

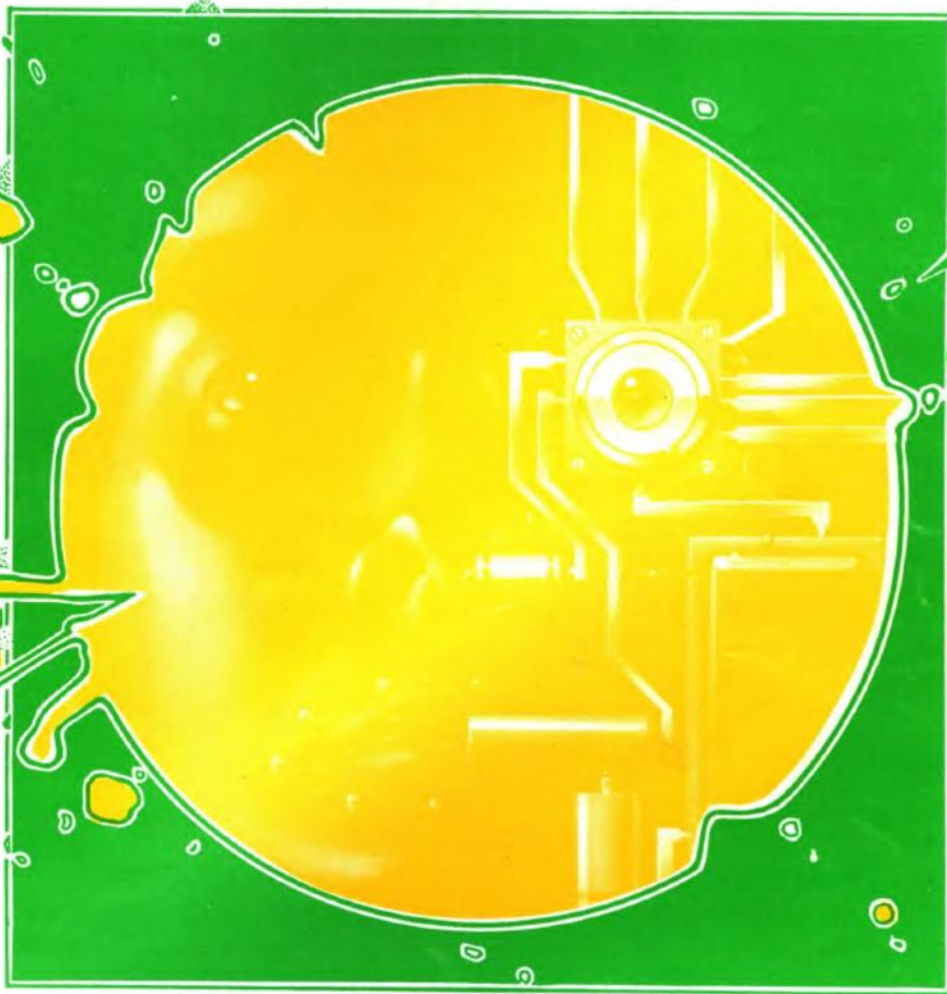
THE Magazine for experienced TANDY Colour Computer Users!

\$4⁵⁰

AUSTRALIAN

COCO

MAGAZINE



VOL 3 NO 12
AUGUST 87

Data Structures in FORTH

SUPER DRAW, NINJA, DETERMINATOR

M/L Utilities with a Disk System

FUNKY TOWN — More music from Monck

SUMMER and THE MILL plus

— Graffix by CoCo granny, Joy Wallace

CoCo as a control device — THE XY PLOTTER

DRAGON LORD — Fight your way out of this one

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WHAT'S ON THE BEST OF CoCoOz

Best of CoCoOz #1. EDUCATION

ROADQUIZ ROB WEBB
 SHARE MARKET ALEPH DELTA
 HANGMAN ALEPH DELTA
 AUSTQUIZ P. THOMAS
 ALPHABET RON WEBB
 SPELLING TUTOR IAN LOBLEY
 TASK ADDITION DEAN HODGSON
 FRACTION TUTOR ROBBIE DALZELL
 TABLES BARRIE GERRAND
 ICOSA BOB WALTERS
 KIDSTUFF JOHANNA VAGG
 TAXMAN TONY PARFITT
 FLAGQUIZ ROB WEBB

Best of CoCoOz #2 part 1 16K GAMES

PYTHON V. ARMSTRONG
 COCONIND STEVE COLEMAN
 POKERMCH GRAHAM & MATTHEWS
 OILSLICK JEREMY GANS
 SPEEDMATHS DEAN HODGSON
 CNETBOR BOB THOMSON
 BATTACK JEREMY GANS
 SKIING JOSHUA GANS
 PROBDICE BOB DELBOURGO
 RALLY TONY PARFITT
 CHECKERS J & J GANS
 FOURDRAW JOHANNA VAGG

Best of CoCoOz #2 part 2 32K GAMES

TREASURE DAVIDSON & GANS
 SHOOTING GALLERY TOM DYKEMA
 MASTERMIND GRAHAM JORDAN
 GARDEN OF EDEN DAVE BLUHORN
 ANESTHESIA MIKE MARTYN
 YAHTZEE KEVIN GOVAN
 ORGON TRAIL DEAN HODGSON
 BATTLESHIP CHRIS SIMPSON
 ADVENTURE + STUART RAYNER
 ANDROMEDIA MAX BETTRIDGE
 LANDATTACK ALDO DEBERNADIS

Best of CoCoOz #3 UTILITIES

SCREEN PRINT TOM DYKEMA
 RANTEST TOM DYKEMA
 PRINT SORT PAUL HUMPHRIES
 BEAUTY BOB THOMPSON
 DATAGEN ROBIN BROWN
 PCOPY BRIAN DOUGAN
 PASTEXT OZ-VIZ
 MONITOR + BRIAN FERGUSON
 COPYDIR THOMAS SZULCHA
 LABELLER FRED BISSELING
 SPEED CONTROL PAUL HUMPHRIES
 2BC WARREN WARRE
 CREAT-A-TITLE BRIAN FERGUSON
 DISKFILE BRIAN DOUGAN
 BIG REMARKS BOB THOMPSON
 LABELLER GORDON BENTZEN
 DIR MORRIE SINGER
 HI ALEX. HARTMANN

Best of CoCoOz #4 Business

HI ALEX. HARTMANN
 (disk; Disk Directory Manager)
 PERSMAN PAUL HUMPHREYS
 (Personal Finance Management)
 BANKSTAT BARRY HATTAK
 (Annual & Store Statement)
 CCS GRAHAM MORPHETT
 (tape; Sales invoicing)
 INSURE ROY VANDERSTEEB
 (Analyse Home Contents)
 COCOFILE BRIAN DOUGAN
 (tape; database)
 DPMS PAUL HUMPHREYS
 (disk; Disk Program Management Sys)
 DATABASE PAUL HUMPHREYS
 (tape; THE tape database)
 RESTACC DUNG LY
 (tape; Restaurant Accounts)
 SPDSHEET GRAHAM MORPHETT
 (disk; 22 column spreadsheet)
 PRSPDSHT GRAHAM MORPHETT
 (disk; prints out "SPDSHEET")
 ACS3 GREG WILSON
 (disk; Multi disk database)

Best of CoCoOz #5 ADVENTURES

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

Best of CoCoOz #6 PRESCHOOL

ALPHABET STUART DAVSON
 HATDANCE JOHANNA VAGO
 AUSTRONG McDERMOTT FAMILY
 ADVANCE McDERMOTT FAMILY
 VALTZING McDERMOTT FAMILY
 TIMEKANG McDERMOTT FAMILY
 BAND McDERMOTT FAMILY
 KIDSTUFF JOHANNA VAGO
 MATCHER ?
 LETTERS JACK PINNEN
 BABYSIT JOHANNA VAGO
 SPELLING JOHANNA VAGO
 SPEEDTAB DEAN HODGSON
 10 FACES JOHANNA VAGO

Please Note: Some of the programs on Best of Cocooz # 3 and #4 will not work on the Coco 3.

Best of CoCoOz #7 GRAPHICS

LIL' COCO ANDREW WHITE
 THE ROOM HERMANN FREDRIKSON
 BACK STREET JOY WALLACE
 LOCO MIKE D'ESTERRE
 COCO ART SANDY MCGREGOR
 KANGA JOHANNA VAGO
 THE BOAT SANDY MCGREGOR
 SAD COCO F. BOLLE
 TOWER C. A. SYMS
 WINDY DAY SARAH LAV
 SAILING STEVE YOUNGBERRY
 OUTHOUSE STEVE YOUNGBERRY
 SMURF JOHANNA VAGO
 SUNSTATE STEVE YOUNGBERRY
 HELICOPTER ANDREW WHITE
 MARTHA ANDREW WHITE
 BAD MOON STEVE YOUNGBERRY
 MCC JOY WALLACE
 EAGLE ?
 BLASTER PAUL YOUOLD
 FOGHORN PAUL STEVENSON

Best of CoCoOz #8 16K GAMES

ALIEN STUART SANDERS
 QVERL DARRELL BERRY
 SHOOTOUT CRAIG STEWART
 SHUTTLE CRAIG STEWART
 FROG DARREN OTTERY
 FROGRACE TOM LEHANE
 KIMKAT TOM LEHANE
 GRANDPRI DOUG GREY
 WATER WARS JUSTIN LIPTON
 CATERPILLER JUSTIN LIPTON
 DETECTIVE VAL STEPHEN
 BREAKOUT WHY/BILT

Best of CoCoOz #9 32K GAMES

TRIONING BOB DELBOURGO
 MATCHEM CHARLES BARTLETT
 GO BOB DELBOURGO
 MARZOD MAX BETTRIDGE
 CHOMPER MAX BETTRIDGE
 POPBALL MAX BETTRIDGE
 LUDO WHY/BILT
 SARRE ANDREW SIMPSON
 MOVEABOUT KEVIN GOVAN
 JIGSAV JAMES REDMOND
 LABYRINTH JAMES REDMOND
 TANK CRAIG STEWART

Best of CoCoOz #10 Education 11

METEOR DEAN HODGSON
 DRIVERS TEST ANDREW SIMPSON
 SALE JUSTIN LIPTON
 TABLES PAT KERMODE
 OPALTON IAN CLARKE
 CAPITAL LETTERS BOB HORNE
 TEST MATCH JEFF SHEEN
 SENTENCE ENDINGS BOB HORNE
 ESCAPE DEAN HODGSON
 RAILMATH BOB HORNE
 COUNTDOWN DEAN HODGSON
 WHATZIT BOB HORNE
 HOMOPHONES BOB HORNE
 COMPOUND WORDS BOB HORNE

Best of CoCoOz #11 Education 111 This is a DISK only issue!

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DATE OF APPLICATION / /

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

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(CHARGES INCURRED ON BUSINESS SERVICES ARE USUALLY TAX DEDUCTIBLE)

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

POSTAL ADDRESS NUMBER/STREET

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

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

section 2

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

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

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

CONTACT TELEPHONE NUMBER (INCLUDING STD CODE)

section 3

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_____ BG _____ SC _____ CI _____

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REF _____

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

Utilities

17 GENESIS VDG CONTROLLER

A sixteen colour,
409 upper and
lowercase character
generator.

19 32x16 & 40x24 WORKSHEET

Helps you determine
what screen location
to use when printing
test on the screen.

22 USING M/L UTILITIES with a DISK SYSTEM

The title says it all.

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Lets you draw on
any graphics screen.

54 X-Y PLOTTER for the CoCo3

Helps you implement
cheap and easy
input/output control.

56 PRINTER to CoCo part 2

Convert your
Teleprinter to a
normal printer.

58 HIGHLIGHTING COMMENTS in a BASIC PROGRAM

Puts REM comments
in lowercase.

62 H2SAVE and H2VIEW

Load and save HSCREEN
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and tape.

inside COCO

7 LABELS

Print out a variety
of labels for your
DMP-130 and DMP-430.

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help you to 'find
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50 LOTTO CHECK8

Yet another Lotto
Checker.

Music

28 FUNKY TOWN

The Pseudo Echo
version of this
great song, now
on your CoCo!

62 THE MINI HUSBAND

Plays the French
song Le Petit Mari.

Plus:- In a Nut Shell, Letters, Working Data Structures.

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IN A NUT SHELL



It's that time of the year again -- the time of people meeting, the time of sharing information, the time for helping one another, the time for ones self to become wealthier with information, the time for the Conference!

At Conf'87, we don't just have a conference, we have a conference special enough to remember! We have a conference not just to "get to know what's new, and maybe I can find out what that new thingydoozy is they're offering", we have a conference that concentrates around factors like meeting new people, making new friends and meeting old ones, to know what you didn't before, to put a face on the name ... all those things are things that make the conference so special.

It is you, me, the ordinary (and sometimes special) computer user that create the atmosphere, the excitement, the thrill of a conference ...

It is like a very big user group meeting, held only once a year - it is the 'biggie' of the user groups for the whole of Australia!

So if you want to know more about this event (not to be missed, may I say), turn to the section in the magazine and read all about this years activities!

Also, if you own a CoCo 3, there'll be plenty of new software and hardware for you! Blaxland & Paris Radio have gone all out on shipping in CoCo 3 software. Their prices are low, and stocks are limited, so if you want to get in a great bargain and have an enjoyable weekend, come to Conf'87!!

* Competitions

All the competitions have now officially closed! There will be no more entries taken! All the entries for each individual competition are being sifted through now as you read this magazine.

If you wish, or if you have already done so, you may enter your program for NEXT year's competition.

As for the programs that have been entered, I must say their standards are very high, and finding a winner for each competition will be a tough one.

The winners for each individual competition will be announced at the conference and published in the September issue of CoCo.

* OS-9 over MS-DOS?

Yes, you're reading correctly. OS-9 is being preferred as an industry standard for Compact Disc Storage!

This particular article appears in the "In Brief" section at the back of Softgold.

* Viatel

If you own a computer, and you can get access to Viatel between 8pm & 11pm eastern standard time (or Queensland time, if you prefer), and you have a question you'd like answered regarding computers or have a problem with a program you're currently writing, or would like to pass on some information that might seem important to somebody else, or would just like to say hi, then do so every Tuesday night!

Tuesday night is a special night that has been set aside for computer discussion.

Commonly known as "Computer Night on Goldlink", the night is orientated towards people with problems or answers regarding computers.

So remember! Tuesday night is computer night! Tuesday night is computer night! Tuesday night is computer night!

* Hardware Modifications

At the beginning of the year, I mentioned that I would try to get into the magazine at least one hardware modification a month. I have found it difficult to keep this promise as hardware articles are rare.

But nevertheless, hardware modifications will resume as of September, where I'm told we will feature a joystick modification.

You can now convert your Atari/Commodore joysticks to work on the CoCo! See this one next month!

And if you have any hardware modifications/articles that you would like to share with the rest of us, then please do!

"How do I send it in?", you ask? Easy, just read the section in this magazine on submitting your work.

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LABELS

32K ECB
UTILITY

by Michael Shoobridge

I AM 65 YEARS of age, too old to learn how to communicate with my P.C. as fluently as 12 and 16 year old children who have grown up with computers, but just old enough to have learned the wisdom of adaptability and relationships.

I have collected many programs for printing labels but they were all very specific and not one filled my particular requirements.

So now I have attempted to write a universal program that will do a whole lot of things. This may be modified for use with almost any line printer -- very easily -- providing a wide range of type fonts (I have only given a few samples in the program), which may be changed to suit your Dot Matrix Printer by changing the numbers (in brackets) and altering the typeface menu and instructions (line 4540-4680).

It is based on an idea by Brian Briggs published in the American Rainbow for December 1986 (pages 93-96) but has been expanded and altered by me so radically as to be almost unrecognizable.

The labels may:-

1. Be printed at any tab locale.
2. Contain as many words/line
3. At any distance apart
4. In as many columns/page as your printer will stand (A4 or A3 paper width, or other sizes if your printer accepts alteration of right and left margins)
5. With as many lines per label as required, and with ...
6. ... as much verticle distance between labels and as is wanted.

... and each label may be repeated as many times as required by hitting the 'Y' key.

I have used this program on the Tandy line printer VIII and the DMP-430 printer.

With the latter an extraordinary number of type faces are possible. The length allowed for each word is shown by a cursor so you don't have to remember how many characters you are allowed (a number you chose for yourself).

The typefont is 'turned on' in line 900 and turned off again in lines 1080 and 4700 rather than on and off in line 2610. This is to support the special functions of the DMP430 in which half or double line advances are linked with microfont or double height lettering, respectively.

Some functions are listed in lines 20-60 (Super and Sub-script, half reverse & 3/4 advance) but have not been used in the menu that I have given in this case.

However, these may be introduced readily.

'Z' has been used for (Z)starting a new font and 'E' for (E)ending it.

The letters that go with the 'Z' or 'E' (as 'E' 'B' or 'C' for Elongation-Bold-Condensed) are fairly easy to memorize.

The code for single numbers mostly consist of a letter and an 8 or 9 so that there is less likelihood of confusion with other numbered letters 'n1', 'n2' and 'n3' elsewhere in the program.

For example,

Z8\$=CHR\$(27):B9\$=CHR\$(32): ie
EE\$=(Z8\$+B9\$) or [end bold].

You may RUN the program, then 'break' and put the line printer

into the desired font (not on menu -- simply by typing ...

```
PRINT#-2,ZE$;UL$"Message";  
EE$;EU$
```

... which would give underlined elongation type.

Be careful with the semi-colons (;) which follow 'PRINT#-2', especially in Lines 900, 1080 and 4700.

The printer instructions are summarized in table one. Read your printer manual and substitute the appropriate number.

Some printers use letters as well as CHR\$(n) and in these cases that letter will have to be included in the final ZX\$ or EX\$ instruction.

But in most cases you need make only minimal changes in Lines 20 to 60 and none at all in the rest of the test.

There are numerous REM comments (explained in line 5) in to indicate movement through the program thus making it easier to understand and modify.

However, you may save 2 granules (6 reduced down to 4) by omitting all REM statements that are followed by an asterisk, provided that any comments preceded by '===' are left in the program.

That is, in ...

```
* 5610 GS H, GT100: ==MENU
```

... the "=== MENU" is left, but "* 5610 GS H, GT 100:" are removed.

Happy printing ... let me know if there are some printers which will not work with this program (although I will not guarantee to be able to do anything about it).

TABLE 1. Codes for various typefonts etc (for LPVIII & DMP430)

 COMPOS:INDIVIDUAL ! TYPEFONT ! CHR\$(n) ! PRINT:COMP ! CHR\$(n)
 -ITE !CODE ! OR ACTION ! ! CONST:CODE !
 CODE ! ! ! ! -ANT !TO END !
 START ! ! ! ! (KP) !FONT !

	(Z8\$)	-----	(27	-	-	
ZN\$	= Z8\$ + N8\$	NORMAL	27 19	*1.0	ZN\$	27 19
ZC\$	= ' + C8\$	CONDENSED	27 20	*1.67	'	'
ZP\$	= ' + P8\$	PROPORTIONAL	27 17	*1.0(5)	'	'
ZE\$	= ' + E8\$	ELONGATED	27 14	*0.5	EE\$	27 15
					[EE\$=Z8\$+E9\$]	
FR\$	= ' + R8\$	FULL REVERSE	27 10	-	NEW L/F CODE	
HR\$	= ' + R4\$	HALF REVERSE	27 30	-	NEW L/F CODE	
FA\$	= ' + A8\$	FULL ADVANCE	27 54	-	NEW L/F CODE	
QA\$	= ' + A6\$	3/4 ADVANCE	27 56	-	NEW L/F CODE	
HA\$	= ' + A4\$	HALF ADVANCE	27 28	-	NEW L/F CODE	
UL\$	= UL\$	UNDERLINE	15	-	EU\$	14

THE ABOVE ARE USABLE WITH EITHER TANDY LP VIII OR THE DMP 430 PRINTER

THOSE LISTED BELOW CAN ONLY BE USED WITH THE DMP 430 PRINTER

ZF\$	= Z8\$ + F8\$	MICROFONT	27 77	*1.0	ZN\$	27 19
ZM\$	= ' + M8\$	COMPRESSED	27 23	*1.2	'	'
MF\$	= ' + M9\$	COMPRESS PROPTNL	27 47	*1.2(2)	'	'
ZQ\$	= ' + Q8\$	CORR Quality 10CPI	27 18	*1.0	'	'
ZY\$	= ' + Y8\$	CORR quality 12CPI	27 29	*1.2	'	'
ZI\$	= ' + I8\$ +N1\$	ITALICS	27 66 1	*1.0	EI\$	27 66 0
					[EI\$=Z8\$+I8\$+N0\$]	
ZD\$	= ' + D8\$	DOUBLE HEIGHT	27 87	*1.0	ZN\$	27 19
					[EB\$=Z8\$+B9\$]	
ZE\$	= ' + B8\$	BOLD LETTERING	27 31	-	EB\$	27 32
SP\$	= ' + S8\$ +N0\$	SUPERSCRIPIT	27 83 0	-	ES\$	27 88
SB\$	= ' + S8\$ +N1\$	SUBSCRIPIT	27 83 1	-	ES\$	[=Z8\$+S9\$]
SL\$	= ' + L8\$[(n)]	SET LEFT MARGIN	27 81 (n)	-	NEW MARGIN or	
SR\$	= ' + R8\$[(n)]	SET RIGHT MARGIN	27 82 (n)	-	COLD START	

 ZX\$ = (BB\$+CC\$+DD\$) ZX\$= A COMBINATION CODE to START FONT (REVERSE etc)
 EX\$ = (WW\$+XX\$+YY\$) EX\$= A COMBINATION CODE to END FONT (UNDERLINE etc)

* means this FONT or ACTION may be modified by other instructions and then the (K)CONSTANT FOR (P)RINT SIZE (KP) will be correspondingly changed.
 Please note: Microfont cannot be printed in Italics but may be Condensed etc.

TABLE 2: Where you can find it.

20-60,500	PRINTING: Simple (& some combined) codes for COMPUTER
510	VARIABLES: Set standard values (TA, WL, DW, NL, COL, SP)
4500-4570	MENU TO SELECT TYPEFACE (or underline, bold etc)
4600-4680	INSTRUCTIONS FOR PRINTER (which typeface & KP)
500	(incl. 'STANDARD TYPEFONT' which here = condensed normal)
(900) & [1080,4700]	ACTIVATE PRINTER: Turn (ON) or [OFF] the particular font, bold, underline, etc (ie the COMBINED CODE)
2530,2610, 4110,4700,4920	LINEFEED (controlled by NL, NW, NN) and MARGINS (line 4110)
500,910, 4540,4810, 4610-4680	KP: CONSTANT which makes adjustments for Printer spacing, and paper size (margins). If you alter margins (ie A4-->A3 paper) you must also adjust KP.
200-340	MAIN MENU (set the VARIABLES, ACTIVATE the printer or END the program)

The Listing:

```

ZE$=(Z8$+E8$):EE$=(Z8$+E9$):      88 '
FR$=(Z8$+R8$):HR$=(Z8$+R4$):      89 ' === OPERATION CENTRE (1ST I
FA$=(Z8$+A8$):QA$=(Z8$+A6$):      NTERCHANGE LOCUS)
HA$=(Z8$+A4$): ' LPVIII & DMP     90 GOSUB 2400: ' * GS 2400: ===
430 --- Z*$= PRINT E*$= END *R    CHECK IF PRINTER ON LINE
$=REVERSE *A$=ADVANCE (FORWARD)  100 GOSUB 4000: ' * 2430 RT H:
F=FULL Q=3/4 H=1/2                GS 4000: === TO RESET PRINTER M
37 '                                ARGINS ON DMP430 -OMIT FOR LPVII
38 '                                I
39 ' === CODES FOR DMP 430 PRINT   110 GOSUB 4500: ' * 4030,4110 RT
ER ONLY lines 40-60                H:GS 4500: === TO SELECT TYPEF
LHS MARGIN (Z8$+L8$+CHR$(n)        ACE
RHS MARGIN (Z8$+R8$+CHR$(n)        120 GOSUB 510: ' * 4580 RT H: GS
40 F8$=CHR$(77): M8$=CHR$(23):     510 === TO SET STANDARD VALUES
M9$=CHR$(47): Q8$=CHR$(18):        (FOR TA, WL, DW, NL, COL, SP) IN LINE
Y8$=CHR$(29): I8$=CHR$(66):        510
N0$=CHR$(0): N1$=CHR$(1):          130 IF Q=0 THEN 200 ELSE 220: '
D8$=CHR$(87): B8$=CHR$(31):        *510 RT H
B9$=CHR$(32): S8$=CHR$(83):        197 '
L8$=CHR$(81): R8$=CHR$(82):        198 '
ZP$=(Z8$+P8$)                       199 ' === MAIN MENU ===
50 ZF$=(Z8$+F8$):ZM$=(Z8$+M8$):    200 CLS: ' * 510,4700,4830,5510
MP$=(Z8$+M9$):ZQ$=(Z8$+Q8$):      GT H
ZY$=(Z8$+Y8$):ZB$=(Z8$+B8$):      210 PRINT@6," standard setting "
EE$=(Z8$+B9$):Z1$=(Z8$+I8$+N1     220 PRINT@32,"1) STANDARD TA-WL
$):E1$=(Z8$+I8$+N0$):ZD$=(Z8$+D8   -DW-NL-COL-SP": '* 350,2140 ELSE
$):SP$=(Z8$+S8$+N0$):SB$=(Z8$+S8   H
$+N1$):' 40-60 APPLY DMP430 ONLY  230 PRINT@67,"SETTING";T1A;W1L;D
: SP/SB= SUPER-/SUB- SCRI          1W;N1L;C1L;S1P
60 SL$=(Z8$+L8$): SR$=(Z8$+R8$):  240 PRINT@96,"2) SET LHS MARGIN
S9$=CHR$(88): ES$=(Z8$+S9$):      (TA)"
' PRINT#-2,SL$+CHR$(n) =CHANGE L   250 PRINT@128,"3) CHANGE WORD LE
MARGIN -- DITTO R= SR$+CHR$(n)     NGTH (WL)"
WHERE n = ANY # FROM 0-160 (OR 8   260 PRINT@160,"4) DISTANCE BETWE
0 FOR A4 PAPER): SUPER- & SUBSCR   EN WORDS (DW)"
1PT ARE 1/2 HEIGHT LETTERS: ZX$=  270 PRINT@192,"5) CHANGE NUMBER
START /EX$=END OF TOTAL COD       OF LINES (NL)"
80 Q=0                                280 PRINT@224,"6) NUMBER OF COLU
87 '                                MNS (COL)"
290 PRINT@256,"7) VERTICL SPACE

```

```

BET LABELS(SP)"
300 PRINT@288,"8) [ END ] [ DELE
TE PROGRAM ]"
310 PRINT@320,"0) ADJUSTED, NOW
start PROGRAM"
315 PRINT@355,"actual settings g
iven below"
320 PRINT@384,"TAB=";TA;" WL=";W
L;" DW=";DW;" NL=";NL:PRINT@416,
"COL=";COL;" SP=";SP
330 PRINT@432,"**KP=";KP;"**":PR
INT@448,"MAX=";80*KP;"TOT=";TA+C
OL*WL+(COL-1)*DW;:INPUT" TYPE 1
--8 (0 TO START)";Q:IF Q<0 O
R Q>8 THEN220
340 ON Q GOSUB 5110,5120,5130,51
40,5150,5160,5170,5100
350 PRINT@0,STRING$(55," "):IF Q
=8 OR Q=0 GOSUB 2400 ELSE220: '
*5110--5180 RT H: GS 2400: ELSE
215 --> 3RD LINE OF MAIN MENU
360 GOTO 900 ' * 2430 RT H: GT 9
00
497 '
498 '
499 ' === STANDARD (CONDENSED) P
RINT & STANDARD VALUES (FOR TA,W
L,DW,NL,COL,SP)
500 ZX$(288+C8$):EX$(288+N8$):
KP=1.67: ' * 120,4520 GT H
510 TA=0: T1A= 0: WL=24: WIL=24:
DW=4: D1W=4: NL=2: N1L=2: COL=3
: C1L=3: SP=1: S1P=1: RETURN: '
* 120 GS H:5110 GT H: (500-->510
) RT 130
897 '
898 '
899 ' === CHECK IF LABELS WILL F
IT IN ONE LINE (TAB,WL,COL ETC)
900 PRINT#-2,ZX$: CN=1: TB=TA: '
* 360 GT H: IF <;> AFTER PRINT#-
2,""; THESE LINEPRINTERS WON'T I
ABULATE 1ST TIME ROUND
910 IF TA+COL*WL+(COL-1)*DW>80*K
P THEN 4800 ELSE 1000: ' * THEN
4800: ELSE 1000:(.DW>160*KP FOR
A3 PAPER) === CHECK CHARS/LINE
--> ELSE INPUT DATA
997 '
998 '
999 ' === INPUT DATA A LINE AT A
TIME
1000 CLS: IF Q=8 THEN 5500: ' *
3010 THEN H: 910 ELSE H:1090 GT
H: THEN 5500: === INPUT (IE TYPE
) DATA A LINE AT A TIME
1010 PRINT@34,"TYPE DATA ONE LIN
E AT A TIME":PRINT@64,"<R>EDO <M
>ENU <F>ONT OR <enter>": GOSUB 1
100: ' * GS 1100 FOR CURSOR(S)
1020 FOR N=1 TO NL: ' * 1150 RT
H
1025 PRINT"#" ;N;:LINEINPUT G$(N)
:AA=LEN(G$(N)): IF LEN(G$(N))<WL
THEN G$(N)=G$(N)+STRING$(WL-AA,
" "): ' * 1075 THEN H: === INPUT
THE DATA
1030 IF G$(N)="M"+STRING$(WL-1,"
") THEN 4700 ' * THEN 4700 -->
MAIN MENU
1035 IF G$(N)="R"+STRING$(WL-1,"
") THEN 1090: ' * THEN 1090 ===

```

```

WORD TOO LONG/ RE-DO
1040 IF G$(N)="F"+STRING$(WL-1,"
") THEN 1080: ' * THEN 1080 ===
NEW TYPEFACE (OR 'FONT')
1050 IF LEN(G$(N))>WL THEN 1075
1060 NEXT N
1070 NN=0: IF CN=COL+1 THEN 4900
ELSE 1500: ' * 3020 THEN H: THE
N 4900 (FOR CR/NL--SPACE <SP> :
ELSE 1500 --> CHECK PRINTER/REVE
RSE/PRINT LABEL/SAME AGAIN?
1075 PRINT@ (MR*32+5),"TOO LONG (
LIMIT=";WL;"CHARACTERS)": GOTO 1
025: ' * 1050 THEN H: GT 1025 --
> RE-DO THE LINE
1080 PRINT#-2,EX$;: TB=0: NN=0:
CN=1: NV=1: GOTO 4900: ' * 1040
THEN H (SET FONT TO NORMAL + TA
B & COUNTERS BACK TO ZERO): NW=1
MARKS IT FROM THIS LINE: GT 490
0 (MOVES TO NEW LINE) THEN--> CH
ANGE FONT (IE TYPEFACE) IN 4530
1090 FOR X=NB TO NL: G$(X)="" : N
EXT X: GOTO 1000: ' * 1035 GT H:
RE-DO THE LABEL, ERASE WHAT WAS
TYPED/INPUT: GT 1000
1097 '
1098 '
1099 ' === CURSOR(S) FOR DATA IN
PUT (SHOW END OF WORD)
1100 MR=3: ' * 1010 GS H: MR=MAR
KER (OR CURSOR)
1110 FOR X=1 TO NL+1: ' * ===NL
IS NO OF LINES
1120 IF X=NL+1 THEN 1150
1130 POKE 1024+(MR*32+WL+5),246:
IF WL>27 THEN MR=MR+2 ELSE MR=M
R+1
1140 NEXT X
1150 X=0: RETURN: ' * 1150 THEN
H: RT 1020
1497 '
1498 '
1499 ' === OPERATIONS CENTRE (2N
D GOSUB COMPLEX)
1500 GOSUB 2400: ' * 1070 ELSE H
: GS 2400: ===CHECK IF PRINTER I
S ON LINE
1510 GOSUB 2500: ' * 2430 RT H:
GS 2500: ===REVERSE PRINTER SUBR
OUTINE
1520 GOSUB 2600: ' * 2570 RT H:
GS 2600: === PRINT LABEL
1530 GOTO 3000: ' * RT 2630: GT
3000 === PRINT SAME LABEL AGAIN
2397 '
2398 '
2399 ' === CHECK IF PRINTER ON L
INE
2400 PE=PEEK(65314)AND1: ' * 90,
350,1500 GS H
2410 IF PE=0 THEN 2430 ELSE PRIN
T@486,"PRINTER NOT ON LINE!";: '
* RT 1510 (VIA 2430) IF ON LINE
2420 GOTO 2400
2430 PRINT@486,STRING$(20," ")::
RETURN: ' * 2410 THEN H: RT 10
0,360,1510 (AFTER SIGN 'PRINTER
NOT ON LINE')
2497 '
2498 '
2499 ' === REVERSE PRINT HEAD

```

```

2500 IF TB>TA THEN 2510 ELSE 256
0: ' * 1510 GS H: THEN 2510: EL
SE 2560
2510 IF G$(N)=STRING$(WL," ") TH
EN NN=NN-2
2520 IF X=NN+NL+1 THEN 2550
2530 PRINT#-2,FR$: ' === FULL RE
VERSE
2540 X=X+1: GOTO 2520
2550 X=0: PRINT#-2,FAS: ' === FU
LL ADVANCE (FORWARD)
2560 P=1: CN=CN+1: ' * 2500 ELSE
H
2570 RETURN: ' * RT 1520
2597 '
2598 '
2599 ' === PRINT LABEL(S) SUBROU
TINE
2600 FOR Q=1 TO N-1: ' *1520 GS
H
2610 PRINT#-2,TAB(TB);G$(Q): ' *
PRINT LABEL: FONT SET IN LINE 9
00 -- TURNED OFF AGAIN IN LINE 4
700 OR 1080
2620 NN=NN+1: NEXT Q: TB=TB+WL+D
W
2630 RETURN: ' * RT 1530: NOTE P
RINTER STILL IN SPECIAL TYPEFONT
(TURNS OFF FOLLOWING 'M' OR 'F'
IN INPUT DATA MENU) <LINES 4700
,1080>
2997 '
2998 '
2999 ' === PRINT SAME LABEL AGAI
N
3000 PRINT@416,"PRINT SAME LABEL
AGAIN (Y/N) ALWAYS USE <M> O
R <F> TO END";AS: AS=INKEY$: IF
AS="" THEN 3000: ' * 1530,4940 G
T H
3010 IF AS="N" OR AS="n" THEN 10
00: ' * BACK TO INPUT DATA
3020 IF AS="Y" OR AS="y" THEN 10
70: ' * THEN 1070: --> CR/NL AND
SPACE BEFORE NEXT LINE
3030 IF AS<>"Y" THEN 3000
3997 '
3998 '
3999 ' === MISCELLANEOUS MARKERS
(INCL PRINTER MARGINS)
4000 CLS: ' * 100 GS H: ===RESET
PRINTER MARGINS (DMP 430)
4010 PRINT @ 64, "1) LPVIII TY
PE <1> & <enter> FOR DMP430
HIT <spacebar>": AS=INKEY$: IF
AS="" THEN 4010
4020 IF AS=CHR$(32) THEN 4050: '
* DEPRESSING spacebar ENABLES M
ARGINS TO BE SET ON DMP 430 (LIN
ES 4050-4110)
4030 IF AS="1" THEN RETURN: ' *
LPVIII (AS="1") DOESN'T HAVE MAR
GIN SETTING ABILITY: RT 110
4040 IF AS<>CHR$(32) THEN 4010
4050 CLS: ' * 4020 THEN H
4060 PRINT@32,"SET MARGINS ON DM
P 430": PRINT@128,"HIT <spacebar
> IF A4 PAPER USED (IE LHS=0 RH
S=80)":PRINT@224,"OR <e> SET OT
HER MARGINS":AS=INKEY$: IF AS=""
THEN 4060
4070 IF AS=CHR$(32) THEN 4100

