the August 89 magazine.

PUBLIC DOMAIN SOFTWARE

This month's addition to the Public Domain Library is especially for Xmas and comprises of games. There should be something to suit most game players in this lineup:-
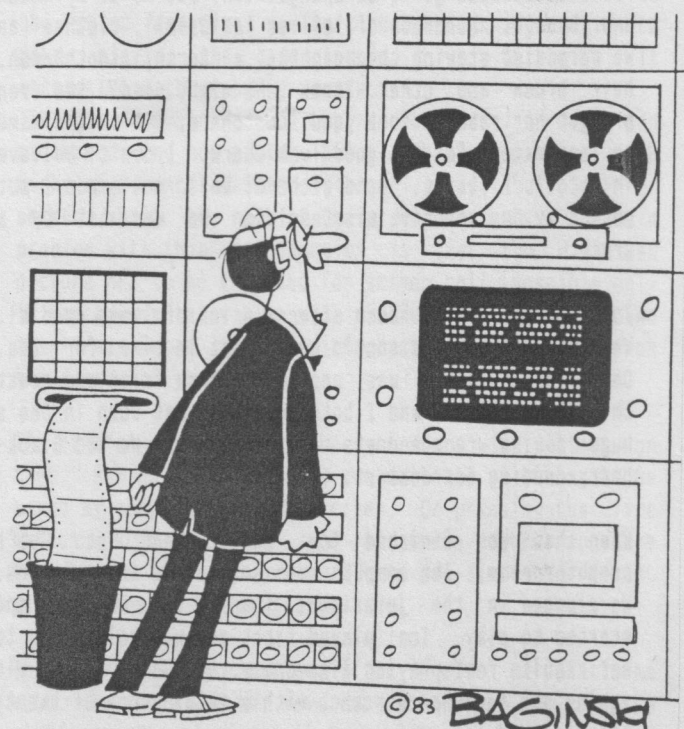
21 CARD TRICK	25 SQUARE
BOBO	BUILD
CENTRIT	CYPHER
GERM	LIFE
MAX	MAZE
REVERSI	TANKS
YANCC	

Where necessary text files have been added to describe the rules of the game. These can be read using the PRINTASC file provided. With this file you can read the ASCII DOC files on screen or make a printout.
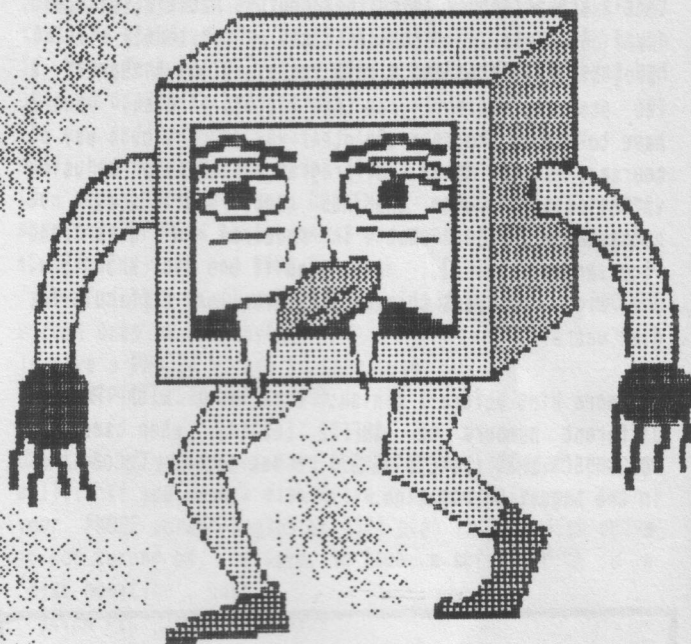
This disk can be purchased from COCO-LINK for $5.00

HURRY! HURRY! and be in time for Xmas.

HOW TO SUBMIT MATERIAL TO COCO-LINK
****

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.

©83 BAGINSKI

"YOU'RE BEING REPLACED WITH A COLOR COMPUTER DESK MODEL!!!"

The Computer Room

By Heidi Lloyd

It all began two years ago today. Toni, my best friend, suggested we go to her aunt's house to play computer games on her Coco. Toni's aunt has everything for her computer; like disk drives, printer, tape deck, modem, joysticks and even a mouse.

I eagerly agreed to go over and play so that I could beat her at Frogger. She had beaten me for three weeks in a row but that was going to change. Toni met me at my house and brought hundreds of lollies (as usual), clothes (as we were also staying the night), a torch, toothbrush, hair brush and other items she might need. She even brought her rabbits foot good luck charm. I took the same as Toni except for the good luck charm. I don't believe in good luck charms. I never have; Well, not since I put one on my dog and five minutes later he was hit by a truck.

Toni and I left my house after a drink of lemon cordial. We arrived at Toni's aunt's house just in time for tea. Dee, Toni's aunt, was cooking french fries and roast chicken which Toni and I both love. We sat down in Dee's huge dining room and ate tea. After that we had Blackberry pudding for dessert.

When that was finished Toni and I went into Dee's computer room. The computer was set up and ready for us. We plugged in the joysticks, loaded the Frogger and started to play. Toni played first and was holding on to her rabbits foot praying like crazy that she would win again. She finished her shot with a total score of twenty thousand and ten.

It was now my turn. Just as I was about to start my game

Dee came in and said she had to go to the hospital where she worked because there was an emergency. We said, "Fine, we'll take care of ourselves.......no problem."

Dee left and I started my game. My score was clocking up. I'd thrashed Toni's score by hundreds then, just as I got to 999,998 the computer went blank. It started jumping up and down; grew arms, legs and a face with vampire teeth appeared on screen.
Toni and I screamed then the computer stood up on its new grown legs and started to strangle me. Toni tried to turn the computer off but it wouldn't turn off so she tried to pull the plug out of the wall socket. Each time she tried the computer kicked her in the head.
Toni didn't know what to do and the computer kept on choking me. I could hardly breathe and was slowly dying. My face turned blue and all the other colours of the rainbow but I still couldn't move. The computer had me against the wall. Toni was going crazy while I was dying. She eventually managed to reach the escape key but not before the computer managed to dig it's teeth into the back of her hand taking a bit of it with each byte.
The computer stopped dead and Toni ran to my side. I slowly managed to get my breath back.

Shortly after that, Dee arrived home from the hospital and we sat down and told her of our terrifying time with the computer over a hot cup of Milo. We felt a lot better after that.