```

```

4080 IF A$="S" OR A$="s" THEN 40
90 ELSE 4060
4090 CLS: PRINT: PRINT: INPUT"TY
PE NEW LHS MARGIN";L9: PRINT: PR
INT: INPUT"TYPE NEW RHS MARGIN";
R9: GOTO 4110
4100 L9=0: R9= 80: ' * 4070 THEN
H
4110 CLS: PRINT#-2, (SL$+CHR$(L9)
); (SR$+CHR$(R9));: RETURN: ' * 40
90 GT H: RT 110
4497 '
4498 '
4499 ' === SELECTS TYPEFACE
4500 CLS: ' * 110 GS H: ===SELECT
TYPEFACE
4510 PRINT:PRINT@32,"<s> SELECT
TYPEFACE <s> OR
<HIT SPACEB
AR> FOR standard =
condensed-normal":A$=INKEY$: I
F A$="" THEN 4510
4520 IF A$="S" THEN 4530 ELSE IF
A$=CHR$(32) THEN KP=1.67: ZX$=(
Z8$+C8$): EX$=(Z8$+N8$): GOTO 5
00: ELSE IF A$<> CHR$(32) THEN 4
510: ' * GT 500 (CONDENSED FONT
): 500-->510 TO SET STANDARD VAL
UES FOR TA,WL,DW,NL,COL): THEN 4
510,4530
4530 NW=0: CLS: PRINT: PRINT"AVA
ILABLE TYPEFACE COMBINATIONS": '
* 4520,4940 THEN H
4540 PRINT: PRINT: PRINT"1) stan
dard = condensed-normal 2) MICR
OFONT (DMP430 ONLY)## 3) NORM
AL PRINT (BOTH)4) ELON
GATED CONDENSED (BOTH)5) BOLD
ELONGATED CONDENSED ##"
4550 PRINT"6) ELONGATED
(BOTH)7) BOLD ELONGATED
## 8) BOLD-2X ELONGATE-C
ONDENSED##"
4560 PRINT: INPUT"TYPE 1 2 3
4 5 6 7 OR 8";ST: IF ST<1 O
R ST>8 THEN 4560
4570 ON ST GOSUB 4610,4620,4630,
4640,4650,4660,4670,4680
4580 GOTO 120: ' * 4610-4680 RT H
: GT 120 TO SET STANDARD VALUES
THEN TO MAIN MENU
4599 '
4600 ' === TYPEFACE INSTRUCTIONS
(4610=standard condensed)
4610 ZX$=ZC$: EX$=ZN$: KP=1.67:
RETURN: ' * 4570 GS H: RT 4580 -
-> MAIN MENU: === CONDENSED NOR
MAL
4620 ZX$=ZF$: EX$=ZN$: KP=1.0: RE
TURN: ' * 4570 GS H: RT 4580: ==
= MICROFONT PRINT
4630 ZX$=ZN$: EX$=ZN$: KP=1.0: RE
TURN: ' * 4570 GS H: RT 4580: ==
= NORMAL PRINT
4640 ZX$=ZE$+ZC$: EX$=EE$+ZN$:
KP=.835: RETURN: ' * 4
570 GS H: RT 4580: === ELONGATED
CONDENSED
4650 ZX$=ZE$+ZE$+ZC$: EX$=EB$+EE
$+ZN$: KP=.835: RETURN: '
* 4570 GS H: RT 4580: === BOLD E
LONGATED CONDENSED
4660 ZX$=ZE$: EX$=EE$: KP=.5: RE
TURN: ' * 4570 GS H: RT 4580: ==
= ELONGATED PRINT
4670 ZX$=ZE$+ZE$: EX$=EB$+EE$:
KP=.5: RETURN: ' * 4570 GS
H: RT 4580: === BOLD ELONGATED
4680 ZX$=ZE$+ZE$+ZC$+ZD$:
EX$=EB$+EE$+ZN$: KP=.835:
RETURN: ' * 4570 GS H: RT 4580:
=== BOLD ELONGATED CONDENSED AN
D DOUBLE HEIGHT
4697 '
4698 '
4699 ' === RETURN TYPEFONT (INCL
U'LINE, BOLD ETC) TO NORMAL & B
ACK TO MENU
4700 PRINT#-2,EX$;:GOTO 200: ' *
1030 THEN H: GT 200: === TYPEFO
NT BACK TO NORMAL: --> MAIN MENU
4797 '
4798 '
4799 ' === YOU GOOFED === TOO MA
NY CHARACTERS PER LINE
4800 CLS: PRINT@10,"you goofed":
PRINT@64,"TA (";TA;)" + COL (";C
OL;)" X WL (";WL;)" + [COL-1] ("
;COL-1;)" X DW (";DW;)" = [";TA+
COL*WL+(COL-1)*DW;]": ' * 910 T
HEN H === EXCESS CHARS/LINE - R
EDUCE TA,WL,DW
4810 PRINT@224,"WHEN ONLY (";80*
KP;"1 CHARACTERS WILL FIT IN ONE
LINE" ' * (160*KP FOR A3 PAPER)
4820 PRINT@320,"REDUCE TA,WL,DW,
OR COL AND THEN TRY AGAIN!!"
4830 PRINT: INPUT"<ENTER> WHEN R
EADY";A$: Q=6: GOTO 200: ' * GT
200 =MAIN MENU
4840 ' *** 4840 -- 4890 === RE
SERVED FOR VARYING NO OF COLUMNS
WHEN THEY ARE PAIRED, TRIPLED E
TC. MK=COL:
4897 '
4898 '
4899 ' === PRINT COLUMN ON LHS O
F PAPER AGAIN & PUT SPACE <SP> B
ETWEEN THEM
4900 TB=TA : P=1 : CN=1 : ' * 10
70,1080 THEN H: RESET TAB <TB> -
-- P (COUNTS UNTIL SPACE <SP> IS
REACHED) --- AND CN (COUNTER IN
LINE 1070 WHICH TELLS WHEN ALL
COLUMNS HAVE BEEN FILLED)
4910 IF P=SP+1 THEN 4940
4920 PRINT#-2: ' === SUBROUTINE
PUTS SPACE <SP> BETWEEN ONE SET
OF LABELS & NEXT
4930 P=P+1: GOTO 4910
4940 IF NW=1 THEN 4500 ELSE 3000
: ' * 1080-->4900-4940->NEW FONT
IN 4500:ELSE 3000 [1070->4900=P
RINT LABEL AGAIN (3000)]
5097 '
5098 '
5099 ' === SETTING NEW VARIABLES
(FROM MAIN MENU) --- TA,WL,DW,N
L,COL,SP
5100 RETURN: ' * 340GS H: RT350:
=== ACTIVATE (START INPUT OF MA
TERIAL)
5110 CLS: INPUT"SETTING TYPEFONT
AS condensed-normal
";R$: GOTO 510: ' * 340 GS H: GT
510 WHERE RT 350
5120 CLS: INPUT"TYPE NEW LEFT HA
ND SIDE MARGIN";TA: RETURN: ' *
340 GS H: RT 350:
5130 CLS: INPUT"TYPE NEW WORD LE
NGTH";WL: RETURN: ' * 340 GS H:
RT 350
5140 CLS: INPUT"TYPE NEW DISTANC
E BETWEEN WORDS";DW: RETURN: ' *
340 GS H: RT 350
5150 CLS: INPUT"NUMBER OF LINES
PER COLUMN";NL: RETURN: ' * 340
GS H: RT 350
5160 CLS: INPUT"TYPE NUMBER OF C
OLUMNS";COL: RETURN: ' * 340 GS
H: RT 350
5170 CLS: INPUT"TYPE NUMBER OF V
ERTICAL SPACES (LINES) BETWEEN
LABELS";SP: RETURN: ' * 340 GS H
: RT 350
5497 '
5498 '
5499 ' === ERASE PROGRAM
5500 CLS:PRINT:PRINT:PRINT: INPU
T"<E> <E> TO ERASE PROGRAM
OTHER KEYS ----> MAIN MENU";Q$
: IF Q$="E" THEN POKE113,0:EXEC4
0999 ELSE 5510: ' * 1000 THEN H:
WIPE OUT PROGRAM ELSE 5510
5510 Q=9: GOTO 220: ' * GT 220 =
MAIN MENU

```

```

#78--80 shorter instructions--->
ELONGATED CONDENSED WORDS---then NORMAL
#79 reverse ZC$ & ZE$ still --->
ELONGATED CONDENSED WORDS---then NORMAL
#81* ---MICROFONT---COMPRESSED NORMAL---ITALICISED NORMAL---
#82 DOUBLE HEIGHT CONDENSED NORMAL ON TOP LINE ***THEN NORMAL LETTERING
#84 BOLD NORMAL bold normal SUPERSCRIPT AND NORMAL AGAIN
#85 CORRESPONDENCE QUALITY 10 CPI 12345678 abcdefghijk
#85A CORRESPONDENCE QUALITY 12 CPI 12345678 abcdefghijk

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THE NINJA ADVENTURE

by Dennis Mellican

Adventure

YOU ARE A NINJA, a highly trained Japanese Warrior. A master in "Ninjitsu": a hired warrior able to scale sheer walls, drop from great heights without any injury and kill in a variety of methods.

Your Mission

You have been hired to steal the secret scroll of immortality. You will be faced with many obstacles and several surprises. You have with you your trusty sword.

The Location

The scroll is hidden in the house of Koga (otherwise commonly known as the Castle of the White Phoenix).

The house is surrounded by a thick forest.

You will be escorted to the perimeters of the house. From there on, you're on your own.

How To Play

Only two special commands you should remember are:

* USE - This command is to attack the enemy with a certain weapon, eg "Use Shuriken/Sword" etc. NOTE - don't throw Shuriken.

* STATUS - This displays your health and score.

The following legal commands may be used:

* NORTH	* SOUTH	* EAST
* WEST	* TAKE	* GET
* DROP	* CLIMB	* USE
* OPEN	* SAVE	* LOAD
* EXAMINE	* JUMP	* WEAR
* TIE	* READ	* EAT
* SCORE	* STATUS	* INVENTORY
* LOOK	* GLOSSARY	

Hints and Tips

* It is advisable to map the adventure.

* If you don't know what a word means type "GLOSSARY" <ENTER> and type the word you don't understand, or type "GLOSSARY: <WORD>"

The Listing:

```

1 ' the ninja adventure
2 ' BY DENNIS MELLICAN
3 CLEAR1500:CLS:PRINT@480,"WELCO
ME NINJA,TO THE CASTLE OF":PRINT
"THE WHITE PHOENIX.":GOTO12
4 N$=1N$
5 IF LEN(N$)<32 THEN PRINTN$:RET
URN
6 CX$=LEFT$(N$,32):CZ$=RIGHT$(N$
,LEN(N$)-32)
7 IF RIGHT$(CX$,1)=" " THEN PRI
TCX$:N$=CZ$:GOTO5
8 FOR CX=32 TO 1 STEP-1
9 IF MID$(CX$,CX,1)=" " THEN PRI
NTLEFT$(CX$,CX-1):N$=RIGHT$(CX$,
LEN(CX$)-CX)+CZ$:GOTO 5
10 NEXT CX
11 RETURN
12 DIM A$(26),L$(40),O$(14),O(14
),N(40),S(40),E(40),V(40),C$(22)
13 PMODE 4,1:PCLS:SCREEN1,1
14 A$(1)="BD7U5E2F2D5U3L3"
15 A$(4)="RD7LRE2EU5HL2"
16 A$(5)="R4L4D7R4L4U3R3"
17 A$(8)="D7U3R4D3U7"
18 A$(9)="BR1R3LD7L2R3"
19 A$(10)="BD4D2FR2EU5"
20 A$(14)="D7U7DF4U5D7"
21 A$(18)="D7U7R3FD2GL3RF3"
22 A$(20)="R4L2D7"
23 A$(21)="D6FR2EU6"
24 A$(22)="D4DFEUEU4"
25 GOTO 40
26 D$=" "+D$
27 FOR T=1 TO LEN(D$)
28 L=ASC(MID$(D$,T,1))-64
29 IF L=-32 THEN 37
30 IF L=-6 THEN DRAW"BD5ER1RBU3L
":GOTO 37
31 IF L=-18 THEN DRAW"BD7BR1R":G
OTO 37
32 IF L=-19 THEN DRAW"BD4R4":GOT
O 37
33 IF L=-20 THEN DRAW"BD7BR2EUL"

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:GOTO 37
34 IF L=-25 THEN DRAW"BR2D2":GOT
O 37
35 IF L=-1 THEN DRAW"BDDUER2FDG2
BD2D":GOTO37
36 DRAW A$(L)
37 X=X+7:DRAW"BM"+STR$(X)+" "+ST
R$(Y)+"":
38 NEXT:Y=Y+9:X=-2
39 RETURN
40 DRAW"C1"
41 D$="THE":X=5:Y=1:GOSUB 26
42 D$="ADVENTURE":X=5:Y=65:GOSUB
26
43 N$="R15F20U15H5R20D50L10H20D1
5F5L20U45H5"
44 I$="R20D45F5L20U45H5"
45 J$="R20D50U50L20F5D45"
46 A$="R10"
47 DRAW"C1EM10,10:"+N$
48 DRAW"C1EM+55,+0:"+I$
49 DRAW"C1EM+30,+0:"+N$
50 DRAW"C1EM+55,+0:"+J$
51 DRAW"C1EM+40,-50:"+A$
52 LINE(155,60)-(140,80),PSET:L1
NE(170,60)-(140,80),PSET
53 LINE(195,10)-(175,60),PSET:L1
NE(175,60)-(195,60),PSET:DRAW"C1
EM195,60;H5":LINE(190,55)-(195,4
5),PSET
54 LINE(205,10)-(225,55),PSET:DR
AW"C1EM225,55;F5L20":LINE(210,60
)-(205,45),PSET:LINE(205,45)-(19
5,45),PSET
55 DRAW"C1EM197,40;E5U2HU2HU2D2G
1D2G1D2G1D2G1R"
56 PAINT(20,20):PAINT(80,20):PAI
NT(125,30):PAINT(165,20):PAINT(1
95,20)
57 DRAW"C1EM30,191U5E5R5E5E1R5F
2R5FR5F2R10L10H2L5HL5H2E3RE1REUR
2EUREUR5F2RFR5L5HLH2E2REREREUE2R
UER5L5EUREUHUH5E5U5E2ERU2E2RU5E
2U5E3U2HU2H2U2E2R2U10E2RE2RE2R2E
R2BR4EER2ER3ER5FR5FR5FR8F1DFDRFD
RFDRFR5FD5FD3F1R5E5G2D2GD10FD5RF
D3G3L5R5E3R1F3D3G5G4LGERE4"
58 DRAW"D2FD2FD2FD2GLGERERE2R2F
R2DFR5FDFR5DFR2DFR5F2D1R2D1F3D5"
59 DRAW"C1EM78,161;H1G5L20H3R20F
2H2E10D5G5E5U5L10F2D2U2H2"
60 LINE(68,151)-(58,101),PSET:L1
NE(60,155)-(50,101),PSET:DRAW"C1
BM50,101;VER5DF":DRAW"C1BM60,155
;BG2BHG2BHG5E8D2F2H2U2G8F4R6DFD
FD"
61 DRAW"BM128,110;R5ER5ER2FRFR3F
2D5F2D1L1GL5GL5GL5HL2HL3HL4HL5H2

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L1U5R1EK1ERER5FRFRE":PAINT(128,1
15)
62 DRAW"COBM115,112;R7FR2FRFR1FR
1D5L3U3H2LGL5HL2U4LGLR2":PAINT(1
18,114),0:DRAW"C1BM119,114;RF":D
RAW"COBM138,112;R5L5G2D12R2U10FR
4ERUR2LHLHHLR3":PAINT(138,114),0
:DRAW"C1BM140,114;RD"
63 FOR T=1 TO 5000:IF INKEY$=""
THEN NEXT
64 EXEC43350:EXEC
65 DATAHUNIN,NINJA SUBLEADERS,J
ONIN,NINJA LEADERS,NINJA,A PRACT
IONER OF MEDIEVAL ART OF NINJITS
U,NINJITSU,THE MEDIEVAL DISCIPLI
NE INCORPARTING EVERY FORM OF
MARTIAL ARTS IN THAT TIME,OBI,A
LONG STRIP OF MATERIAL USED FOR
SILENT WALKING
66 DATA SHURIKEN,A MULTI-POINTED
THROWING WEAPON SUCH AS DIRKS A
ND DARTS,TABI,SPLIT-TOED SHOE SO
CKS,CALTROPS,MAINLY AN IRON BALL
WITH FOUR PROJECTING SPIKES SO
ARRANGED THAT ONE SPIKE POINTS U
PWARD
67 FOR T=1 TO 8:READ A$,B$:G1$(T
)=A$:G2$(T)=B$:NEXT
68 DATA NEAR A LARGE TREE BY THE
FOREST.,34,,31,,39
69 DATA LOST IN THE FOREST.,37,
32,31,31
70 DATA ON A STONE PATH.,29,39,3
5,33,34
71 DATA IN A SMALL BUSH BY THE H
OUSE.,34,,29
72 DATA AT THE START OF A STONE
PATH.,28,,34,,33
73 DATA ON THE STEPS OF THE HOUS
E.,23,33,,28
74 DATA AT THE FRONT DOOR.,18,28
,24,22,23
75 DATA ON THE OLD BROKEN VERAND
A.,23,21,22
76 DATA NEAR A LARGE TREE BY THE
HOUSE.,22,,26,27
77 DATA AT THE END OF THE VERAND
A.,22,,21
78 DATA NEAR A SMALL TREE BY THE
HOUSE.,27,,26
79 DATA ON THE VERANDA BY THE CO
RNER OF THE HOUSE.,19,,23,24
80 DATA ON THE VERANDA.,14,24,,
19
81 DATA AT THE END OF THE VERAND
A.,19,,14
82 DATA AT THE BEND OF THE STONE
PATH.,30,,34,35
83 DATA ON THE STONE PATH.,25,35
,,30
84 DATA ON THE STONE PATH.,20,30
,,25
85 DATA ON THE STONE PATH.,15,25
,,20
86 DATA"AT THE END OF THE STONE
PATH,NEAR THE BLACK POND.",10,20
,,15
87 DATA IN THE MAIN LIVING ROOM.
,23,,17,18
88 DATA IN THE PRINCIPAL ROOM.,1
2,,18,,17
89 DATA IN A ROOM WITH A LARGE S

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TATUE OF BUDDHA.,17,13,,12
90 DATA IN A LARGE ROOM WITH BLO
OD STAINED WALLS.THERE IS A MESS
AGE WRITTEN IN BLOOD ON THE WALL
.,8,,12,13
91 DATA IN A SECRET ROOM.,12,,
7
92 DATA UNDER-WATER IN THE BLACK
POND.THERE IS A LARGE BOULDER H
ERE.,15,,10
93 DATA IN THE UNDER-WATER SECRE
T CAVE.THERE IS A CLAM HERE.,10
,,5
94 DATA"IN AN ATTIC.THERE IS A C
HEST HERE,A HOLE LEADING DOWN AN
D A WOODEN BEAM SUPPORTING THE C
EILING.",2,,9
95 FOR T=1 TO 27
96 READ A$,A,B,C,D,E:L$(E)=A$:N(
E)=A$:S(E)=B$:E(E)=C$:W(E)=D
97 NEXT
98 DATA N,S,E,W,TAK,GET,DRO,CLI,
USE,OPE,SAV,EXA,JUM,WEA,TIE,REA,
EAT,SCO,LOA,STA,INV,LOO
99 FOR T=1 TO 22:READ OB$:C$(T)=
OB$:OB=T:NEXT
100 L$(32)=L$(31):L$(36)=L$(31):
L$(37)=L$(36)
101 DATA 0,36,32,31,31,32,37,32,
31,32,31,36,37,39,36,32,,37,31,3
7
102 FORT=1 TO 4:READ A,B,C,D,E:N
(E)=A$:S(E)=B$:E(E)=C$:W(E)=D:NEXT
103 DATA"IN A LARGE DOJO,SURROUN
DED BY STONE WALLS.THERE IS A HO
LE IN THE CEILING.",13,,8
104 READ A$,A,B,C,D,E:L$(E)=A$:N
(E)=A$:S(E)=B$:E(E)=C$:W(E)=D
105 DATA CALTROPS,5,SAI,10,SHURI
KEN,26,SWORD,-1,BLOWGUN,37,STAFF
,29,CANE,27,TABI,14,SCROLL,1,ROP
E,-2,ORANGE,-2,OBI,-2,GLOVE,-2,H
OCK,7
106 FOR T=1 TO 14
107 READ A$,B
108 OS(T)=A$
109 IF B=0 THEN B=RND(40):IF L$(
B)="" THEN B=0:GOTO109
110 O(T)=B:NEXT
111 GOTO 117
112 IN$=IN$+"I SEE "
113 FOR T=1 TO 14
114 IF O(T)=LO THEN IN$=IN$+"A "
+C$(T)+", "
115 NEXT:IN$=LEFT$(IN$,LEN(IN$)-
1)+", "
116 RETURN
117 LO=39:F(1)=0:F(2)=0:F(3)=0:F
(4)=1:F(5)=23:CH=5:SCREEN0,0
118 IN$="I'M "+L$(LO)
119 R=RND(4)
120 ON R GOSUB 121,122,123,124:G
OTO 125
121 IN$=IN$+"POSSIBLE EXITS ARE
":RETURN
122 IN$=IN$+"EXITS ARE ":RETURN
123 IN$=IN$+"OBVIOUS DIRECTIONS
ARE ":RETURN
124 IN$=IN$+"EXITS LEAD ":RETURN
125 A=0:B=0:IF N(LO)<>0 THEN B=4
000
126 IF S(LO)<>0 THEN B=B+300

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127 IF S(LO)=2 THEN B=B+200
128 IF E(LO)<>0 THEN B=B+20
129 IF W(LO)<>0 THEN B=B+1
130 B$=RIGHT$(STR$(B),LEN(STR$(B
))-1)
131 FOR T=1 TO 4
132 IF MID$(B$,T,1)="" THEN B$=
LEFT$(B$,T-1)+MID$(B$,T,1,4-T):G
OTO131
133 NEXT
134 A$=B$:B$=""
135 C=LEN(A$)
136 IF C=2 THEN C$="" AND " ELSE
C$=","
137 FOR T=1 TO C
138 B$=MID$(A$,T,1)
139 IF B$="4" THEN B$="NORTH"
140 IF B$="3" THEN B$="SOUTH"
141 IF B$="5" THEN B$="DOWN"
142 IF B$="2" THEN B$="EAST"
143 IF B$="1" THEN B$="WEST"
144 IN$=IN$+B$+C$
145 NEXT:IN$=LEFT$(IN$,LEN(IN$)-
LEN(C$))+", "
146 FOR T=1 TO 14
147 IF O(T)=LO GOSUB 112
148 NEXT
149 GOSUB 4
150 IF F(4)=1 AND F(6)=1 AND LO<
>F(5) THEN F(5)=LO:CH=CH-1
151 IF LO=F(5) AND F(4)=1 THENF(
6)=1:PRINT"YOU ARE CONFONDED BY
AN UNFRIENDLY NINJA WARR
IOR.":IF RND(CH)=1 THEN PRINT"TH
E NINJA STRIKES AT YOU,WOUND- IN
G YOU.":HT=HT+1
152 IF F(1)=1 THEN F(4)=1:F(5)=0
:F(6)=0:F(1)=2:TH=0
153 IF F(8)=1 THEN PRINT"A SNAKE
SUDDENLY JUMPS OUT AND TAKES A
BITE AT YOUR HAND.":IF F(9)=0
THEN PRINT"ALL OF A SUDDEN YOU
FEEL DIZZY AND YOU DOZE OF...FO
REVER.":GOTO190
154 IF F(8)=1 AND F(9)=1 THEN FR
INT"BU BUT LUCKILY YOU HAD YOUR HAN
D PROTECTED BY YOUR GLOVE ! TH
E SNAKE SLITHERED AWAY.":F(8)=
0
155 B$="" :IF O(9)=-1 AND F(4)=0
THEN 279
156 LINEINPUTC$
157 IF CR<3 THEN CH=2
158 IF LO=13 AND C$=C$(1) AND O(
12)<>13 THEN PRINT:PRINT"creak":
PRINT:SOUND0,3,3:PRINT"SUDDENLY,
A POOBY TRAP SPRINGS RELEASING
POISONED TIPPED SPEARS...
":PRINT:GOTO190
159 IF LO=F(5) AND F(4)=1 THEN C
H=CH-1:IF RND(CH)<>1 THEN 163 EL
SE NI=RND(3)
160 IF F(4)=0 THEN NI=0:GOTO 163
161 IF NI=1 THEN PRINT"THE NINJA
STRIKES AT YOU,BUT MISSES."
162 IF NI=2 THEN PRINT"THE NINJA
STRIKES AT YOUR ARM WOUNDING
YOU.":HT=HT+1:GOTO163 ELSE IF NI
=3 THEN PRINT"THE NINJA QUICKLY
STRIKES AGAIN,WOUNDING YOU.":HT=
HT+1
163 IF O(5)<>-1 AND (LO=10 OR LO

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=5) THEN PRINT" G-A-S-P ! NO AIR
!":GOTO198
164 IF O(5)=-1 AND LO=10 THEN PR
INT"YOU STAY UNDERWATER WITH THE
AIDOF THE BLOWGUN AS A RESPIRAT
OR"
165 IF HI=9 THEN PRINT"TOO LATE,
AS QUICK AS A FLASH, THE NINJA
THROWS HIS SHURIKEN, HITTING Y
OUR GROIN,TERMINATING YOUR LIFE
.":PRINT:GOTO198
166 IF F(5)=8 AND LO=8 AND (C$="
N" OR C$="S" OR C$="E" OR C$="W"
) THEN PRINT"HERE CHUNIN NINJA
BLOCKS EVERY POSSIBLE EXIT.":GOT
O156167 IF O(1)=LO AND (C$="N" O
R C$="E" OR C$="W" OR C$="S") TH
EN PRINT"OUCH !!! CAN'T MOVE OVE
R THE CALTROPS !!!":GOTO156
168 IF C$=C$(1) AND N(LO)<>0 THE
N LO=N(LO):GOTO118
169 IF C$=C$(2) AND S(LO)<>0 THE
N LO=S(LO):GOTO118
170 IF C$=C$(3) AND E(LO)<>0 THE
N LO=E(LO):GOTO118
171 IF C$=C$(4) AND W(LO)<>0 THE
N LO=W(LO):GOTO118
172 IF (C$=C$(1) OR C$=C$(2) OR
C$=C$(3) OR C$=C$(4)) GOTO199
173 FORX=1TOLEN(C$):IFMID$(C$,X
,1)=" "ANDLEN(C$)>X+1THENEBS=MID$
(C$,X+1,LEN(C$)-X+1):B$=LEFT$(BB
$,3)
174 NEXT:AS=LEFT$(C$,3)
175 IFA$=C$(5)ORAS=C$(6)THEN200
176 IFA$=C$(22)THEN118
177 IFA$=C$(7)ORAS="LEA"THEN206
178 IFA$=C$(21)ORCS="IN"THEN213
179 IFA$=C$(12)ORAS="REV"THEN215
180 IFA$="PUS"ORAS="ROL"ORAS="MO
V"THEN223
181 IFA$=C$(10)THEN232
182 IFA$=C$(16)THEN237
183 IFA$=C$(9)THEN240
184 IFA$=C$(14)THEN250
185 IFA$=C$(8)THEN253
186 IFA$=C$(11)THEN282
187 IFA$=C$(19)THEN297
188 IFA$=C$(17)THEN304
189 IFA$=C$(20)THEN306
190 IFA$=C$(18)THENPRINT"YOUR SC
ORE IS":SC:GOTO156
191 IF (AS="QUI" OR AS="STO" OR
AS="END") THEN 193
192 IFA$="JUM"THEN263
193 IFA$="GLO"THEN266
194 IFA$="TIE"THEN272
195 IFA$="UNT"THEN277
196 ER$="SORRY, DON'T UNDERSTAND
"
197 PRINTER$:GOTO 156
198 PRINT"YOU SCORED"SC" OUT OF
A":PRINT"POSSIBLE SCORE OF 85":E
ND
199 ER$="CAN'T GO IN THE DIRECTI
ON":GOTO197
200 FORT=1TO14
201 IF O(T)=LO AND B$=LEFT$(O$(T
),3) THEN 203
202 NEXT:ER$="TAKE WHAT ???":GOT
O197
203 O(T)=-1
204 IF O(9)=-1ANDF(4)=0THEN279
205 ER$=O$(T)+" TAKEN.":GOTO197
206 FORT=1TO14
207 IF B$=LEFT$(O$(T),3) AND O(T
)=-1 THEN 209
208 NEXT:ER$="DROP WHAT ?":GOTO1
97
209 O(T)=LO:PRINTO$(T)" DROPPED"
210 IF O$(T)<>O$(11) THEN 156
211 SC=SC+10:ER$="BUDDHA THANKS
YOU AND REVEALS A SECRET PASSA
GE.":O(11)=0:N(12)=7:L$(12)=L$(1
2)+"THERE IS A SECRET PASSAGE HE
RE.":212 GOTO197
213 K=0:PRINT"I AM CARRYING.":FO
RT=1TO14:IF O(T)=-1 THEN PRINTO$
(T):K=K+1
214 NEXT:IFK=0THENER$="NOTHING":
GOTO197ELSE156
215 IFB$="SWO"ANDO(4)=-1THENPRIN
T"IT'S MADE OF IRON.":GOTO156ELS
EIFB$="STA"ANDO(6)=-1THENPRINT"I
T'S MADE OF BAMBO CANE.":GOTO156
216 IF LO=5 THEN IFB$="CLA"AND F
(1)=0THENPRINT"THE CLAM IS CLOSE
D,BUT THERE IS WRITING ON IT.":G
OTO156ELSEIFB$="CLA"ANDF(1)=1THE
NPRINT"THE CLAM IS OPEN.":GOTO15
6
217 IFB$="SAI"ANDO(2)=-1THENPRIN
T"NOTHING INTERESTING.":GOTO156E
LSEIFB$="SHU"ANDO(3)=-1THENPRINT
"OUCH ! IT'S SHARP !":GOTO156ELS
EIFB$="BLO"ANDO(5)=-1THENPRINT"I
CAN BREATHE THROUGH IT !":GOTO1
56
218 IFB$="CAN"ANDO(7)=-1THENPRIN
T"THE TIP IS MADE OF LEAD.":GOTO
156ELSEIFB$="TAB"ANDO(8)=-1THENP
RINT"NOTHING INTERESTING.":GOTO1
56
219 IFB$="VER"AND LO=22THENPRINT
"THE TIP IS MADE OF LEAD.":GOTO
156ELSEIFB$="TAB"ANDO(8)=-1THENP
RINT"NOTHING INTERESTING.":GOTO1
56
220 IFB$="TRE"ANDLO=26ANDO(10)=-
2THENO(10)=26:PRINT"THE TIP IS A
LONG ROPE HERE.":GOTO156ELSEIFB$=
"TRE"ANDLO=27THENPRINT"THE TREE
IS TO HIGH TO EXAMINE":GOTO156
221 IFB$="TRE"ANDLO=39ANDF(2)=0T
HENPRINT"IT'S AN ORANGE TREE WIT
H ONLY ONE ORANGE LEFT !"
:O(11)=39:F(2)=1:GOTO156ELSEIFB$
="TRE"ANDLO=39ANDF(2)=1THENPRINT
"SHUCKS NO MORE ORANGES !":GOTO1
56
222 IFB$="ORA"ANDO(11)=-1THENPRI
NT"LOOKS TEMPTING !":GOTO156ELSE
IFB$="ROP"ANDO(10)=-1THENPRINT"L
OOKS NICE AND STRONG.":GOTO156
223 IFB$="BOU"ANDLO=10ANDF(3)=0T
HENPRINT"IT SEEMS TO BLOCKING AN
ENTRANCE.":GOTO156ELSEI
FB$="BOU"ANDLO=10ANDF(3)=1THENPR
INT"IT'S BEEN ROLLED AWAY FROM T
HE ENTRANCE.":GOTO156
224 IFB$="STA"ORB$="BUD"ANDO(11)
<>0THENPRINT"BUDDHA LOOKS HUNGRY
.":GOTO156 ELSE IFB$="STA"ORB$="
BUD"ANDO(11)=0THENPRINT"BUDDHA L
OOKS QUITE FAT.":GOTO156
225 IFB$="ROO"THENER$="TRY lookI
NG.":GOTO197
226 IFB$="CHE"ANDLO=9ANDF(7)=0TH
ENPRINT"THE CHEST IS UNLOCKED BU
T IS CLOSED.":GOTO156 ELSE IF
B$="CHE"ANDLO=9ANDF(7)=1THENPRIN
T"THE CHEST IS OPENED.":GOTO156
227 ER$="EXAMINE WHAT ???":GOTO1
97
228 IF B$="BOU"ANDF(3)=0ANDLO=10
ANDO(7)=-1 THEN PRINT"THE BOULDE
R ROLLED AWAY.":L$(10)=LEFT$(L$(
10),LEN(L$(10))-5)+" AND A CAVE
HERE.":N(10)=5:F(3)=1:GOTO156
229 IF B$="BOU"ANDF(3)=1 THEN PR
INT"IT ALREADY HAS BEEN MOVED.":
GOTO156
230 IF B$="BOU" THENPRINT"IT'S I
OO HEAVY TO MOVE.":GOTO156
231 ER$="MOVE WHAT ???":GOTO197
232 IFB$="CLA"ANDF(1)=0ANDO(14)=-
1ANDLO=5THENPRINT"USING THE HOO
K, THE CLAM EASILY OPENS,EXPOSIN
G IT CONTENTS...":F(1)=1:O(13)=
5:O(12)=5:SC=SC+15:GOTO156
233 IFB$="CLA"ANDLO=5ANDF(1)=0TH
ENPRINT"IT WON'T BUDGE !":GOTO15
6
234 IFB$="CLA"ANDLO=5ANDF(1)=1TH
ENPRINT"IT'S ALREADY OPEN !":GOT
O156
235 IFB$="CHE"ANDLO=9ANDF(7)=0TH
ENPRINT"THE CHEST IN NOW OPEN.":
F(8)=1:F(7)=1:O(9)=9:F(4)=1:F(5)
=9:F(6)=1:HT=5:GOTO153 ELSE IFB$
="CHE"ANDLO=9ANDF(7)=1THENPRINT"
THE CHEST IS ALREADY OPEN.":GOTO
156
236 ER$="OPEN WHAT ???":GOTO197
237 IFLO=13 ANDB$="VAL" OR B$="M
ES" THEN PRINT"IT SAYS 'BUDDHA O
NCE SAID THAT NOISY MAN SLEEPS
SILENTLY'.":GOTO156
238 IFLO=5ANDB$="CLA"THENPRINT"I
T SAYS 'BUDDHA ONCE SAID THAT A
WISE FISHERMAN USES A HOOK'.":G
OTO156
239 ER$="READ WHAT ???":GOTO197
240 IFLO<>F(5)THENPRINT"ATTACK W
HAT ???":GOTO156
241 IF B$="CAL"ANDO(1)=-1THENPRI
NT"THE NINJA QUICKLY RETREATS AS
YOU SCATTER THE CALTROPS.":F(
4)=0:F(5)=0:F(6)=0:TH=0:O(1)=0:S
C=SC+15:SOUND1,1:GOTO155
242 IF B$="SAI"ANDO(2)=-1GOSUB24
5ELSEIFB$="SHU"ANDO(3)=-1THENPRI
NT"YOU THROW THE SHURIKEN AT THE
NINJA,KILLING HIM INSTANTLY.":
O(3)=0:SC=SC+15:F(4)=0:TH=0:F(5)
)=0:F(6)=0:SOUND1,1:GOTO155
243 IF B$="SWO"ANDO(4)=-1GOTO245
ELSEIFB$="STA"ANDO(6)=-1GOTO245E
LSEIFB$="BLO"ANDO(5)=-1THENPRINT
"CAN'T USE THE BLOWGUN...NO
DARTS !":GOTO156
244 ER$="ATTACK WITH WHAT ???":G
OTO197
245 HT=RND(4)
246 IF HT=1 THEN PRINT"THE NINJA
QUICKLY RECEIVES A DEADLY BL

```

continued on page 16

Here's a real gem!

HOUSE of TREASURE

Adventure

by Reagan Blundell

HOUSE OF TREASURE IS my first large scale program I have written. It is an adventure game that uses two and three word commands or one word directions, eg "LOOK DIAMOND", "GET BOTTLE", "GET GOLD KEY", "NORTH", "UP".

The object of the game is to escape from the building. To do so you need to use some of the things you may find.

If you need a list of verbs that you can use type "HELP". This will display a list of words that the computer can understand.

It will also display a list of one letter abbreviations of the verbs already displayed.

I guarantee this program will keep you occupied for at least 12 minutes and 34 seconds (unless you are fast at typing in the commands then it will take only 12 minutes and 21 seconds).

When typing in the program make sure there are no errors in it especially in the data lines (an error here could cause major problems with the program's functioning).

Be sure not to confuse ones with '1's or zeros with '0's.

Have fun with this program!

The Listing:

```
1 '#####
2 '#HOUSE OF TREASURE#
3 '# BY R.BLUNDELL #
4 '# COPYRIGHT 1987 #
5 '#####
6 'THANKS TO A.HART FOR HIS HELP
7 GOTO10
8 SAVE"283:3":END'7
10 DATA STUDY,0,2,0,0,0,0,LIBRAR
Y,0,0,0,21,0,3,SMALL ROOM,0,0,6,
```

```
0,2,0,BEDROOM,0,0,12,0,0,0,KITCH
EN,0,0,13,0,0,0,DINING ROOM,23,0
,14,0,0,0,LOUNGE,12,23,0,0,0,0,M
USTY CHAMBER,0,0,0,7,0,11
20 DATA LARGE ROOM,0,0,0,0,0,15,
CELLAR,0,11,0,0,0,0,WINE CELLAR,
0,35,0,10,3,0,HALLWAY,4,13,7,0,0
,0,HALLWAY,25,14,0,12,0,0,HALLWA
Y,6,0,0,13,0,0,DAMP TUNNEL,0,16,
0,11,9,0,ROOMY CHAMBER,0,0,0,15,
17,0,OUTSIDE,0,0,0,0,0,16
30 DATA A GOLDEN KEY,GOLD KEY,YO
U SEE NOTHING SPECIAL,*,1
40 DATA A DOOR IN THE WEST WALL,
DOOR,IT HAS A BRONZE KEYHOLE,=,2
50 DATA A NECKLACE,NECKLACE,IT I
S MADE OF PRECIOUS GOLD,*,3
60 DATA A BED,BED,IT HAS SOME TH
INGS ON IT,=,4,SOME KEYS,KEYS,TH
EY ARE MADE OF BRONZE,*,4,A MAR
BLE,MARBLE,YOU SEE NOTHING SPECI
AL,*,4
70 DATA A RING,RING,IT HAS A BEA
UTIFULL RUBY SET IN IT,*,5
80 DATA A MAN,MAN,HE LOOKS HUNGR
Y,=,6
90 DATA A SMALL HOLE,HOLE,IT IS
ABOUT THE SIZE OF A MARBLE,=,7
100 DATA A BOTTLE,BOTTLE,IT IS F
ULL OF WINE,*,8
110 DATA A CHEST,CHEST,IT HAS A
GOLDEN KEYHOLE,=,10,A DIAMOND,DI
AMOND,IT IS A LARGE MULTI FACETE
D DIAMOND,*,10
120 DATA A SILVER GOBLET,GOBLET,
YOU SEE NOTHING SPECIAL,*,9
130 DATA A WINE RACK,RACK,THERE
IS A BOTTLE MISSING,=,11,A STEEL
KEY,STEEL KEY,YOU SEE NOTHING S
PECIAL,*,11
140 DATA A SAPPHIRE,SAPPHIRE,YOU
SEE NOTHING SPECIAL,*,12
150 DATA A DOOR IN THE NORTH WAL
L,DOOR,IT HAS A STEEL KEYHOLE,=,
13
160 DATA A SCRAP OF PAPER,PAPER,
"IT READS:'. . TO ESCAPE YOU NEED
5 TREASURES AND GO OUTSIDE...'",
*,15
170 DATA SOME MUSHROOMS,MUSHROOM
S,THEY LOOK TASTY,*,17
180 DATA NORTH,EAST,SOUTH,WEST,U
P,DOWN,LOOK,INVENTORY,HELP,QUIT,
GET,DROP,PUT,GIVE
190 CLEAR 500
200 DIML$(17),D(17,6),LO$(19),OB
$(19),O$(19),G$(19),O(19),W$(14)
:GOTO 250
```