On our way to bed we noticed lights coming from under the computer room door. Neither of us slept that night!!!!!!

END

Chain Reaction
The Review Column

SPACE INTRUDERS - REVIEW
****

A programme by Nickolas Marentes

For Space Intruders read Space Invaders. This is a version of the original arcade game which started it all. Programmed in Australia by Nickolas Marentes this game shows that all good game technique does not belong to the US. The game has been programmed to run on the Coco 3 and is available on cassette or disk.

One doesn't have to explain the rules for this game as I am sure just about everyone knows the scenario. Space Intruders uses the well trodden path with just a few minor changes to make it a bit different. Nickolas even gives you a couple of hints on how to better your score.

The graphics are well done and one can clearly make out the shapes of the different colourful intruders.
Sound effects are adequate for a game of this sort. I was glad that each time a game was over (and that is usually pretty often for me), I didn't have to listen to 12 bars of 'Star Spangled Banner' or something like that.

Space Intruders allows you to pit your score against other players or the two top scores shown on the board. This is a feature much beloved by those able to get scores high enough to compete.

I felt that the movement of my artillery was rather sluggish. The whole action of the game seemed a bit slow to me but, personally, I wouldn't count that as much of a demerit. When using a joystick I am sure that a self centering type would be a definite advantage. My son, who is better at these games than I am, showed how much simpler it was to use the arrow keys. Using them did not improve my score much. Still, it is a good feature the ability to use either Joystick or keyboard and must increase the audience for this game.

On the whole I found Space Intruders to be as good and colourful a version as I have seen on any computer. It's an old game and a favourite of many. It may not be fast enough for the hotshot gameplayers but I am sure it would be a lovely Xmas present for some of the mums and dads

who would like their relaxation not to be too frenzied.

I enjoyed playing it again. You don't have to think too much, you just keep zapping away at those aliens till either you get them or they get you.

Give yourself a treat. Step back in time and have a game of Space Invaders. (OOPS! That should read Space Intruders).

RUPERT RYTHYM.......REVIEW
****
A programme by Nickolas Marentes.

This is an arcade game for the Color Computer III. The first thing noticeable about it is the quaint spelling of rhythm (ie RYTHYM).

The literature accompanying Rupert Rythym is short and to the point and gives you more than enough information to make playing the game simple. The packaging is attractive without being ornate.
The game is introduced by a very stylish digitised picture of the pop singer Sting. (Obviously done with Nickolas Marentes RASCAN digitiser). This is displayed on screen while the rest of the programme loads. The main problem with this introduction is that the digitised picture has to be adjusted for screen roll (possible only if you have a television with a manual vertical hold) and then readjusted when the introduction screen arrives on the scene.

The initial screen has a number of doors with letters on them. Behind each door is a musical note which has to be saved by completing a game screen. On pressing the fire button when outside one of these doors you are transported to a game screen. There are sixteen different game screens in the programme.

The game screen is comprised of a number of platforms with elevators which move up and down between the platforms. The platforms change colour when Rupert passes over them. All platforms must be changed for the musical note to be saved.

This may seem very simple to all you game players but Nickolas has added a few little things that will alter this feeling.

The game works on a timer which starts at 50000 and continually counts down by one. Each platform changed earns you a score of 200 but time wasted waiting for elevators and taking unneccessary trips makes the score decrease pretty rapidly.

Wait! There are also these little men who guard the platforms and who can zap you in the wink of an eye. You have ammunition to stop them getting you but they can make life difficult in getting to some of the platforms.

Hold it! There is also this ball thing which floats around indiscriminately and has to be avoided. You have a limited supply of ammunition to combat this fellow so it is advisable to be very wary of him.

When you have successfully captured all the notes you have to arrange them in the correct order so as to play the tune. This is where your total score is of importance. If you have not accumulated a high enough score it will decrease to zero before you have had time to sort the notes into the correct order.

Ther are several different pieces of music encoded into the programme so that each time you start the game you will not neccessarily be aiming at the same target.

Nickolas claims that this is the best percussion music you will hear on the Color Computer. The literature also states that it is to be performed "on stage". I do not know what that means as I have not managed to get that far yet.

The graphics in this programme are of the top order and won't be bettered anywhere. They are a delight to behold.

For gamers, Rupert Rythym presents a stimulating challenge. I have not yet managed to complete a game but have come fairly close. I have visions of managing to assemble a whole tune and hear or see it played.

There are several ways to make attaining a high score easier but I think this is one of the things that most game players prefer to find out for themselves.

I definitely recommend this game as one of the best arcade games available for the Coco 3 that I have seen. The reasonable price tag of $18.00 makes it a must for the collection.

(Both the above programmes can be purchased from : Nickolas Marentes Software, PO box 551, Garden City, Mt. Gravatt, Qld. 4122. Please specify disk or tape.)

Nomination Form

Give the Nomination form opposite to your COCO User friends and do them the best turn you have ever done. They will thank you for it. DO IT NOW!!!

☐ RENEWAL NOTICE   SUB NO. ☐

COCO-LINK

NAME: _____

ADDRESS: _____

_____

_____

TELEPHONE: _____

EQUIPMENT:

COCO 1 ☐
COCO 2 ☐
COCO 3 ☐

MULTIPAK ☐
CASSETTE ☐
DISK ☐

OTHER ☐

PRINTER MODEL ☐
MODEM MODEL ☐

DO YOU PROGRAMME?

BASIC ☐
C ☐
PASCAL ☐

ASSEMBLY ☐
BASIC 09 ☐
FORTRAN ☐

OS9 LEVEL 1 ☐
OS9 LEVEL 2 ☐

WHERE DID YOU HEAR OF COCO-LINK _____

INTERESTS:

PROGRAMMING ☐
W/PROCESSING ☐
HOUSEHOLD ☐

BUSINESS ☐
GAMES ☐
GRAPHICS ☐

COMMUNICATIONS ☐
DESKTOP PUBLISH ☐
EXTERNAL CONTROL ☐
HARDWARE ☐

OTHER ☐

DO YOU SUBSCRIBE TO:

BBS NAME ☐
VIATEL NUMBER ☐
RAINBOW MAGAZINE ☐
USER GROUP NAME ☐

If you have any suggestions
for the improvement of the
COCO-LINK Magazine, please
write them overleaf.

SEND CHEQUE/MONEY ORDER TO:

COCO-LINK
31 NEDLAND CRESCENT
PORT NOARLUNGA SOUTH
STH AUST 5167

JOINING FEE $ 8.00 ☐

ANNUAL SUB. $14.00 ☐

PC power problems and protection plans

By JIM TUCKER

ETSA gets blamed for a lot of things — the cost of electricity (one of the highest in the nation) and stobie poles, those things which keep bumping into motor cars.

Another cause for complaint is sometimes the lack of the stuff — such as the recent blackout which suddenly turned off just about every computer between Port Augusta and Mount Gambier for a few hours.

And they get blamed for breaking computers because users say the electricity they supply isn't all it's cracked up to be.

In a bid to boost their image and educate computer users ETSA is conducting free seminars for those in the business and anybody who wants to know about these things.

Personally, I have never had a computer failure which could be blamed on ETSA. But that does not mean it doesn't happen.

In home computers and small business systems, simple precautions can be taken.

For instance, do not (if you can help it) connect your computer to a circuit that contains an air

conditioner, something with an electric motor which makes the lights dim every time it starts, or a circuit with arc welding equipment.

If your television picture shrinks whenever your air conditioner or pool pump motor kicks in you may be in for a bit of bother.

When electricity leaves the power station generators is essentially "pure". But as it circulates around the system is can become contaminated by the loads connected to it.

Mr Wayne Broadbridge of ETSA says computers are frequently affected by disturbances and loads within the customer's own building.

Light dimmers can cause disturbances, and so can simple things like security systems, food processors and fluro lights.

Modern personal computers are designed to cope with many glitches and changes in the power supply. Occasionally data may be lost and (less frequently) hardware may be destroyed.

If you have a big business with very important computer data, and continuous operation of your computer is essential, then you probably know about these things.

An example is an airport automatic landing system. They have experts because power failure could be catastrophic.

For those with a home computer, or those who use computers in a small business, there are a few options. Unfortunately, none of them are cheap.

One is a device called a line conditioner or filter — a box of bits and pieces which simply helps ensure that the quality of the electricity supplied to the computer is as good as possible.

The box removes high voltage surges which last perhaps only a few millionths of a second which can cause destruction.

Simple solution

Then there are devices called motor-generators. For instance, some businesses condition power lines for computers by generating their own electricity. What drives the generator? An electric motor connected to the ETSA power supply. It sounds strange until you think about it. The power supply is immune from outside sources.

Still, I don't think my local land broker with a PC and three terminals really wants a motor-generator in his office.

The main problem is power failure. The simple solution is to save your work every 10 minutes or so. That way you can recover in a short time. Some word processing programs save data to disk automatically every few minutes so little work is lost.

The expensive solution is to install an uninterruptible power supply (UPS).

This is a device with a bank of batteries which keeps your computer running for maybe 10 minutes when everything around you fades to black.

The problem with a UPS is that if you have a simple PC setup the UPS can cost more than the computer.

If you believe you have a computer problem caused by consistent failures in your electricity supply call ETSA. Their technical people have just bought some very sophisticated equipment to monitor the supply into houses, factories and office buildings.

ETSA's half-day seminars on Computers and Electricity will be held tomorrow and Thursday. For registration phone 366 1273.

If you cannot attend a seminar but want to know about it ETSA have a booklet which explains it in simple terms.
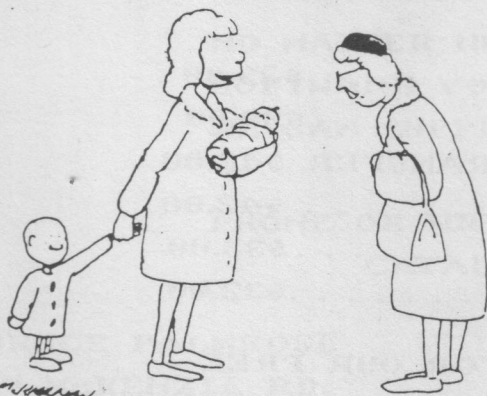
" . . . And these are my children — David and David: Version 2.0!"

Club Noticeboard

GENERAL NOTICE

This page is provided free for the use of clubs to let people know who, what, and where you are and to let them know what you are doing.

Please send your notices for the following two months no later than the 14th of the month previous to publication.

ADELAIDE COMMUNITY COMPUTER CLUB

NOTICE of a new club to be formed for mature persons.

Aiming to help in community work and to assist the aged, the blind, the disabled or socially disabled.

You are never too old to learn how to make use of a computer.

Meetings:
24 Avonmore Ave,
Trinity Gardens

Saturdays 2nd & 23rd Dec
13th and 27th Jan
10th Feb, 1990
12-30 pm to 5-00 pm.
Small fee (40 cents)

Contact us for further details:
Laurie O'Shea
                    08 363 2647
Glenys Ferres
                    (After 7.30pm)
                    08 332 4264

or write:
PO Box 157
Kensington Park
S.A. 5068

CLUB CONTACTS

Noarlunga.........Robbie Dalzell
                    08 386 1647
.   Garry Holder
                    08 386 1139

OS9 User Group....Bob Devries
                    07 372 7816

Moe User Group....Joseph Hester
                    051 277 817
.   Ian Taffs
.   051 275 751

Geelong...........David Collen
.   c/ 23 Anzac Ave
.   Leopold. 3224
.   (No Ph. supplied)

Adelaide..........Laurie O'shea
                    08 363 2647
                    (after 7.30pm)
                    Glenys Ferres
                    08 332 4246

Basic.............Johanna Vagg
                    068 522 943

Clubs or persons wishing to be added to this list please inform the editor.

NOARLUNGA COCO CLUB

MEETINGS
****
Deacember meeting will be held at Robbie's home on
Wednesday 13th Oct at 7.15 pm.
Address: 31 Nedland Cres
         Pt. Noarlunga Sth.
         S.A. 5167

NOTE

There will be no club meeting held during the Month of January.

ALL WELCOME. No joining fees or collections. For further details contact Robbie on (08) 386 1647

BUY and SELL INFORMATION SERVICE

DAMIEN ROLLOND

is willing to start a buy and sell service register. He will make a list of current Coco ware for sale from the newspapers, Trading Post and where ever.
Anyone looking for a particular item or with something to sell should contact Damien at:-
         AH 08 337 0023

Coco-Link Award

This is to certify that

___Johanna Vagg___

is commended for meritorious service to the

Color Computer Community of Australia

PRESENTED BY COCO-LINK MAGAZINE

December 1989

_____

_____

EDITORS

The inaugural award in this year of 1989 has been won by two persons. The award this year will be shared by Johanna Vagg and Kieran Kenny.