```
210 FOR T=1 TO 17:READ L$(T):FOR
X=1 TO 6:READ D(T,X):NEXT X,T
220 FOR T=1 TO 19:READ LO$(T),OB
$(T),O$(T),G$(T),O(T):NEXT
230 FOR T=1 TO 14:READ W$(T):NEX
T
240 RETURN
250 CLS3:PRINT@102,"HOUSE OF TRE
ASURE":PRINT@175,"BY":PRINT@23
5,"R.BLUNDELL":PRINT@297,"COPYR
IGHT 1987":FOR X=1 TO 1000:NEXT
X
260 CLS
270 PRINT"YOU AWAKE WITH AN ACHI
NG HEAD. YOU LOOK AROUND AND FI
ND YOU ARE IN A STRANGE BUILDING!
YOU DON'TKNOW HOW YOU GOT HERE
AND YOUR ONLY THOUGHTS ARE ON G
ETTING OUT*****
*****"
280 PRINT"TYPE <HELP> OR <H> TO
GET A LISTOF VERBS YOU CAN USE.
PRESS ANY KEY TO BEGIN
"
290 IF INKEY$=""THEN 290 ELSE PR
INT"INITIALIZING...":L=13:GOSUB
210
300 CLS:PRINTSTRING$(32,140):IF
L=17 THEN GOSUB 1160
310 PRINT"LOCATION :--":L$(L):PRI
NT
320 PRINT"OBVIOUS DIRECTIONS :";
330 FOR T=1 TO 6:IF D(L,T)>0AND
D(L,T)<20 THEN PRINTLEFT$(W$(T),
1);", ";
340 NEXT T:PRINT:PRINT
350 PRINT"YOU SEE : "
360 FOR T=1 TO 19: IF O(T)=L THE
N PRINTLO$(T)
370 NEXT
380 PRINTSTRING$(32,131);
390 INPUT"=>":W$
400 IF W$="" THEN 390
410 W1$="":W2$="":WF=0:V=0
420 FOR T=1 TO LEN(W$):IF W>0 TH
EN 440
430 IF MID$(W$,T,1)=" "THEN W=T
440 NEXT
450 IF W=0 THENW1$=W$
460 IF W>0 THEN W1$=LEFT$(W$,V-1
):W2$=MID$(W$,V+1)
470 FOR T=1 TO10:IF WF>0THEN 490
480 IF W1$=W$(T)OR W1$=LEFT$(W$(
T),1) THEN WF=T
490 NEXT:IF WF>0 THEN 530
500 FORT=11TO14:IF WF>0 THEN520
510 IFW1$=W$(T) THEN WF=T
520 NEXT
```

```

530 IF WF=0 THEN PRINT "WHAT?": PR
INT: GOTO 390
540 ON WF GOSUB 560, 560, 560, 560,
560, 560, 650, 810, 850, 910, 930, 980,
1020, 1110
550 GOTO 390
560 IF D(L, WF)=0 THEN PRINT "YOU CA
N'T GO THAT WAY!": GOTO 590
570 IF D(L, WF)>20 THEN 590
580 L=D(L, WF): GOTO 300
590 IFL=2 AND WF=2 THEN PRINT "TH
E DOOR IS LOCKED"
600 IF L=7 AND WF=2 THEN PRINT "OUC
H ! YOU JUST RAN INTO THE WAL
L."
610 IF L=6 AND WF=1 THEN PRINT "TH
E MAN BLOCKS THE WAY!"
620 IF L=11 AND WF=2 THEN PRINT "Y
OU JUST BUMPED INTO THE WINE R
ACK"
630 IF L=13 AND WF=1 THEN PRINT "
THE DOOR IS LOCKED"
640 PRINT: RETURN
650 IF W2$="" THEN 300
660 GOSUB 720: IF WO=0 THEN 710
670 IF O(WO)<>-20 AND O(WO)<>L T
HEN 710
680 WWS=O$(WO): GOSUB 780
690 IF L=4 AND WO=4 THEN O(5)=ABS(O
(5)): O(6)=ABS(O(6)): O$(4)="YOU S
EE NOTHING SPECIAL"
700 PRINT: RETURN
710 PRINT "LOOK AT WHAT ???": RETU
RN
720 WO=0: FOR T=1 TO 19: IF WO>0 THEN
740
730 IF W2$=OBS(T) OR W2$=LEFT$(OB
$(T), 3) THEN WO=T
740 NEXT
760 IF L=13 AND WO=2 THEN WO=17
770 RETURN
780 I=31: IF LEN(WWS)<I+1 THEN PR
INT WWS: PRINT: RETURN
790 IF MID$(WWS, I, 1)<>" THEN I=
I-1: GOTO 790
800 PRINT LEFT$(WWS, I-1): WWS=MID$
(WWS, I+1): GOTO 780
810 CLS: PRINT "****INVENTORY****"
: PRINT "YOU ARE HOLDING THE FOLLO
WING : -";
820 PRINT STRING$(32, 128);
830 FOR T=1 TO 19: IF O(T)=-20 THEN
PRINT LO$(T)
840 NEXT: PRINT STRING$(32, 128); : R
ETURN
850 CLS: PRINT "I UNDERSTAND THESE
VERBS :": PRINT STRING$(32, 128);
860 WWS="": FOR T=1 TO 14: WWS=WWS+W
$(T)+", ": NEXT
870 GOSUB 780: PRINT "YOU CA
N ALSO USE THESE LETTERS : "
880 WWS="": FOR T=1 TO 10: WWS=WWS+LE
FT$(W$(T), 1)+", ": NEXT
890 WWS=LEFT$(WWS, LEN(WWS)-1): WWS
=WWS+", ": GOSUB 780: PRINT STRING$
(32, 128);
900 RETURN
910 CLS: PRINT "YOU GIVE UP IN DIS
PAIR AND LIE DOWN TO DIE": INPUT
"PLAY AGAIN <Y-N>": AS
920 IF AS="Y" THEN RUN ELSE IF AS
="N" THEN CLS: END ELSE 910

```

```

930 GOSUB 720: IF WO>0 THEN 970
940 IF O(WO)<1 OR O(WO)<>L THEN 9
70
950 IF G$(WO)=" THEN PRINT "DONT
BE RIDICULOUS. YOU CAN'T GET TH
AT!": PRINT: RETURN
960 O(WO)=-20: PRINT "IT'S YOURS":
PRINT: RETURN
970 PRINT "GET WHAT?": PRINT: RET
URN
980 GOSUB 720: IF WO=0 THEN 1010
990 IF O(WO)>-20 THEN PRINT "YOU H
AVEN'T GOT THAT.": PRINT: RETURN
1000 O(WO)=L: PRINT "OKAY.": PRINT:
RETURN
1010 PRINT "DROP WHAT?": PRINT: R
ETURN
1020 GOSUB 720: IF WO=0 THEN PRINT "P
UT WHAT?": PRINT: RETURN
1030 IFO(WO)>-20 THEN PRINT "YOU H
AVEN'T GOT THAT.": PRINT: RETURN
1040 INPUT "WHERE"; W3$: IF W3$="" O
R LEN(W3$)>6 THEN 1040 ELSE W3$=L
EFT$(W3$, 3)
1050 IF L=2 AND WO=5 AND W3$="HOL" TH
EN PRINT "THEN DOOR OPENS": D(L, 4)=
1: O(15)=-6: O(2)=-2: RETURN
1060 IFL=7 AND WO=6 AND W3$="HOL" THE
N PRINT "A PANEL FALLS FROM THE WA
LL REVEALING A PASSAGE": D(L,
2)=8: O(6)=-7: O(9)=-7: RETURN
1070 IFL=10 AND WO=1 AND W3$="HOL" TH
EN PRINT "THE CHEST OPENS. THERE IS
A DIA- MOND INSIDE": O(1)=-10: O(
12)=10: RETURN
1080 IFL=11 AND WO=10 AND W3$="RAC" T
HEN PRINT "THE RACK SINKS INTO THE
FLOOR REVEALING A PASSAGE": D(
11, 2)=15: O(10)=-11: O(14)=-11: RET
URN
1090 IFL=13 AND WO=15 AND W3$="HOL" T
HEN PRINT "THE DOOR SWINGS OPEN": O
(15)=-13: O(17)=-13: D(13, 1)=5: RET
URN
1100 PRINT "YOU CANT DO THAT": PRI
NT: RETURN
1110 GOSUB 720: IF WO=0 THEN PRINT
"GIVE WHAT?": PRINT: RETURN
1120 IF O(WO)<>-20 THEN PRINT "YOU
HAVEN'T GOT THAT": PRINT: RETURN
1130 IF L<6 OR O(8)=-6 THEN PRINT
"HERE ISN'T ANYONE TO GIVE IT T
O": RETURN
1140 IF WO=19 THEN O(19)=-8: O(8)=
-8: D(6, 1)=3: PRINT "THE MAN GOBBLE
S UP THE MUSHROOMS AND RUNS AWAY"
: RETURN
1150 PRINT "THE MAN HAS NO USE FO
R IT": PRINT: RETURN
1160 IF O(3)=-20 AND O(7)=-20 AND O(
12)=-20 AND O(13)=-20 AND O(16)=-20 T
HEN 1170 ELSE RETURN
1170 FOR X=1 TO 3: PRINT "YOU HAVE
ESCAPED !!!"
1180 NEXT X
1190 FOR X=200 TO 255: SOUND X, 1:
NEXT: INPUT "PLAY AGAIN <Y-N>": AS
: GOTO 920

```

from page 14

```

OW": CH=CH+1: TH=TH+1
247 IF HT=2 THEN PRINT "THE NINJA
QUICKLY AVOIDS YOUR DEADLY BL
OW."
248 IF HT=3 THEN PRINT "THE NINJA
RECEIVES A HIT WOUNDING
HIM.": CH=CH+1: TH=TH+1 ELSE IF HT
=4 THEN PRINT "THE NINJA DODGES Y
OUR STRIKE."
249 IF TH=7 THEN PRINT "SUDDENLY,
THE NINJA FALLS DEAD ON THE GR
OUND.": SOUND 198, 1: F(4)=0: F(5)=0:
F(6)=0: CH=5: TH=0: SC=SC+20: GOTO 1
55 ELSE GOTO 155
250 IF B$="TAB" AND O(8)=-1 THEN F(10
)=1: PRINT "FITS PERFECTLY.": GOTO 1
56
251 IF B$="GLO" AND O(13)=-1 THEN F(9
)=1: PRINT "FITS PERFECTLY.": GOTO 1
56
252 ER$="WEAR WHAT ???": GOTO 197
253 IF B$="WAL" AND LO=8 AND O(8)=-1 A
NDF(10)=1 THEN LO=9: "YOU SCALE THE
WALL WITH HELP FROM THE TABI
'S": GOTO 118
254 IF B$="WAL" AND LO=8 AND O(8)=-1 A
NDF(10)=0 THEN PRINT "OUCH !!! IT'S
PRETTY HARD CLIMB- ING BARE-FOOT
ED WITH NO GRIP.": GOTO 156
255 IF B$="WAL" AND LO=13 THEN PRINT "
THE WALL IS TO BLOODY TO
CLIMB.": GOTO 156
256 IF B$="TRE" AND LO=27 THEN PRINT "
THE TREE IS UN-CLIMBABLE.": GOTO 1
56
257 IF B$="ROP" AND LO=9 AND F(0)=1 TH
EN LO=8: GOTO 118
258 IF B$="ROP" AND LO=8 AND F(0)=1 TH
EN LO=9: GOTO 118
259 IF B$="DOW" THEN B$="ROP": GOTO 2
57
260 IF B$="UF" THEN B$="ROP": GOTO 25
8
261 IF B$="DOW" AND LO=9 THEN PRINT "A
RRGGGHHHH... YOU FELL DOWN THE H
OLE BREAKING EVERY BONE IN Y
OUR BODY.": GOTO 198
262 ER$="CLIMB WHAT ???": GOTO 197
263 IF B$="DOW" AND LO=9 THEN PRINT "A
RRGGGHHHH... YOU BOKE EVERY B
ONE IN YOUR BODY": GOTO 198
264 IF B$="CAL" AND O(1)=LO THEN PRI
NT "IT'S TO WIDE SPREAD TO JUMP !
": GOTO 156
265 ER$="JUMP WHAT ???": GOTO 197
266 IF B$="" THEN LINE INPUT "WOR
D": B$
267 B$=B$
268 FOR T=1 TO 8
269 IF B$=G$(T) THEN 271
270 NEXT: B$="": ER$="SORRY, WORD N
OT IN VOCAB.": GOTO 197
271 B$="": SUB$="": PRINT: IN$=G$(T
)+", ": GOSUB 4: PRINT: GOTO 156
272 IF O(10)=-1 AND F(0)=0 AND LO=9 A
ND (B$="ROP" OR B$="BEA" OR B$="W
OO") THEN F(0)=1: O(10)=0: L$(9)=L
EFT$(L$(9), LEN(L$(9))-1)+" WITH

```

continued on page 18

GENESIS VDG

64K DECB
CoCo 1 only
UTILITY

CONTROLLER^{by} Charles Bartlett

I HOPE YOU ARE AS excited about this program as I was when I got it to work, because "Genesis" is a ...

- * 409 Character,
- * Sixteen Colour,
- * True VDG Lowercase Character Generator accessed from Basic by normal commands and ...
- * Only occupies 30 bytes of the normal Basic memory.

All sixteen colours can be displayed at one time!

"Genesis" has a total of 409 different characters which may all be displayed at the same time.

The colours may vary from TV set to TV set but I have labeled the new ones thus :-

- | | |
|--------------|-------------|
| * Purple | * Tangerine |
| * Sky Blue | * Pink |
| * Mustard | * Cream |
| * Dark Green | * Pale Blue |

Throughout this text, I refer to these colours as the "secondary colours". The new characters can be accessed via the PRINT CHR\$(n) statement or in the case of the new alphanumeric characters, directly from the keyboard as well.

The available characters are:-

- * All the standard semigraphic shapes in sixteen different colours.
- * Standard uppercase letters
- * Standard reverse video letters.
- * Standard punctuation marks.
- * Standard numeric characters.
- * Lowercase characters
- * Reverse video punctuation and numbers, available from the keyboard.
- * Special dual colour Semigraphic blocks.

Getting Started

Power up your CoCo - it's best to load "Genesis" before you load your program, as although "Genesis" only takes up 30 bytes after you EXEC it, it needs a fair bit of elbow room to set itself up.

Now type :-

```
CLEAR200,&H7FE1  
LOADM"GENESIS/BIN"  
EXEC
```

You should now see the "Genesis" screen with the "Genesis" copyright message (in true lowercase) and sixteen coloured blocks.

You will also notice that the heading is underlined with very fine coloured lines (more on how to do that later).

Apart from these obvious differences, the only other thing that will indicate that you are on the "Genesis" screen is the absence of the flashing block cursor.

The "Genesis" screen does NOT scroll, as it is primarily designed for display purposes.

You can enter commands directly on the "Genesis" screen, though if you type LIST it won't do you much good if your program is longer than 15 lines.

To do things like listing, return to the normal text screen by typing:-

```
SCREEN0
```

To return to the "Genesis" screen type:-

```
PRINT CHR$(3)
```

You can change screens as often as you like. About now you must be getting near the

bottom of the "Genesis" screen, so type:-

```
CLS
```

'CLS' clears both the normal screen and the "Genesis" screen at the same time. 'CLS(n)' is NOT supported and will give a syntax error - we have other and better ways to do that.

Two of the other commands are:-

```
PRINT CHR$(1)  
(Selects character set 1)
```

```
PRINT CHR$(2)  
(Selects character set 2)
```

Changing character sets "DOES NOT" change characters that have already been printed, changing sets just changes the set of characters being chosen from.

If you are not already on the "Genesis" screen, type:-

```
PRINTCHR$(3)
```

Now type:-

```
CLS
```

Now type in the following program to see the full range of characters.

```
10 CLS:PRINTCHR$(1);:FOR X=32  
TO255:PRINTCHR$(X);:NEXT  
:PRINTCHR$(2);:FOR X=32 TO  
255:PRINTCHR$(X);:NEXT
```

You could, if you wished have made the first line of the program PRINTCHR\$(3) and the screen change would have been automatic.

In character set 1 are the semigraphic patterns in the secondary colours, lowercase letters, reverse video punctuation and numbers and special semigraphic blocks.

In character set 2 are the normal characters that you are used to.

Hi-res screen commands can also be used on the "Genesis" screen.

If you plan to use any of these commands you should have 'PMODE4,1' as the first line of your program - this configures the Hi-res commands to operate within the bounds of the "Genesis" screen.

To underline characters for example, just type:-

```
LINE(X,Y)-(XX,Y),PSET
```

... just as normal in fact.

To select foreground and background colour when using hi-res commands, take the values from the following table and poke them into the required address.

To set the foreground colour type:-

```
POKE178,n
```

To set the background colour type:-

```
POKE179,n
```

```
* Orange = 3
* Black = 32
* Yellow = 35
* Magenta = 51
* Green = 83
* Cyan = 99
* Buff = 147
* Red = 195
* Blue = 243
```

So to clear the "Genesis" screen to black, type:-

```
POKE179,32:PCLS
```

Poking values other than those in the table will clear the screen with characters or semigraphic shapes. Experiment with other commands to see which you find useful - PCOPY, GET, PUT etc.

The screen can be cleared to other colours and stored in a GET/PUT array for later recall - try the following program to see some of the extra colours available.

The colours are in addition to the sixteen you already have.

Select any pair of numbers from this list and enter them into the program.

```
* 3/32 Brown
* 35/32 Grey
* 51/32 Dark Purple
* 83/32 Dark Green
* 99/32 Blue Grey
* 195/32 Dark Red
* 243/32 Dark Blue
```

Many other colours are available, experiment!

```
10 PRINT@480,"";:INPUT A,B:CLS
20 FOR Y=0 TO 190 STEP 2:POKE
178,A:LINE(0,Y)-(256,Y),PSET
:POKE178,B:LINE(0,Y+1)-(256,
Y+1),PSET:NEXT Y:GOTO10
```

Technical Information

The "Genesis" screen is based on the semigraphics-24 mode described on page 265 of "Getting Started with Colour Basic".

By using the information in this chart, you will find that many more character shapes, graphic shapes and colours are available!

"Genesis" loads in the following memory area:-

```
* Start = &H37E3
* End = &H65FD
* Entry = &H4FEA
```

After you EXEC it, it moves itself to &H7FE2 upwards, making extensive use of the top bank of 32k RAM.

This RAM is switched in and out under the control of "Genesis" so that when the ROMs are required they are present.

(Ed's note: This program is unique. If we convert it to Basic, the program would not fit into any CoCo (about 36K). Therefore regrettably, we have had to place this program on CoCoOz this month.

from page 16

```
A ROPE TIED AROUND IT.":PRINT"RO
PE TIED TO THE BEAM.":GOTO156
273 IF O(10)=-1ANDF(0)=1ANDLO=9A
ND(B$="ROP" OR B$="BEA" OR B$="W
OC") THEN PRINT"THE ROPE IS ALRE
ADY TIED TO THE BEAM.":GOTO156
274 IF O(10)=-1AND(LO=26 OR LO=2
7 OR LO=29 OR LO=39) THEN PRINT"
THE ROPE WON'T TIE AROUND IT.":G
OTO156
275 IF B$="ROP" THEN ER$="TIE AR
OUND WHAT ???":GOTO197
276 ER$="TIE WITH WHAT ???":GOTO
197
277 IF B$="ROP"ANDF(0)=1THENF(0)
=0:L$(9)=LEFT$(L$(9),LEN(L$(9))-
27):PRINT"ROPE UNTIED":O(10)=LO:
GOTO156
278 ER$="UNTIE WHAT ???":GOTO197
279 FOR T=1 TO 1000:NEXT
280 CLS
281 PRINT"CONGRATULATIONS NINJA
YOU HAVE SUCCEEDED IN STEALING
THE SECRETSCROLL OF IMMORTALITY
AND SHALL BE REWARDED BY BEING M
Y CHUMIN.":GOTO 198
282 LINEINPUT"FILENAME.":F$
283 PRINT"READY CASSETE.":EXEC44
539
284 OPEN"O",#-1,F$
285 FOR T=1 TO 14
286 X=O(T)
287 PRINT#-1,X
288 NEXT
289 FOR T=0 TO 10
290 X=F(T)
291 PRINT#-1,X
292 NEXT
293 FOR T=1 TO 40:A$=L$(T):A=N(T)
):B=S(T):C=E(T):D=W(T):PRINT#-1,
A$,A,B,C,D:NEXT
294 A=CH:B=HT:C=TH:D=SC:E=LO:PRI
NT#-1,A,B,C,D,E
295 CLOSE #-1
296 GOTO 156
297 LINEINPUT"FILENAME.":F$
298 PRINT"READY CASSETE.":EXEC44
539
299 OPEN"1",#-1,F$
300 IF EOF(-1) THEN 118
301 FOR T=1 TO 14:INPUT#-1,X:O(T)
)=X:NEXT:FORT=0 TO 10:INPUT#-1,X
:F(T)=X:NEXT
302 FOR T=1 TO 40:INPUT#-1,A$,A,
B,C,D:L$(T)=A$:N(T)=A:S(T)=B:E(T)
)=C:W(T)=D:NEXT:INPUT#-1,A,B,C,D
,E:CH=A:HT=B:TH=C:SC=D:LO=E
303 GOTO 300
304 IFE$="ORA"ANDO(11)=-1THENPRI
NT"MMMMM...DELICIOUS.":O(11)=0:G
OTO156
305 ER$="EAT WHAT ???":GOTO197
306 PRINT"HEALTH :";(7-HT)/7*100
"%
307 PRINT"SCORE :";SC
308 GOTO 156
310 SAVE"269A:3":END'
```

32x16 & 40x24 WORKSHEET

CoCo 1,2 or 3
UTILITY

by Harry Hoffmann

WORKSHEET IS A utility I developed to help you determine what screen location to use when printing text on the text screen.

When I decided to write a program I would print a couple of worksheets. I then write anything I like onto these worksheets and transfer it to the program I am working on.

This saves me a lot of messing around and/or scribbling on the sheets provided in the manual.

I hope that you will make use of it.

There are two worksheets I have created; one for the 32 by 16 column screen, and one for the 40 by 24 column screen.

Sometimes, when I read other programs in CoCo or Softgold, I get annoyed because I have to alter the programs written for other printers.

Therefore, if you want to make this program run on your printer, I have included descriptions of each step taken. They can be, if you like, omitted from the program.

I hope it will set an example.

The Listing:

```

0 GOTO10
3 SAVE"243A:3":END'8
10 'oooooooooooooooooooooooooooo
20 'o
30 'o WORKSHEET 24 X 40 o
40 'o BY HARRY HOFFMANN o
50 'o CROWS NEST CARAVAN PK o
60 'o CROWS NEST QLD 4355 o
70 'o
80 'oooooooooooooooooooooooooooo

90 POKE150,18
100 '#####
110 '# SELECT CHARACTER MODE #
120 '#####

130 PRINT#-2,CHR$(30)

140 '#####
150 '# STANDARD CHARACTERS #
160 '#####

170 PRINT#-2,CHR$(27)CHR$(19);
180 '#####
190 '# ELONGATED CHARACTER ON #
200 '#####

210 PRINT#-2,CHR$(27)CHR$(14);
220 '#####
230 '# PRINT 12 SPACES; #
240 '# (15) UNDERLINE ON #
250 '#####

260 PRINT#-2,STRINGS(12,32);CHR$(15);"WORKSHEET 24 X 40"
270 '#####
280 '# (14) UNDERLINE OFF #
290 '#####

300 PRINT#-2,CHR$(14);
310 '#####
320 '# ELONGATED CHARACTERS #
330 '# OFF #
340 '#####

350 PRINT#-2,CHR$(27)CHR$(15);
360 PRINT#-2,TAB(35);"By Harry Hoffmann"
370 '#####
380 '# CONDENSED CHARACTERS #
390 '#####

400 PRINT#-2,CHR$(27)CHR$(20)
410 '#####
420 '# PRINT TOP ROW OF NO. #
430 '#####
440 FORA=0TO39:PRINT#-2,TAB(10);CHR$(32);:PRINT#-2,USING"###";A;:NEXT
450 '#####
460 '# TURN OFF LINE FEED #
470 '# (13)CARRIAGE RETURN #
480 '#####

490 PRINT#-2,CHR$(27)CHR$(21);CHR$(13);
500 '#####
510 '# SET GRAPHICS MODE #
520 '#####
530 PRINT#-2,CHR$(18);
540 '#####
550 '# MOVE CARRIAGE TO #
560 '# COLUMN 0 POSITION 62 #
570 '#####

580 PRINT#-2,CHR$(27);CHR$(16);C

HR$(0);CHR$(62);
590 '#####
600 '# PRINT 17 TIMES NOTHING#
610 '# PLUS 1 SOLID BAR #
620 '#####

630 FORX=1TO40:PRINT#-2,STRINGS(17,128);CHR$(255);:NEXTX
640 '#####
650 '# RETURN TO LINEFEED #
660 '#####

670 PRINT#-2,CHR$(27)CHR$(22)CHR$(10);
680 '#####
690 '# POS PRINTHEAD AS ABOVE #
700 '#####

710 PRINT#-2,CHR$(27);CHR$(16);CHR$(0);CHR$(62);
720 '#####
730 '# PRINT 17 DOTS AND 1BAR #
740 '#####

750 FORX=1TO40:PRINT#-2,STRINGS(17,192);CHR$(255);:NEXT
760 '#####
770 '# 1 LINEFEED #
780 '#####

790 PRINT#-2,CHR$(10)
800 '#####
810 '# PRINT VERTICAL NUMBERS #
820 '# AND GRID #
830 '#####

840 FORX=0TO23
850 '#####
860 '# SELECT CHARACTER MODE #
870 '# AND PRINT NUMBER #
880 '#####

890 PRINT#-2,CHR$(30);TAB(7);CHR$(32);:PRINT#-2,USING"###";X;
900 '#####
910 '# SELECT GRAPHICS MODE #
920 '#####

930 PRINT#-2,CHR$(18);
940 '#####
950 '# MOVE CARRIGE TO #
960 '# COLUMN 0 POSITION 61 #
970 '#####

980 PRINT#-2,CHR$(27);CHR$(16);CHR$(0);CHR$(61);
990 '#####
1000 '# PRINT 1 SOLID BAR AND #

```

```

1010 '# EXEC LOOP FOR 40 TIMES #
1020 '# 17 SPACES AND 1 S-BAR #
1030 '#####

1040 PRINT#-2,CHR$(255);:FORY=1T
O40:PRINT#-2,STRING$(17,128);CHR
$(255);:NEXTY
1050 '#####
1060 '# CARRIGE RETURN L-FEED #
1070 '#####

1080 PRINT#-2,CHR$(10)
1090 '#####
1100 '# REPOSITION PRINTHEAD #
1110 '# AS ABOVE #
1120 '#####

1130 PRINT#-2,CHR$(27);CHR$(16);
CHR$(0);CHR$(61);
1140 '#####
1150 '# PRINT 1 SOLID BAR #
1160 '#####

1170 PRINT#-2,CHR$(255);
1180 '#####
1190 '# LOOP FOR 40 TIMES #
1200 '# 17 DOTS AND 1 SOLID BAR#
1210 '#####

1220 FORY=1TO40:PRINT#-2,STRING$
(17,192);CHR$(255);:NEXTY
1230 '#####
1240 '# CARRIAGE RETURN #
1250 '#####

1260 PRINT#-2,CHR$(10)
1270 NEXT X
1280 '#####
1290 '# (30) CHARACTER MODE #
1300 '# (27,54)FULL LINE FD #
1310 '# (7,10) 7 LINE FEEDS #
1320 '#####

1330 PRINT#-2,CHR$(30);CHR$(27);
CHR$(54);STRING$(7,10)
1340 'oooooooooooooooooooooooooooo
1350 'oTHIS PROGRAM WAS WRITENO
1360 'oBY HARRY HOFFMANN o
1370 'oCROWS NEST CARAVAN PARK o
1380 'oCROWS NEST QLD 4355 o
1390 'oooooooooooooooooooooooooooo

1400 '#####
1410 '# all comment lines can #
1420 '# be omitted #
1430 '#####

100 CLS
110 '#####
120 '** SET PRINTER BAUD 2400 **
130 '#####

140 POKE149,0:POKE150,18

150 '#####
160 '** SELECT CHARACTER MODE **
170 '** " STANDARD CHARACTERS **
180 '** 1 LINEFEED;1 CARR.RET.**
190 '** >>JUST TO MAKE SURE<< **
200 '#####

210 PRINT#-2,CHR$(30);CHR$(27);C
HR$(19);CHR$(13);CHR$(10);

220 '#####
230 '** (27,54) FULL LINEFEED **
240 '** (27,14) ELONGATED ON **
250 '** (15) UNDERLINING ON **
260 '#####

270 PRINT#-2,CHR$(27)CHR$(54);CH
R$(27)CHR$(14);STRING$(9,32);CHR
$(15);"WORKSHEET FOR WIDTH 32"

280 '#####
290 '** (14) UNDERLINE OFF **
300 '**(10) LINEFEED CARR.RET.**
310 '#####

320 PRINT#-2,CHR$(14)CHR$(10)

330 '#####
340 '** END ELONGATED **
350 '#####

360 PRINT#-2,CHR$(27);CHR$(15);

370 '#####
380 '** CONDENSED CHARACTER **
390 '#####

400 PRINT#-2,CHR$(27)CHR$(20)

410 '#####
420 '** PRINT FIRST LINE OF **
430 '** NUMBERS **
440 '#####

450 FORX=0TO31
460 READ A
470 PRINT#-2,TAB(15);A;
480 NEXT X
490 PRINT#-2:

500 '#####
510 '** PRINT SECOND ROW OF **
520 '** NUMBERS **
530 '#####

540 FORX=1TO3
550 FORY=0TO9
560 PRINT#-2,TAB(15);Y;
570 NEXT: NEXT
580 PRINT#-2," 0 1"
590 DATA ,, ,, ,, ,, ,, ,, ,, ,,
,1,1,1,2,2,2,2,2,2,2,2,2,3,3

600 '#####
610 '** PRINT VERTICAL ROW OF **

620 '** NUMBERS AND GRID **
630 '#####

640 FOR PR=0TO480STEP32
650 PRINT#-2,USING"#####
#";PR;
660 GOSUB810
670 NEXT PR

680 '#####
690 '** 5 LINEFEEDS AT THE END**
700 '#####

710 PRINT#-2,STRING$(5,10);
720 END

730 '#####
740 '** SUBROUTINE FOR GRID **
750 '#####
760 '** (18) SELECT GRAPHICS **
770 '** MODE,(27,16,0,91) SET **
780 '** CARRIAGE TO COLUMN 0 **
790 '** POINT 91 **
800 '#####

810 PRINT#-2,CHR$(18);CHR$(27);C
HR$(16);CHR$(0);CHR$(91);
820 GOSUB 870:GOSUB1030
830 GOTO1180

840 '#####
850 '** PRINT 1 SOLID BAR **
860 '#####

870 PRINT#-2,CHR$(255);
880 FORX=1TO32

890 '#####
900 '** (17,128)PRINT 17 TIMES**
910 '** NOTHING;(255) 1 SOLID **
920 '** BAR **
930 '#####

940 PRINT#-2,STRING$(17,128);CHR
$(255);
950 NEXT X
960 RETURN

970 '#####
980 '**(10)CARR.RETURN; **
990 '**(27,16,0,91) POSITION **
1000 '** CARRIAGE AS ABOVE **
1010 '** (255) 1 SOLID BAR **
1020 '#####

1030 PRINT#-2,CHR$(10);CHR$(27);
CHR$(16);CHR$(0);CHR$(91);CHR$(2
55);
1040 FORX=1TO32

1050 '#####
1060 '**(17,192) PRINT 17 DOTS**
1070 '**TO CREATE BOTTOM LINE **
1080 '** (255) 1 SOLID BAR **
1090 '#####

1100 PRINT#-2,STRING$(17,192);CH
R$(255);
1110 NEXTX
1120 RETURN

```

The Listing:

```

0 GOTO10
3 SAVE"243B:3":END'8
10 'oooooooooooooooooooooooooooo
20 'o o
30 'o WORKSHEET 32X16 o
40 'o BY o
50 'o HARRY HOFFMANN o
60 'o CROWS NEST CARAVAN PARK o
70 'o CROWS NEST QLD 4355 o
80 'o o
90 'oooooooooooooooooooooooooooo

```

```

500 '#####
510 '** PRINT SECOND ROW OF **
520 '** NUMBERS **
530 '#####

540 FORX=1TO3
550 FORY=0TO9
560 PRINT#-2,TAB(15);Y;
570 NEXT: NEXT
580 PRINT#-2," 0 1"
590 DATA ,, ,, ,, ,, ,, ,, ,, ,,
,1,1,1,2,2,2,2,2,2,2,2,2,3,3

600 '#####
610 '** PRINT VERTICAL ROW OF **

```

```

1050 '#####
1060 '**(17,192) PRINT 17 DOTS**
1070 '**TO CREATE BOTTOM LINE **
1080 '** (255) 1 SOLID BAR **
1090 '#####

1100 PRINT#-2,STRING$(17,192);CH
R$(255);
1110 NEXTX
1120 RETURN

```

continued on page 24

USING M/L UTILITIES

with a DISK SYSTEM.

CoCo 3 + EDTASM (optional)

UTILITY

by George McLintock

OVER THE YEARS there have been a number of useful machine language (ML) utilities published in magazines, and you may have developed some yourself, or modified others.

One of the problems with using them is that after you have collected a number of them, you require some way to have them conveniently available for when you might want to use them.

For example, if you are in the middle of de-bugging a section of a Basic program and want to use BSEARCH (Hot CoCo, Sept 83) to find something, it's annoying to then have to go looking for a disk or tape with BSEARCH on it before you can use it.

Even if it is on the same disk, if you have an auto line number routine active in memory, then you still have to switch utilities to be able to use it, and then switch back again when you have finished with it.

You have similar problems when you think you are nearly finished and want to get a special listing or remove blanks or something. You have to load and activate another utility, when you might still be using a different one.

Some years ago, before I got a disk drive for the CoCo, I developed a series of linked utilities which reside in memory all the time and are therefore always available. It includes an auto line number, single key entry of strings, a form of on screen edits, and some specialised routines to suit my hardware set up at that time.

This is a good approach, but it generates its own problems as well, the main one being that it becomes a large and complex beast. The one I developed uses all of protected memory above 30000 and the control logic is very complex with lots of switches to show its current status.

I have looked at this one a

number of times with the intention of adding and improving some features and removing others which I seldom use any more. While it certainly could be done, I haven't yet felt up to tackling the task. I feel it needs a complete re-structuring of the central control logic, and I know from experience how time consuming an exercise this can be, so I put it off for another day.

When I eventually got a disk drive for the CoCo, I started using the direct access buffer file space for certain utilities. This procedure is fairly common with the Model 1 and compatible machines, as the advantages of it with those machines is much more obvious.

However, the basic procedure can be used quite effectively on the CoCo.

The CoCo provides a fixed area of memory for direct access files, starting from location Hex 989. The default file size is 256 bytes, which is the same as a sector on disk.

The basis of the procedure is that the Basic command GET #1,1 will transfer the binary image of the first sector of the disk file into the direct access buffer. Likewise, a PUT #1,1 will transfer the binary image in the buffer to the first sector of the file on disk.

If a ML routine is poked into the direct access buffer before the PUT, then any subsequent GET for that record will restore that ML routine to a known area of memory for use.

If you depart from the default parameters for the first direct access file, you may have to use the Field and Varptr commands to find the start of the ML code.

This procedure will only always work with a direct access file. While you can do the same thing with serial files for some ML routines, it won't work with any routine that contains a bit pattern in a byte which Basic

treats as a delimiter, eg CR, comma, quote etc.

Hence the basic principle for the procedure is to create a single direct access file that contains the various utilities you might want, and have a copy of this file on any disk that you use while developing a new program.

The effect is much the same as having a separate file for each one on disk that you can LOADM, but this takes up more space, and puts a lot of entries in the directory before you start your own programs. It also makes it less convenient to start up a new disk. With LOADM files you need a clean master and then backup to a new disk. With a single file you can copy it across to the new disk from any other disk that has it.

You are therefore more likely to put them all on a new disk before you start.

With the default record length, a direct access file will provide 9 records per granule and 18 records per track. A single LOADM file uses a full granule on disk.

File Organization

One of the problems with this approach is to remember which utility is in which record. You can keep a record on paper, but you have to find the right piece of paper when you need it.

Over a period of time you will probably build different versions of a file called 'UTILITYS', and will need to know what is on each one. I've built a few different versions, but keep the same file name as it is the name I remember.

For my own use, I've adopted a file size of two granules. This provides 18 records. I use records 1 & 2 as index/remainder records, and the other 16 for utilities. I initially selected this size because of the 16 lines of display for the CoCo,

but have found it quite adequate.

The only time I've exceeded 16 utilities was when I wanted a number of small, special purpose things there. So rather than extend the main file, I put them in other utility files called UTIL1 and UTIL2, which I only copy if I particularly want them.

Supporting Programs

The main requirement for a supporting program is to build and maintain the index/reminder records. I've organised these so that I can enter:

```
OPEN      "D",#1,"UTILITYS":GET
#1,1:EXEC &H989
```

... and get an index of what's available, together with the EXEC addresses for each one. If I 'GET' & 'EXEC' record 2, I can display extra reminder information where this might be necessary.

With my memory resident single key entry routine, I have control Z set to execute this command automatically.

The Basic program submitted is the one used for setting up a new utility file and for adding or changing utilities within an existing file. It is the only supporting program required.

New utilities are added to the file by POKE'ing the ML code into the buffer area, and PUT'ing the record to the open file. Opening the file does not alter what's in the buffer.

Utilities that I have submitted, like REMOVE, can be put there by changing the M to &H989, and running the Basic program with the DATA statements in it.

I guess that this is one of the reasons I've adopted this procedure for my own utilities.

It sets them up for convenient addition to my utility file if I want to put them there.

Index/Reminder Records

These records contain a small ML routine in the first 20 bytes which displays the contents of the remaining 236 bytes of the record on the screen. The display on the screen stops when it reaches a zero byte. This routine transfers the bytes directly through the CHROUT routine, and will send them to the printer if Hex 6F is set

to -2 before executing it. You have to do this with a single Basic line to prevent it being reset by Basic. eg POKE &H6F,-2:EXEC &H989.

The ML routine does no formatting, and the messages to be displayed should contain its own carriage returns as required.

For my own index, I use the record number, utility name, and entry points as off sets from the start, with a space between each entity and followed by a CR. eg