JOHANNA VAGG for many years has been the correspondent to many budding Coco programmers. Her unselfish attitude to helping others has already been acknowledged by the now defunct Coco magazine and continues to be recognised by the many readers who write to us here at COCO-LINK. Johanna was of tremendous help to us when COCO-LINK was just getting started and encouraged her many correspondents to support us. She writes articles and programmes for the magazine and still continues to help those who ask.

We salute you Johanna and hope this small token will show our appreciation.

KIERAN KENNY writes programmes. His programmes have appeared in Coco magazine, US Rainbow and COCO-LINK. His input of 9 programmes in the US Rainbow last year alone has carried the flag for Australia and showed that we are capable of turning out as good and better than our counterparts across the Pacific.

Kieran has also been of help in this first year of COCO-LINK. Not only in submitting his material for our use but also in advice in the formative months of the magazine.

The Coco community raises it's hat to you, Kieran and hopes that you will accept this small recognition of the job you are doing for all of us.

A cheque for $50.00 has been sent to each of the recipients of the award along with a scroll as depicted above. (Reduced photocopy).

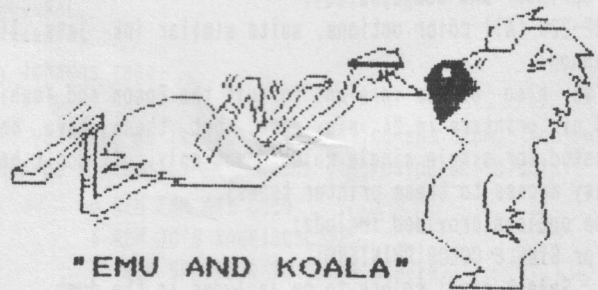# --- Congratulations ---

Graphics by......
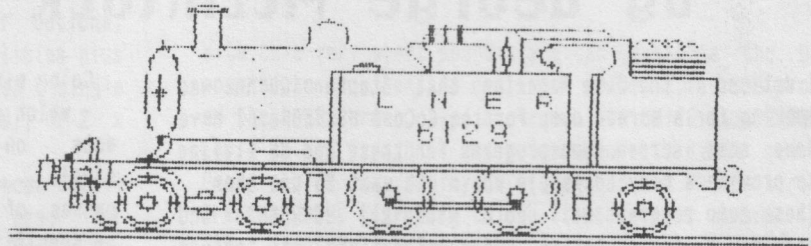
"ELVIS" and "TRAIN"

by Graham Elphick

Using LINEMASTER.

We will accept graphics for this page executed in any manner. BASIC, COCO MAX, ARTGAL or any other method. Show us what wonders the Coco can perform.
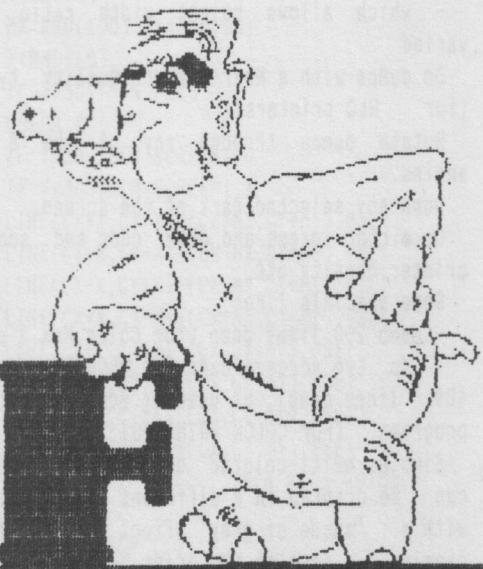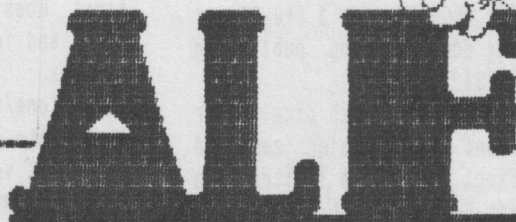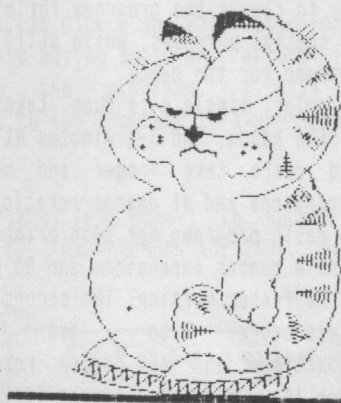
"EMU AND KOALA"

by Richard Vagg.

"ALF" and "GARFIELD"

by Geoff Donges.

Coco 3 Screen Dumps

By George McLintock

I noticed in the June Magazine that Stephen Quinn was looking for a screen dump for the CoCo 3 HSCREENs. I have done some screen dump programs for these and am willing to provide a copy to people who might want to use them. These dump programs will work with all HSCREEN's and provide a comprehensive range of options that include almost anything you might want to do with a screen dump and they can be easily modified to suit any type of printer. I have set up versions for three printer types which have been fairly well tested. These are for:-
TANDY DMP-105 (single color, suits other Tandy printers).
STAR NX-1000 (All color options, suits Epson, IBM Proprinter and compatables).
CGP-220 (All color options, suits similar ink jets like Cannon).
I've also set up versions to suit the Epson and Toshiba 24 pin printers in 24 pin mode, but these have been tested for simple single color dumps only. (I don't have easy access to these printer types).
The options provided include:
(For SINGLE COLOR PRINTERS)
    Select pixel colors to be included in the dump.
    Do different shades of grey for each pixel color.
    Expand dump to any size
    - including fractional expansions and reductions in size for each axis
    - which allows height width ratio of dump to be varied
    Do dumps with a Near Letter Quality type of print (for NLQ printers).
    Rotate dumps through any of the 8 by 45 degree angles.
    Dump any selected part of the screen.
    Do mirror images and other odds and sods like vary printer density etc.
    Some specials like:
    - dump 200 lines deep (for Color Max 3 screens).
    - do two screens deep for HSCREENs 1 & 3 (ie 384 or 400 lines deep), as used by some desktop publishing programs. (For COLOR PRINTERS):
    Simple multi-colored dumps - where each pixel color can be printed in a different printer color combined with a 'shade of grey' effect Colors are limited to a single pass of the print head for each pixel color or printer ribbon color.