```
3 PSKIP 8 42 CR
4 REMOVE 0 CR
5 HIGHLIGHT 6 10 CR
```

If the full index looks likely to exceed the space available, I shorten the name of the utility to make them all fit.

Other Records

The other records in the file basically contain the ML code for the utilities only. However, very few utilities actually occupy 256 bytes, and I include as standard another small ML routine in the last 15 bytes of each of these records. This routine simply moves the contents of the direct access buffer into the cassette buffer (at Hex 1DA)

This allows me to have two utilities from the file in memory at the same time if I want to. By GET'ing the first, and EXEC &HA79, will move it to the cassette buffer, and allows another one to be loaded into the direct access buffer.

The code to display the index record is also relocatable and can be executed from the cassette buffer as well. The move routine is also included as the last 15 bytes of these records as well, but if you want to use it that way you have to ensure that these bytes are not overwritten by the message to be stored there.

The program submitted tells you if this will happen.

It can be useful at times to keep the index in the cassette buffer where it can be executed even if you have another utility in the direct access buffer. eg if you need to know the restore to normal execute address for a utility in control.

The program used to build the utility file puts this ML code at the end of all of the records

when the file is created. To keep it there you have to GET the record before POKE'ing the utility into the buffer and PUT'ing the record again.

It would be possible to combine a number of small separate utilities into a single record of 256 bytes, but I've not felt the need to do this. I prefer to create a separate file if required.

It is also possible to spread larger utilities (greater than 256 bytes) across both the direct access and cassette buffers. The only time I've actually used this approach is when I converted BSEARCH (A utility from Hot CoCo) to work with the utility file approach.

Suitable Utilities

Most utilities which are less than 256 bytes long are suitable for use in this way. Its easier to put them there if they are relocatable, but if they are not you can either re-assemble them or convert them so that they are relocatable.

The ones you have to be more careful with are those which alter RAM hooks to make them work. You can still use these, but they should include a routine which restores the RAM hook to normal again. And you must remember to EXEC this 'undo' routine before changing the utility.

I find that the 'restore to normal' routine is not common with utilities in magazines. I include them with my own utilities, but then I have a requirement for it.

The more common approach is to alter the RAM hook and then put a RTS instruction at the start of the initialise routine. This is a safer approach and could still be used with a restore to normal routine - I haven't bothered to do so in the past, perhaps I should.

I have since included this feature with PSKIP2 (still to come - ed) and it added 15 bytes to the code. I guess this is not an unreasonable price for the extra security.

If you want to use one of these routines in the direct access buffer, its desirable to add your own restore to normal routine to it. The alternative is to remember the POKE's required to restore the RAM hook to normal for your machine.

Program Operation

The program submitted, called INDEXREM, is a Basic program which allows you to set up a new utility file along the lines that I have outlined. It also allows you to update and modify the index and reminder records for an existing utility file.

The ML code at the end of the index record is automatically restored after each update, so that if you go over it once, but then shorten the message later, this ML code is restored.

This method of operation won't suit everyone, but I find it convenient.

The Listing:

```
1 '** INDEXREM
  BY GEORGE MCLINTOCK
2 GOTO 10
3 SAVE"230G:3":END'9
4 ' PROGRAM TO CREATE UTILITYS F
  ILE AND
5 ' MAINTAIN THE INDEX REM RECOR
  DS
10 CLEAR 1000:DIM A$(16)
20 V1=&H989+20:V2=&HA78:V3=&HA88
  :S=236
30 CLS:PRINT "PROGRAM TO CREATE
  OR CHANGE A UTILITY FILE":PRIN
  T:PRINT"BY GEORGE MCLINTOCK"
40 PRINT:PRINT "ENTER N TO CRE
  ATE A NEW FILE OR PRESS ENTER T
  O CHANGE AN":INPUT "EXISTING ONE
  ":A$
50 PRINT:INPUT "ENTER NAME OF FI
  LE":N$
60 OPEN "D",#1,N$:IF A$="N" THEN
  GOSUB 630
70 'SELECT RECORD
80 PRINT:PRINT "ENTER RECORD NUM
  BER OF INDEX TO ALTER":INPUT "US
  E 0 TO FINISH":N: IF N <= 0 THEN
  CLOSE: STOP
90 IF N>2 THEN PRINT:INPUT "DO Y
  OU MEAN IT":A$:IF LEFT$(A$,1) <>
  "Y" THEN 80
100 GET #1,N
110 'EXTRACT MESSAGE
120 PRINT:PRINT "EXTRACTING MESS
  AGE FROM RECORD NO":N
130 Y=V1:C=V3:FOR X=1 TO 16:A$(X
  )=""
140 A=PEEK(Y):IF A=0 THEN 180
150 Y=Y+1:IF Y > C THEN 180
160 IF A=13 THEN 180
170 A$(X)=A$(X) + CHR$(A):GOTO 1
  40
180 NEXT X
190 'EDIT LOOP
200 GOSUB 520:GOSUB 570
```

```
210 PRINT:PRINT "EDIT INDEX RECO
  RD NO":N:PRINT "A TO DISPLAY ALL
  ":PRINT"S TO SAVE AND TO MENU":P
  RINT"Q TO MENU AND NOT SAVE IT":
  PRINT"ENTER TO STEP THROUGH MESS
  G"
220 INPUT A$:IF A$ <> "A" THEN 2
  90
230 'DISPLAY FULL SCREEN
240 CLS:FOR X=1 TO 15
250 IF LEN(A$(X)) > 0 THEN PRINT
  A$(X)
260 NEXT X:IF LEN(A$(16)) > 0 TH
  EN PRINT A$(16):
270 IF INKEY$="" THEN 270 ELSE 2
  00
280 'EXIT THIS RECORD
290 IF A$="Q" THEN 80 ELSE IF A$
  ="S" THEN 390
300 'STEP THROUGH LINES
310 FOR X=1 TO 16:PRINT:PRINT "L
  INE NO":X
320 IF LEN(A$(X))=0 THEN PRINT "
  NOT USED" ELSE PRINT A$(X)
330 PRINT:PRINT "ENTER R TO RE
  PLACE IT":PRINT" Q TO RET
  URN TO MENU":PRINT "OR PRESS ENT
  ER FOR NEXT"
340 INPUT A$:IF A$="Q" THEN X=17
  :GOTO 370
350 IF A$="R" THEN PRINT "OLD LI
  NE IS":PRINT A$(X):PRINT "ENTER
  NEW LINE":LINE INPUT A$(X)
360 IF LEN(A$)>1 THEN PRINT:PRIN
  T"DID YOU STUFF IT AGAIN":PRINT"
  DID YOU REALLY WANT TO REPLACE":
  PRINTA$(X):PRINT"WITH":PRINT A$:
  INPUT B$:IF LEFT$(B$,1)="Y" THEN
  A$(X)=A$:PRINT "THOUGHT SO - IS
  DONE"
370 NEXT X:GOTO 200
380 'REPLACE MESSAGE IN RECORD
390 FOR X=V1 TO V2:POKE X,0:NEXT
  X
400 Y=V1:FOR X=1 TO 16: IF LEN(A
  $(X))=0 THEN 440
410 FOR C=1 TO LEN(A$(X))
420 POKE Y,ASC(MID$(A$(X),C,1)):
  Y=Y+1:IF Y>V3 THEN 490
430 NEXT C:IF X<16 THEN POKE Y,1
  3:Y=Y+1:IF Y>V3 THEN 490
440 NEXT X:POKE Y,0:IF Y > V2 TH
  EN A$="W" ELSE A$="K"
450 IF Y <= V2 THEN RESTORE:FOR
  X=1 TO 21:READ C:NEXT X:GOSUB 73
  0
460 PUT #1,N
470 IF A$="W" THEN PRINT:PRINT "
  ML CODE TO MOVE THIS RECORD TO
  THE CASSETTE BUFFER HAS BEEN
  OVERWRITTEN":PRINT:INPUT "PRESS
  ENTER TO CONTINUE":A$
480 GOTO 80
490 PRINT:PRINT "MESSAGE TO LARG
  E FOR BUFFER":PRINT"YOU WILL HAV
  E TO REDUCE IT":INPUT "PRESS ENT
  ER TO RETURN TO MENU":A$
500 GOTO 200
510 'CALCULATE SIZE
520 T=0:C=0:FOR X=1 TO 16
530 IF LEN(A$(X))>0 THEN T=T+LEN
  (A$(X))+1:C=C+1
```

```
540 NEXT X:IF LEN(A$(16))>0 THEN
  T=T-1
550 RETURN
560 'PRINT SIZE
570 PRINT:PRINT "TOTAL LENGTH ME
  SG =" :T
580 PRINT "FREE SPACE AVAIL =" :S
  -T
590 PRINT "NO OF CR'S =" :C
600 IF S-T < 15 THEN PRINT:PRINT
  "WILL DESTROY ML MOVE"
610 RETURN
620 'SET UP NEW FILE
630 FOR X=V1 TO V2:POKE X,0:NEXT
  X
640 RESTORE:C=0:Y=&H989
650 FOR X=0 TO 19
660 READ T:POKE Y+X,T:C=C+T
670 NEXT X:READ X:IF X <> C THEN
  PRINT "ERROR IN FIRST DATA LINE
  ":STOP
680 GOSUB 730
690 FOR X=1 TO 18
700 PUT #1,X
710 NEXT X
720 RETURN
730 C=0:Y=&HA79
740 FOR X=0 TO 14
750 READ T:POKE Y+X,T:C=C+T
760 NEXT X:READ X:IF X <> C THEN
  PRINT "ERROR IN SECOND DATA LI
  NE":STOP
770 RETURN
780 DATA 48,140,17,166,128,39,6,
  173,159,160,2,32,246,173,159,160
  ,0,39,250,57,2154
790 DATA 142,9,137,206,1,218,95,
  166,128,167,192,90,38,249,57,189
  5
  USING MACHINE LANGUAGE
  UTILITIES WITH A DISK SYSTEM
```

from page 20

```
1130 '*****
1140 '**(30) BACK TO CHARACTER**
1150 '** MODE:(27,56)SET 3/4 **
1160 '** FORWARD LINE FEED **
1170 '*****
1180 PRINT#-2,CHR$(30);CHR$(27);
  CHR$(56)
1190 RETURN
1200 '*****
1210 '##REMEMBER TO TYPE SEMI ##
1220 '##COLONS AS THEY APPEAR ##
1230 '##ALL COMMENT LINES CAN ##
1240 '##BE OMITTED ##
1250 '*****
1260 '*****
1270 '* WRITTEN *
1280 '* BY *
1290 '* HARRY HOFFMANN *
1300 '*CROWS NEST CARAVAN PARK *
1310 '* CROWS NEST QLD 4355 *
1320 '*****
```

```

00100 * ML CODE FOR INDEXREM
00110 * ORGED AT 32000 FOR CONVENIENCE ONLY
00120 *
7D14 00130 DATA EQU $7D14
00140 *
00150 * DATA DEFINED IN THIS WAY ONLY TO SAVE 1
BYTE WHEN ASSEMBLED
00160 *
7D00 00170 ORG 32000
00180 * DISPLAY BUFFER ON SCREEN
7D00 30 8C 11 00190 START LEAX DATA,PCR START
MESSAGE
7D03 A6 80 00200 S2 LDA ,X+
7D05 27 06 00210 BEQ OUT
7D07 AD 9F A002 00220 JSR [$A002] TO SCREEN
7D0B 20 F6 00230 BRA S2
7D0D AD 9F A000 00240 OUT JSR [$A000] WAIT FOR KEY
7D11 27 FA 00250 BEQ OUT
7D13 39 00260 RTS
00262 *
00263 * DATA IS ADDED HERE
00264 *
00265 * THE MOVE ROUTINE IS ASSEMBLED AT THIS
00266 * ADDRESS FOR CONVENIENCE ONLY
00270 *
00280 * CODE TO MOVE TO CASSETTE BUFFER
00290 *
7D14 8E 0989 00300 MOVE LDX #$989 START DIRECT ACCESS
7D17 CE 01DA 00310 LDU #$1DA START CASSETTE
7D1A 5F 00320 CLR B COUNTER
7D1B A6 80 00330 T2 LDA ,X+ MOVE 256
7D1D A7 C0 00340 STA ,U+ BYTES
7D1F 5A 00350 DECB
7D20 26 F9 00360 BNE T2
7D22 39 00370 RTS
00380 *
7D23 00390 ZZEND EQU *
7D00 00400 END START
00000 TOTAL ERRORS

```

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SEE YOU AT

CONF

BUNDEENA NSW

AUGUST 8 & 9

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

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

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

Getting there is not a problem.

Bundeena is reached through the Royal National Park by road or by train to Cronulla and ferry from the nearby wharf to Bundeena.

The conference will be jam packed with all sorts of things to see and do!

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

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

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

Blaxland Computer Services have imported a wide range of new products for the Tandy CoCo 3 and all of this will be on show and in use.

Some of these products are very exciting. For example Colour Max 3 should be available

at the show - a colour version of CoCoMax.

Paris Radio will be bringing their Sculptor based accounting package, all the new OS-9 packages for the CoCo 3, an Atari running OS-9, they'll have a big modem sale, featuring the HAYES compatible Avtek Megamodem, the latest version.

They will also be connected to "Infocenter", Paris Radio's on-line information service.

Infocenter was one of the first on-line services in Australia and continues to be a source of programs and information for Tandy computer owners.

Paris will also have an enormous bookshelf, including "CoCo 3 Peeks and Pokes". There will be memory upgrades for the CoCo 3, Macintosh software running on the Atari, and possibly an Oki Laser Line 6 printer working with the CAD 3-D software package for the Atari 1020.

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

We've had continuing interest in some of the more diverse

subjects covered in the magazine at past conferences, so again this year we'll have tutorials on hardware mods and on Forth.

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

Some of the people attending as lecturers this year include Johanna Vagg, Ron Wright, Jack Fricker, John Redmond, Mike Turk and John Vitstyn.

John Vitstyn is an expert on MS DOS and especially the IBM PC and he will bring us a broad range of information for Tandy 1000 users.

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

Conference is a place to meet old friends, to meet the people behind the names in the magazine, to learn a lot of new information, to see the latest Tandy equipment.

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

The cost is increased over previous years due entirely to the fact that we are doing it in

P.O. BOX 1742, SOUTHPORT.
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'87

Sydney which is a good deal more expensive than the Gold Coast!

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

We have made a genuine error in our pricing for the conference.

I had not previously considered the impact of day visitors on conferences as they have always been on the Gold Coast, basically away from where everyone lives.

Now with conference being in Sydney, things have changed.

If you are a day visitor, it will cost just \$20.00 for one day or \$35.00 for both days per head to be at conference.

Bookings closed on 15th July, but because of the price change I will accept them right through to Conference time.

I'D STILL PREFER YOU TO BOOK. Its very difficult to cater for people when you don't know who is coming!

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

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

Rates

Accommodated (1) \$87.00
Family of 2, + \$68.00 = \$155.00
Additional family members \$52.00 ea
Includes supper Friday evening, breakfast
lunch and dinner on Saturday and breakfast
and lunch on Sunday plus all accommodation.

Non Accommodated Rates

	One day	Two days
One person	\$20.00	\$35.00
Sat Evening Meal	\$12.00	\$12.00
	=====	=====
	\$32.00	\$47.00

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

LOCATION:-

Uniting Church's campsite
Bundeena NSW

DATE:- 8th & 9th August, 1987

REGISTER NOW!!

We can only accept a limited number of people this year. DON'T MISS OUT! on a top weekend of FUN, FRIENDSHIP and LEARNING.

Name:

Address:

Phone:

No. People attending:

SPEAK UP!:- Now is your chance to suggest your ideas for any tutorials we may not have mentioned. (participants only).

Tutorials likely to attend:

Please find enclosed:

chq/money order/bankcard/visa/mastercard

Card No.

Signature:

Won't you take me to...

FUNKY TOWN

CoCo + Orchestra 90-cc
MUSIC

by Michael Monck

FUNKY TOWN (PSEUDO Echo version) was recently supplied to us by Michael Monck.

Michael has been the winner of last years Music competition in the field of playing tunes with the Orchestra-90CC.

His winning entries were "Popcorn", "Beverly Hills Cop" and many more great songs.

And so we come to another entry - titled "Funky Town" it is sure to be a winner!

So load it in, sit down and play it - we're sure you'll like it!

(For those not in the know, "Pseudo Echo" is one of many Australian pop groups!)

The Listing:

/FUNKY TOWN (PSUDO ECHO VSN)
/ENTERED AND ARRANGED BY
/MICHAEL MONCK '87 (28/5)

NQ=76
V1YD V2YD V3YD V4YD V5YB
P01
M
V5 S(-E\$-7\$)6-E\$-8&-7
M
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
V3 I(-E-7)3
V5 S(-E\$-7\$)2-E\$-8&-7
M
*17,7,6&,7,\$Q4,14,
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
*17,A,9,7
V3 I(-E-7)3
V5 S(-E\$-7\$)2-E\$-8&-7
M
*17,7,6&,7,\$Q4,14,
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
*17,A,9,7Q\$1\$0
V3 I(-E-7)3
V5 S(-E\$-7\$)2-E\$-8&-7

V4*H\$Q\$1\$0
P02
*I(0,)3Q2,12,2,
V4*I(0,)3Q2,12,2,
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
*14,Q4,199,8,Q7,
V4*14,Q4,199,8,Q7,
V3 I(-E-7)3
V5 S(-E\$-7\$)2-E\$-8&-7
M
*17,7,6&,7,\$Q4,14,
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
*17,A,9,7,Q\$1\$0
V4*H\$Q\$1\$0
V3 I(-E-7)1-9-2-8&-1
V5 S(-E\$-7\$)1-9\$-2\$-8&\$-1\$
M
*I(0,)3(2,)3
V4*I(0,)3(2,)3
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
*1(4,)39,8,Q7,
V4*I(4,)39,8,Q7,
V3 I(-E-7)1-9-2-8&-1&
V5 S(-E\$-7\$)1-9\$-2\$-8&\$-1&\$
M
*17,7,6&,7,\$Q4,14,
V3 I(-E-7)3
V5 S(-E\$-7\$)3
M
*17,A,9,7,\$Q7,17,
V4*H\$1\$Q7,17,
V3 I(-E-7)3
V5 S(-E\$-7\$)2-E\$-8&-7
M
*I(8,)3(7,)3
V4*I(8,)3(7,)3
V2*I(6,)3(5,)3
V3 I(-A-3)3
V5 S(-A\$-3\$)3
M
*I(6,)3(5,)24
V4*I(6,)3(5,)24
V2*I(3,)3(0,)2-1
V3 I(-A-3)3
V5 S(-A\$-3\$)3
M
*14,4,3,4,\$Q1,11,
V4*14
V2*I-1
V3 I(-A-3)3
V5 S(-A\$-3\$)3
M

*14,7,6,4,\$\$88
V4*H\$Q\$1\$8
V3 I(-A-3)3
V5 S(-A\$-3\$)2-A\$-4-3
V2*H\$Q\$1\$6
P03
M
*18,8,Q8,17,7,Q7,
V4*18,8,Q8,17,7,Q7,
V2*18,6,Q6,15,5,Q5,
V3 I(-A-3)1(-B-4)1
V5 S(-A\$-3\$)1(-B\$-4\$)1
M
*16,6,Q6,1.6X12345164
V4*16,6,Q6,1.6X12345164
V2*14,4,Q4,1.4X-1012314\$
V3 I(-C-5)1(-D-6)1
V5 S(-C\$-5\$)1(-D\$-6\$)1
M
*17,7,6&,7,\$Q4,14,
V3 I(-E-7)3
V5 S(-E\$-7\$)2-E\$-8&-7
M
*17,A,9,7\$84
V3 I(-E-7)1-9-2-8&-1
V5 S(-E\$-7\$)1-9\$-2\$-8&\$-1\$
M
P04
*17,7,6&,77,Q4,14,
V4*17,7,6&,77,
V2*12,2,1,22,
V3 I(-E-7)3
V5 T(-E\$-7\$)3S(-E\$-7\$)1
M
*17,A,9,77,
V3 I(-E-7)3
V5 T(-E\$-7\$)3S(-E\$-7\$)1
M
P05
R04
R04
P06
V3 I(-A-3)1(-B-4)1
V5 T(-A\$-3\$)3(-B\$-4\$)3
M
V3 I(-C-5)1(-D-6)1
V5 T(-C\$-5\$)3(-D\$-6\$)3
M
V3 I-E,\$-E,-E,Q-E,-E,
V5 S-E\$-7\$-E\$,-E\$,I-E\$,-E\$,
M
V3 I-E,-E,-E,-E,Q-E,-E,
V5 S-E\$,-E\$,-E\$,-E\$,I-E\$,-E\$,
M
V3 I-E-7-A-3-8&-1-8%-1
V5 S-E\$-7\$-A\$-3\$-8&\$-1\$-8%-1\$
M
V3 I-E-7-A-3-8&-1-8%



CoCo3 goes pastoral with...

MILL

GRAPHICS

by Joy Wallace

V5 S-E8-78-A8-38-8A8-18-8X
 P07
 K38
 M
 *1.2,S2,12,4,6,4,6,4,
 V4+Q8I84,6,4,6,4,
 V2+1.-1,S-1,1-1,82,82,
 V3 I(-E-7)3
 V5 T(-E8-78)7
 M
 *1.2,S2,12,7,7,Q9S9XAB
 V4+Q8I87,7,Q9S9XAB
 V2+1.-1,S-1,1-1,4,4,Q4
 V3 I(-E-7)3
 V5 T(-E8-78)7
 M
 *1.2,S2,12,4,6,4,6,7,
 V4+Q8I84,6,4,6,7,
 V2+1.-1,S-1,1-1,82,82,
 V3 I(-E-7)3
 V5 T(-E8-78)7
 M
 *1.2,S2,12,7,7,Q2S2X34
 V4+Q8I87,7,Q2S2X34
 V2+1.-1,S-1,1-1,4,4,Q2
 V3 I(-E-7)3
 V5 T(-E8-78)7
 P08
 R07
 P09
 *1.2,S2,12,46464
 V2+1.-1,S-1,1-1,
 V3 I(-E-7)3
 V5 T(-E8-78)6-E8-8-7
 M
 *1.2,S2,12,676Q9
 V2 I.-1,S-1,1-1,
 V3 I(-E-7)3
 V5 T(-E8-78)7
 M
 *1.2,S2,12,46467
 V2+1.-1,S-1,1-1,
 V3 I(-E-7)3
 V5 T(-E8-78)6-E8-8-7
 M
 *1.2,S2,12,67,7Q2
 V2+1.-1,S-1,1-1,
 V3 I(-E-7)3
 V5 T(-E8-78)7
 M
 P0A
 R09
 P0B
 *S3,13,S33,13,S3,Q3,X12S.312
 V4+S0,10,S00,10,S0,Q0
 V2+S-2%,I-2,S-2-2,1-2,S-2,Q-2
 V3 I(-B-4)3
 V5 T(-E8-48)7
 M
 *X12S.312X12S.31265&Q5
 V3 I(-B-4)3
 V5 T(-E8-48)7
 M
 *S3,13,S33,13,S3,Q3,X12S.312
 V4+S0,10,S00,10,S0,Q0
 V2+S-2%,I-2,S-2-2,1-2,S-2,Q-2
 V3 I(-B-4)3
 V5 T(-E8-48)7
 M
 *165&32,1.2S3Q3
 V3 I(-B-4)3
 V5 T(-E8-48)7
 P0C
 R0B
 P0D
 R07
 R07
 P0E
 *H7X6543
 V4+H4X3210
 V2+H2%X10-1-2
 V3 H-E

MILL IS AN ENTRY from our resident "CoCo Granny" for the graphics competition that we are holding at the present moment. The winner of the graphics competition will be held at this month's Conf '87.

Mill, (or "3MILL" on tape) depicts 'the old mill by the water' scene, and has animation to boot!

So go to it, graphics freaks!

The Listing:

```

3 *****THE OLD MILL*****
*****      BY      *****
*****JOY WALLACE*****
*****
*****:::1987:::*****
*****FOR THE COCO 3*****
*****
4 GOTO10
5 SAVE"275:3":END'6
10 PALETTE0,11:PALETTE1,33:PALETTE2,2:PALETTE3,7:PALETTE4,10:PALETTE5,10:PALETTE6,3:PALETTE7,52:PALETTE9,32:PALETTE10,32:PALETTE11,4:PALETTE12,6:PALETTE13,32
12 HSCREEN2:HCLS0
14 HCOLOR2
16 HCIRCLE(320,40),40,,1.5:HPAINT(315,40),2,2
18 HCIRCLE(0,90),140,2,.2:HPAINT(2,90),2,2
20 HCOLOR8
22 HDRAW"BM120,106U50B40F40L80BR80D50L80BR80D50R120U50L20BU50M+50,+5H40M-50,-5
24 HDRAW"BM200,106E30R110BL70U1526 HPAINT(122,104),3,8:HPAINT(160,26),6,8:HPAINT(220,120),3,8:HPAINT(210,90),3,8:HPAINT(210,50),9,8:HPAINT(220,104),9,8
28 HCOLOR6:FORX=58TO104STEP2:HLINE(122,Y)-(198,Y),PSET:NEXTY:FOR Y=108TO154STEP2:HLINE(202,Y)-(318,Y),PSET:NEXTY
30 HCOLOR8
32 HLINE(135,62)-(150,82),PSET,BF:HLINE(133,84)-(152,86),PSET,BF:HLINE(170,62)-(185,82),PSET,BF:HLINE(168,84)-(187,86),PSET,BF
34 HLINE(240,155)-(260,120),PSET,BF:HLINE(280,125)-(310,145),PSET,BF
36 FORY=30TO50STEP5:HLINE(155,Y)-(165,Y),PSET:HLINE(155,30)-(165,50),PSET,B:NEXTY
38 HCIRCLE(320,190),50,2,.9:HPAI

```

```

NT(315,188),2,2:HCIRCLE(320,190),50,8,.9
40 HLINE(0,106)-(140,103),PSET:HCOLOR9:HLINE(0,104)-(140,101),PSET:HLINE(0,96)-(140,93),PSET
42 HCOLOR11:FORX=1TO44STEP4:HLINE(X,93)-(X,103),PSET:NEXTX:FORX=46TO72STEP4:HLINE(X,93)-(X,103),PSET:NEXTX:FORX=74TO140STEP4:HLINE(X,92)-(X,102),PSET:NEXTX
44 FORR=25TO30STEP5:HCIRCLE(160,120),R,10,1.2:NEXTR:HPAINT(187,120),10,10:HPAINT(160,102),8,10:HPAINT(160,120),8,10:HCIRCLE(167,120),30,10,1.2:.72,.3:HPAINT(192,130),11,10:HCIRCLE(160,120),30,8,1.2:HCIRCLE(167,120),30,8,1.2,.72,.3
46 HDRAW"C13BM160,120NE18NH18R1NE18L2NH18C14NU25NR24NL23RIU25
48 HCIRCLE(160,120),8,12:HPAINT(160,120),12,12
50 HDRAW"C8BM104,102D49BU25G10U10BD10D10F5M+20,+3F8M+50,+5E14M+2,+2M-5,-8E6M+6,-2D17M+5,+8M-2,+3M+3,+7D3M+3,+7D2M-4,+6M+6,+3
52 HPAINT(260,190),6,8:HPAINT(106,106),11,8:HPAINT(100,142),8,8:HCIRCLE(320,190),50,2,.9
54 HCOLOR8:HLINE(80,108)-(94,125),PSET,BF
56 HDRAW"BM80,125M-3,+4D8E2M-7,+5M+3,+5M-10,+2M-6,+4M-10,+3E2M+4,+6D3G3L3M-10,+6L3M-10,-4L3M-8,+5L3M+2,-6M-10,+4M+2,-3M-6,+2
58 HPAINT(10,135),11,8
60 HCOLOR8:HLINE(80,124)-(0,124),PSET
62 HPAINT(10,110),12,8:HLINE(0,121)-(80,123),PSET,B
64 HPAINT(90,130),5,8
66 HDRAW"C12BM154,126M-15,+4M-10,+31M+48,5E10M-5,-4E2M+8,+4M-10,-25M-15,-4
68 HPAINT(154,140),12,12
70 HDRAW"C4BM94,126L2G2DF2DG3DF2DM-2,+4DF2BM91,126L2G2DF2DG3DF2DM-2,+4EM88,126L2G2DF2DG3DF2DM-2,+4DF2BM95,126L2G2DF2DG3DF2DM-2,+4DF2ED
72 HCOLOR11:HPRINT(26,14),"THE MILL HOUSE.
74 HPRINT(0,40),"Joy Wallace"
76 FORW=1TO50:NEXTW:PALETTE13,0:PALETTE14,32:PALETTE4,10
78 FORW=1TO50:NEXTW:PALETTE13,32:PALETTE14,0:PALETTE4,11
80 ON BRK GOTO 84
82 GOTO 76
84 PALETTECMP

```


the GOLDSOFT WISHBOOK



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G 1003	# 2	\$16.00
G 1004	# 3	\$16.00

Item #	The Best of CoCo2z Description	Price
G 1005	# 1 Education	\$16.00
G 1006	# 2 Part 1 16K Games	\$16.00
G 1007	# 2 Part 2 32K Games	\$16.00
G 1008	# 3 Utilities	\$16.00
G 1009	# 4 Business	\$16.00
G 1010	# 5 Adventure Games	\$16.00
G 1011	# 6 Preschool Edn	\$16.00
G 1012	# 7 Graphics	\$16.00
G 1013	# 8 16K Games	\$16.00
G 1014	# 9 32K Games	\$16.00

G 1015	#10	Education	\$16.00
G 1016	#11	Education (Disk only)	\$16.00

Tandy and IBM PC Hardware			
Item #	Description		Price
Q 001	Colour Monitor (DTX 2001)		\$680.00
Q 002	Mono Monitor		\$190.00
Q 003	Mouse		\$90.00
Q 004	80286 Speed Card		\$550.00

Tandy and IBM PC Software			
Business			
Item #	Description		Price
Q 1001	dBase II		\$1043.00
Q 1002	dBase III		\$1470.00
Q 1003	Sidekick		\$215.00
Q 1004	Turbo Pascal 8087		\$261.00
Q 1005	Turbo Pascal BCD & 8087		\$244.00
Q 1006	Crosstalk		\$306.00
Q 1007	Lotus 123		\$1054.00
Q 1008	Wordstar 2000+		\$927.00
Z 2001	Webster's New World Writer		\$249.00
Z 2002	Webster's Spelling Checker		\$89.95
Z 2003	Webster's Thesaurus		\$89.95
Z 2004	Windowword		\$269.00
Z 2005	Ready		\$99.00
Z 2006	Thinktank		\$385.00

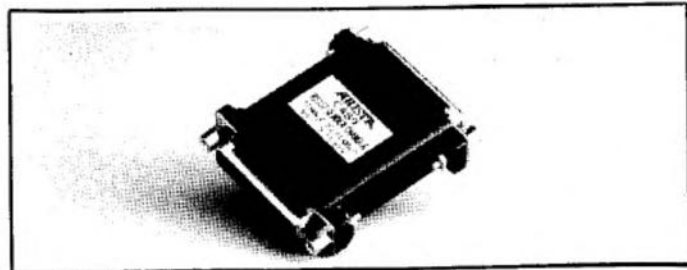
CAD Packages		
Item #	Description	Price
Z 2007	TURECAD (V 1.4)	\$399.00

Trade Business Packages		
Item #	Description	Price
Z 2008	The Motor Trade Package	\$99.00
Z 2009	The Professional's Pack	\$99.00
Z 2010	The Retailer's Package	\$99.00
Z 2011	The Rental Package	\$99.00

Accounting		
Item #	Description	Price
Z 2012	Asset Manager	\$1170.00
Z 2013	Cash Desk/Finance Desk	\$399.00
Z 2014	System 4	\$645.00
Z 2015	C.P.A. Plus	\$395.00

Databases		
Item #	Description	Price
Z 2016	Omnus3 IBM-Single user (Multi user versions are available)	\$495.00

Spreadsheets		
Item #	Description	Price
Z 2017	Logistix	\$399.00



ARISTA RS232 - Female to Female Gender Changer.

Fun Item #	Description	Price
Q 1020	Ancient Art of War	\$96.00
Q 1021	Print Shop	\$119.00
Q 1022	Gato	\$68.00
Q 1023	Sargon III	\$96.00
Q 1024	Zork I	\$79.00
Q 1025	Zork II	\$79.00
Q 1026	Zork III	\$79.00
Q 1027	Trinity	\$79.00
Q 1028	Ballyhoo	\$79.00
Q 1029	Hitch Hicker's Guide to the Galaxy	\$79.00
Q 1030	Crossword Magic	\$68.00
Q 1031	The American Challenge	\$68.00
Q 1032	Balance of Power	\$89.00
Q 1033	Racter	\$79.00
Q 1034	Jet	\$114.00
Q 1035	Moonmist	\$79.00
Q 1036	Shanghai	\$68.00
Q 1037	Championship Golf	\$89.00
Q 1038	Borrowed Time	\$68.00
Z 2018	The Great International Paper Airplane Construction kit	\$49.95
Z 2019	Star Trek	\$49.95
Z 2020	Championship Boxing	\$69.95
Z 2021	Ultima II	\$69.95
Z 2022	Decision in the Desert	\$69.95
Z 2023	F-15 Strike Eagle	\$69.95
Z 2024	Kings Quest	\$69.95
Z 2025	Mean 18	\$69.95
Z 2026	Boulderdash	\$49.95
Z 2027	Boulderdash II	\$49.95
Z 2028	Conflict in Vietnam	\$69.95
Z 2029	Dambusters	\$69.95
Z 2030	Kings Quest II	\$69.95
Z 2031	FSI-5 Trading Company	\$69.95
Z 2032	Silent Service	\$69.95
Z 2033	Solo Flight	\$69.95
Z 2035	Star Fleet	\$59.95

Education

Item #	Description	Price
Z 2036	Chem Lab	\$69.95
Z 2037	Creature Creator	\$59.95
Z 2038	Crypto Cube	\$59.95
Z 2039	Decimal Dungeon	\$49.95

Z 2040	Donald Duck's Playground	\$59.95
Z 2041	European Nations and Locations	\$59.95
Z 2042	Fraction Action	\$49.95
Z 2043	Math Maze	\$59.95
Z 2044	Mickey's Space Adventure	\$69.95
Z 2045	Mission Algebra	\$59.95
Z 2046	Race Car 'Rithmetic	\$49.95
Z 2047	Remember!	\$89.95
Z 2048	Ships Ahoy	\$59.95
Z 2049	Spellagraph	\$59.95
Z 2050	Spellakazam	\$59.95
Z 2051	Spellicopter	\$59.95
Z 2052	Ten Little Robots	\$49.95
Z 2053	Winnie The Pooh in the 100 Acre Wood	\$69.95

Miscellaneous Items

Item #	Description	Price
G 2001	Box of 10 DSDD Disks	\$19.00
	10 Boxes plus (per box)	\$16.10
G 2002	Blank C30 Cassettes	\$2.00
	12 Cassettes	\$13.00
G 2003	Tape cases, 12 for	\$5.00
G 2004	Help - Manual for CoCo	\$9.95

Modems

Item #	Description	Price
D 001	Manual 1200/75 baud plus 300/300 modem	\$269.00
D 002	IBM Half Card 1200/75 & 300/300 (Auto dial - auto answer)	\$370.00
D 003	Desktop 1200/75 & 300/300 baud modem (Auto dial - auto answer)	\$425.00

Terminal Programs

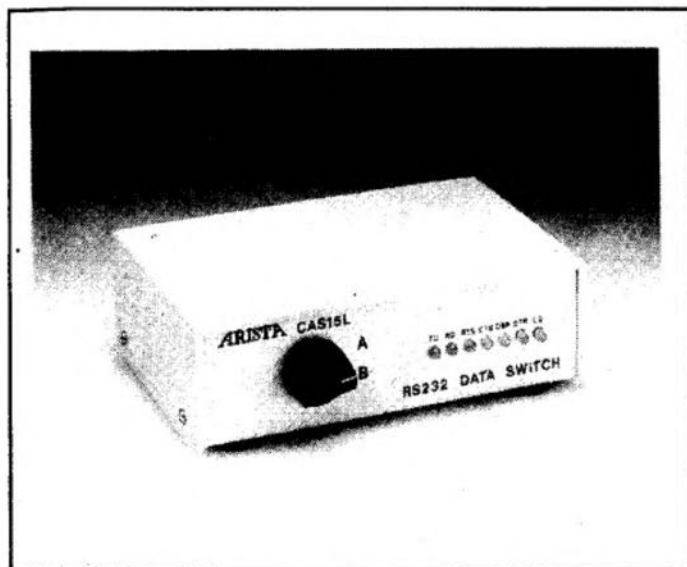
Item #	Description	Price
G 1017	CoCoTex - Videotex pac (Viatal) for all CoCos On Tape	\$79.95
G 1018	CoCoTex as above on disk	\$79.95
G 1019	Vtex 2 - Videotex pac for IBM Compatibles	\$225.00
G 1020	Supertex 2 for Amiga & Atari 520 ST (specify)	\$99.95
G 1021	Interlink - Videotex software for IBM PC's and compatibles	\$94.95

Modems/Software/Cable

Item #	Description	Price
G 005	CoCoTex with cable and manual modem (Specify disk or tape)	\$295.00
G 006	CoCoTex with cable and auto dial modem (Specify disk or tape)	\$451.00
G 007	Interlink with cable and manual modem	\$385.00
G 008	Vtex 2 with half card auto modem	\$555.00
G 009	Vtex 2 with desktop auto modem and cable	\$720.00

Other Hardware

Item #	Description	Price
A 001	Gender Changer - Male to Male	\$12.45
A 002	Gender Changer Female to Female	\$12.75
A 003	RS232 Data Switch with Tester	\$99.95



ARISTA DATA SWITCH.

Tandy

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 (Sorry no rainchecks)



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- With Comprehensive Tutorial Manuals on Extended BASIC
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Learn to programme, or use ready-to-run software and SAVE \$200! Extended BASIC lets you write sophisticated programmes and create color graphics with access to 16,000 characters of memory and built-in Extended

basic language! Create drawings, designs, charts and animation. With 256 x 192 screen resolution, string arrays of up to 255 characters, full featured editing, tracing and so much more! Expands to 64K RAM. 26-3136

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Speed Racer. Become a formula one racing driver. Pitstop for new tyres. Requires 64K CoCo 2 and joysticks. (in tape). 26-7362 Reg 29.95 **Sale! 12.95**

Color Editor Assembler. Requires minimum 16K CoCo 2 and tape recorder (in ROM Pak). 26-3250 Reg 99.95 **Sale! 49.95**

Color Disk Editor Assembler. Requires 16K Extended CoCo 2 disk drive. 26-3254 Reg 119.95 **Sale! 59.95**

Disk Scripsit. Requires minimum 16K Extended CoCo 2 and disk drive. 26-3255 Reg 179.95 **Sale! 99.95**

Color Profile. Requires minimum 16K Extended CoCo 2 and disk drive. 26-3253 Reg 99.95 **Sale! 89.95**

Cookbook Program. An all-purpose menu planner. Requires 64K CoCo 2 and disk drive. 26-3257 Reg 79.95 **Sale! 39.95**

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OS-9 Editor Assembler. Requires 64K CoCo 2 and disk drive. 26-3030 Reg 129.95 **Sale! 99.95**

OS-9 Level 1 Programming Languages

Basic-09. Produce high-speed object programmes. Requires 64K CoCo 2 and disk drive. 26-3036 Reg 199.95 **Sale! 79.95**

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D.L. Logo. A programming language that can play music and talk! Requires 64K CoCo 2 and disk drive. 26-3033 Reg 149.95 **Sale! 79.95**

Pascal-09. A programming language with enhancements for expanding input/output and the OS-9 operating system. Requires 64K CoCo 2 and disk drive. 26-3034 Reg 179.95 **Sale! 79.95**

(All the above requires 26-3030)

Color Computer Sesame Street Educational Tape Software:

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Star Trap. Exciting action. 26-2510 **34.95**

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Peanut Butter Panic. 26-2523 **34.95**

Ernie's Shapes. 26-2524 **39.95**

Big Bird Delivery. 26-2525 **39.95**

Cookie's Letter. 26-2526 **39.95**

Grobot. Creative fun. 26-2527 **34.95**

Timebound. Planetary action. 26-2528 **34.95**

Flip Side. Color invasion. 26-2529 **34.95**

*Some of these tape programs may require joysticks.

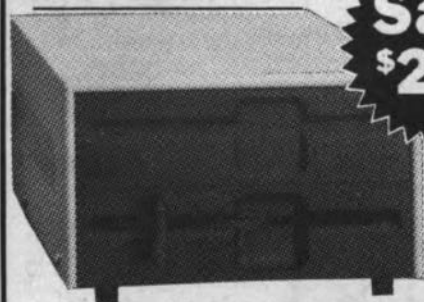
Color Computer Upgrade Kits

64K Upgrade for 16K Extended CoCo 2. Upgrade your existing 16K Extended Color Computer to 64K RAM to double your programming power! 26-9411/12
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Increase your data storage with a second drive—add 156K and SAVE \$300! 156,672 characters of user storage per diskette. Requires installation (not included). 26-3130

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299⁹⁵



FD-501. Allows storage of over 156,000 characters of data in color-computers with extended BASIC. With 13.3cm double density, 35 track floppy disk drive and more! 26-3129

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Save \$120

Reg 199.00

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TP-10. This speedy little printer features an elongation mode for expanding print, with a special repeat function to make graphics programming so much easier! Prints 32 cpl at 30 cps on 10.47cm wide thermal paper. CoCo compatible serial interface only (600 baud). 26-1261

Computer Cassette Recorder

59⁹⁵

Reg 79.95



Save \$20

Saves your money and your data! Features volume control with preset marker. It's idea for loading and saving all your valued programmes. A 'must' for tape-based computers. Includes cable. Requires four "AA" batteries or AC adapter (not included). 26-1209

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THE TERMINATOR II

Adventure

by Dennis Mellican

SOMEWHERE IN THE FUTURE, the Cyborgs (machines that are half human, half robot who persist in ruling the world) are making another attempt in changing world history.

They are sending down one of their Cyborgs in our time to terminate you (you, by the way, are a computer programmer who, in the future, shall lead a great rebellion against the Cyborgs).

You have been notified by the humans of the future that says where the enemy is.

Worried about your life, you turn to the police for protection, but instead they think you are crazy. You must survive or there will be no future for mankind.

How to Play

You begin at the police reception office. A map is definitely needed (see figure one). The map shown is on a 7 x 12 grid which is partly filled in. The rest you must fill in (it should be easy, since the adventure uses true directional mapping, except for certain areas which are already filled in on the map).

Normal commands apply in this adventure, for example "Get Torch" or "Get Hook".

There are several social commands - they are:

* Go - Move to/into object, eg "GO POLICE CAR"

* Dial/Ring - For use when dialling in the phone booth, eg "DIAL 000".

* Give - Give object to character in adventure, eg "GIVE KEY", not "GIVE KEY TO JIM".

* Hold - Hold a weapon. When holding you are ready to shoot, eg "HOLD GUN".

* Shoot - Shoot object/person. Must hold a weapon before shooting, eg "SHOOT JIM".

* Get All - Take every object in the room. This command is very helpful when a lot of objects are in the room.

* Take All - Like "Get All".
The following legal commands may be used:

* DROP	* SAVE	* DIAL
* RING	* EXAMINE	* THRO
* LOAD	* PUSH	* PRESS
* INVENTORY	* NORTH	* HELP
* INSERT	* HELP	* INSERT
* FLOG	* GET	* SOUTH
* SCORE	* MOP	* HOLD
* TAKE	* EAST	* QUIT
* DIG	* KILL	* GRAD
* WEST	* OPEN	* GIVE
* PUT	* GO	* READ
* SHOOT		

Hints

* Using the map is very helpful
* In the adventure there is a device called the tracker - this keeps track of the terminator by displaying its position in co-ordinates corresponding with the map co-ordinates above.
* At the reception, don't TAKE it, STEAL it.

	1	2	3	4	5	6	7
1		Cell	X		X	Gas Station	X
2	Reception						X
3					X		
4			X		X	Security Gate	X
5					X		X
6	Secret Room	Gun Depot	X		X		
7			X		X		
8			Phone Booth		X		
9					X	X	
10	Vault				X		
11					X		
12					X		

The Listing:

```
1 REM *****
2 REM * the terminator ii *
3 REM * BY DENNIS C. MELLICAN *
4 REM *****
5 CLS
6 PRINTTAB(8)"the terminator ii"
:PRINT:PRINT" THE YEAR IS 2049
AND THE WAR BETWEEN MAN AND COM
PUTERS HAS NO END. BUT YOU A NO
RMAL CIVILIAN FROM THE YEAR 1987
HAS BEEN CHOSEN BY THE CYBOR
GS TO BE TERMINATED."
7 PRINT" YOU ONLY GOAL IS TO SU
RVIVE.":PRINT:PRINT"HE'S BACK ,A
ND IS NOW AFTER YOU.":PRINT:EXEC
44539
8 CLEAR1000
9 NS=18:NO=17:CO=45:OG$="0906307
32700":F$(0)="mice":F$(1)="human
s":F$(2)="robots":DM=100:TM=21:U
M=100
10 DIM RM$(84),N(84),S(84),E(84)
,V(84),SO$(NS),S$(NS),SO(NS),LO$(
NO),OB$(NO),OB(NO),CO$(CO),F(11
)
11 FORN=1 TO 84
12 READA$,A,B,C,D:RM$(N)=A$:N(N)
=A$:S(N)=B$:E(N)=C$:V(N)=D$:NEXT
13 DATA"IN THE CHIEF'S OFFICE.",
,8,,
14 DATA"IN THE DARK AND DAMP CEL
L.",,,,
15 DATA",,,,
16 DATA"ON THE ROAD.",81,11,,
17 DATA",,,,
18 DATA"AT THE GAS STATION.",,13
,,
19 DATA",,,,
20 DATA"IN THE POLICE STATION'S
RECEPTION OFFICE.",1,,9,
21 DATA"AT THE POLICE CAR PARK."
,,10,8
22 DATA"ON THE DRIVEWAY LEADING
TO THE POLICE STATION.",,,11,9
23 DATA"AT A CROSS ROAD.",4,18,1
2,10
24 DATA"ON THE ROAD.",,13,11
25 DATA"ON THE BEND OF THE ROAD.
",6,20,,12
26 DATA",,,,
27 DATA"ON THE ROAD.",,16,21
28 DATA"ON THE ROAD.",,17,15
29 DATA"ON THE ROAD.",,18,16
30 DATA"ON THE ROAD.",11,25,,17
31 DATA",,,,
32 DATA"ON THE ROAD LEADING TO T
HE BIG COMPUTER AUTO-MATED ROBOT
FACTORY.",13,27,21,
33 DATA"ON A ROAD LEADING TO A B
IG FACTORY.",,15,20
34 DATA"IN FLAT NUMBER 1.",,23,
35 DATA"AT THE MOTEL'S RECEPTION
OFFICE.",,30,,22
36 DATA",,,,
37 DATA"ON THE ROAD.",18,32,,
38 DATA",,,,
39 DATA"AT THE SECURITY GATE.",2
0,,
40 DATA",,,,
41 DATA"IN FLAT NUMBER 2.",,30,
42 DATA"AT THE CAR PARK,OUTSIDE
OF FLAT 2 OF THE MOTEL.",23,,31,
29
43 DATA"ON THE DRIVEWAY LEADING
TO THE CARPARK OUTSIDE THE MOTEL
.",,32,30
44 DATA"ON THE ROAD.",25,39,,31
45 DATA",,,,
46 DATA"AT THE CARPARK,NORTH OF
THE FACTORY ENTRANCE.",27,41,,
47 DATA",,,,
48 DATA"IN A SECRET ROOM.",,37,
49 DATA"IN THE GUN DEPOT SHOP.",
,52,
50 DATA",,,,
51 DATA"ON THE ROAD.",32,46,,
52 DATA",,,,
53 DATA"IN THE ENTRANCE OF THE F
ACTORY.",34,48,42,
54 DATA"IN SECTION A OF THE FACT
ORY.",,41
55 DATA"IN THE STAFF'S FEMALES T
OILET.",,44,
56 DATA"IN THE CAR TAKE-AWAY SER
VICE AREA.",,51,,43
57 DATA",,,,
58 DATA"ON THE ROAD.",39,53,,
59 DATA",,,,
60 DATA"IN SECTION B OF THE FACT
ORY.",41,55,49,
61 DATA"IN THE MAIN STORE ROOM."
,,56,,48
62 DATA"AT THE SERVING COUNTER."
,,57,,
63 DATA"IN THE KITCHEN.",44,,50
64 DATA"IN THE PHONE BOOTH.",,58
58
65 DATA"ON THE ROAD.",46,60,,
66 DATA",,,,
67 DATA"IN SECTION C OF THE FACT
ORY.",48,,
68 DATA"IN THE CONTROL ROOM OF T
HE FACTORY.",49,,
69 DATA"IN THE DINING ROOM.",50,
,58,
70 DATA"AT THE ENTRANCE OF THE R
ESTAURANT.",,59,57
71 DATA"ON THE FOOT-PATH,OUTSIDE
THE ENTRANCE TO THE RESTAURANT,
TO THE WEST.",,66,,58
72 DATA"ON THE ROAD.",53,67,,
73 DATA",,,,
74 DATA",,,,
75 DATA"IN THE SECRET PASSAGE.",
56,70,,
76 DATA"IN THE BANK'S VAULT.",0,
,65,
77 DATA"IN THE BANK,NEAR A TELLE
R.",,66,
78 DATA"ON THE FOOT-PATH,OUTSIDE
THE ENTRANCE TO THE BANK OF BUR
MA,TO THE WEST.",59,73,,65
79 DATA"ON THE ROAD.",60,74,,
80 DATA",,,,
81 DATA",,,,
82 DATA"IN THE EXPERIMENTAL LABO
RATORY WHERE ROBOTS ARE MADE.",6
3,,
83 DATA"IN THE TRUCK SECTION OF
THE CAR YARD.",,72,
84 DATA"IN THE CAR YARD'S GARAGE
.CHARLIE THE REPAIRMAN IS HERE I
N HIS OVERALLS.",,79,,71
85 DATA"ON THE FOOT-PATH,NEAR A
CAR PARK.",66,80,74,
86 DATA"ON THE ROAD.",67,81,,73
87 DATA",,,,
88 DATA"IN THE DARK AND DENSE FO
REST.",76,83,77,76
89 DATA"IN A LARGE CAVE.",70,84,
,
90 DATA"IN THE CAR YARD'S OFFICE
. ESTER THE MANAGER IS HERE.",,7
9,
91 DATA"IN THE CAR YARD.",72,,80
,78
92 DATA"OUTSIDE THE ENTRANCE TO
THE CAR YARD.",73,,79
93 DATA"ON THE ROAD.",74,4,,
94 DATA",,,,
95 DATA"IN THE DARK AND DENSE FO
REST.",76,83,83,83
96 DATA"IN THE DARK AND DENSE FO
REST.",84,84,84,83
97 DATA AN EMERGENCY PHONE BOOTH
,BOOTH,58
98 DATA AN AIR CONDITIONING VENT
,VENT,70
99 DATA AN EMERGENCY PHONE,PHONE
,52
100 DATA A PARKED POLICE CAR,POL
ICE CAR,9
101 DATA A GRAFFITTIED WALLED,GR
AFFITTI,43
102 DATA A PRETTY BAR MAID,MAID,
50
103 DATA A DOUBLE BED,BED,22
104 DATA A COMPUTER,COMPUTER,56
105 DATA A TOUGH LOOKING SECURIT
Y GUARD,GUARD,27
106 DATA A MEAN LOOKING TRUCK,TR
UCK,71
107 DATA A WOODEN DESK,DESK,1
108 DATA A POLICE OFFICER,OFFICE
R,8
109 DATA A PRACTICE TARGET SHOOT
ING BOARD,TARGET,37
110 DATA A DOOR,DOOR,50
111 DATA A BLACK TORANA,TORANA,7
9
112 DATA A DINING TABLE,TABLE,57
113 DATA A ROBOF,ROBOT,63
114 DATA A POOL OF WATER,WATER,6
3
115 FORN=1TONS:READA$,B$,C:SQ$(N
)=A$:S$(N)=B$:SO(N)=C$:NEXT
116 DATA A LARGE SHINING GOLDEN
BAR,GOLD,64
117 DATA A COMPUTER DISK,DISK,0
118 DATA A BRONZE CAR KEY,BRONZE
KEY,8
119 DATA A SILVER CAR KEY,SILVER
KEY,0
120 DATA A GOLD CAR KEY,GOLD KEY
,0
121 DATA A POWERFUL HAND GRENADE
,GRENADE,36
122 DATA A HANDY SUB-MACHINE GUN
,MACHINE GUN,36
123 DATA A HEAVY BAZOOKA,BAZOOKA
,36
124 DATA A HAND-HELD PISTOL,PIST
OL,0
```



```

125 DATA A DIRTY SHOVEL, SHOVEL, 6
126 DATA A MINE BOMB, MINE, 36
127 DATA A HANDY SCREWDRIVER, SCR
EWDRIVER, 78
128 DATA A THICK MOP, MOP, 49
129 DATA A DIAMOND RING, RING, 0
130 DATA A TRACKING DEVICE, TRACK
ER, 0
131 DATA A LOG BOOK, BOOK, 0
132 DATA A POLICE ID CARD, ID, 0
133 FORN=1TO NO: READ A$, B$, C: LO$(
N)=A$: OB$(N)=B$: OB(N)=C: NEXT
134 DATA LOOK, L, EXAM, INVE, I, GET,
G, TAKE, GRAB, PUT, DROP, P, THRO, N, S,
E, W, GO, SAVE, LOAD, HELP, SCOR, QUIT,
OPEN, READ, DIAL, PUSH, INSE, DRIN, PO
UR, EMPT, MOP, DIG, GIVE, MORT, SOUT, E
AST, WEST, SHOO, RING, PRES
135 DATA STEA, FLOG, GIVE, HOLD
136 FORN=1TO CO: READ A$: CO$(N)=A$:
NEXT
137 RM=8
138 CLS
139 IF RM=1 AND OB(17)<>-1 THEN
PRINT"AN OFFICER STOPS, YOU AND S
AYS, 'SORRY, MISTER YOU CAN'T GO
IN HERE WITHOUT AN ID.": RM=
8: GOTO175
140 IF RM=2 AND OB(14)<>-2 THEN
PRINT"YOU ADVENTURE IS OVER.": GO
TO393
141 IF RM=65 THEN IF OB(17)=-1 T
HEN W(65)=64 ELSE W(65)=0
142 IF RM=2 AND OB(14)=-2 THEN P
RINT"SUDDENLY THE BAR MAID APPEA
RS AND BAILS YOU OUT.": RM=8
143 GOSUB354
144 IF RM=70 AND SO(18)=63 THEN
PRINT"YOU SLIP OVER THE POOL OF
WATER BREAKING YOUR NECK.": GOTO3
93
145 IN$="I'M "+RM$(RM)
146 FORN=1TONS: IFSO(N)=RM THEN I
N$=IN$+"THERE IS "+SO$(N)+" HERE
"
147 NEXT
148 IF LEN(IN$)>150 GOSUB208: IN$
=""
149 IN=0: FORN=1TONO: IFOB(N)=RM T
HEN IN=IN+1
150 NEXT
151 IF IN=0 THEN155
152 IN$=IN$+"I SEE "
153 FORN=1TONO: IFOB(N)=RM THEN I
N$=IN$+LO$(N)+" "
154 NEXT: IN$=LEFT$(IN$, LEN(IN$)-
2)+" "
155 IFN(RM)=OANDS(RM)=OANDE(RM)=
OANDW(RM)=O THEN 163
156 IF LEN(IN$)>200 GOSUB208: IN
$=""
157 IN$=IN$+" POSSIBLE DIRECTION
S ARE "
158 IF N(RM)<>0 THEN IN$=IN$+"NO
RTH, "
159 IF S(RM)<>0 THEN IN$=IN$+"SO
UTH, "
160 IF E(RM)<>0 THEN IN$=IN$+"EA
ST, "
161 IF W(RM)<>0 THEN IN$=IN$+"WE
ST. "
162 IN$=LEFT$(IN$, LEN(IN$)-2)+" "
"
163 GOSUB208: IN$="" : GOTO175
164 IF TM=RM THEN PRINT"THE TERM
INATER IS HERE.": GOTO 166
165 IF F(6)=1 THEN IN$="TRACKING
TERMINATER AT CO-ORDINATES"+STR
$(CX)+" "+STR$(CY)+" " : GOSUB208
166 IF TM=RM GOSUB371
167 IF DM<1 THEN PRINT: PRINT"THE
TERMINATER IS DEAD. YOU HAVE SUR
VIVED THIS DEADLY ORDEAL AND THE
PRISONERS OF THE YEAR 2049 REV
ARD YOU , FOR YOU ARE THE KEYTO
SUCCESS.": PRINT"YOU KILLED HIM I
N"; SC" MOVES.": END
168 IF UM<1 THEN PRINT: PRINT"YOU
R VISION SLOWLY BLURS... YOUR DEA
D (YOU COULDN'T TAKE ANY MOR
E)": GOTO393
169 IF F(0)=1 AND F(10)=2 THEN D
M=DM-10: F(0)=0: SO(17)=-2: PRINT"
TERMINATER DAMAGED, BUT THE ROBOTI
S DEAD."
170 IF F(1)=3 AND TM=77 THEN DM=
DM-10: F(1)=1
171 IF F(0)=1 AND F(10)=1 THEN P
RINT"ARRRRGGGGGGHHHHH... THE RO
BOT JUST KILLED YOU.": GOTO393
172 IF TM=77 AND F(11)=1 THEN DM
=DM-25: PRINT"YOU HERE A LARGE EX
PLOSION ... THE MINE JUST WENT
OFF.": F(11)=0
173 IF RM=72 AND OB(4)=0 THEN PR
INT"CHARLIE SAY'S, 'HEY, MY MAIN
MAN, GO FETCH ME THE
SCREWDRIVER.'"
174 GOTO176
175 GOSUB354: GOTO164
176 LINEINPUTOK$: SC=SC+1
177 IFOK$="" THEN175
178 IF INSTR(OK$, " ")=0 THEN A$=
LEFT$(OK$, 4): C$=A$: GOTO180
179 C$=LEFT$(OK$, INSTR(OK$, " ")
-1): A$=LEFT$(C$, 4)
180 IF A$=CO$(1) OR A$=CO$(2) TH
EN 139
181 IF (A$=CO$(14) OR A$=CO$(35)
) AND N(RM)<>0 THEN RM=N(RM): GOT
O139
182 IF (A$=CO$(15) OR A$=CO$(36)
) AND S(RM)<>0 THEN RM=S(RM): GOT
O139
183 IF (A$=CO$(16) OR A$=CO$(37)
) AND E(RM)<>0 THEN RM=E(RM): GOT
O139
184 IF (A$=CO$(17) OR A$=CO$(38)
) AND W(RM)<>0 THEN RM=W(RM): GOT
O139
185 IF A$=CO$(4) OR A$=CO$(5) TH
EN 215
186 IF A$=CO$(18) THEN 220
187 IF (A$=CO$(6) OR A$=CO$(7) O
R A$=CO$(8) OR A$=CO$(9)) THEN 2
30
188 IF (A$=CO$(10) OR A$=CO$(11)
OR A$=CO$(12) OR A$=CO$(13)) TH
EN242
189 IF A$=CO$(26) OR A$=CO$(40)
THEN 249
190 IF A$=CO$(3) OR A$=CO$(25) T
HEN 255
191 IF A$=CO$(27) OR A$=CO$(41)
THEN 318
192 IF A$="KILL" AND RM=SO(17) T
HEN 323
193 IF A$=CO$(39) THEN 327
194 IF A$=CO$(42) OR A$=CO$(43)
OR A$="ROB" THEN 336
195 IF A$=CO$(44) OR A$=CO$(34)
THEN 341
196 IF A$=CO$(45) THEN 348
197 IF A$=CO$(28) THEN 367
198 IF A$=CO$(32) THEN 377
199 IF A$=CO$(24) THEN 381
200 IF A$=CO$(23) THEN 393
201 IF A$=CO$(22) THEN PRINT"YOU
HAVE MOVED"SC: PRINT"TIMES.": PRI
NT"HEALTH: "UM"%": GOTO175
202 IF A$=CO$(33) THEN 386
203 IF A$=CO$(19) THEN 395
204 IF A$=CO$(20) THEN 407
205 PRINT"SORRY, DON'T UNDERSTAND
!": GOTO175
206 GOTO 175
207 REM **** NEAT-PRINTING ****
208 L=LEN(IN$)
209 IF L<32 THEN PRINTIN$: RETURN
210 A$=LEFT$(IN$, 32)
211 FORN=32 TO 1 STEP-1
212 IF MID$(A$, N, 1)=" " THEN PRIN
TLEFT$(A$, N-1): IN$=RIGHT$(IN$, L-
N): GOTO208
213 NEXTN
214 REM **** INVENTORY ****
215 A=0: PRINT"I'M CARRYING ": FO
RN=1TONO: IFOB(N)=-1 THEN PRINT"A
"OB$(N): A=A+1
216 NEXT
217 IF A=0 THEN PRINT"NOTHING"
218 GOTO 175
219 REM **** GO ****
220 GOSUB390
221 IF B$=S$(1) AND RM=58 THEN R
M=52: GOTO139
222 IF B$=S$(2) AND F(1)=1 AND R
M=70 THEN RM=77: GOTO 139
223 IF B$=S$(2) AND F(1)=0 AND R
M=70 THEN PRINT"CAN'T GO THROUGH
A CLOSED VENT": GOTO175
224 IF B$=S$(14) AND RM=50 THEN
RM=51: GOTO139
225 IF B$=S$(4) AND RM=SO(4) THE
N IF OB(3)=-1 THEN F(4)=1: GOTO 2
96 ELSE PRINT"SORRY, BUT YOU HAVE
NO KEY'S.": GOTO175
226 IF B$=S$(15) AND RM=SO(15) T
HEN IF OB(4)=-1 THEN F(2)=1: GOTO
296 ELSE PRINT"SORRY, BUT YOU HA
VE NO KEY'S.": GOTO175
227 IF B$=S$(10) AND RM=SO(10) T
HEN IF OB(5)=-1 THEN F(3)=1: GOTO
296 ELSE PRINT"SORRY, BUT YOU HA
VE NO KEY'S.": GOTO175
228 PRINT"GO WHERE ?": GOTO175
229 REM **** GET/TAKE/G/GRAB ***
*
230 GOSUB390
231 IF B$=OB$(3) AND RM=8 THEN P
RINT"THE POLICE OFFICER SENSES Y
OUR ACTION AND QUICKLY GRABS YO
U AND PUTS YOU IN JAIL": RM=2: GOTO
139
232 IF B$="ALL" AND (RM<>8 AND O

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B(3)<>RM) THEN 237
233 FORN=1TO NO:IFOB(N)=RM AND B
S=OB$(N) THEN OB(N)=-1:PRINTOB$(N
)" TAKEN.":GOTO 175
234 NEXT
235 PRINT"SORRY, DON'T UNDERSTAND
.":GOTO175
236 IF B$=OB$(3) AND RM=8 THEN P
RINT"THE POLICE OFFICER SEE'S YO
U ANDTHROWS YOU IN JAIL.":RM=2:G
OTO139
237 A=0:FORN=1TO NO:IFOB(N)=RM T
HENOB(N)=-1:PRINTOB$(N)" TAKEN.
":A=A+1
238 NEXT
239 IF A=0 THEN PRINT"SORRY, NOTH
ING TO TAKE."
240 GOTO175
241 REM **** PUT/DROP/P/THRO ***
*
242 GOSUB390
243 IF B$="MINE" AND OB(11)=-1 T
HEN PRINT"THE MINE IS BURIED AND
READY.":OB(11)=-2:F(11)=1:GOTO1
75
244 IF B$=OB$(6) AND OB(6)=-1 TH
EN IF TM=RM THEN DM=DM-10:PRINT"
THE TERMINATER IS DAMAGED BY THE
BLAST":OB(6)=2:GOTO175 ELSE OB(6
)=2:PRINT"THE GRENADE EXPLODES.V
HAT A WASTE.":GOTO175
245 FORN=1TONO:IF OB(N)=-1 AND B
S=OB$(N) THEN PRINTOB$(N)" DROPP
ED.":OB(N)=RM:GOTO 175
246 NEXT
247 PRINT"SORRY, DON'T UNDERSTAND
.":GOTO 175
248 REM **** DIAL ****
249 GOSUB390
250 IF RM<>52 THEN PRINT"SORRY, T
HERE IS NO TELEPHONE.":GOTO175
251 IF B$="007" THEN PRINT"SUDDEN
LY THE FLOOR DROPS...":FORN=1TO
1000:NEXT:RM=37:GOTO139
252 IF B$="" THEN PRINT"DIAL WHA
T NUMBER?":GOTO 175
253 PRINT"SORRY, THE LINE'S BUSY.
":GOTO 175
254 REM **** EXAMINE ****
255 A$=C$:GOSUB390
256 FORN=1TONO
257 IF (OB(N)=-1 OR OB(N)=RM) AN
D B$=OB$(N) THEN 259
258 NEXT:GOTO275
259 IF B$=OB$(1) THEN PRINT"IT'S
VERY HEAVY.":GOTO 175
260 IF B$=OB$(2) THEN PRINT"THE
RE IS WRITING ON IT. IT S
AYS : ROBOT-CONTROL SO
FTWARE FOR ROBOT FACTORIES
BY DENNIS MELLICAN":GOTO175
261 IF B$=OB$(3) THEN PRINT"ENGR
AVED ON THE BRONZE KEY IS THE
WORDS 'POLICE CAR':":GOTO175
262 IF B$=OB$(4) THEN PRINT"ENGR
AVED ON THE SILVER KEY IS THE
WORDS 'TORANA KEYS':":GOTO175
263 IF B$=OB$(5) THEN PRINT"ENGR
AVED ON THE GOLD KEY IS THE WORD
S 'TRUCK KEYS':":GOTO175
264 IF B$=OB$(6) THEN PRINT"ENGR
AVED ON IT ARE THE WORDS 'PUL

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L PIN, THEN THROW":GOTO175
265 IF B$=OB$(7) THEN PRINT"IT'S
VERY HEAVY.":GOTO175
266 IF B$=OB$(8) THEN IF F(5)=0
THEN PRINT"IT'S LOADED.":GOTO175
ELSE PRINT"IT'S UNLOADED.":GOTO
175
267 IF B$=OB$(9) THEN PRINT"IT'S
A NIFTY GADGET.":GOTO175
268 IF B$=OB$(10) THEN PRINT"THE
RE'S DIRT AT IT'S TIP.":GOTO175
269 IF B$=OB$(11) THEN PRINT"THE
WORDS.":PRINT"ONCE BURIED IT'S
ACTIVE":PRINT"ARE INSCRIBED ON I
T.":GOTO175
270 IF B$=OB$(14) THEN PRINT"A G
IRL WOULD LOVE ONE OF THESE RIN
GS.":GOTO175
271 IF B$=OB$(15) THEN PRINT"THE
RE IS A BUTTON ON IT.":GOTO175
272 IF B$=OB$(17) THEN PRINT"HEY
, THAT ID PICTURE LOOKS JUST LIK
E YOU.":GOTO175
273 IF B$=OB$(16) THEN PRINT"THE
NOTE.":PRINT" DELIVERY TO ROBO
T FACTORY. CHECK IN AT SECU
RITY.":PRINT"ARE SCRIBBLED ON IT
.":GOTO175
274 PRINT"NOTHING INTERESTING.":
GOTO175
275 FORN=1TONS
276 IF B$=S$(N) AND RM=SO(N) THE
N 278
277 NEXT:GOTO 293
278 IF B$=S$(1) THEN PRINT"THE
RE IS A PHONE INSIDE.":GOTO175
279 IF B$=S$(2) THEN IF F(1)=0 T
HEN PRINT"IT IS FIXED TO THE WAL
L BY FOUR SCREWS.":GOTO175 ELSE
PRINT"THE VENT IS LARGE ENOUGH F
OR A NORMAL MAN.":GOTO175
280 IF B$=S$(3) THEN PRINT"YOU D
ON'T HAVE TO PUT MONEY INTO
IT.":GOTO175
281 IF B$=S$(4) THEN IF F(4)=1 A
ND OB(17)=0 THEN OB(17)=RM:PRINT
"HERE'S AN ID CARD HERE.":GOTO1
75 ELSE PRINT"THE CAR'S POLICE N
UMBER IS 007":GOTO175
282 IF B$=S$(5) THEN PRINT"THE V
ORDS.":PRINT"RING 007 FOR A GOO
D TIME.":PRINT"ARE WRITTEN ON TH
E WALL.":GOTO 175
283 IF B$=S$(6) THEN PRINT"STOP
DROOLING.":GOTO175
284 IF B$=S$(8) THEN IF F(8)=0 T
HEN PRINT"THERE IS AN EMPTY DISK
DRIVE.NO DISK,NO COMPUTER.":GOT
O175 ELSE PRINT"THERE IS A DISK
IN THE COMPUTER.THE COMPUTER IS
ON.":GOTO175
285 IF B$=S$(7) THEN IF OB(2)=0
THEN OB(2)=RM:PRINT"HEY, THERE'S
A DISK HERE.":GOTO175
286 IF B$=S$(9) THEN PRINT"HE'S
GOT BULGING BICEPS.":GOTO175
287 IF B$=S$(10) THEN IF F(3)=1
AND F(7)=0 THEN PRINT"THERE'S A
PISTOL HERE AND A LOG BOOK.":OB(
9)=RM:OB(16)=RM:GOTO175
288 IF B$=S$(11) AND OB(15)=0 TH
EN OB(15)=RM:PRINT"HEY, THERE'S A

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FUNNY LOOKING GADGET HERE.
":GOTO175
289 IF B$=S$(15) THEN PRINT"THE
RE ARE A PAIR OF DICES HERE.":GOT
O175
290 IF B$=S$(16) AND RM=57 AND O
B(14)=0 THEN OB(14)=RM:PRINT"HE
Y, THERE'S A DIAMOND RING HERE.":GO
TO175
291 IF B$=S$(17) AND SO(17)=RM T
HEN PRINT"THERE IS A SWITCH AND
A DIAL HERE WITH INSTRUCTIONS
WHICH READ.":PRINT"PRESS S
WITCH TO ACTIVATE. WARNING
DO NOT REPROGRAM THE ROBOT"
":GOTO175
292 PRINT"NOTHING INTERESTING.":
GOTO175
293 IF B$="DIAL" AND SO(17)=RM T
HEN PRINT"IT READS.":PRINT"ROBO
T PROGRAMMED TO KILL":PRINTTAB(1
0)F$(F(10)):PRINT"TO REPROGRAM T
YPE KILL AND AWAITFURTHER INSTRU
CTIONS.":GOTO175
294 PRINT"SORRY, I DON'T UNDERSTA
ND YOU.":GOTO175
295 REM **** DRIVE CAR ****
296 IN$="I'M IN THE "+B$+" "+RM$(
RM):CR$=B$:A=0
297 GOSUB208
298 EXEC44539:PRINT:PRINT"WHERE
DO YOU WISH TO GO : "
299 FORC=1TO6
300 B$=STR$(C)+" ". IF A=1 THEN
B$=STR$(C-1)+" ".
301 OG=VAL(MID$(OG$,C*2-1,2)):B(
VAL(B$))=OG
302 IF OG=0 THEN IN$=B$+"GET OUT
OF THE CAR.":GOSUB208:GOTO306
303 IF OG=RM THEN A=1:GOTO 306
304 IN=INSTR(RM$(OG),"THE")
305 IN$=B$+MID$(RM$(OG),IN):GOSU
B208:PRINT
306 NEXT
307 B=VAL(B$)
308 A$=INKEY$:IF A$="" THEN 308
309 IF A$<"1" OR VAL(A$)>B THEN
308
310 B=VAL(A$):PRINT
311 IF B(B)=0 THEN 139
312 RM=B(B)
313 IF CR$=S$(4) THEN SO(4)=RM
314 IF CR$=S$(15) THEN SO(15)=RM
315 IF CR$=S$(10) THEN SO(10)=RM
316 GOTO139
317 REM **** PUSH/PRESS ****
318 A$=C$:GOSUB390
319 IF B$="BUTTON" AND OB(15)=-1
THEN IF F(6)=0 THEN PRINT"TRACK
ER ON.":F(6)=1:GOTO175 ELSE PRIN
T"TRACKER OFF.":F(6)=0:GOTO175
320 IF B$="SWITCH" AND SO(17)=RM
THEN PRINT"ROBOT ACTIVATED.":F(
0)=1:GOTO175
321 PRINTA$" WHAT?":GOTO175
322 REM **** KILL ****
323 PRINT"ROBOT IN REPROGRAMING
MODE.":PRINT"TYPE CODE NUMBER TO
ACTIVATE.":LINEINPUT"CODE NUMBE
R (1-3) ?":C$
324 IF C$<"1" OR C$>"3" THEN PRI
NT"INSTRUCTIONS ABORTED.":GOTO17