Color mixing
    - which provides procedures for printing adjoining dots on the paper in different printer colors for a single pixel color. This is done with multiple passes of the print head for each pixel color, or by specifying any number of pixel colors and 'shade of grey' for each ribbon color. This increases the total number of possible printer colors to more than 100 from a 4 color ribbon.
The various color options can be applied at the same time as any or all of the options available for single color printers.
They can also be applied with single color printers that can have different single colored ribbons. And this applies to all printers these days, because there is at least one place in Sydney that will reload any black printer ribbon with a different color. However, these printers (with single colored ribbons) are effectively limited to the simple color options, because you can't really get sufficiently accurate registration of the starting position on the paper to do the more complex color mixing patterns

The programs are set up to allow most of these options to be selected through a menu type setup before starting the dump. The programs themselves are coded in Basic for the higher level control type logic and printer control etc. with calls to ML routines to do the detailed low level processing required. This makes it fairly easy to change the programs for other printer types and for special purposes, while still maintaining a reasonable speed for the dumps.
eg. a single color, single size dump takes around 2 minutes at 9600 bauds, and 3-4 minutes at 1200 bauds. Multi colored dumps take longer and so do the fractional expansions and 45 degree rotations.
There are two Basic programs for each printer type. The first does whole number expansions and 90 degree rotations and is the faster version. The second uses a more complex procedure to get fractional expansions/reductions and 45 degree rotations, and these take some 10 - 20 minutes longer for a dump than the first version.
The same ML routines are used for all programs and all printers. The only difference between them is in the

Basic program code required for the different printers and operations.

SOME OTHER ASPECTS

The programs are NOT public domain. The copies provided will be test versions, and I would appreciate advice on any problems you may have with them.

To obtain copies (and cover my incidental costs) send $7 with your own formatted disks/blank tapes in reusable packing, or $15 if you want me to provide the disks/tapes, to the address below.

The complete package is fairly extensive, has lots of text description, sample code for some other options, test programs for printers, some related utilities plus some others to fill the tapes. It requires 6 single sided disks (or 3 flippies/double sided disks), or 2 x C60 tapes, to hold it.

The text describes the various programs in some detail and covers the programming techniques used for interfacing between the ML routines and Basic, the various memory mapping procedures used for the CoCo 3 and other aspects. It also includes possible further modifications, changes required for doing multi colored dumps with different single colored ribbons, the principles involved for graphic printing and color mixing etc.

I have not set up a program to dump the PMODE screens on an old CoCo, although the changes required for this are described. With the CoCo 3, these screens are done by transfering them to HSCREEN 1 and dumping from there.

While you may not want all of this, it comes as a package and you might find some of it interesting. eg XCOM (included to print the text files) also provides a good coverage of direct computer to computer communications. With Grahame's magazine out of action, you are not likely to pick up something of this size and complexity from other sources. It is just too large for CoCo Link.

If sending tapes, they must be C60, either new or bulk erased. I've put the lot on C60's and will copy them across to yours. For disks, I can copy onto double sided disks (as disk 0 and 2). Please format the disks. Again, please advise me of any errors (problems) you find with the programs. I will circulate any corrections to the programs to everyone who gets a copy from me.

Send disks/tapes (and money) to GEORGE McLINTOCK, 7 LOGAN STREET, NARRABUNDAH ACT 2604. Phone (ah) (062) 956590

Shorts

Here are a couple of short programmes to give you something to think about. Both are graphics orientated and while one should make you think, the other should help to soothe your worries away with a restful kaleidiscope of geometrical shapes.

DIRECT DRAW
****
By Kieran Kenny

With this very short shortie you can exercise the DRAW command to your heart's content. To begin, at the prompt on the text screen, type a string like BM128,96U40R40D40 L40. Do not type DRAW or enclose your string in quotes. Press ENTER to see your figure on the PMODE4 screen. Press any key to return to the text screen prompt and enter another string. The program will respond to any DRAW command. It is saved as DREKTDRW.

```
10 PMODE4,1:COLOR0,5:PCLS
20 CLS:PRINT@224,"";:LINEINPUTA$
   :SCREEN1,1:DRAWA$:EXEC44539:K$=I
   NKEY$:GOTO20 'DREKTDRW
```

PMODEKAL
****
By Johanna Vagg

All you need do is enter the listing and run. You will then be treated to an everchanging colourful display.

```
0 REM FOR ANY COCO
4 REM JO'S KALEIDOSCOPE
10 REM SPACEBAR TO CLEAR SCREEN
20 PMODE3:SCREEN1,1:PCLS
30 X=RND(-TIMER)
70 CX=128:CY=96
80 C=RND(3)+1
90 X=RND(10)
120 MX=RND(100):MY=RND(80)
130 Y=RND(60)
140 IF Y>50 THEN PCLS
145 COLOR C
146 IF Y>30 THEN SCREEN1,0
147 IF Y<30 THEN SCREEN1,1
150 LINE(CX+X,CY+X)-(CX+MX,CY+MY),PSET
160 LINE(CX-X,CY-X)-(CX-MX,CY-MY),PSET
170 LINE(CX-X,CY+X)-(CX-MX,CY+MY),PSET
180 LINE(CX+X,CY-X)-(CX+MX,CY-MY),PSET
190 LINE(CX+X,CY+X)-(CX,CY+MY),PSET
200 LINE(CX-X,CY-X)-(CX,CY-MY),PSET
210 LINE(CX-X,CY+X)-(CX,CY+MY),PSET
220 LINE(CX+X,CY-X)-(CX,CY-MY),PSET
221 I$=INKEY$:IF I$=" " THEN PCLS:GOTO80
222 X=X+6
224 IF X<55 THEN 150
230 GOTO 80
240 CLS:GOTO 80
```

21 Card Trick
By Kieran Kenny
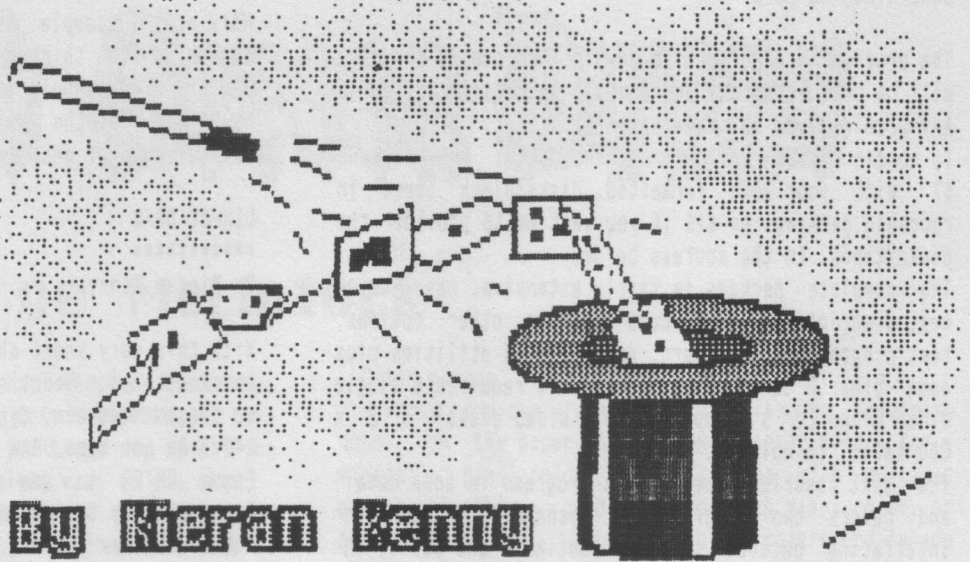
The 21-Card Trick is probably one of the first tricks a budding magician learns. Of course you too probably know how to perform this feat with a deck of cards, but now's your chance sit back and watch how slick-dealing CoCo lays 'em down and picks 'em up like greased lightning and never drops a card!

When you run the program, you get a display of 21 random mini-cards dealt in seven rows of three (to form three columns of seven). Follow the prompt at the right of the screen and press the number corresponding to the column the card you choose is in. The cards are then picked up from the table (erased) and dealt again. After two more deals, CoCo will tell you which card you chose.

Credit to Getting Started With Color Basic for the routine in lines 500-530 which establishes the values of the double array K(S,N) - the suits and face values of the cards. See Appendix F, the exercise program to Chapter 25 (a two-dimensional card deck).

If you are one of the few who do not know how this trick works, well study the listing carefully and note how the cards are picked up from the table.

The high speed poke, line 5, is optional. For CoCo 3 enter POKE65497,0 in line 5 and POKE65496,0 in line1030. With a high speed poke in effect, the action on screen is, in my opinion, too fast.

There are plenty of games and adventures available for CoCo, but so far I have never seen any magic tricks. My career as a magician never got any further than the 21-card trick, but if you have a few tricks up your sleeve let's see your ABRACADABRA in CoCo-Link sometime.