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5
325 F(10)=VAL(C$)-1:PRINT"ROBOT
NOW SET TO KILL "F$(F(10)):GOTO1
75
326 REM **** SHOOT ****
327 A$=C$:GOSUB390
328 IF OB(8)=-1 AND RD$=OB$(8) A
ND F(5)=1 THEN PRINT"THE BAZOOKA
IS UNLOADED.":GOTO175
329 IF B$=S$(13) AND RM=37 THEN
IF RD$=OB$(9) THEN PRINT"PERFECT
SHOT...SUDDENLY A SECRETDOR OP
ENS.":W(37)=36:GOTO175 ELSE IF R
D$=OB$(7) THEN PRINT"SO MUCH FOR
THE TARGET BOARD.":SO(13)=0:W(3
7)=0:GOTO175 ELSE IF RD$="" THEN
PRINT"SHOOT WITH WHAT?":GOT
330 IF B$=S$(9) AND RM=27 AND RD
$(8)="" THEN PRINT"SUDDENLY ALL OV
ER THE PLACE COPSSURROUND YOU !
YOU ARE SENTENCE TO THE ELECTRIC
CHAIR...":RM=2:GOTO139
331 IF B$="ESTER" AND RM=78 AND
RD$="" THEN PRINT"YOU QUICKLY SE
ARCH ESTER AND FIND A GOLD KE
Y AND TAKE IT. BUT THE COPS FIND
YOU ... YOU HAVE BEEN SENTENCED
TO LIFE IN JAIL FOR MURDER.":R
M=2:OB(5)=-1:GOTO139
332 IF B$="CHARLIE" AND RM=72 AN
D RD$="" THEN PRINT"CHARLIE SUDD
ENLY GRABS HIS M-60 AND BLAST YO
U BEFORE YOU COULD PULL THE TRI
GGER.":END
333 IF (B$="CYBORG" OR B$="TERMI
NATER") AND RM=TM AND RD$(8)="" TH
EN PRINT"THE TERMINATER TAKES A
BIG BLOW FROM THE "RD$:IF RD$="B
AZOOKA" THEN DM=DM-50:F(5)=1:GOT
O175 ELSE IF RD$="PISTOL" THEN D
M=DM-1:GOTO175 ELSE IF RD$=OB$(7
) THEN DM=DM-3:GOTO175
334 PRINT"SHOOT AT WHAT?":GOTO1
75
335 REM **** STEAL/ROB/FLOG ****
336 A$=C$:GOSUB390
337 IF B$="BANK" AND RM=65 THEN
PRINT"SUDDENLY BEFORE YOU COULD
DO ANYTHING A POLICE OFFICER
COMES OUT FROM BEHIND THE TELLER
...":END
338 IF B$=OB$(3) AND OB(3)=RM TH
EN PRINT"YOU QUICKLY AND QUIETLY
STEAL THE BRONZE KEY.":OB(3)=
-1:GOTO175
339 PRINT"STEAL WHAT YOU THIEF?":
GOTO175
340 REM **** GIVE/OFFER ****
341 GOSUB390
342 IF B$=OB$(1) AND OB(1)=-1 AN
D RM=78 THEN PRINT"ESTER THANKS
YOU AND IN RETURN HANDS YOU A G
OLD KEY.":OB(1)=-2:OB(5)=-1:GOTO
175
343 IF B$=OB$(12) AND RM=72 AND
OB(4)=0 THEN PRINT"CHARLIE TAKES
THE SCREWDRIVER AND SAYS, ' TH
ANKS MY MAN ,HERE HAVE MY KEYS
TO MY TORANA '. ANDHANDS YOU THE
KEYS AND THE SCREWDRIVER."
:OB(4)=-1:OB(12)=-1:GOTO175
344 IF B$=OB$(16) AND OB(16)=-1
AND RM=27 AND SO(10)=RM THEN PRI
NT"THE GUARD CHECKS THE BOOK AND
GIVES YOU THE OKAY TO GO
THROUGH.":S(27)=34:OG$=LEFT$(
OG$,LEN(OG$)-4)+"3400":GOTO175
345 IF B$=OB$(14) AND RM=50 AND
OB(14)=-1 THEN OB(14)=-2:PRINT"TH
E BAR MAID SMILES AND PUTS THER
ING ON HER HAND.SHE SAYS , ' IF Y
OUR EVER IN TROUBLE I'LL BAIL Y
OU OUT',AND THEN GIVES YOU A K
ISS.":GOTO175
346 PRINT"GIVE WHAT?":GOTO175
347 REM **** HOLD ****
348 GOSUB390
349 IF B$=OB$(7) AND OB(7)=-1 TH
EN RD$=B$:PRINTB$" READY.":GOTO1
75
350 IF B$=OB$(8) AND OB(8)=-1 TH
EN IF F(5)=0 THEN RD$=B$:PRINTB$
" READY.":GOTO175 ELSE PRINT"THE
BAZOOKA IS UNLOADED.":GOTO175
351 IF B$=OB$(9) AND OB(9)=-1 TH
EN RD$=B$:PRINTB$" READY.":GOTO1
75
352 PRINT"HOLD WHAT WEAPON?":GO
TO175
353 REM **** CYBORG MOVES ****
354 CY=INT((TM+6)/7)
355 CX=7-((CY*7)-TM)
356 X=CX:Y=CY
357 IF F(8)=1 AND CX>5 AND (CY)>5
AND CY<10 THEN UX=RND(7):UY=RN
D(12):GOTO 360
358 UY=INT((RM+6)/7)
359 UX=7-((UY*7)-RM)
360 CX=CX+SGN(UX-CX)
361 CY=CY+SGN(UY-CY)
362 C=CX+(7*(CY-1))
363 IF R$(C)="" AND RND(3)>1 T
HEN CX=X:CY=Y:RETURN
364 TM=CX+(7*(CY-1))
365 RETURN
366 REM **** INSERT ****
367 A$=C$:GOSUB390
368 IF B$=OB$(2) AND OB(2)=-1 AN
D F(8)=0 THEN F(8)=1:OB(2)=-2:S(
56)=63:PRINT"DISK INSERTED INTO
COMPUTER. A SECRET PASSAGE IS
REVEALED.":GOTO175
369 PRINT"INSERT WHAT?":GOTO175
370 REM **** CYBORG ATTACK ****
371 R=RND(4)
372 IF R=1 THEN PRINT"THE TERMIN
ATER FIRES AT YOU BARELY MIS
SING YOU.":RETURN
373 IF R=2 THEN PRINT"THE TERMIN
ATER FIRES AT YOU , WOUNDING Y
OU.":UM=UM-5:RETURN
374 IF R=3 THEN PRINT"THE TERMIN
ATER UNLEASHES HIS POWERFUL F
IST AND HITS YOU.":UM=UM-2:RETUR
N
375 RETURN
376 REM **** MOP ****
377 GOSUB390
378 IF B$=S$(18) AND RM=63 THEN
PRINT"THE FLOOR IS NOW SPOTLESS.
":SO(18)=-2:GOTO175
379 PRINT"MOP WHAT?":GOTO175
380 REM **** OPEN ****
381 GOSUB390
382 IF B$=S$(2) AND RM=70 AND OB
(12)=-1 AND F(1)=0 THEN PRINT"TH
E VENT IS NOW OPEN.":F(1)=1:GOTO
175
383 IF B$=S$(2) AND RM=70 AND OB
(12)<>-1 AND F(1)=0 THEN PRINT"TH
E VENT IS FASTENED TIGHT BY F
OUR SCREWS.":GOTO175
384 PRINT"OPEN WHAT?":GOTO175
385 REM **** DIG ****
386 GOSUB390
387 IF B$=OB$(11) AND OB(11)=-1
AND RM=77 AND F(11)=0 THEN PRINT
"Mine BURIED.":F(11)=1:OB(11)=-2
:GOTO175
388 PRINT"DIG WHAT?":GOTO175
389 REM **** ONE WORD SUB ****
390 IF INSTR(OK$, " ")=0 THEN B$=
"":RETURN
391 B$=RIGHT$(OK$,LEN(OK$)-LEN(A
$)-1):RETURN
392 REM **** ADVENTURE END ****
393 PRINT"YOU MOVED";SC" TIMES":
INPUT"DO YOU WISH TO PLAY AGAIN"
;OK$:IF LEFT$(OK$,1)="Y" THEN RU
N ELSE END
394 REM **** SAVE ****
395 LINEINPUT"FILENAME.":FL$
396 IF FL$="" THEN 175
397 FL$=LEFT$(FL$,8):POKE65494,0
398 OPEN"O",#-1,FL$
399 FORN=0 TO 10:A=F(N):PRINT#-1
,A:NEXT
400 FORN=1 TO NS:A=SO(N):PRINT#-
1,A:NEXT
401 FORN=1 TO NO:A=OB(N):PRINT#-
1,A:NEXT
402 FORN=1 TO 84:A=N(N):B=S(N):C
=E(N):D=W(N):PRINT#-1,A,B,C,D:NE
XT
403 A=UM:B=DM:C=RM:D=TM:E=SC:PRI
NT#-1,A,B,C,D,E
404 A$=OG$:PRINT#-1,A$
405 CLOSE#-1:POKE65495,0:PRINT"S
AVED RESULTS.":GOTO175
406 REM **** LOAD ****
407 LINEINPUT"FILENAME.":FL$:FL$
=LEFT$(FL$,8)
408 IF FL$="" THEN 175
409 POKE65494,0:OPEN"I",#-1,FL$
410 FORN=0 TO 10:INPUT#-1,A:F(N)
=A:A:NEXT:FORN=1 TO NS:INPUT#-1,A:
SO(N)=A:NEXT
411 FORN=1 TO NO:INPUT#-1,A:OB(N)
=A:A:NEXT:FORN=1 TO 84:INPUT#-1,A
,B,C,D:N(N)=A:S(N)=B:E(N)=C:W(N)
=D:NEXT
412 INPUT#-1,A,B,C,D,E:UM=A:DM=B
:RM=C:TM=D:SC=E:INPUT#-1,A$:OG$=
A$
413 CLOSE#-1:POKE65494,0
414 GOTO138
415 END
416 SAVE"269:3":END' 7

```




All we need now is Michael Jackson!

BREAKSHOW

32K / 16K ECB
APPLICATION

by Dennis Mellican

WHO SAID THE COCO couldn't breakdance? This program will not only challenge you in break-dancing but will entertain you by doing some "break" moves like the famous (?) "Moonwalk" and the "wave". If by chance you have some "rap" music (or any song) you can incorporate the music with the dancing.

To use the program type RUN and enter your desired colour by using the low resolution graphics colour codes (1-8).

Then the computer will ask if you want music or not. Just type 'Y' or 'N' depending on you.

Now you can sit back and relax while the CoCo dances and the flashing letters of the word "BREAKSHOW" appear one by one.

If you have 16k Colour Basic delete line 780.

The Listing:

```
0 GOTO10
3 SAVE"269G:3":END'10
10 .....
20 ' BREAKSHOW '
30 ' BY DENNIS MELLICAN '
40 .....
50 POKE 248,50:POKE249,98:POKE25
0,28:POKE251,175:POKE252,126:POK
E253,173:POKE254,165:POKE410,126
:POKE411,0:POKE412,248'breakPOKE
60 CLS:AUDIOOFF:MOTOROFF
70 CLEAR 1000
80 DIM A(16),A$(16)
90 I=127
100 INPUT"COLOUR(1-8)":D
110 IFD<0 OR D>8 THEN 100
120 INPUT"MUSIC":A$
130 C=(D-1)*16
140 FORT=1TO16
150 I=I+1
160 A(T)=I
170 A$(T)=CHR$(I+C)
180 NEXTT
190 IF LEFT$(A$,1)="" THEN AUDI
CON:MOTORON
200 CLSO
210 GOSUB 1050
220 F1$=A$(15)+A$(13)+A$(3)
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```
230 F2$=F1$
240 F3$=A$(12)+A$(4)+A$(9)
250 R1$=A$(15)+A$(10)+A$(1)
260 R2$=A$(15)+A$(10)+A$(1)
270 R3$=A$(11)+A$(6)+A$(1)
280 E1$=A$(15)+A$(13)+A$(1)
290 E2$=E1$
300 E3$=A$(12)+A$(4)+A$(1)
310 A1$=A$(15)+A$(14)+A$(1)
320 A2$=A1$
330 A3$=R3$
340 K1$=A$(11)+A$(7)+A$(1)
350 K2$=A$(15)+A$(3)+A$(1)
360 K3$=A$(11)+A$(6)+A$(1)
370 B$=A$(1)+A$(1)+A$(1)
380 S1$=A$(7)+A$(13)+A$(1)
390 S2$=A$(13)+A$(10)+A$(1)
400 S3$=A$(4)+A$(7)+A$(1)
410 H1$=A$(11)+A$(6)+A$(1)
420 H2$=A$(16)+A$(16)+A$(1)
430 H3$=H1$
440 O1$=A$(7)+A$(10)+A$(1)
450 O2$=H1$
460 O3$=A$(10)+A$(7)+A$(1)
470 W1$=A$(11)+A$(11)+A$(11)+A$(
1)
480 W2$=W1$
490 W3$=A$(10)+A$(12)+A$(9)+A$(1
)
500 TIMER=0:TI=TIMER
510 CLSO
520 Y=0
530 J=0:L=200
540 A=0
550 L=L+100
560 IF J=1 THEN Y=Y+1
570 A=A+1
580 FORT=1TOL:NEXT
590 IF J=1 THEN 610 ELSE CLSO
600 IF Y=99 THEN J=0
610 ON A GOSUB 660,680,700,710,7
20,730,740,750,760
620 IF Y=99 THEN 520
630 IF A=12 THEN 920
640 GOTO 770
650 GOTO 560
660 PRINT@160,F1$;:PRINT@192,F2$
;:PRINT@224,F3$;
670 RETURN
680 PRINT@160+3,R1$;:PRINT@192+3
,R2$;:PRINT@224+3,R3$;
690 RETURN
700 PRINT@160+6,E1$;:PRINT@192+6
,E2$;:PRINT@224+6,E3$;:RETURN
710 PRINT@160+9,A1$;:PRINT@192+9
,A2$;:PRINT@224+9,A3$;:RETURN
720 PRINT@160+12,K1$;:PRINT@192+
12,K2$;:PRINT@224+12,K3$;:RETURN
```

```
730 PRINT@160+15,S1$;:PRINT@192+
15,S2$;:PRINT@224+15,S3$;:RETURN
740 PRINT@160+18,H1$;:PRINT@192+
18,H2$;:PRINT@224+18,H3$;:RETURN
750 PRINT@160+21,O1$;:PRINT@192+
21,O2$;:PRINT@224+21,O3$;:RETURN
760 PRINT@160+24,W1$;:PRINT@192+
24,W2$;:PRINT@224+24,W3$;:RETURN
770 R=RND(6):POKE 1042+RND(447),
42
780 IF TIMER>6500 THEN MOTOROFF:
AUDIOOFF:CLS:END
790 IF U=1 THEN 990
800 IF U=2 THEN 1000
810 IF U=3 THEN 1010
820 IF U=4 THEN 1030
830 IF U=5 THEN 1040
840 ON R GOTD 860,890,960,860,89
0,1200
850 GOTO 560
860 PRINT@320+10,A$(14)+A$(1)+A$(
16)+A$(1)+A$(1);:PRINT@352+10,A
$(1)+A$(13)+A$(16)+A$(13)+A$(11)
+A$(1)+A$(1);
870 PRINT@384+10,A$(1)+A$(7)+A$(
1)+A$(10)+A$(1);:PRINT@416+10,A$
(1)+A$(10)+A$(1)+A$(7);
880 PRINTA$(1);:GOTO 850
890 PRINT@320+10,A$(15)+A$(1)+A$(
16)+A$(1)+A$(1);:PRINT@352+10,A
$(5)+A$(13)+A$(16)+A$(13)+A$(10)
+A$(1);
900 PRINT@384+10,A$(1)+A$(7)+A$(
1)+A$(10)+A$(1);:PRINT@416+10,A$
(7)+A$(1)+A$(1)+A$(1)+A$(10);
910 GOTO 850
920 A=0:L=L-100
930 L=L-100
940 IF L=-300 THEN 950 ELSE 550
950 J=1:GOTO550
960 PRINT@320+10,A$(1)+A$(1)+A$(
16)+A$(1)+A$(1);:PRINT@352+10,A$
(13)+A$(13)+A$(16)+A$(13)+A$(13)
+A$(1);:U=1
970 PRINT@384+10,A$(1)+A$(6)+A$(
1)+A$(11)+A$(1);:PRINT@416+10,A$
(1)+A$(6)+A$(1)+A$(11)+A$(1);
980 GOTO 850
990 PRINT@320+10,A$(3)+A$(1)+A$(
16)+A$(1)+A$(1);:U=2:PRINT@352+1
0,A$(5)+A$(13)+A$(16)+A$(13)+A$(
13);:GOTO 970
1000 PRINT@320+10,A$(1)+A$(3)+A$(
16)+A$(1)+A$(1);:U=3:PRINT@352+
10,A$(13)+A$(5)+A$(16)+A$(13)+A$(
13)+A$(1);:GOTO 970
1010 PRINT@320+10,A$(1)+A$(1)+A$(
16)+A$(1)+A$(1);:GOTO 970
1010 PRINT@320+10,A$(1)+A$(1)+A$(
16)+A$(1)+A$(1);:GOTO 970
continued on page 43
```

STOCK LIST INSTRUCTIONS

SUPPLEMENT

by James Grech

In "Stock List" (June CoCo, P13) there are a few changes to be made:

Line 220 should read:

```
220 FOR W=0T0200
```

Line 475 should read:

```
475 FOR V=0T0200
```

Line 1530 should read:

```
1350 W=V+1:IFV=200THEN 1195  
ELSE 1525
```

WHEN WE PRINTED "Stock List" (June 87 CoCo, P13) we had no idea that it would be so complex!

So we asked James to supply some further information regarding this program.

Anyway, here it is, black on white.

Inventory Inquiry

Enter the item No. to be listed. If the item number is not on file, it will print 'Item No. Not On File'.

If you do not know the item number, use the search description by pressing <ENTER> at the item number.

The cursor moves down. To move the cursor up, press enter again. With the cursor at search description, enter what you think the description is.

Keep it as short as possible because it searches only for what you have typed in. For example, type in 'B' and the computer searches through its files and prints up whatever 'B' has in its file.

If there is something you want in there and you want to see the item number etc, then press the up arrow - the reversed line will move up one.

Repeat until the reversed line is at the one you want. Press enter at the line you want and the computer will print up that item.

Press the down arrow to move the cursor down. It will print only eight items at a time.

To continue the search, move the reversed line to 'Continue Search' then press enter.

To return to Item selection, move reversed line to 'Return to Item Selection' and press enter.

Edit Item

To change item detail, press 2 at the edit menu. Use the same cursor movement as "Item Search" did.

Move reversed line to the line you want changed and then press enter. Retype new information.

Move reversed line to 'Return to Main Menu' and press enter to return to main menu.

New Item

A few things to remember when typing in a new item. The item number should be no more than ten characters long.

The description should not be more than 25 characters long. That is, it should not go on to the next line.

The number on the bottom left hand corner is the number of items there are in memory. If you delete an item, the next item you enter will fill that position vacated by the deleted number.

The number at bottom right is the amount of memory left.

The rest of the program is fairly simple if you just follow the prompts.

NOTE: Before entering a new item, make sure the item number is not already on file as it will not tell you upon entering.

If you do enter an item number the same as one already on file, you will only receive the first one in memory. You must delete the first item number, then the second.

Retype the first one again and then the second using a different number.

COPY ROM PROBLEMS

by Frank Rees

ALWAYS THOUGHT that the use of extra RAM in CoCo was a simple ML routine. So when I saw D.V. Thurbon's "Copy Rom", (April Aust. CoCo, pp38) I thought this was it but I was wrong.

I entered the program, taped, ran & disassembled (see enclosed) then tried to use it but "no go".

When I first ran the program I got an OD error and added '00' to the end of the data to fill the gap.

Study of the disassembly did not give any evidence of a missing byte of code.

While not mentioned, I assumed you had to EXEC the program loaded when the Basic program was "run", but lockup requiring reset resulted.

I tried all sorts of ways to get it going without results. Any suggestions?

Disassembly for Copy ROM

4000 8E8000	LDX	\$\$8000
4003 7FFFDE	CLR	\$\$FDE
4006 EC84	LDD	,X
4008 7FFFD	CLR	\$\$FDF
400B ED81	STD	,X++
400D 8CFEFE	CMPX	\$\$FEFE
4010 25F1	BLO	\$4003
4012 39	RTS	

Cassette tape cleaning

ALWAYS totally erase a tape before doing any CSAVE's on it. This will eliminate any bits of garbage that will cause the dreaded IO Errors.

This is best done with a BULK ERASER, but may also be done by placing the tape in a cassette player and pressing play and record simultaneously and by typing 'MOTORON'.

It takes a while, but it is worth it.

Kevin Gowan



DRAGON LORD

32K ECB
GAME

by Dennis Mellican

ALTHOUGH INSTRUCTIONS are provided in the program, I'll quickly give a brief outline of the game.

You have been challenged to fight any of the five opponents you desire. You are capable of jumping, kicking, punching and moving from left to right. You can either use the joystick or the keyboard. Remember the list of functions, shown in table 1, and how to do them.

When Playing

Your man wears blue pants and your opponent wears red. Move to your opponent, and perform any function, but note: if you get hit your energy goes down, but if you hit him your energy gains.

The same applies to the opponent. To win you must knock down the opponent and score higher than what he did.

Color Basic Conversions:

Dragon Lord can be converted to Colour Basic by converting the statement "EXEC44539" to a statement such as ...

```
"IF INKEYS="" THEN"
```

.. but wise to use a subroutine.

Also, other ECB commands such as STRINGS(?), TIMER and PLAY can be deleted with making any major change in the game.

If you have problems see your local User Group.

The Listing:

```

0 GOTO10
3 SAVE"269C:3":END'1
10 .....
20 ' DRAGON LORD
30 ' BY DENNIS MELLICAN '
40 .....
50 CLEAR700
60 CLS:X$(1)="BRUCE LEE":X$(2)="

```

```

CHUCK NORRIS":X$(3)="JACKIE CHAN
":X$(4)="MASTER NINJA":X$(5)="KA
RATE KID":X$(6)="THE CLAW":X$(7)
="FIST OF FURY":X$(8)="MISSING I
N ACTION":X$(9)="DRAGON BREATH":
X$(10)="BURMESE DRAGONS":FOR T=1
TO 10:X(T)=100:NEXT T
70 DI=10:JJ=0:LZ=10
80 DIN Y$(16),B$(16),R$(16),U$(2
4),C$(24)
90 FOR T=1 TO 16
100 Y$(T)=CHR$(127+T+16):B$(T)=C
HR$(127+T+32):R$(T)=CHR$(127+T+4
8)
110 NEXT
120 SP$=Y$(1)+Y$(1)
130 U$(1)=SP$+Y$(1)+Y$(16)+SP$+S
P$
140 C$(1)=SP$+SP$+Y$(16)+Y$(1)+S
P$
150 U$(2)=Y$(1)+Y$(6)+Y$(14)+Y$(
16)+Y$(12)+Y$(9)+SP$
160 C$(2)=SP$+Y$(5)+Y$(8)+Y$(16)
+Y$(15)+Y$(11)+Y$(1)
170 U$(3)=SP$+B$(8)+B$(16)+B$(12
)+SP$+B$(1)
180 C$(3)=R$(1)+SP$+R$(8)+R$(16)
+R$(12)+SP$
190 U$(4)=B$(1)+B$(8)+B$(15)+B$(
5)+B$(14)+B$(12)+SP$
200 C$(4)=SP$+R$(8)+R$(15)+R$(9)
+R$(14)+R$(12)+R$(1)
210 U$(5)=U$(1)
220 C$(5)=C$(1)
230 U$(6)=Y$(1)+Y$(7)+Y$(14)+Y$(
16)+Y$(15)+Y$(13)+SP$
240 C$(6)=SP$+Y$(13)+Y$(14)+Y$(1
6)+Y$(15)+Y$(10)+Y$(1)
250 U$(7)=SP$+B$(8)+B$(16)+B$(16
)+B$(15)+B$(13)+B$(13)
260 C$(7)=R$(13)+R$(13)+R$(14)+R
$(16)+R$(16)+R$(12)+SP$
270 U$(8)=B$(1)+B$(8)+B$(15)+SP$
+SP$+B$(1)
280 C$(8)=R$(1)+SP$+SP$+R$(14)+R
$(12)+R$(1)
290 U$(9)=SP$+SP$+Y$(16)+Y$(1)+S
P$
300 C$(9)=SP$+Y$(1)+Y$(16)+SP$+S
P$
310 U$(10)=SP$+Y$(7)+Y$(14)+Y$(1
6)+Y$(15)+Y$(13)+Y$(1)
320 C$(10)=Y$(1)+Y$(13)+Y$(14)+Y
$(16)+Y$(15)+Y$(10)+SP$
330 U$(11)=U$(3)
340 C$(11)=C$(3)
350 U$(12)=U$(4)
360 C$(12)=C$(4)

```

```

370 U$(13)=SP$+Y$(1)+Y$(16)+Y$(1
)+B$(2)+B$(15)+B$(1)
380 C$(13)=R$(1)+R$(14)+R$(3)+Y$(
1)+Y$(16)+SP$
390 U$(14)=Y$(1)+Y$(7)+Y$(14)+Y$(
16)+B$(16)+B$(15)+SP$
400 C$(14)=SP$+R$(14)+R$(16)+Y$(
16)+Y$(15)+Y$(10)+Y$(1)
410 U$(15)=SP$+B$(8)+B$(16)+B$(1
5)+SP$+B$(1)
420 C$(15)=R$(1)+SP$+R$(14)+R$(1
6)+R$(12)+SP$
430 U$(16)=B$(1)+B$(8)+B$(15)+B$(
1)+SP$+SP$
440 C$(16)=SP$+SP$+R$(1)+R$(14)+
R$(12)+R$(1)
450 U$(17)=U$(1)
460 C$(17)=C$(1)
470 U$(18)=Y$(1)+Y$(13)+Y$(14)+Y
$(16)+Y$(15)+Y$(13)+SP$
480 C$(18)=SP$+Y$(13)+Y$(14)+Y$(
16)+Y$(15)+Y$(13)+Y$(1)
490 U$(19)=B$(13)+B$(14)+B$(16)+
B$(16)+B$(16)+B$(15)+B$(13)+B$(1
)
500 C$(19)=R$(1)+R$(13)+R$(14)+R
$(16)+R$(16)+R$(16)+R$(15)+R$(13
)
510 U$(20)=SP$+SP$+SP$+SP$
520 C$(20)=U$(20)
530 U$(21)=U$(20)
540 C$(21)=C$(20)
550 U$(22)=U$(1)
560 C$(22)=C$(1)
570 U$(23)=U$(6)
580 C$(23)=C$(6)
590 U$(24)=SP$+B$(8)+B$(16)+B$(1
5)+B$(13)+B$(13)+B$(13)
600 C$(24)=R$(13)+R$(13)+R$(13)+
R$(14)+R$(16)+R$(12)+SP$
610 U=2
620 CLSO:SC=0:JT=0:ME=0:CO=0:EG=
0:SZ=0
630 PRINT:PRINT@10,"DRAGON LORD"
640 PRINT@32,STRINGS(32,131);
650 PRINT"DO YOU WISH INSTRUCTIO
NS MASTER?";
660 AS=INKEYS:IF AS="Y" THEN 670
ELSE IF AS="N" THEN CLSO:GOTO 7
20 ELSE 660
670 CLS:PRINT"WELCOME TO THE FIN
ALS OF THE WORLD CHAMPIONSHIP
S OF MARTIAL ARTS.YOU HAVE BEEN
CHOSEN TO CHALLENGE ONE OF T
HE FIVE BEST AND HOPELESS MARTI
AL-ARTISTS IN THE WORLD.YOUR AIM
IS TO SCORE"
680 PRINT"THE MOST POSSIBLE POIN

```



```

TS AND ALSO TRY TO KEEP YOUR
ENERGY AT A GOOD STATE OTHERWISE
YOU FAINT(OR EVEN DIE !!! BUT L
ETS NOT THINK OF THAT EH ???).
"
690 PRINT"<MORE>":EXEC44539:CLS:
PRINT"YOU ARE CAPABLE OF JUMPING
, KICKING,PUNCHING AND MOVIN
G.":PRINT"BRIEF DISCRPTION OF Y
OUR CAPABILITIES.":PRINTST
RING$(32,131);:PRINT"FUNCTION /
PRESS ..... KEY":PRINTSTRING$(32
,140);
700 PRINT"FRONT KICK <SHIFT> & U
P ARROW SIDE KICK <SHIFT> & R
IGHT ARROWLOW KICK DOWN ARROW
PUNCH SPACE BAR
JUMP UP ARROW
MOVE LEFT LEFT ARROW
MOVE RIGHT RIGHT ARROW
"
710 PRINT"*REMEMBER*":EXEC44539:
CLS0
720 FORT=0T04:PRINT@(T*32),U$(T)
;:NEXT:PRINT@5*32,"STANCE":FOR T
=5 TO 8:PRINT@8+((T-4)*32),U$(T)
;:NEXT:PRINT@8+(32*5),"SIDE KICK
":FOR T=9 TO 12:PRINT@20+((T-8)*
32),U$(T);:NEXT:PRINT@20+(32*5),
"PUNCH"
730 FORT=13 TO 16:PRINT@32+((T-8
)*32),U$(T);:NEXT:PRINT@320,"FRO
NT KICK":FOR T=17 TO 20:PRINT@32
+((T-12)*32)+12,U$(T);:NEXT:PRIN
T@332,"JUMP"
740 FORT=21 TO 24:PRINT@32+((T-1
6)*32)+20,U$(T);:NEXT:PRINT@319+
20,"LOW KICK/DUCK";
750 EXEC44539
760 CLS
770 PRINT"PICK YOUR DIFFICULTY:"
780 PRINT" (1-HARD/5-EASY)"
790 PRINT:PRINT"[1] BRUCE LEE"
800 PRINT:PRINT"[2] CHUCK NORR
IS"
810 PRINT:PRINT"[3] JACKIE CHA
N"
820 PRINT:PRINT"[4] KARATE KID
"
830 PRINT:PRINT"[5] CHARLIE CH
AN"
840 N$(1)="BRUCE LEE":N$(2)="CHU
CK NORRIS":N$(3)="JACKIE CHAN":N
$(4)="KARATE KID":N$(5)="CHARLIE
CHAN"
850 PRINT:PRINT"YOUR CHOICE (1/5
)":
860 IF JJ=0 THEN PRINT@480,"PRES
S J TO USE JOYSTICK"; ELSE PRINT
@490,"PRESS K TO USE KEYBOARD";
870 TIMER=0
880 A$=INKEY$
890 IF A$="0" AND A$<"6" THEN CH
=VAL(A$):GOTO 950
900 IF A$="I" THEN 2530
910 IF JJ=0 AND A$="J" THEN PRIN
T@480,"PRESS K TO USE KEYBOARD";
:JJ=1
920 IF JJ=1 AND A$="K" THEN PRIN
T@480,"PRESS J TO USE JOYSTICK";
:JJ=0
930 IF TIMER>1200 THEN 2530
940 GOTO 880
950 IF CH=1 THEN DI=8
960 IF CH=2 THEN DI=10
970 IF CH=3 THEN DI=15
980 IF CH=4 THEN DI=20
990 IF CH=5 THEN DI=25
1000 CLS0
1010 PRINT@352,STRING$(32,143+64
);:PRINT@0,STRING$(16,172);:EG=3
1:PRINT@32,STRING$(16,179);:GE=3
1
1020 UX=2:UY=224
1030 CX=22:CY=224
1040 A$=INKEY$
1050 IF JJ=0 THEN 1070
1060 AA=JOYSTK(0):BB=JOYSTK(1)
1070 PRINT@416,"YOU:"SC,:PRINT@4
80,N$(CH);:"JT;
1080 IF EG>63 THEN EG=63
1090 IF EG<0 THEN EG=0:GOTO 2000
1100 SET(EG,0,3)
1110 IF GE>63 THEN GE=63
1120 IF GE<0 THEN GE=0:GOTO 2050
1130 SET(GE,3,4)
1140 IF EG<63 THEN RESET(GE+1,3)
1150 IF EG<63 THEN RESET(EG+1,0)
1160 IF U>1 THEN U=1:GOTO 1410
1170 IF RND(INT(DI/2))=1 GOSUB14
80
1180 IF A$="" THEN U=17:EG=EG-
5
1190 IF JJ=0 THEN 1210
1200 IF BB<10 THEN U=17:EG=EG-.5
1210 IF A$=CHR$(10) THEN U=21
1220 IF JJ=0 THEN 1240
1230 IF BB>50 THEN U=21
1240 IF A$="" THEN U=13
1250 IF JJ=0 THEN 1270
1260 IF BB<10 AND (PEEK(65280))=1
26 OR PEEK(65280)=254) THEN U=13
1270 IF A$=CHR$(8) AND UX>2 THEN
UX=UX-1
1280 IF JJ=0 THEN 1300
1290 IF AA<20 AND UX>2 THEN UX=U
X-1
1300 IF A$=CHR$(9) AND UX+5<>CX
THEN UX=UX+1
1310 IF JJ=0 THEN 1330
1320 IF AA>40 AND UX+5<>CX THEN
UX=UX+1
1330 IF A$="I" THEN U=5:EG=EG-.5
1340 IF JJ=0 THEN 1360
1350 IF AA>40 AND (PEEK(65280))=1
26 OR PEEK(65280)=254) THEN U=5:
EG=EG-.5
1360 IF A$="" THEN U=9
1370 IF JJ=0 THEN 1390
1380 IF AA>10 AND AA<50 AND BB<5
0 AND BB>10 AND (PEEK(65280))=126
OR PEEK(65280)=254) THEN U=9
1390 IF RND(INT(DI/2))=1 GOSUB14
80
1400 IF UX>CX-6 THEN UX=CX-6
1410 E=U-1
1420 FOR T=UY+UX TO UY+UX+96 STE
P 32
1430 E=E+1
1440 PRINT@T,U$(E);
1450 NEXT T:IF U=13 THEN UX=UX+1
1460 IF UX=CX-6 GOSUB 1670
1470 GOTO 1040
1480 R=RND(DI):C=1
1490 IF R=1 THEN CX=CX-1
1500 IF R=2 THEN CX=CX+1
1510 IF R=3 THEN C=5
1520 IF R=4 THEN C=13
1530 IF R=5 THEN C=17
1540 IF CH>3 AND (R=5 OR R=3) TH
EN GE=GE-.5
1550 IF R=6 THEN C=21
1560 IF R=7 THEN C=9
1570 IF R>7 THEN CX=CX-1
1580 F=C-1
1590 IF CX>24 THEN CX=24
1600 IF CX<15 THEN CX=15
1610 FOR T=CX+CY TO CX+CY+96 STE
P 32
1620 F=F+1
1630 PRINT@T,C$(F);R$(1);
1640 NEXT
1650 IF UX=CX-6 GOSUB 1670
1660 RETURN
1670 XX=E/4
1680 IF XX=1 THEN 1820
1690 IF XX=2 THEN SC=SC+10:EG=EG
+1:GE=GE-1
1700 IF XX=3 THEN SC=SC+15:EG=EG
+1.5:GE=GE-1.5
1710 IF XX=4 AND (F/4)<>6 THEN S
C=SC+50:EG=EG+5:GE=GE-5
1720 IF XX=5 THEN 1820
1730 IF XX=6 AND YY<5 THEN SC=S
C+20:EG=EG+2:GE=GE-2
1740 IF YY=5 THEN 1820
1750 IF EG>63 THEN EG=63
1760 FORT=0T0EG:SET(T,0,3):NEXT
1770 IF EG>63 THEN GE=63
1780 IF GE<0 THEN GE=0
1790 FORT=63 TO GE STEP-1:RESET(
T,3):NEXT
1800 SOUND 198,1
1810 IF GE=0 THEN 2050
1820 YY=F/4
1830 IF YY=1 THEN RETURN
1840 IF YY=2 THEN JT=JT+10:EG=EG
-1:GE=GE+1
1850 IF YY=3 THEN JT=JT+15:EG=EG
-1.5:GE=GE+1.5
1860 IF YY=4 AND XX<>6 THEN JT=J
T+50:EG=EG-5:GE=GE+5
1870 IF YY=5 THEN RETURN
1880 IF YY=6 AND XX<>5 THEN JT=J
T+20:EG=EG-2:GE=GE+2
1890 IF XX=5 THEN RETURN
1900 IF XX=6 THEN RETURN
1910 IF EG<0 THEN EG=0
1920 FORT=63 TO EG STEP-1:RESET(
T,0):NEXT
1930 IF GE<0 THEN GE=0
1940 IF EG>63 THEN GE=63
1950 FORT=0 TO GE :SET(T,3,4):NE
XT
1960 SOUND 1,1
1970 IF GE=0 THEN 2050
1980 IF EG=0 THEN 2000
1990 RETURN
2000 FOR T=UY+UX TO UY+UX+96 STE
P 32
2010 PRINT@T,U$(20);
2020 NEXT
2030 PRINT@T-32,Y$(1)+Y$(16)+Y$(
12)+Y$(16)+Y$(16)+B$(16)+B$(12)+
B$(8);

```

```

2040 CO=1:ME=0:GOTO 2100
2050 FOR T=CX+CX TO CY+CX+96 STE
P 32
2060 PRINT@T,C$(20);
2070 NEXT
2080 PRINT@T-32,R$(12)+R$(8)+R$(
16)+Y$(16)+Y$(16)+Y$(8)+Y$(16)+Y
$(1);
2090 CO=0:ME=1
2100 PLAY"P2":PRINT@480,"";:FORT
=0T016:PRINT:SOUND255,2:NEXT
2110 IF ME=1 THEN SZ=SC
2120 IF CO=1 THEN SZ=JT
2130 GOSUB2400
2140 CLS:PRINT"*****
*****          TODAY'S TO
P TEN          **          DRAGON L
ORDS          *****
*****"
2150 FOR I=1 TO LZ
2160 PRINT@96+(I*32)+20,USING"##
##";X(I);
2170 IF I=10 THEN 2190
2180 IF SZ=X(I) AND SZ=X(I+1) TH
EN MN=1:GOTO 2220
2190 IF SZ=X(I) THEN 2260
2200 IF MN=2 THEN MN=0:GOTO 2260
2210 IF SZ=X(I) THEN GT=1:GOTO 2
260
2220 PRINT@96+(I*32)+1,"";
2230 PRINTX$(1);
2240 IF MN=1 THEN I=I+1:MN=2
2250 GOTO 2360
2260 IF X$(I)<" THEN I=I-1
2270 IF SZ=JT THEN X$(I)=N$(CH):
GOTO 2350
2280 A$=INKEY$
2290 PRINT@96+(I*32)+LEN(X$(I))+
1,CHR$(143+(RND(7)*16));:IF A$="
" THEN 2280
2300 IF A$=CHR$(13) THEN PRINT@9
6+(I*32)+1,X$(I)" ";:GOTO 2360
2310 IF A$=CHR$(8) AND LEN(X$(I)
)>0 THEN X$(I)=LEFT$(X$(I),LEN(
X$(I))-1):PRINT@96+(32*I)+1,X$(I
);" ";:GOTO 2280
2320 IF LEN(X$(I))>15 THEN 2280
2330 X$(I)=X$(I)+A$:PRINT@96+(32
*I)+1,X$(I);:SOUND 198,1
2340 GOTO 2280
2350 PRINT@96+(I*32)+1,X$(I);
2360 NEXT I

```

```

2370 GT=0
2380 IF SB=1 THEN SB=0:GOTO 2650
2390 EXEC44539:GOTO 620
2400 IF LZ=0 THEN X(1)=SZ:LZ=1:R
ETURN
2410 FOR I=1 TO LZ
2420 IF SZ>X(I) THEN 2460
2430 NEXT I
2440 IF LZ<10 THEN LZ=LZ+1:X(LZ)
=SZ
2450 RETURN
2460 IF I=10 THEN X(10)=SZ:RETUR
N
2470 IF LZ<10 THEN LZ=LZ+1
2480 FOR J=LZ TO I+1 STEP -1
2490 X(J)=X(J-1):X$(J)=X$(J-1)
2500 NEXT J
2510 X(I)=SZ:X$(I)="" :XZ=I
2520 RETURN
2530 CLS
2540 PRINT"POINT SCORING:"
2550 PRINT"FRONT KICK ..... 5
0 PTS      SIDE KICK ..... 1
0 PTS      LOW KICK ..... 2
0 PTS      PUNCH ..... 1
5 PTS"
2560 PRINT:PRINT"REMEMBER:"
2570 PRINT"* OPERATION OF KICKS,
ETC          * YOUR MAN IS WEARING
BLUE PANTS* YOUR ENERGY/STAMINA
IS IN BLUE* YOUR ENERGY/STAMINA
IS AT THE TOP OF THE SCREEN.
          * AFTER DOING A FRONT
KICK YOU MOVE FORWARD AUTOMA
TICLY."
2580 EXEC44539
2590 CLS
2600 PRINT"AUTHOR'S HINTS AND TI
PS:"
2610 PRINT"* TO GAIN ENERGY/STAM
INA KICK OR PUNCH YOUR ENEMY
DE KICKS * JUMPING OR DOING SI
GY TO DO. * IF THE ENEMY IS DOI
NG A FRONT KICK,DUCK (OR DO A
LOW KICK) TO AVOID THE HIT."
2620 PRINT"* IF THE ENEMY IS DOI
NG A LOW KICK,JUMP TO AVOID
BEING HIT."
2630 EXEC44539
2640 SB=1:GOTO 2140
2650 EXEC44539:CLS0:GOTO 720

```

from page 39