21 CARD TRICK

```
0 '21CARD' BY KEIRAN KENNY
1 '2/45 CREMORNE ROAD,CREMORNE
  NSW 2090
2 'SHAREWARE CONTRIBUTION $1
  APPRECIATED
3 'DELETE THE (') FROM LINE 5
  FOR THE HI-SPEED POKE
5 'POKE65495,0
10 CLS:GOTO1050
20 CLEAR2000
30 DIMA(54),F$(13),J(21),K(4,13)
   ,L(21),N(21),S(21),L$(90)
40 FORI=1TO13:READF$(I):NEXT
50 DATA A,K,Q,J,10,9,8,7,6,5,4,3
   ,2
59 'A - Z

60 L$(65)="U4E2F2D2NL4D2":L$(66)
   ="U6R3FDGNL3FDGNL3BR":L$(67)="BR
   3NEL2HU4ER2FBD5":L$(68)="U6R3FD4
   GNL3BR":L$(69)="NR4U3NR3U3R4BD6"
   :L$(70)="U3NR3U3R4BD6":L$(71)="B
   R3EU2NLD2GL2HU4ER2FBD5":L$(72)="
   U3NR4U3BR4D6"
70 L$(73)="BRR2LU6NLRBD6BR":L$(7
   4)="BRHUBU4BR4D5GNL3BR":L$(75)="
   U6D3RNE3F3":L$(76)="NU6R4":L$(77
   )="U6F2E2D6":L$(78)="U6F4U4D6":L
   $(79)="BRHU4ER2FD4GNL2BR":L$(80)
   ="U6R3FDGNL3BRBD3":L$(81)="BRHU4
   ER2FD3G2NLBU2F2"
80 L$(82)="U6R3FDGL3RF3":L$(83)=
   "BRNHR2EH4ER2FBD5":L$(84)="BR2U6
```

```
L2R4BD6":L$(85)="BRHU5BR4D5GNL2B
R":L$(86)="BU6D4F2E2U4BD6":L$(87
)="NU6E2F2NU6":L$(88)="UE4UBL4DF
4D":L$(89)="BU6DF2ND3E2UBD6":L$(
90)="BU6R4DG4DR4"
89 '0 - 9
90 L$(48)="BRHU4ER2FBGNG2BED4GNL
2BR":L$(49)="R4L2U6NG2BR2BD6":L$
(50)="BU5ER2FDGL2GD2R4":L$(51)="
BU5ER2FDGNL2FDGL2NHBR3":L$(52)="
BR3U6G3R4BD3":L$(53)="BRNHR2EU2H
L3U2R4BD6"
100 L$(54)="BUU3NE2BD3FR2EUHL2GB
D2BR4":L$(55)="BU5UR4DG4DBR4":L$
(56)="BRHUER2EUHL2GDFR2FDGNL2BR"
:L$(57)="BRNHR2EU4HL2GDFR3BD3"
```

```
109 'SIGNS/PUNCTUATION
110 L$(32)="BR":L$(33)="UBU2U3BD
6":L$(36)="BUR3EHL2HERNUND5R2BD5
":L$(39)="BRBU4U2BD6":L$(40)="BR
2H2U2E2BD6":L$(41)="E2U2H2BD6BR2
":L$(43)="BU3R2ND2NU2R2BD3":L$(4
4)="BRNGNU":L$(45)="BU2BR2R2BR2B
D2"
120 L$(46)="BRNUBR2":L$(47)="UE4
UBD6":L$(58)="BRUBU2UBR3BD4":L$(
59)="BR2NGUBU2UBD4":L$(61)="BU2B
RR2BRBU2BLL2BR3BD4":L$(63)="BU4U
ER2FDGLBD2DBR2"
130 PRINT:PRINTTAB(8)"PRESS ANY
KEY.":EXEC44539:K$=INKEY$:LL=13:
GOTO480
140 DRAW"U24R47D24L47":DRAW"BM+2
9,-2":ONS GOSUB150,160,170,180:R
ETURN
150 DRAW"H10E10F10G10":DRAW"BM"+
STR$(X+5)+","+STR$(Y-16):W$=F$(N
):GOSUB260:RETURN
160 DRAW+"H10U5E5R2F3E3R2F5D5G10
":DRAW"BM"+STR$(X+5)+","+STR$(Y-
16):W$=F$(N):GOSUB260:RETURN
170 DRAW"L3E3U2G3L2H3U3E3R2F3ND3
U2H3U3E3R2F3D3G3D2E3R2F3D3G3L2H3
NU3D2F3L3":DRAW"BM"+STR$(X+5)+",
"+STR$(Y-16):W$=F$(N):GOSUB260:R
ETURN
180 DRAW"L3E3U2G3L3H3U5E10F10D5G
3L3H3D2F3L3":DRAW"BM"+STR$(X+5)+
","+STR$(Y-16):W$=F$(N):GOSUB260
;RETURN
190 K$=INKEY$:IFK$=""THEN190ELSE
RETURN
200 IFLEN(ZL$)<=LL THEN240
210 FORT=LL TO1STEP-1:IFMID$(ZL$
,T,1)=" "THEN230
220 NEXTT:GOTO240
230 P$=LEFT$(ZL$,T):W$=P$:GOSUB2
50:ZL$=RIGHT$(ZL$,(LEN(ZL$))-T):
C=C+15:GOTO200
240 W$=ZL$
250 DRAW"BM"+STR$(B)+","+STR$(C)

260 COLOR0:FORZB=1TOLEN(W$):DRAW
L$(ASC(MID$(W$,ZB,1)))+"BR3":NEX
T:RETURN
270 H=0:V=0
280 FORTT=1TO19STEP3:T=T+1
290 N(T)=J(TT):S(T)=L(TT)
300 PUT(H,V)-(H+47,V+24),A
310 V=V+26
320 NEXT
330 RETURN
```

```
340 H=56:V=0
350 FORTT=2TO20STEP3:T=T+1
360 N(T)=J(TT):S(T)=L(TT)
370 PUT(H,V)-(H+47,V+24),A
380 V=V+26
390 NEXT
400 RETURN
410 H=112:V=0
420 FORTT=3TO21STEP3:T=T+1
430 N(T)=J(TT):S(T)=L(TT)
440 PUT(H,V)-(H+47,V+24),A
450 V=V+26
460 NEXT
470 RETURN
480 PMODE4,1:COLOR0,5:PCLS:SCREE
N1,1
490 GET(168,0)-(255,24),A
500 FORS=1TO4
510 FORN=1TO13
520 K(S,N)=(S-1)*13+N
530 NEXTN,S
540 X=0:Y=24
550 FORT=1TO21
560 TM=RND(-TIMER)
570 N=RND(13)
580 S=RND(4)
590 IFK(S,N)=0THEN570
600 DRAW"BM"+STR$(X)+","+STR$(Y)
:GOSUB140
610 IFT/3=INT(T/3)THENX=0:Y=Y+26
ELSEX=X+56
620 K(S,N)=0
630 J(T)=N:L(T)=S
640 NEXT
650 B=21:C=190
660 FORX=1TO3:ZL$=STR$(X):GOSUB2
00:B=B+56:NEXT
670 B=168:C=40:ZL$="PICK A CARD!
":GOSUB200
680 B=168:C=C+15:ZL$="WHICH COLU
MN IS YOUR CARD IN? PRESS:":GOSU
B200
690 C=C+15:ZL$="1, 2 OR 3.":GOSU
B200
700 K$=INKEY$:T=0:NR=NR+1
710 GOSUB190:IFK$<"1"ORK$>"3"THE
N710
720 IFK$="1"THENGOSUB410:GOSUB27
0:GOSUB340
730 IFK$="2"THENGOSUB270:GOSUB34
0:GOSUB410
740 IFK$="3"THENGOSUB340:GOSUB41
0:GOSUB270
750 IFNR=3THEN870
760 X=0:Y=24
770 FORT=1TO21
```

```
780 N=N(T):S=S(T)
790 DRAW"BM"+STR$(X)+","+STR$(Y)

800 GOSUB140
810 IFT/3=INT(T/3)THENX=0:Y=Y+26
ELSEX=X+56
820 J(T)=N(T):L(T)=S(T)
830 NEXT
840 PUT(168,16)-(255,40),A
850 B=168:C=40:ZL$="NOW!":GOSUB2
00
860 IFNR<3THEN700
870 FORT=1TO21
880 N=N(T):S=S(T)
890 NEXT
900 PCLS:B=0:C=40:W$="ABRACADBRA
ABRACADEE,":GOSUB250
910 C=C+15:W$="LET ME THINK WHAT
YOUR CARD CAN BE!":GOSUB250
920 C=C+30:ZL$="HMMMM":GOSUB200
930 SN=128:B=38:FORP=1TO4:FORD=1
TO350:NEXT:W$=".":GOSUB250:SOUND
SN,1:B=B+7:SN=SN+4:NEXT
940 FORD=1TO350:NEXT:B=70:W$="HA
H! GOTTIT!":GOSUB250
950 B=0:C=C+45:W$="YOUR CARD IS
THE ":GOSUB250
960 X=117:Y=C
970 N=N(11):S=S(11)
980 DRAW"BM"+STR$(X)+","+STR$(Y)

990 GOSUB140
1000 B=75:C=C+30:W$="TRY AGAIN?
Y/N":GOSUB250
1010 GOSUB190
1020 IFK$="Y"THENPCLS:NR=0:GOTO5
00
1030 IFK$="N"THENPCLS:POKE65494,
0:CLS:END
1040 GOTO1010
1050 PRINT@100,"<<<THE 21-CARD T
RICK>>>"
1060 PRINT:PRINTTAB(1)"BY KEIRAN
KENNY, SYDNEY, 1989."
1070 PRINT:PRINT"LET COCO-THE-CO
NJURER AMAZE YOURFRIENDS BY GUES
SING THE CARD    THEY CHOOSE. BU
T DON'T TELL THEMHOW HE DOES IT!
"
1080 GOTO20
```
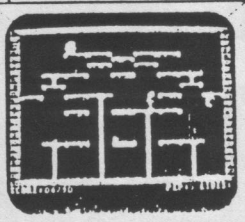
GAMES