```

(16)+A$(1)+A$(1);:PRINT@352+10,A
$(13)+A$(13)+A$(16)+A$(13)+A$(13
)+A$(1);
1020 U=4:GOTO 870
1030 PRINT@320+10,A$(1)+A$(1)+A$(
16)+A$(2)+A$(1)+A$(1);:PRINT@35
2+10,A$(13)+A$(13)+A$(16)+A$(9)+
A$(13)+A$(1);:U=5:GOTO 970
1040 PRINT@320+10,A$(1)+A$(1)+A$(
16)+A$(1)+A$(2)+A$(1);:PRINT@35
2+10,A$(13)+A$(13)+A$(16)+A$(13)
+A$(9)+A$(1);:U=0:GOTO 970
1050 M$(1)=CHR$(132+C)+CHR$(138+
C)+CHR$(143+C)+CHR$(128)+CHR$(12
8)
1060 M$(2)=CHR$(128)+CHR$(140+C)
+CHR$(143+C)+CHR$(141+C)+CHR$(13
0+C)
1070 Z$(1)=CHR$(128)+CHR$(129+C)
+CHR$(141+C)+CHR$(128)+CHR$(128)
1080 X$(1)=CHR$(129+C)+CHR$(138+
C)+CHR$(135+C)+CHR$(128)+CHR$(12
8)
1090 Z$(2)=Z$(1):X$(2)=CHR$(128)
+CHR$(135+C)+CHR$(135+C)+CHR$(12
8)+CHR$(128)
1100 Z$(3)=CHR$(128)+CHR$(128)+C
HR$(142+C)+CHR$(130+C)+CHR$(128)
1110 X$(3)=CHR$(128)+CHR$(129+C)
+CHR$(138+C)+CHR$(141+C)
1120 L=0
1130 L=L+1:IF L>10 THEN RETURN
1140 FOR T=1 TO 100:NEXT T
1150 PRINT@320+L-1,CHR$(128)+M$(
1);:PRINT@352+L-1,CHR$(128)+M$(2
);
1160 IF Z=1 THEN V=V-1:IF V<1 TH
EN V=0:Z=0:ELSE 1180
1170 V=V+1:IF V>3 THEN Z=1:V=4:G
OTO 1160
1180 PRINT@384+L-1,CHR$(128)+Z$(
V);:PRINT@416+L-1,CHR$(128)+X$(V
);
1190 GOTO 1130
1200 PRINT@320+10,A$(1)+A$(1)+A$(
16)+A$(1)+A$(1);:PRINT@352+10,A
$(5)+A$(13)+A$(16)+A$(13)+A$(9);
1210 PRINT@384+10,A$(13)+A$(13)+
A$(13)+A$(13)+A$(13);:PRINT@416+
10,A$(1)+A$(1)+A$(1)+A$(1)+A$(1)
;:GOTO 850

```

table 1...

Function	Keyboard	Joystick
Front kick	(Shift) up arrow	Press fire & move stick up
Side kick	(Shift) and right arrow	Press fire & move stick right
Sweep (low kick)	Down arrow	Move stick down
Punch	Space bar	Centre stick & press fire
Jump	Up arrow	Move stick up
Move left	Left arrow	Move stick left
Move right	Right arrow	Move stick right

Discover the real you!

PREDICTION

32K ECB
APPLICATION

by Paul Savage

PREDICT CAME from a visit to the doctors waiting room, the idea namely formulating while watching a lady fill out such a questionnaire from a magazine. Just (C)LOAD and RUN.

The Listing:

```
0 GOSUB5000
2 GOTO10
3 *****
*****PREDICT*****
*****BY*****
****PAUL AND JOAN SAVAGE****
****CRYSTAL BROOK S.A.*****
****PHONE086-362546*****
****JUNE 1987*****
```

```
4 SAVE"276A13":END"10
10 DIML$(27),V$(48),P$(48)
16 SC=0:IA=1
18 PCLS:COLLIFE
20 GOTO180
30 FOR L=1TO LEN(V$):P$=MID$(V$,L,1):IF P$=" "THENP$=""
40 DRAW"BM"+STR$(X)+"","+STR$(Y)+"",S4":DRAW L$(ASC(P$)-33)
50 X=X+7:NEXT L:RETURN
60 REM
70 FOR J=0TO30:READ R$:L$(J)=R$:NEXT J
80 DATA BR2ND1BU2U4,BR1BU4U1BR2D1,BR1U2L1BU2R1U2BR2D2R1BD2L1D2,BU1R2ND1R1E1H1L2H1E1R1NU1R2,U1E4U1BL4D1BF4D1,BR4H1U1H3E1F1G2D2F1R1E2U1,BR2BU4U2,BR2H1U4E1,BR2E1U4H1
90 DATA BU2E2NH2NU2NE2NF2D2,BR2BU1U2NL2NU2R2,BR2NU1G1,BU3R4,BR2U1,U1E4U1,BU1NE4U4E1R2F1D4G1L2H1,R2NR2U6L1G1,NR4E4U1H1L2G1,BU1F1R2E1U1H1NL2E1U1H1L2G1,BR3U6G3R4
100 DATA BU1F1R2E1U2H1L2G1U3R4,BU3E1R2F1D2G1L2H1U4E1R3,E4U2L4D1,BU1U1E1NR2H1U1E1R2F1D1G1F1D1G1L2H1,BR1R2E1U4H1L2G1D2F1R2E1,BR2U1BU2U1,BR1BD1E1U1BU2U1,BU3NE3F3
110 DATA BU1R4BU2L4,BR1E3H3,BU5E1R2F1D1G1L1D1BD2D1
120 FOR J=32TO57:READ R$:L$(J)=R$:NEXT J
130 DATA U4E2F2D2NL4D2,R3E1U1H1E1U1H1L3R1D3NR2D3,BE4BU1H1L2G1D4F
```

```
1R2E1,R3E1U4H1L2NL1D6,R4U1BU4U1L3NL1D3NR2D3,R1NR1U3NR2U3NL1R3D1,HE2R1NR1D1ND1G1L1H1U4E1R2D1,U3NU3R4NU3D3,BR1R1NR1U6NL1R1,BU1NU1F1R1E1U5NL1R1
140 DATA R1U6NL1BD3R1E2U1BD5ND1H2,R4U1BG1BL2U6NL1R1,U6F2E2D6,U6F4NU4D2,BU1U4E1R2F1D4G1L2H1,R1NR1U6NL1R2F1D1G1L2,BU1U4E1R2F1D4G1D1R1BH1L2H1,U6R3F1D1G1L1NL2F2D1,BU1F1R2E1U1H1L2H1U1E1R2F1,BR2U6NL2R2
150 DATA BU1NU5F1R1E1R1ND1U5,BU3NU3F1D1F1E1U1E1U3,NU6E2F2U6,U1E4U1BL4D1F4D1,BR1R1NR1U3H2U1BR4D1G2,BU5U1R4D1G4D1R4U1
159 FORCS=1TO43:READPS(CS):NEXT
160 DATA9,8,9,5,9,8,7,3,9,1,2,3,4,9,9,7,5,1,8,9,3,9,1,1,2,8,1,1,2,9,4,5,6,7,8,9,1,5,3,1,5,6,7,5,5,9,8,0
170 RETURN
180 PCLS:A=0:B=0:C=255:FORD=191TO171STEP-2:LINE(A,B)-(C,D),PSET,B:A=A+2:B=B+2:C=C-2:NEXT
190 GOSUB60
200 PMODE4,1:X=40:Y=60:W$="P R E D I C T":SCREEN1,1
210 FOR L=1TO LEN(W$):P$=MID$(W$,L,1):IF P$=" "THENP$=""
220 DRAW"BM"+STR$(X)+"","+STR$(Y)+"",S12":DRAW L$(ASC(P$)-33)
230 X=X+13:NEXT L
240 X=115:Y=96:W$="BY":GOSUB30
250 FORC=.75 TO.5STEP-.1:CIRCLE(60,96),13,5,C:CIRCLE(180,96),13,5,C:NEXT
260 CIRCLE(180,96),7,5,.375
270 CIRCLE(60,96),7,5,.375
280 X=60:Y=144:W$="PAUL & JOAN SAVAGE":GOSUB30
290 LINE(93,172)-(145,180),PSET,BF:COLOR0:X=95:Y=180:W$="<ENTER>":GOSUB30
300 A$=INKEY$:IFA$(<)<CHR$(13) THEN300
310 PCLSS:A=0:B=0:C=255:FORD=191TO181STEP-3:LINE(A,B)-(C,D),PSET,B:A=A+3:B=B+3:C=C-3:NEXT
320 X=100:Y=40:W$="WELCOME":GOSUB30:X=100:Y=47:W$="-----":GOSUB30
330 X=15:Y=57:W$="????????????????????????????????????????":GOSUB30
340 X=45:Y=67:W$="LET THE MYSTICAL COCO":GOSUB30
350 X=15:Y=77:W$="AND FORTUNETEL
```

```
LER,MIND READER":GOSUB30
360 X=15:Y=87:W$="AND ALL ROUND BIG HEAD TELL":GOSUB30
370 X=15:Y=97:W$="YOUR FORTUNE":GOSUB30
380 FORMI=1TO4:PLAY"O4L33CDABCAF FDGE":NEXT
390 X=15:Y=117:W$="PRESS (Y/N) TO ANSWER QUESTIONS":GOSUB30
395 X=15:Y=137:W$="NA":GOSUB30
400 X=15:Y=147:W$="PLEASE PRESS ENTER TO CONTINUE":GOSUB30
405 X=30:Y=147:NA=1
410 A$=INKEY$:IFA$=""THEN410
420 IFA$(<)<CHR$(13)GOTO410 ELSE500
500 PCLS(5):A=0:B=0:C=255:FORD=191TO170 STEP-3:LINE(A,B)-(C,D),PSET,B:A=A+3:B=B+3:C=C-3:NEXTD
510 GOTO570
520 X=30:Y=70:GOSUB30
525 X=30:Y=90:W$="ANSWER:-":GOSUB30
530 A$=INKEY$:IFA$=""THEN530
540 IFA$(<)<"Y" AND A$(<)<"N" THEN530
545 PLAY"T255V31ACFGEDAB"
550 IFA$="Y" THENSC=SC+PS(1A):X=100:Y=90:W$="YES":GOSUB30:FORTL=1TO100:NEXTELSEIFA$="N" THENX=100:Y=90:W$="NO":GOSUB30
560 IA=IA+1:COLOR5:LINE(25,25)-(230,110),PSET,BF:COLOR0:RETURN
570 W$="DO YOU GO OUT AND RAGE M UCH":GOSUB520
580 W$="DO YOU HAVE TROUBLE SLEEPING":GOSUB520
590 W$="ARE YOU ADDICTED TO ANYTHING":GOSUB520
600 W$="DO YOU WALK AROUND HOME NUDE":GOSUB520
610 W$="ARE YOU A HYPOCHONDRIAC":GOSUB520
620 W$="ARE YOU ACCIDENT PRONE":GOSUB520
630 W$="ARE YOU A GARBAGE GUTS":GOSUB520
640 W$="ARE YOU MARRIED":GOSUB520
650 W$="ARE YOU UNEMPLOYED":GOSUB520
660 W$="GOT ANY KID'S":GOSUB520
670 W$="ARE YOU RETIRED":GOSUB520
680 W$="IS YOUR FAMILY IN GOOD HEALTH":GOSUB520
690 W$="ARE YOU PREGNANT":GOSUB5
```



```

20
700 Ws="DOES NICOTINE RULE YOUR
LIFE":GOSUB520
710 Ws="DO YOU RISK A.I.D.S.":GO
SUB520
720 Ws="HAS THE STORK VISTED LAT
ELY":GOSUB520
730 Ws="IS YOUR BOSS NOT AMUSED"
:GOSUB520
740 Ws="ARE YOU BROKE":GOSUB520
750 Ws="DO YOU GAMBLE":GOSUB520
760 Ws="DO YOU LIKE FAST CAR'S":
GOSUB520
770 Ws="DO YOU KICK THE DOG IN T
EMPER":GOSUB520
780 Ws="DO YOU SUFFER FROM TENSI
ON":GOSUB520
790 Ws="ARE YOU SUCCESSFUL":GOSU
B520
800 Ws="IS YOUR MORTGAGE OVER $90
,000":GOSUB520
810 Ws="IS WORK THE PIT'S":GOSUB
520
820 Ws="DO YOU HAVE A PASSPORT":
GOSUB520
830 Ws="DO YOU SUFFER ARTHRITIS"
:GOSUB520
840 Ws="ARE YOUR IN-LAWS A PAIN"
:GOSUB520
850 Ws="GOT WHAT YOU WANT OUT OF
LIFE":GOSUB520
860 Ws="HAVE YOU TRAVELED AUSTRA
LIA":GOSUB520
870 Ws="ARE YOUR KIDS AT SCHOOL"
:GOSUB520
880 Ws="MOVED HOUSE LATELY":GOSU
B520
890 Ws="ARE YOU A HAPPY PERSON":
GOSUB520
900 Ws="DO YOU HATE YOUR BOSS":G
OSUB520
910 Ws="DO YOU SMOKE THE FUNNY S
TUFF":GOSUB520
920 Ws="DO YOU WORK BACK":GOSUB5
20
930 Ws="ARE YOU A COMPUTER WIDOW
/ER":GOSUB520
940 Ws="HAVE YOU FINISHED A TRAD
E/UNI":GOSUB520
950 Ws="DO YOU PLAY COMPUTER GAM
ES":GOSUB520
960 Ws="DO YOU BELIEVE IN GOD":G
OSUB520
970 Ws="DO YOU LIKE GARDENING":G
OSUB520
980 Ws="DO YOU HAVE ANYTHING ON
H.P.":GOSUB520
990 Ws="ARE YOU ON A COMMITTEE":
GOSUB520
1000 Ws="DO YOU CARE ABOUT OTHER
S":GOSUB520
1010 Ws="DO YOU LIKE OPERA":GOSU
B520
1020 Ws="ARE YOU GOING ON HOLIDA
Y":GOSUB520
1030 Ws="IS IT ALWAYS CHRISTMAS"
:GOSUB520
1040 Ws="HAVE YOU EVER ROBBED A
BANK":GOSUB520
1045 X=40:Y=40:Ws="PLEASE WAIT W
HILE I CHECK ":GOSUB30:X=40:Y=60

```

```

:Ws="YOUR ANSWERS WITH MY ":GOSU
B30:X=40:Y=80:Ws="THIRD EYE":GOS
UB301050 FORA=1TO50:SOUND(RND(25
5)),1:NEXT
1060 CIRCLE(118,125),18,,.40:CIR
CLE(118,125),20,,.40:CIRCLE(118,
125),8:CIRCLE(118,125),2:DRAW"EM
133,121R2DR2DR2DR2DL2DL2DL2DL2":
DRAW"BM103,121L2DL2DL2DL2DR2DR2D
R2DR2"
1070 FORTL=1TO1000:NEXT
1100 FORY=0TO111:S=.23:X=50+COS(
S*Y):COLOR5:LINE(0,Y)-(X+16S/2,Y
),PSET:COLOR0:LINE-(X+148,Y),PSE
T:COLOR5:LINE-(255,Y),PSET:NEXT:
COLOR0:LINE(0,111)-(255,191),PSE
T,BF:COLOR5
1110 IFSC<=90 THEN GOSUB2000
1111 IFSC>90 AND SC<150 THEN GOS
UB2100
1112 IFSC>150 AND SC<200 THEN GO
SUB2200
1113 IFSC>200GOSUB2300
1200 X=10:Y=165:Ws="INSTEAD OF C
ROSSING A PALM WITH":GOSUB30:X=1
0:Y=175:Ws="SILVER PLEASE INSERT
GOLD ":GOSUB30:X=10:Y=185:Ws="M
ICRO CHIP'S THANK YOU.":GOSUB30
1210 EXEC44539
1300 CLS:PRINT"BYE":END
2000 COLOR0:Ws=NA$:X=10:Y=105:GO
SUB30:COLOR5:X=10:Y=120:Ws="YOU
LEAD A STABLE,SAFE WAY OF":GOSUB
30:X=10:Y=130:Ws="LIVING AND YOU
ARE LESS LIKELY":GOSUB30:X=10:Y
=140:Ws="THAN AVERAGE TO DIE YOU
NG.":GOSUB30
2001 X=10:Y=150:Ws="OH! UNLESS Y
OU DIE OF BOREDOM":GOSUB30:RETUR
N
2100 COLOR0:Ws=NA$:X=10:Y=105:GO
SUB30:COLOR5:X=10:Y=120:Ws="THER
E'S A 37% CHANCE OF YOU":GOSUB30
:X=10:Y=130:Ws="HAVING HEALTH OR
SAFETY ":GOSUB30:X=10:Y=140:Ws=
"PROBLEMS BUT ON THE WHOLE YOU":

```

```

GOSUB30:X=10:Y=150:Ws="ENJOY LIF
E.":GOSUB30:RETURN
2200 COLOR0:Ws=NA$:X=10:Y=105:GO
SUB30:COLOR5:X=10:Y=120:Ws="BOY
AM I GLAD THAT I DON'T":GOSUB30:
X=10:Y=130:Ws="WORK OR PLAY AT T
HE RATE YOU DO":GOSUB30:X=10:Y=1
40:Ws="SLOW DOWN FOR EVERYONE'S
SAKE":GOSUB30:RETURN
2300 X=10:Y=120:Ws="*****S
T O P*****":GOSUB30:X=10:Y=
130:Ws="SIT DOWN,RELAX OR YOU MI
GHT":GOSUB30:X=10:Y=140:Ws="END
UP HERE":GOSUB30:LINE(0,0)-(255,
111),PSET,BF:GOSUB2500
2500 COLOR0:DRAW"BM40,20D40F50U5
H45U35H5R50F5NL50D35NL50F45NL50D
5L50"
2501 X=50:Y=35:Ws="R.I.P.":GOSUB
30:Ws=NA$:X=50:Y=45:GOSUB30:COLO
R5:RETURN
2600 EXEC44539
5000 POKE248,50:POKE249,98:POKE2
50,28:POKE251,175:POKE252,126:PO
KE253,173:POKE254,165:POKE410,12
6:POKE411,0:POKE412,248:CLS:PRIN
T00,STRING$(32,156):Y$="PREDICT"
:FORX=1TO19:PRINT@63-X,LEFT$(Y$,
X):SOUND180,1:NEXT:PRINT@64,STRIN
G$(32,156)
5010 PRINT@96," BEFORE YOU E
NTER THE MYSTICAL WOR
LD OF COCO PLEASE ENTER
YOUR NAME FOR FUTURE R
EFERENCE"
5020 PRINT@256,STRING$(32,156)
5030 PRINT@288,"":INPUT"YOUR NA
ME PLEASE KEEP YOUR NAME 10 CHAR
ACTERS OR LESS":NA$
5040 IFLEN(NA$)=0 THENPRINT"YOU
MUST HAVE A NAME":FORTL=1TO1000:
NEXT:GOTO5000ELSEIFLEN(NA$)>10TH
ENPRINT"10 CHARACTERS PLEASE":FO
RTL=1TO1000:NEXT:GOTO5000ELSERET
URN

```



"I'm afraid you've been sitting at your computer too much Mr. Foddlesworth! Your spine has floppy disks!"

Get into the picture with...

DRAWINGS

16K DECB (can be modified)
CoCo 1/2

by Paul Savage

MY FIRST DRAWING is my own work and I spent many sleepless nights bashing away at the keys to get a result.

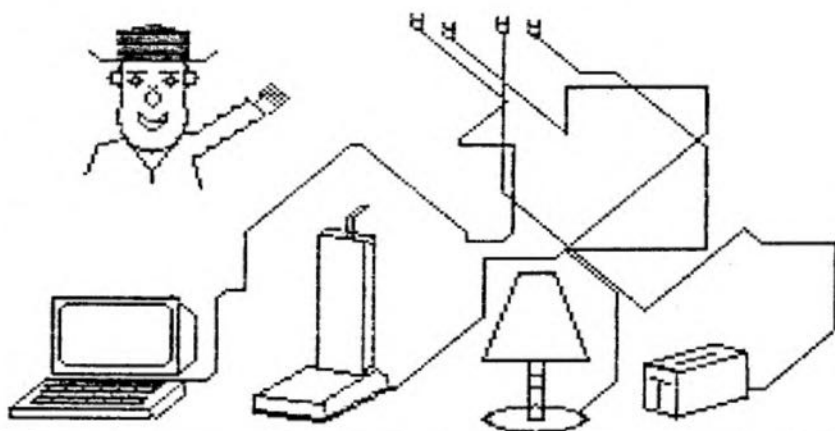
This is my first time that I have sent graphics programs to you except for the "Quick on the Draw" competition.

To RUN this program just LOAD "BOOTDRA" and type RUN.

The first drawing was done as a special for my wife - she asked me to do "something Egyptian" as a letter heading.

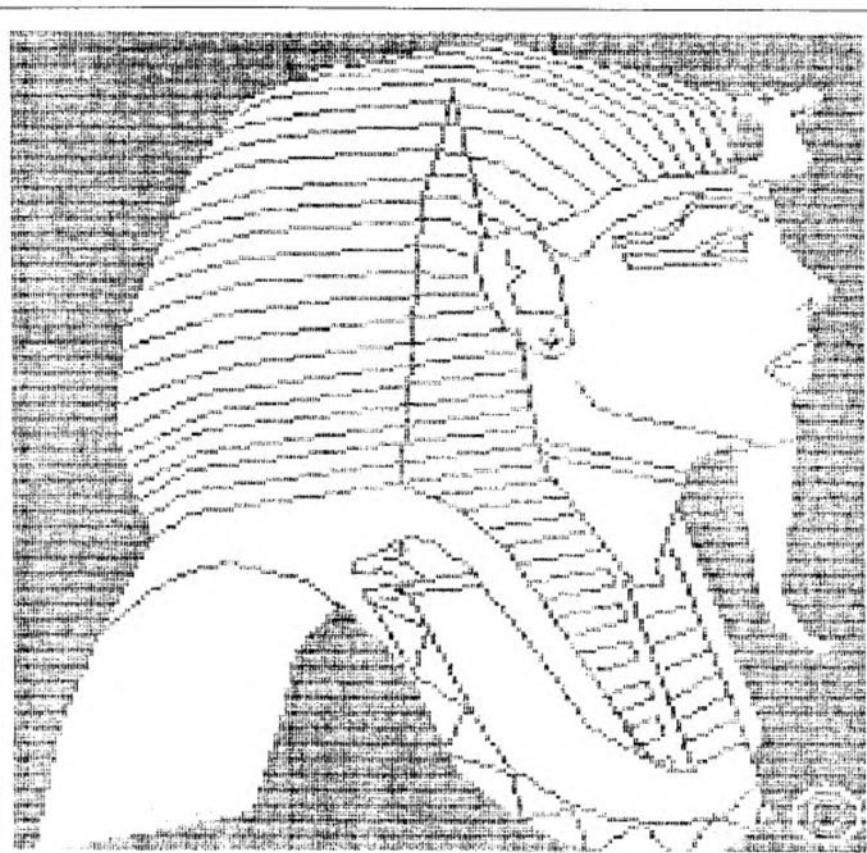
The second drawing came from an idea from a breakfast cereal card and I thought it appropriate for many of us users.

WHAT A MESS! WHICH CORD DO I
NEED TO PLUG IN MY COMPUTER



The Listing:

```
1 CLS0
2 PRINT@44,"drawings";
3 PRINT@79,"by";
4 PRINT@266,"paul";CHR$(128);"a"
;CHR$(128);"savage";
5 EXEC44539
6 CLS:PRINT"THE DRAWINGS THAT FO
LLOW ARE TO SHOW HOW WONDERFULL
THE GRAPHICSARE ON THE TANDY COL
OR COMPUTER."
7 PRINT"THERE HAS BEEN A LOT OF
RAVING ON ABOUT COCO 3 BUT IN M
Y VIEW THERE IS A LOT MORE OF C
OCO 1 AND 2 TO RAVE ABOUT JUST
YET."
8 PRINT"JUST HIT ANY KEY TO VIEW
THE SECOND PICTURE AFTER THE
FIRST ONE HAS LOADED
NOTE** I HAVE A GREY CAS
E 64K UPGRADED FROM 16K.":MS="
PRESS ENTER TO VIEW PICTURES":FO
RX=1TO30:PRINT@479-X,LEFT$(M$,X)
:SOUNDRND(255),1:NEXT
9 EXEC44539
10 PMODE4:PCLS:SCREEN1,1
20 LOADM"DRAWING1"
30 EXEC44539
40 LOADM"DRAWING2"
50 EXEC44539
```



CoCo comes up with the goods.

SUPERDRAW

32K ECB + Speech Pak (optional)
UTILITY

by John Baker

SUPERDRAW IS A drawing program that lets you draw in any graphic screen and save it to tape.

I do not have a disk drive so someone might be able to work out how to save the pictures to disk.

If you have a Tandy Speech / Sound Pak, plug it in the cartridge port and the program will tell you what to do.

The program will work with or without the pak. I have still incorporated sounds into the program even if you don't have the pak.

A short list of commands may be printed out. I have a TP-10 printer, so for other printers simply drop the control codes.

You use the right joystick to control movements of the flashing cursor (a flashing pixel).

The keyboard arrows can be used for more detail.

There are 22 different commands from the keyboard.

They are:-

A-BOX: press once to initiate one corner and again for the opposite corner and the box will be drawn.

S-BOX FILLED: same as box but filled.

C-COLOUR: press to change present colour to another.

Z-PMODE: press to change from PMODE4 or to PMODE3 or vice versa ...

X-SCREEN: press to select SCREEN1,0 or SCREEN1,1.

O-CIRCLE: press once and fill in data. While on the graphics screen press again and the present cursor position will be the centre of the circle.

Y-REPEAT CIRCLE: this can be used to draw a circle several times by using the data from the 'O' command. Press it and the circle will be drawn from the current cursor position.

P-PAINT: press once and fill in data. Press again to paint at current cursor position. NOTE:- The colour of the cursor must be different to the border colour you selected.

T-REPEAT PAINT: this can be used to paint several times using paint data. Same as 'T' command for circle.

I-PENCIL: use joystick to make pencil size. Press fire button once to use as a cursor. Press fire button again to exit.

R-RUBBER: press once and rub away in opposite cursor colour. Press fire button to exit.

M-QUIT: exit program.

S-SAVE: save a program to tape.

L-LOAD: a program from tape.

ENTER-DRAW A LINE: press once to set first co-ordinate and a second time to draw a line in current cursor colour.

CLEAR-CLEAR SCREEN: clear screen in cursor colour.

GET: I have provided you with 3 arrays in which you can store areas of your choice. First select which array by commands:-

D-GET 1 F-GET 2 V-GET 3

Move cursor to top left corner and select array. Use joystick to select area (flashing dots) and press firebutton.

PUT: You must first GET to PUT an array on the screen. Simply select which array by command:-

G-PUT 1 H-PUT 2 B-PUT 3

Use joystick to place array and press fire button.

NOTE:- which colour the cursor is in before PUTing or you will leave a trail of unwanted colours behind the array.

I hope you enjoy this program. I use it alot for graphic pictures in my programs. I have included one picture at the end of the program.

The Listing:

```
0 GOTO4
1 ***** SUPERDRAW *****
*USE WITH OR WITHOUT SPEECH PAK*
***** BY JOHN BAKER *****
***** JUNE, 1987 *****
3 SAVE"284:3":END'8
4 POKE65494,0
5 CLEAR1000:SS=&HFF7E
10 POKE &HFF00+1,52:POKE &HFF00+
3,63:POKE &HFF00+35,60
```



```

15 POKE&HFF7D,1:POKE&HFF7D,0
20 GOTO 100
30 S2=&HFF00:POKES2+1,52:POKES2+
3,63:POKES2+35,60:SS=&HFF7E:FOR
1=1 TO LEN(A$)
40 IF PEEK(SS) AND 123=0 THEN 40
50 POKE SS,ASC(MID$(A$,S1,1))
60 NEXT S1
70 IF PEEK(SS) AND 123=0 THEN 70
80 POKE SS,13:RETURN
90 IF PEEK(SS)=191 THEN 90 ELSE
RETURN
100 DIM A(200),B(200),C(200):PM=
4:CO=1:SC=1:H1=128:V1=96
110 CLS:PRINT@32,STRING$(32,156)
:PRINT@448,STRING$(32,147):PRIN
T@107,"WELCOME TO":PRINT@171,STR
ING$(10,188):PRINT@235,STRING$(1
0,179):PRINT@202,CHR$(186)+"supe
r-draw"+CHR$(181):PRINT@170,CHR
$(190):PRINT@234,CHR$(187):
120 PRINT@181,CHR$(189):PRINT@2
45,CHR$(183):PRINT@139,"-----
---":PRINT@297,"BY JOHN BAKER."
:AS="WELCOME TO SOOPER DRAW ..B
Y JOHN BAKER ":GOSUB30:GOSUB90
130 PRINT@360,"+INSTRUCTIONS?":
:PRINT@392,"*(Y)ES OR (N)O*":A$
="INSTRUCTIONS ..YES OR NO ":GOS
UB30:GOSUB90
135 PLAY"O3L255T255ABCDEFGV31AAA
AABBBBBBCCCCDDDDDEEEEEFFFFFG
GGGGG"
140 A$=INKEY$:IFA$=""THEN140 ELS
E IF A$="Y" THEN 9000 ELSE IF A$
="N" THEN 150 ELSE 140
150 A$="NO ":GOSUB30:GOSUB90
160 CLS:PMODEPM,1:PCLS:SCREEN 1,
SC
170 POKE65495,0
175 PMODEPM,1:SCREEN1,SC
200 B$=INKEY$:IFB$=""THEN 400
210 IFB$="C" THEN GOSUB1000
220 IFB$="Z" THEN GOSUB1100
230 IFB$="X" THEN GOSUB1200
240 IF B$=CHR$(12) THEN GOSUB300
0
250 IFB$="I" THEN GOSUB1300
260 IFB$="A" THEN GOSUB1500
270 IFB$="S" THEN GOSUB 1600
280 IFB$="P" THEN GOSUB1700
290 IFB$="M" THEN GOSUB1800
300 IFB$="O" THEN GOSUB1900
310 IFB$="R" THEN GOSUB2000
320 IFB$=CHR$(94) THEN V1=V1-1
330 IFB$=CHR$(10) THEN V1=V1+1
340 IFB$=CHR$(8) THEN H1=H1-1
350 IFB$=CHR$(9) THEN H1=H1+1
360 IFB$=CHR$(13) THEN GOSUB2100
370 IFB$="K" THEN GOSUB2200
372 IFB$="T" THEN GOSUB2600
374 IFB$="Y" THEN GOSUB2700
376 IFB$="V" THEN GOSUB2400
378 IFB$="B" THEN GOSUB2500
380 IFB$="L" THEN GOSUB2300
382 IFB$="D" THEN GOSUB2400
384 IFB$="F" THEN GOSUB2400
386 IFB$="G" THEN GOSUB2500
388 IFB$="H" THEN GOSUB2500
400 H=JOYSTK(0):V=JOYSTK(1)
410 IFH<6 THEN H1=H1-1 ELSE IF H
>58 THEN H1=H1+1
420 IFV<6 THEN V1=V1-1 ELSE IF V
>58 THEN V1=V1+1
430 IFH1<0 THEN H1=0 ELSE IF H1>
255 THEN H1=255
440 IFV1<0 THEN V1=0 ELSE IF V1>
192 THEN V1=192
445 PSET(H1,V1,L1)
450 PSET(H1,V1,CO)
500 GOTO 200
1000 REM COLOR CHANGE
1001 SOUND100,4
1005 IF PM=4 THEN 1050
1010 LI=1:CO=CO+1:IF CO>4 THEN C
O=1:LI=4
1015 COLORCO,1
1020 RETURN
1050 IF CO=0 THEN CO=1:LI=0 ELSE
CO=0:LI=1
1055 COLORCO,1
1060 RETURN
1100 REM PMODE CHANGE
1105 SOUND100,5:SOUND50,1
1110 IF PM=4 THEN PM=3 ELSE PM=4
1115 PMODE PM,1:SCREEN1,SC
1120 RETURN
1200 REM SCREEN CHANGE
1205 SOUND50,5:SOUND100,1
1210 IF SC=0 THEN SC=1 ELSE SC=0
1215 SCREEN 1,SC
1220 RETURN
1300 REM PENCIL
1305 A$="PENCIL ":GOSUB30:GOSUB9
0
1306 SOUND50,5:SOUND55,5
1310 LINE(H1,V1)-(H1+1,V1+1),PSE
T,BF
1315 P1=0:P2=0
1320 COLORCO,1:H=JOYSTK(0):V=JOY
STK(1)
1330 IFH<6 THEN P1=P1-1 ELSE IF
H>58 THEN P1=P1+1
1340 IFV<6 THEN P2=P2-1 ELSE IF
V>58 THEN P2=P2+1
1350 IF P1<0 THEN P1=0 ELSE IF P
1>100 THEN P1=100
1360 IF P2<0 THEN P2=0 ELSE IF P
2>100 THEN P2=100
1370 LINE(H1,V1)-(H1+P1,V1+P2),P
SET,BF
1380 P=PEEK(65280):IF P=126 OR P
=254 THEN FORLH=1TO500:NEXTLH:GO
TO1400
1385 COLORL1,1:LINE(H1-1,V1-1)-(
H1+P1+1,V1+P2+1),PSET,B
1390 GOTO 1320
1400 H=JOYSTK(0):V=JOYSTK(1)
1410 IF H<6 THEN H1=H1-1 ELSE IF
H>58 THEN H1=H1+1
1420 IF V<6 THEN V1=V1-1 ELSE IF
V>58 THEN V1=V1+1
1430 IF H1<0 THEN H1=0 ELSE IF H
1+P1>255 THEN H1=H1-1
1440 IF V1<0 THEN V1=0 ELSE IF V
1+P2>192 THEN V1=V1-1
1450 LINE(H1,V1)-(H1+P1,V1+P2),P
SET,BF
1460 P=PEEK(65280):IF P=126 OR P
=254 THEN RETURN ELSE 1400
1500 REM BOX
1505 SOUND255,5
1510 IF B1=1 THEN B1=0:GOTO1550
1515 IF PM=4 THEN PSET(H1,V1,1)
ELSE PSET(H1,V1,CO)
1520 B2=H1:B3=V1:B1=1:RETURN
1550 COLORCO,1:LINE(B2,B3)-(H1,V
1),PSET,B:B1=0:A$="BOX ":GOSUB30
:GOSUB90:RETURN
1600 REM BOX FILLED
1605 SOUND255,5
1610 IF F1=1 THEN F1=0:GOTO1650
1615 IF PM=4 THEN PSET(H1,V1,1)
ELSE PSET(H1,V1,CO)
1620 F2=H1:F3=V1:F1=1:RETURN
1650 COLORCO,1:LINE(F2,F3)-(H1,V
1),PSET,BF:F1=0:A$="BOX ":GOSUB3
0:GOSUB90:RETURN
1700 REM PAINT
1701 T5=1
1705 IFT3=1 THEN1780
1706 T3=1
1710 CLS:PRINT"PRESS KEY FOR COL
OUR TO PAINT INFOLLOWED BY BORDE
R COLOR.":A$="PRESS KEY FOR COLO
R TO PAINT IN. FOLLOWED BY EBORD
ER COLOR ":GOSUB30:GOSUB90
1715 SOUND100,5
1720 B$=INKEY$:IFB$=""THEN1720
1730 T1=VAL(B$)
1735 SOUND100,5
1740 B$=INKEY$:IFB$=""THEN1740
1745 SOUND100,5
1750 T2=VAL(B$):IF T1<0 OR T1>8
OR T2<0 OR T2>8 THEN PRINT"INCOR
RECT VALUE.. TRY AGAIN ":SOUND10
0,10:SOUND50,5:A1="IN CORRECT VA
LUE.. TRY AGAIN ":GOSUB30:GOSUB9
0:GOTO1710
1760 PRINT"PRESS p TO PAINT":A$=
"PRESS P TO PAINT":GOSUB30:GOSUB
90:FORLH=1TO1000:NEXTLH:SCREEN1,
SC:RETURN
1730 T3=0:SOUND100,5:SOUND100,5:
SOUND50,1:PAINT(H1,V1),T1,T2:RET
URN
1800 REM QUIT
1805 CLS:PRINT"ARE YOU SURE YOU
WANT TO QUIT?":SOUND200,10:
1810 A$="ARE YOU SURE YOU WANT T
O QUIT":GOSUB30:GOSUB90
1820 B$=INKEY$:IFB$=""THEN1820
1830 IFB$="N" THEN SCREEN1,SC:RE
TURN ELSE IF B$="Y" THEN 1840 EL
SE 1810
1840 POKE65494,0
1850 CLS:END
1900 REM CIRCLE
1901 T6=1
1902 SOUND10,5:SOUND50,1
1905 IF FC=1 THEN FC=0:GOTO1960
1906 FC=1
1909 POKE65494,0
1910 A$="ENTER CIRCLE RADIUS ":G
OSUB30:GOSUB90
1920 CLS:PRINT"OLD CIRCLE DATA":
PRINT"RADIUS ":C6:PRINT"COLOR":C
7:PRINT"HEIGHT/WIDTH":C8:PRINT"S
TART POINT":C9:PRINT"END POINT":
DC:PRINT"PRINT"NEW CIRCLE DATA":
INPUT"RADIUS":C6:A$="ENTER COLOR
":GOSUB30:INPUT"COLOR":C7:A$="E
NTER HIGHT RAY SHE O":GOSUB30
1930 INPUT"HEIGHT/WIDTH (0-255)(
1)":C8:A$="START POINT":GOSUB30:
INPUT"START POINT (0)":C9:A$="EN

```