Rupert Rythym
by Nickolas Marentes

Help Rupert infiltrate ''Music Box Records'' and collect all of his stolen notes which are scattered throughout the complex. Ride the crazy elevators and beware of the security robots on patrol.
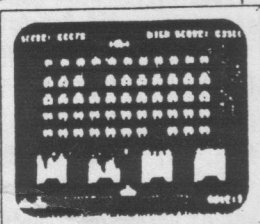
This strategy arcade game features 17 different, 16 color graphic screens and some of the hottest digitized percussion music and vocals you've ever heard.   Disk or Tape

SPACE INTRUDERS
by Nickolas Marentes

Enemy alien creatures have been identified entering our solar system, their destination: our home planet! Their goal: the total annihilation of our race. They must not be allowed to land!

An action arcade game featuring high quality 16 color graphics and sound effects.
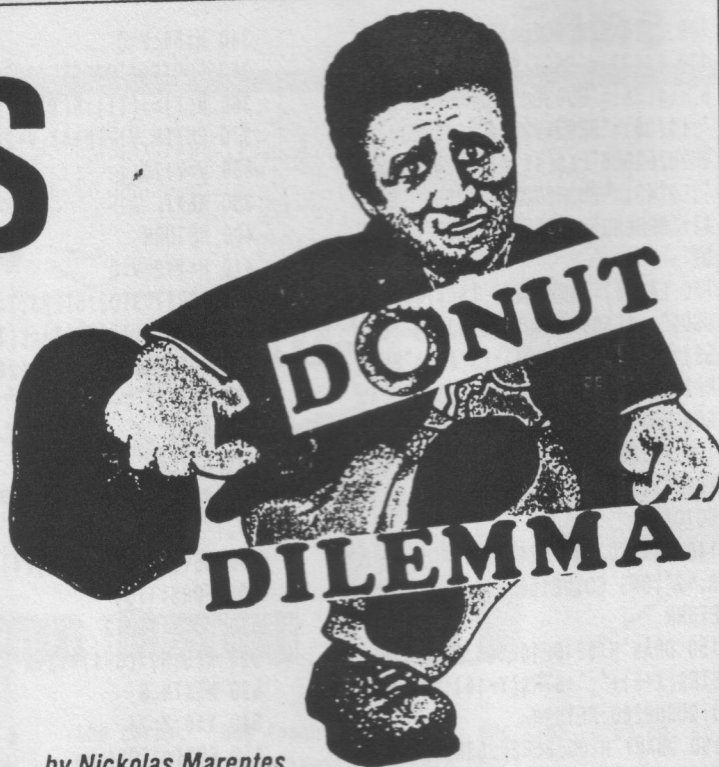
DONUT DILEMMA
by Nickolas Marentes

Angry Angelo has raided Antonio's Donut Factory sending the entire complex amuck! Donuts have come alive and are jumping around in wild frenzies. Machines have gone out of control throwing cooking fat, dough and icing sugar everywhere! You must help poor Antonio climb ladders, Jump platforms and ride elevators to reach the top floor and shut down the factory's power generator which will restore law and order.

PROGRAM DETAILS

PROGRAM TITLE	COCO REQUIRED	MEMORY NEEDED	JOYSTICK	KEYBOARD	LANGUAGE
Donut Dilemma	CoCo 1,2 or 3	64K Minimum	NO	YES	6809 M/L
Rupert Rythym	CoCo 3 only	128K or 512K	YES	NO	6809 M/L
Space Intruders	CoCo 3 only	128K or 512K	YES	YES	6809 M/L

DISCOUNT PRICING

QUANTITY	PAY	SAVE
Buy 1	$18	
Buy 2	$30	$6
Buy 3	$44	$10

Send cheque or Postal Money Order to:

Nickolas Marentes Software

P.O. Box 551
Garden City
Mt. Gravatt 4122

* Please specify TAPE or DISK

''' Please PRINT name and address in large uppercase letters '''

ATTENTION PROGRAMMERS: We are looking for commercial quality software for the CoCo3, preferably machine language. Help support the CoCo3 market by making your product available to CoCo3 users in Australia, Canada and the U.S.A.!

CLASSIFIED ADVERTS
****

FOR SALE $100.00
            OS9 LEVEL 2 operating system for Coco 3.
            Two disk - System master and Boot/ config/
            Basic 09.
            Plus complete Rainbow guide to OS9 Level 2.
            Phone Jim - Ph. (08) 298 2843

FOR SALE   National Panasonic SS Drive in case with
            Power supply.
            Disk controller with JDOS and GDOS (BDOS)
            switchable.
            $130.00 + Postage (if applicable)
            Contact Robbie - Ph. (08) 386 1647

WANTED - Coco 3 "DESKTOP PUBLISHER" on tape.
Contact Graham Elphick
        26 Birch St.
        St. Marys
        NSW 2760   or phone (02) 623 8141
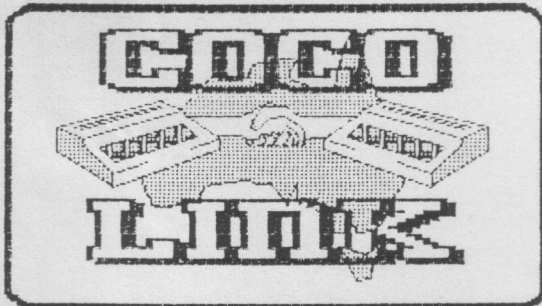
COCO-LINK PRODUCTS
****

Back Issues.......$2.40each

Software:
    Programmers Utility.............$20.00
(Reviewed Coco-Link No.2)

PD SOFTWARE:

#001 Education Programmes........$5.00
#011 Coco Trivia   Game.........$5.00
#012 Computer Tote..............$5.00
#013 13 Games...................$5.00

ADVERTISING RATES:

    $12.00 per full page
    $8.00 per half page
    $5.00 per Quarter page
    MAX. 3 months

    Classified...$2.00 per 20 words.

Write to: COCO-LINK
             31 Nedland Cres.
             Pt. Noarlunga Sth.
             S.A. 5167

Or phone: (08) 386 1647
           (08) 386 1139

When answering our Adverts PLEASE mention COCO-LINK