```

D POINT":GOSUB30:INPUT"END POINT
(1)";DC
1940 POKE65495,0
1950 SCREEN1,SC:RETURN
1960 CIRCLE(H1,V1),C6,C7,C8,C9,D
C:RETURN
2000 REM RUBBER
2001 POKE65494,0
2002 IFFM=4 AND CO=1 THEN LC=0 E
LSE IF FM=4 THEN LC=1 ELSE IF PM
=3 AND CO=1 THEN LC=4 ELSE IF PM
=3 THEN LC=1
2005 A$="RUBBER ":GOSUB30:GOSUB9
0
2006 POKE65495,0
2007 SOUND1,1:SOUND10,1
2010 H=JOYSTK(0):V=JOYSTK(1)
2011 COLOR CO,1
2020 IFH<6 THEN H1=H1-1 ELSE IF
H>58 THEN H1=H1+1
2030 IFV<6 THEN V1=V1-1 ELSE IF
V>58 THEN V1=V1+1
2040 IF H1<0 THEN H1=0 ELSE IF H
1+10>255 THEN H1=H1-1
2050 IFV1<0 THENV1=0 ELSE IF V1+
10>192 THEN V1=V1-1
2053 P=PEEK(65280):IF P=126 OR P
=254 THEN RETURN
2054 LINE(H1+1,V1+1)-(H1+9,V1+9)
,PSET,BF
2056 COLORLC,1
2060 LINE(H1,V1)-(H1+10,V1+10),P
SET,BF:GOTO2010
2100 REM LINE TO LINE
2105 SOUND70,3
2110 IF E1=1 THEN 2150
2120 PSET(H1,V1,CO):E1=1:E2=H1:E
3=V1:RETURN
2150 E1=0:LINE(E2,E3)-(H1,V1),PS
ET:RETURN
2200 REM SAVE
2205 CLS:SOUND20,10:PRINT"ARE YO
U SURE YOU WANT TO SAVE THIS P
ICTURE?"
2210 A$="ARE YOU SURE YOU WANT T
O SAVE THIS PICTURE":GOSUB30:GOS
UB90
2220 B$=INKEY$:IFB$=""THEN2220 E
LSE IF B$="Y"THEN 2230 ELSE IF B
$="N" THEN SCREEN1,SC:RETURN ELS
E2210
2230 A$="ENTER A FILE NAME OF 8
LETTERS":GOSUB30:GOSUB90
2240 POKE65494,0
2250 INPUT"FILENAME:";GN$:CSAVEM
GN$,1526,7679,1536
2260 A$="SAVE COMPLETE":GOSUB30:
POKE65495,0:SCREEN 1,SC:RETURN
2300 REM LOAD
2305 CLS:SOUND20,10:PRINT"ARE YO
U SURE YOU WANT TO LOAD?"
2310 A$="ARE YOU SURE YOU WANT T
O LOAD":GOSUB30:GOSUB90
2320 B$=INKEY$:IFB$=""THEN2320
2330 IFB$="Y"THEN2340ELSEIFB$="N
"THEN SCREEN1,SC:RETURN ELSE2310
2340 POKE65494,0:A$="ENTER FILE
NAME":GOSUB30:INPUT"FILENAME:";G
N$:GN$=LEFT$(GN$,8):SCREEN1,SC:C
LOADM GN$
2350 A$="FILE LOADED":GOSUB30:SC
REEN 1,SC:POKE65495,0:RETURN
2400 CLS:PRINT"ARE YOU SURE YOU
WANT TO GET?":REM GET 1+2+3
2401 A$="ARE YOU SURE YOU WANT T
O GET":GOSUB30:GOSUB90
2402 AB$=INKEY$:IFAB$=""THEN2402
ELSEIFAB$="Y"THEN2405ELSEIFAB$="
N"THEN SCREEN1,SC:RETURN ELSE240
1
2405 SCREEN1,SC:G1=30:G2=30
2406 PSET(H1,V1,CO)
2410 H=JOYSTK(0):V=JOYSTK(1)
2420 IFH<6 THEN G1=G1-1 ELSE IF
H>58 THEN G1=G1+1
2430 IFV<6 THEN G2=G2-1 ELSE IF
V>58 THEN G2=G2+1
2450 IF G1<5 THEN G1=5 ELSE IF G
1>100 THEN G1=100
2460 IF G2<5 THEN G2=5 ELSE IF G
2>100 THEN G2=100
2470 G3=PPOINT(H1+G1,V1+G2):PSET
(H1+G1,V1+G2,CO):PSET(H1+G1,V1+G
2,G3):G3=PPOINT(H1+G1,V1):PSET(H
1+G1,V1,CO):PSET(H1+G1,V1,G3):G3
=PPOINT(H1,V1+G2):PSET(H1,V1+G2,
CO):PSET(H1,V1+G2,G3)
2480 P=PEEK(65280):IF P=126 OR P
=254 THEN2485 ELSE GOTO 2410
2485 IFB$="V"THEN2496
2490 IFB$="F"THEN2495
2491 G6=G1:G7=G2
2492 GET(H1,V1)-(H1+G1,V1+G2),A,
G:RETURN
2495 G8=G1:G9=G2:GET(H1,V1)-(H1+
G1,V1+G2),B,G:RETURN
2496 W6=G1:W7=G2:GET(H1,V1)-(H1+
G1,V1+G2),C,G:RETURN
2500 REM PUT1+2
2505 COLORLI,1
2510 A$="PUT ":GOSUB30:GOSUB90
2530 H=JOYSTK(0):V=JOYSTK(1)
2540 IFH<6 THEN H1=H1-1 ELSE IF
H>58 THEN H1=H1+1
2550 IFV<6 THEN V1=V1-1 ELSE IF
V>58 THEN V1=V1+1
2560 IFH1<0 THEN H1=0 ELSE IF H1
+G6>255 OR H1+G8>255 THEN H1=H1-
1
2570 IFV1<0 THEN V1=0 ELSE IF V1
+G7>192 OR V1+G9>192 THEN V1=V1-
1
2580 P=PEEK(65280):IF P=126 OR P
=254 THEN RETURN
2585 IFB$="E"THEN2598
2590 IFB$="H" THEN 2595
2592 PUT(H1,V1)-(H1+G6,V1+G7),A,
PSET
2593 LINE(H1-1,V1-1)-(H1+G6+1,V1
+G7+1),PSET,B
2594 GOTO2530
2595 PUT(H1,V1)-(H1+G8,V1+G9),B,
PSET
2596 LINE(H1-1,V1-1)-(H1+G8+1,V1
+G9+1),PSET,B
2597 GOTO2530
2598 PUT(H1,V1)-(H1+W6,V1+W7),C,
PSET:LINE(H1-1,V1-1)-(H1+W6+1,V1
+W7+1),PSET,B
2599 GOTO2530
2600 SOUND100,5:SOUND100,5:SOUND
50,1:REM PAINT
2601 IFT5=1 THEN 2605 ELSE RETUR
N
2605 A$="PAINT ":GOSUB30:GOSUB90
2610 PAINT(H1,V1),T1,T2:RETURN
2700 REM CIRCLE
2701 IFTG=1 THEN2710 ELSE RETURN
2710 A$="CIRCLE ":GOSUB30:GOSUB9
0:CIRCLE(H1,V1),C6,C7,C8,C9,DC:R
ETURN
3000 CLS:PRINT"ARE YOU SURE YOU
WANT TO CLEAR THE SCREEN?":A$="
ARE YOU SURE YOU WANT TO CLEAR T
HE SCREEN":GOSUB30:GOSUB90
3005 SOUND20,10
3010 IFINKEY$="Y"THENPCLS CO:SCR
EEN1,SC:RETURN ELSE IFINKEY$="N"
THEN SCREEN1,SC:RETURN ELSE 3010
3040 P=PEEK(65280):PRINT@32,P;:G
OTO3040
9000 POKE65494,0:A$="YES":GOSUB3
0:GOSUB90:CLS:PRINT"*****/IN
STRUCTIONS\*****/*";A$="INST
RUCTIONS ":GOSUB30
9010 PRINT@32,STRING$(32,169)
9020 PRINT@64," THIS IS A UTILI
TY DESIGNED TO BE USED IN MAKING
PICTURES. THE PICTURES MA
Y BE SAVED TO TAPE AND LOADED A
S AN M.L. FILE. I HAVE INCLUDED
MANY OPTIONS."
9025 A$="THIS IS A UTILITY DESIG
NED TO BE USED IN MAKING PICTURE
S.. THE PICTURES MAY BE SAVED TO
TAPE AND LOADED AS AN M L FILE
.. I HAVE INCLUDED MANY OPTIONS.
":GOSUB30:GOSUB90
9030 PRINT:A$="DO YOU REQUIRE A
PRINT OUT OF THE COMANDS ":GOSUB
30:INPUT"DO YOU REQUIRE A PRINTO
UT OF THECOMMANDS";CV$:CV$=LEFT$
(CV$,1):IFCV$="Y"THEN9040 ELSE16
0
9040 PRINT:A$="IS PRINTER ON LIN
E":GOSUB30:INPUT"IS PRINTER ON L
INE...";CV$
9050 REM TP-10 PRINTER
9060 PRINT#-2,CHR$(28) CHR$(32)
CHR$(134)
9070 PRINT#-2,CHR$(27) CHR$(14)
"***COMMANDS***"
9080 PRINT#-2,CHR$(27) CHR$(15)
"A-BOX B-PUT3
C-COLOUR D-GET1
E- F-GET2
G-PUT1 H-PUT2
I-PENCIL J-
K-SAVE L-LOAD
M-QUIT N- "
9090 PRINT#-2,"O-CIRCLE
F-PAINT Q-
R-RUBBER S-BOX FILLED
T-REP PAINT U-
V-GET3 W-
X-SCREEN MODE Y-REP CIRCLE
Z-FMODE"
9100 PRINT#-2,"ENTER-POINT TO PO
INT CLEAR-CLEAR SCREE
N"
9110 PRINT#-2,CHR$(28) CHR$(32)
CHR$(134)
9120 A$="PRINTING COMPLETE":GOSU
B30:GOSUB90:GOTO160

```

Get your lucky numbers to come up.

LOTTO CHECK8

16K ECB
APPLICATION

by Keith Echburg

LOTCHECK8 WAS WRITTEN by me for 2 reasons. The first being because I am still only a beginner and wished to get experience in programming and secondly, because I wanted to get some practical use out of my new hobby.

As the suffix '8' suggests this edition is not my first; unfortunately there is no room in the filename for double digits!

My "lotto philosophy" is that once you have decided on a set of numbers you stay with them for better or for worse (mainly the latter!). I generated my numbers in random fashion from my CoCo and enter a 5-weekly full coupon of 10 games.

Whilst it is a little tedious entering the 60 numbers into the computer ('F\$') in the first place, once they are there that is the end of the matter for a long time.

Then all you have to do each week is enter the 8 winning numbers at line 10 of "Lottocheck" and you get a printout of your 'luck' from your printer.

The program has 'STOP' built into it at line 10 initially so this has to be changed so that the winning numbers can be entered as data.

For example,

10 DATA 13,43,24 ... etc.

To avoid confusion, the 2 supplementary numbers should be entered last.

My method of writing this program to enter the winning numbers is, perhaps a little unpolished, and I am sure than someone with more experience that I could improve on it.

However, that was the best that I could do (and I certainly tried a lot of ways).

The Listing:

```
0 CLS
1 PRINT"LOTCHK8"
2 PRINT"FOR CHECKING 'LOTTO' RES
  ULTS."
3 PRINT"BY KEITH ECHBERG,15:9:19
  86":FOR I=1 TO 5000:NEXT I
4 PRINT"ONLY SUITABLE IF YOUR NU
  MBERS ARE THE SAME FOR EVERY DRA
  W"
5 PRINT"ENTER YOUR NUMBERS AT LI
  NES 101,111 ETC.EXISTING NUMBERS
  ARE SAMPLES"
6 PRINT"CHANGE LINE 10 TO ENTER
  THE 8 WINNING NUMBERS AS 'DATA'
  "
7 PRINT"ENTER THE 2 SUPPLEMENTAR
  Y NUMBERS LAST"
8 PRINT"WHEN ALL WINNING NUMBERS
  HAVE BEEN ENTERED,'RUN 10'."
9 PRINT:PRINT#-2,"LOTCHK8":PRIN
  T#-2,""
10 STOP
20 FOR X=1TO8
30 READ F$
40 PRINT "F$="F$:PRINT #-2,"F$="
  :F$
100 REM...GAME 1...
101 IF F$="17" GOTO 201 ELSE 102
102 IF F$="18" GOTO 201 ELSE 10
  3
103 IF F$="19" GOTO 201 ELSE 104
104 IF F$="31" GOTO 201 ELSE 105
105 IF F$="33" GOTO 201 ELSE 106
106 IF F$="25" GOTO 201 ELSE 110
110 REM...GAME 2...
111 IF F$="9" GOTO 211 ELSE 112
112 IF F$="20" GOTO 211 ELSE 113
113 IF F$="24" GOTO 211 ELSE 114
114 IF F$="27" GOTO 211 ELSE 115
115 IF F$="19" GOTO 211 ELSE 116
116 IF F$="36" GOTO 211 ELSE 120
120 REM...GAME 3...
121 IF F$="7" GOTO 221 ELSE 122
122 IF F$="6" GOTO 221 ELSE 123
123 IF F$="12" GOTO 221 ELSE 124
124 IF F$="40" GOTO 221 ELSE 125
125 IF F$="35" GOTO 221 ELSE 126
126 IF F$="34" GOTO 221 ELSE 130
130 REM...GAME 4...
131 IF F$="2" GOTO 231 ELSE 132
132 IF F$="5" GOTO 231 ELSE 133
133 IF F$="21" GOTO 231 ELSE 134
134 IF F$="42" GOTO 231 ELSE 135
135 IF F$="23" GOTO 231 ELSE 136
136 IF F$="44" GOTO 231 ELSE 140
```

```
140 REM...GAME 5...
141 IF F$="36" GOTO 241 ELSE 142
142 IF F$="11" GOTO 241 ELSE 143
143 IF F$="42" GOTO 241 ELSE 144
144 IF F$="18" GOTO 241 ELSE 145
145 IF F$="42" GOTO 241 ELSE 146
146 IF F$="36" GOTO 241 ELSE 150
150 REM...GAME 6...
151 IF F$="7" GOTO 251 ELSE 152
152 IF F$="18" GOTO 251 ELSE 153
153 IF F$="14" GOTO 251 ELSE 154
154 IF F$="12" GOTO 251 ELSE 155
155 IF F$="34" GOTO 251 ELSE 156
156 IF F$="45" GOTO 251 ELSE 160
160 REM...GAME 7...
161 IF F$="2" GOTO 261 ELSE 162
162 IF F$="42" GOTO 261 ELSE 163
163 IF F$="15" GOTO 261 ELSE 164
164 IF F$="37" GOTO 261 ELSE 165
165 IF F$="40" GOTO 261 ELSE 166
166 IF F$="45" GOTO 261 ELSE 170
170 REM...GAME 8...
171 IF F$="3" GOTO 271 ELSE 172
172 IF F$="36" GOTO 271 ELSE 173
173 IF F$="41" GOTO 271 ELSE 174
174 IF F$="44" GOTO 271 ELSE 175
175 IF F$="31" GOTO 271 ELSE 176
176 IF F$="38" GOTO 271 ELSE 180
180 REM...GAME 9...
181 IF F$="8" GOTO 281 ELSE 182
182 IF F$="1" GOTO 281 ELSE 183
183 IF F$="19" GOTO 281 ELSE 184
184 IF F$="24" GOTO 281 ELSE 185
185 IF F$="16" GOTO 281 ELSE 186
186 IF F$="42" GOTO 281 ELSE 190
190 REM...GAME 10...
191 IF F$="33" GOTO 291 ELSE 192
192 IF F$="39" GOTO 291 ELSE 193
193 IF F$="28" GOTO 291 ELSE 194
194 IF F$="18" GOTO 291 ELSE 195
195 IF F$="34" GOTO 291 ELSE 196
196 IF F$="41" GOTO 291 ELSE 340
201 PRINT "YES,GAME 1":PRINT#-2,
  "YES,GAME 1":GOTO 110
211 PRINT "YES,GAME 2":PRINT#-2,
  "YES,GAME 2":GOTO 120
221 PRINT "YES,GAME 3":PRINT#-2,
  "YES,GAME 3":GOTO 130
231 PRINT "YES,GAME 4":PRINT#-2,
  "YES,GAME 4":GOTO 140
241 PRINT "YES,GAME 5":PRINT#-2,
  "YES,GAME 5":GOTO 150
251 PRINT "YES,GAME 6":PRINT#-2,
  "YES,GAME 6":GOTO 160
261 PRINT "YES,GAME 7":PRINT#-2,
  "YES,GAME 7":GOTO 170
271 PRINT "YES,GAME 8":PRINT#-2,
  continued on page 51
```




Get ready for...

SUMMER

GRAPHICS

by Joy Wallace

DO YOU MISS summer? Do you live in the very cold parts of Australia? If you do and you wish you had a warm day (or even a hot day) then you'll want to type this one in!

"Summer" (or "3SUMMER" on tape/disk) depicts a hot day somewhere out in sunny Australia.

Just (C)LOAD and RUN, I'm sure it'll make your day ...

The Listing:

```

1 '#####HOT SUMMER#####
#####
#####JOY WALLACE#####
#####
<<<<<1987>>>>
#####FOR THE COCO 3#####
#####
2 GOTO10
3 SAVE"275A:3":END'6
10 PALETTE2,32:PALETTE4,4:PALETT
E7,38:PALETTE9,52
12 HSCREEN2:HCLS1
14 HCOLOR7
16 HLINE(0,0)-(320,35),PSET,BF
18 HCOLOR9:HLINE(0,35)-(320,75),
PSET,BF
20 HDRAW"C2BM0,110M+80,-2E6R2D3M
+5,-3M+2,-4F4M+221,+4
22 HDRAW"BW0,130R40M+18,-5R4M+4,
+1M+8,+6R4M+4,-2M+6,-2F3D3F4M+72
,+6D4R154BNO,150R20M+40,+4R14M+1
0,-2R52M+24,+2R22F2D2M-1,+4M+1,+
2R28M+4,+2D2M+14,+2M+10,-1F2D4M+
8,+1F2D4F2R6OE5
24 HPAINT(5,120),3,2:HPAINT(5,18
0),3,2:HPAINT(310,170),7,2
26 HDRAW"C4BM66,120H2U2E2M+4,+1M
+4,-1M+2,-1R2M+2,+3M+4,+1R4M+72,
+4M+26,+1M+26,-1M+12,+2M+10,+2R8
M+10,-1R16M+4,+1D4M+28,-2R6M+6,+
1M+8,-1BM66,120R6M+18,+5E3R3M+48
,+5R20M+3,+1M-6,+7M-8,-4L8M-6,-2
L10
28 HDRAW"BM120,130M+8,-1L12M-12,
+3M-3,+1D2R8M+6,-1R4D2M+8,+2R32M
+4,+2M+3,+1D1G3D1R3M-10,+6M+7,+1
M+1,+3D2M-4,+2L4M-1,+4M+3,+4E2R2
D4M-12,+10D16BR20U14M+2,-4U2L2U9
M+4,-5L3E4M+10,-2R14M+23,-2F2D2G
2D2M+3,+2R2E2H2U2E2M+8,-2M-2,+3D

```

```

2M+3,+4R6U3G2H2U2M+6,-2R10
30 HDRAW"BM256,151M+6,+2M+6,+3M+
9,-2M-1,-3E2R26FDGM-10,+2D2R12D2
M-6,+2F2R2D2L6G2M+2,+4L3M-1,+3F3
R20F3BM319,130M-14,+3M-4,+2H2L4G
2D6R26U12BM288,135M+2,+7M-11,+1M
-1,-8M+6,-4M+5,+4BL15M+1,+9M-7,+
2M-4,-7M+3,-7M+6,+3
32 HDRAW"BL14D4M+3,+10L18M-5,-10
M+3,-5M+6,+2R11BL30M+10,+11L13H3
M+7,-9EH3M-6,+4M-4,+9M-10,-5U2E2
M-2,-1U2R4E2H2M+4,-5R4F9
34 HPAINT(124,134),4,4
36 HDRAW"C3BM102,102E4F1E2R2F2M+
5,-2F2E2M+1,-4R4F4R3M+1,-2M-1,-3
FEM+2,+1M+2,-1D2REM+2,+5M+5,+1M+
2,-3R6M+3,-2M+6,+4U2R3E4R2M+6,-7
M+4,+7R8F7R2M+1,-3RM+3,-1M+8,+7M
+10,-6R2E6BD4M+3,+6L6M+3,-6BU4M+
2,+3R2ERM+2,+7R2M+2,-9E2R4E3R2M+
4,+3M+4,+10R5U6R6M+8,-10F2
38 HDRAW"M+6,+12BL4L10M+5,-6M+5,
+6BR4R6M-2,-8E4M+3,+2M+1,+8R2M+1
,-12E2R14D4L8M-1,+4M+1,+4M+8,+4C
8BM319,182G3L60H2U2M-34,-1U2E2M-
4,-2M-45,+4G4L10M-10,-5L4GL6M-40
,-4M-20,-2M-20,+2L60
40 HPAINT(310,100),8,3:HPAINT(31
0,189),8,8
42 HCOLOR2:HLINE(4,4)-(315,187),
PSET,B:HPAINT(2,135),2,2:HPAINT(
2,125),2,2:HPAINT(2,2),2,2
44 HDRAW"C8BM46,176M-1,-22M+1,-8
M+10,-20M-5,-6M-6,+12M-2,+6M-1,-
6U6L2M-8,+6D2L2U6E2BU4H3M+4,-2M-
2,+4BD4L4M-8,+6U6M+1,-6E8M-14,+2
U3M+12,-6R9H4M-10,-4E2R8M+3,+2BD
12M-6,+2M-2,-4M+8,+2BU12M+3,+2M-
7,-16R2M+8,+6M+4,+7
46 HDRAW"U11F3U2M+2,-4D12M+4,-6M
+10,-6D2G4M-4,+8BG4L4F4U4BE4M+4,
-2R2M+6,+4F4BM-4,+6M-1,+3M-3,-6M
+5,-1D5EM-3,+5M-2,+4H4U8M+6,+10B
M+6,-14M+11,-17H2M-12,+10M+3,-8M
+14,-13M-24,+9M+14,-18R10M-2,-5M
-11,+5M-6,+4U4M-10,+8M-12,+10UGM
+8,-16M+14,-10
48 HDRAW"M-10,-6M-10,-4L8M+8,-6M
+8,-2R14M+8,+6BF5F8E4M-2,-3M-10,
-1BH5U6M-2,-8M-10,-12M+10,+4M+10
,+8M+4,+6M+11,-16M+9,-2M-4,+8M-4
,+18F10BD4M-6,+8H4M+10,-4BU4M+8,
-4M+12,-3M+3,+1M-6,+12R3M+6,+2M+
3,+6M-3,-2L12M-8,+2M+8,+4L12M-6,
+2F10M+5,+8D8M-6,-7L2
50 HDRAW"M-3,-6D2M-8,-6BU8U8M-6,
+4M+6,+4BD8M-2,+6R4M+4,+3M+6,+9D
7M-6,-9M-9,-8G3M+7,+10M+1,+12D4G

```

```

2U7M-2,-4M-3,-1U3M-1,-3U3M-3,-5M
-3,+6M+3,+8D10M-1,+4M-1,-4M-2,-8
M-3,-6M-18,+33M+13,+17M+4,+8M+4,
+16D10BU9BL17H6M-5,-16U8M+3,-7M+
10,+12M+4,+10D8M-4,+7
52 HDRAW"BR12M+6,-8M+13,-16M+17,
-14M+7,-5M+13,-14M+8,-17M+27,-54
HM-3,+4M-8,+10M-3,+11H3M+4,-16M+
4,-6H2M-8,+6M-2,+6UG6M-3,+4M-1,
-2M+4,-12M+2,-4M+6,-4L2M-12,+4M-
10,+8U2M+8,-10M+12,-8U3L8M-18,+4
M-2,-3E2R3U2L5M-3,+1E4M+20,-4M+1
6,-3M+10,-3M+10,-2R20M+10,+2
54 HDRAW"M+10,+3G10M+12,-2R6M+14
,+6M+5,+4M+1,+5M-8,-4D6M-8,-9L3M
+1,+6M-8,-5L8F2M+16,+8M+6,+4M+6,
+11M+2,+8D14M-2,-6H4M-9,-18G2M-8
,-6M-4,-1L7M+12,18M+3,12D14M-10,
-20M-8,-10M-12,-6M+4,+10M+2,8D10
M-4,+16H2L2M+2,-10L1M-1,-6U14M-2
,-10M-4,-8D14M-3,+14M-5,+8U6
56 HDRAW"M+2,-4U4M-6,+2M+8,-18U2
M-3,-4M-29,+66M-11,+20M-6,+8M-13
,+12M-10,+18M-1,+4D2F6BM187,10M+
12,-1M-5,+7M-8,-6BD10M-1,-4M-8,+
5D2M+10,-3BD6BL12M-13,+4M+7,-6R3
M+3,+2
58 HDRAW"BR18M+6,-4F6M+1,+4G4H10
BR14BU3H3E5M+4,+2G5
60 HPAINT(50,170),8,8:HPAINT(110
,170),8,8:HPAINT(155,96),8,8
62 GOTO 62

```

from page 50

```

"YES,GAME 8":GOTO 180
281 PRINT "YES,GAME 9":PRINT#-2,
"YES,GAME 9":GOTO 190
291 PRINT "YES,GAME 10":PRINT#-2,
"YES,GAME 10":GOTO 340
340 PRINT:PRINT#-2,""
350 NEXT X
360 PRINT"REMEMBER THAT THE LAST
2 NUMBERS ARE SUPPLEMENTARIES"
370 PRINT#-2,"REMEMBER THAT THE
LAST 2 NUMBERS ARE SUPPLEMENTARI
ES"
379 END
380 SAVE"77:3":END'10

```

WORKING DATA

STRUCTURES in FORTH

Languages

by John Redmond

USING BASIC AS a programming language has become a bit of a liability: it's not nearly as portable as it is supposed to be.

So code that was written on a Commodore 64 (say) won't work on the CoCo without extensive modification. And I'm not talking just about graphics statements, I'm talking about bread-and-butter syntax.

Similar sorts of problems have arisen for other 'portable' languages, like C and Pascal - and even Forth!

I'm not intending to introduce one of my well-loved homilies at this point: I bring the subject up to explain the status of different Forth standards, which seem to confuse newcomers to the language.

The history goes something like this: Charles Moore invented the language and set up a company, Forth Inc., to market it as polyForth. This was 1973 and, from the start, polyForth was very successful, but also very expensive. As a result, a group of micro enthusiasts got together to construct their own versions for, originally, the 8080 and Apple.

This group became the Forth Interest Group (FIG), which now has branches all over the world.

Subsequently, several of the FIG members started to market their creations, and they began to add their own special features. But the lesson of Basic was clear, with the result that the Forth-79 standard became necessary.

In the event, this standard left a number of holes, because the language was still evolving fairly fast, but many commercial 79-standard versions were marketed (and still are).

Two years later, though, THE introductory Forth book appeared. It was Leo Brodie's 'Starting Forth', published jointly by Forth Inc. and Prentice-Hall. At that time, Brodie worked for Forth Inc., and it was natural that the Forth he described was the version that his employer sold.

Now this book is so good that it established a standard in its own right, and obviously the conditions were there for thrashing out a more comprehensive standard, which eventually appeared as the 83-standard.

To complete the history on a local note, A*FORTH appeared in 1985 as a 'Starting Forth' version, with the recommendation that all new users start with that book. All well and good, but just one year later a second edition of the book appeared, and it was (wait for it!) 83-standard.

So a REAL standard had finally arrived and I had a decision to make: junk A*FORTH or go through a total rewrite. I elected to do the rewrite, which took several months, and now there is an ultra-standard Forth-83 available for the CoCo 1, 2 or 3, with one or more disks and 64k of memory.

Unfortunately, its name is changed to E*FORTH (it turns out that there is an AForth in the US). End of history and down to work.

If there is any sort of program that I've written N times, it is an editor. And I have to admit that it is one of the hardest packages to write well. There are a few rules that I've discovered along the way, and I feel that many of them apply generally to applications programs.

A good editor must be ...

1. Bug-free and absolutely crash-proof.
2. The program must be fast.
3. The commands must be reasonably obvious and easy to remember.
4. If an incorrect command is given, the response should be reasonable.
5. If possible, the commands should be single keystrokes.
6. The source code should be as portable as possible.

Rule 1 is obvious: who knows who might use the program? And have you ever spent hours typing in text or a program, only to find that you've lost the lot after a single false move?

Rule 2 is an absolute must. Computers are fast, we know, but it's extraordinary how impatient we can get if we have to wait more than the smallest fraction of a second to move a cursor across the screen.

Rule 3 is based on a lot of use of Wordstar. It just is not reasonable to use control-E to move up a line or control-T to remove a word, etc. How I've managed to remember them, I don't know.

Rule 4 is very important, but difficult to get absolutely right with normal structured logic (but more about that in a moment).

Rule 5 comes from my experience with the 'vanilla' Forth editor (like that described in 'Starting Forth'). Many of the commands need spaces in the correct places - and they all need to be followed by a carriage return. No good!

Rule 6 is an ideal. No code is totally portable, but the hardware-dependent parts should be kept localized to minimize the porting job.

Finally, let's think about command input logic which is bulletproof. When we use the editor, we are at liberty to press any of the available keys, some of which will be interpreted as valid commands, while others will be no-ops.

The current version of the E*FORTH keystroke editor has 27 commands and it should be clear that it is just not good sense to use 27 levels of IF ... ELSE decision making.

The source code would be grotesque and the object code would be bulky.

I can hear some of you gentle readers saying: 'A case statement is what you need!' It is true that the source code would be easier to read, but the object code would still be a large bowl of tangled spaghetti.

No! Forth has the way: the decision array.

To keep things simple, let us consider that the editor has just four commands - those to move the cursor up, down, left and right. Looking at rule 3, the obvious keys are the arrow keys, so let's do that.

We will decide to use a decision array that is extensible, so that we can add further commands with zero trouble. Looking at the amount of space required for storage, a key character needs one byte, while an address requires two. Our lookup array therefore requires three bytes per entry and all the information for our four-way logic requires a total of twelve bytes.

No language can pack the information more tightly.

We will want to locate these twelve bytes in memory; so we give them a name: COMMANDS, created by typing CREATE COMMANDS (look back at earlier articles in this series).

NOW we will define a tiny word which will make life much easier for us at compile time:

```
: FOR ( char) C, ' , ;
```

To put the function of FOR into words: it expects on the stack a character, which it compiles as a byte with C, (refer to 'Data Structures in Forth').

Then FOR fetches the compilation address of the next word in the input stream and compiles it as a two-byte value with ', '. The source code for the decision array will then be:

```
CREATE COMMANDS
```

```
8 ( left arrow) FOR LEFT
9 ( right arrow) FOR RIGHT
94 ( up arrow) FOR UP
10 ( down arrow) FOR DOWN
```

(Note that 8, 9, 94 and 10 are the ASCII values for the arrow keys.)

Easy to read, isn't it? It's worth making a clear point: if it's Forth code and it's hard to read, then it's bad Forth code (Read Brodie).

To this stage, we've managed a nice syntax for creating a very memory-efficient data structure, but the structure is no good unless we have a way to use it.

So, immediately after the last item in the above code, we type:

```
HERE COMMANDS - 3 /
```

```
CONSTANT COMMANDS
```

Remember that typing COMMANDS returns the address of the first byte of the array on the stack, while HERE returns the address of the first byte AFTER the array of twelve bytes.

Therefore, HERE COMMANDS - will return the difference between these values (12). This value, on the stack, is divided by 3 (bytes per array entry) and used to define the constant #COMMANDS (number of commands).

What a long-winded way of doing it, you say? The point is that we are making the compiler do all the housekeeping; so, when we add extra commands into the source file, and recompile, we will always get the total number of commands as the new value of #COMMANDS. Easy code maintenance!

Now that the program is given a way of knowing the number of valid command characters, we can construct a word (?ACT) which will skim through the array, looking at the first byte (character) of each group of three.

If it does find a match with a character which it has been given on the stack, it will carry out the appropriate action, but will do nothing if a match is not found. Note the name of the word. It starts with a '?' to indicate that its action is conditional.

```
: ?ACT ( char expected on stack)
```

```
COMMANDS ( array base address)
```

```
#COMMANDS 0 ( loop limits)
```

```
DO 2DUP ( dup char & address)
```

```
C@ = ( comp char & char found)
```

```
IF ( if a match found)
```

```
1+ ( increase address)
```

```
@ ( get address there)
```

```
EXECUTE ( execute it)
```

```
LEAVE ( the job is done)
```

```
THEN ( end of condit. code)
```

```
3 + ( increase array address)
```

```
LOOP ( keep trying)
```

```
2DROP ; ( drop char & address)
```

The top level word, a grandiose one, is EDIT. It will include, as part of its structured code a loop like ...

```
BEGIN KEY ( fetch key input)
```

```
?ACT ( if it can!) FINISHED
```

```
UNTIL
```

Nice code, isn't it? To put it into English: fetch a keyboard input and try to act on it and keep on doing this until you are finished.

We've run out of space this month, but next month we will continue with other data structures which make programming the editor elegant and efficient. We will look at the logistics of putting bit-mapped characters onto the high resolution screen, and status arrays for recording cursor position.

If you have any queries about using Forth, please contact me at 23 Mirool St., West Ryde, NSW 2114 or (better) (02)-85-3751 (evenings).

X-Y PLOTTER for the COCO3

by Mark Bevelander

UTILITY

THE COLOUR COMPUTER has always been an ideal computer for implementing cheap and easy input/output control.

Easy because the CoCo has two joystick ports which are actually 6-bit analogue to digital converters and a cassette port which has a software controlled relay.

This combination provides the basis of a control method called the "on-off Closed Loop Control".

To quote a practical example: If a room is to be heated, some type of feedback, in terms of temperature measurement, is fed back to a controlling device (like the CoCo).

The controller then scales the voltage value from the temperature transducer into a temperature value; this temperature value is then compared against a set point (this is the desired heat setting) and if the measured value is higher, the heater remains on.

A slight variation of this technique is to implement a deadband (or bandwidth or band spread) where a specific gap is programmed between 'on' time and 'off' time.

This is done to prevent the relay switching on and off rapidly around the set-point.

A more sophisticated method of control is to use the digital/analogue sound output facility of the CoCo to provide proportional control instead of an 'on'-'off' control. This is a more accurate method of maintaining a constant output.

It is interesting to note that the industry pays somewhere in the order of \$5000 for a package

with similar facilities to what the CoCo offers, with slight increase in resolution and high voltage interface capabilities.

The program I have devised for the CoCo 3 plots a variation of input voltage (0-5V) on the left joystick against a calibrated time period.

A variety of time periods can be selected from the menu (these are approximate only) and, if desired, a plot can be saved onto disk for storage.

Cassette owners need only change the disk I/O statements from '#1' to '#-1' and the reference to disk in the menus.

A graticule may be switched on or off from the menu depending on personal requirements.

A fast plot is also available for quick response of input voltage.

Note that this program was designed as a plotter, not as an oscilloscope, for measuring fairly slow variations of voltage from transducers such as thermistors or light dependant resistors.

Most previous X-Y plots on the CoCo have always use the 'HSET' method of plotting by dots.

However this is a relatively slow method and has the disadvantage of having too big a gap between dots for any large, sudden voltage variations.

The method I've chosen was taken from an idea by Forrest Mims in February '84 magazine of "Computers and Electronics" to use the LINE algorithm in Extended Colour Basic to draw a line between any two points.

This method is fast and has the advantage of continuity between the points.

The simplest method of measuring temperature is to connect a 1 to 2.2 Kiloohm resistor in series with a thermistor - the top of the resistor is connected to the 5V of the joystick port with the connection between the resistor and the thermistor joined to the joystick in line, the bottom of the thermistor is then connected to ground.

As the temperature varies, the resistance of the thermistor also varies causing a fluctuation of voltage in.

For example, a PTC thermistor (Positive Temperature Co-efficient); when the temperature increases, so does the resistance. The voltage at the joystick in-line will the also increase.

For other types of measurements replace the thermistor with a light dependant resistor for measuring light variations.

How about a couple of brass rods placed in the garden bed to measure moisture variations?

'On'-'Off' control can be used by programming a set-point via the menu with a deadband - just follow the prompt.

When the voltage in reaches the set-point the cassette relay is switched on and a relay will switch off again and the colour of the trace will revert back to original.

A word of warning: do NOT attempt to switch 240V with the cassette relay - buy a commercial 5V to 240V solid state relay to switch your appliances.

The Listing:

```
0 GOTO10
3 SAVE"256:3":END'10
10 '***3COCO X-Y PLOTTER***
20 '***MARK BEVELANDER***
30 '*****JUNE 1987*****
40 GOTO 60
50 SAVE"3HRSPL0T"
60 PALETTE RGB
70 LC=12
80 ON ERR GOTO 1750
90 WIDTH40
100 PALETTE8,8:PALETTE5,56
110 CLS6
120 IF G>1 THEN G=0
130 ON BRK GOTO 1480
140 POKE&HFFD9,0
150 PALETTE 2,9:ATTR3,2,U:FS$=""
:D$=""
160 PRINT"        COLOR COMPUTER X
-Y PLOTTER":ATTR0,5
170 PRINT:PRINT
180 ATTR7,5:PRINT"S";:ATTR0,5:PR
INT" Single sweep with disk sav
e."
190 ATTR7,5:PRINT"C";:ATTR0,5:PR
INT" Continuous sweep."
200 ATTR7,5:PRINT"L";:ATTR0,5:PR
INT" Load trace from disk."
210 ATTR7,5:PRINT"G";:ATTR0,5:PR
INT" Graticule ";:IF G=1 THEN 2
30
220 ATTR 7,5:PRINT"On";:ATTR0,5:
PRINT"/off":GOTO240
230 PRINT"On/";:ATTR7,5:PRINT"Of
f":ATTR0,5
240 ATTR7,5:PRINT"M";:ATTR0,5:PR
INT" Program Menu."
250 ATTR7,5:PRINT"F";:ATTR0,5:PR
INT" Fast Scan."
260 ATTR7,5:PRINT"A";:ATTR0,5:PR
INT" Adjust Setpoint.":PRINT"-
";:ATTR7,5:PRINT"X";:ATTR0,5:PRI
NT" Clear Setpoint."
270 ATTR7,5:PRINT"Q";:ATTR0,5:PR
INT" Quit to Basic."
280 PRINT""
290 ATTR2,5,U:PRINT"Selection:";
:ATTR7,5,B:PRINT" ";
300 SE$=INKEY$:IF SE$="" THEN 30
0
310 PRINT SE$:ATTR0,5
320 PRINT:Q=1
330 IF SE$="Q" THEN 1480
340 IF SE$="X" THEN STP=0:BND=0:
GOTO90
350 IF SE$="A" GOSUB 1910:GOTO48
0
360 IF SE$="F" THEN Q=16 ELSE Q=
1
370 IF SE$="F" GOSUB1680:GOTO660
380 Q=1
390 IF SE$="G" THEN G=G+1:GOTO 11
0
400 IFSE$="L" THEN740
410 IF SE$="M" THEN GOTO 100
420 IF SE$="C" THEN GOTO 480
430 CLS
440 INPUT"SAVE TRACE ON DISK (Y/
N)":D$
450 IF D$="Y" OR D$="N" THEN 460
ELSE430
460 CLS:POKE&HFFD8,0:IF D$="Y" T
HEN GOSUB 1560:GOSUB1670
470 LOCATE 1,13
480 ATTR3,2,U:PRINT"Y Sweep in S
econds";:ATTR0,5
490 PRINT:PRINT
500 ATTR7,5:PRINT"A";:ATTR0,5:PR
INT" 45 Seconds"
510 ATTR7,5:PRINT"B";:ATTR0,5:PR
INT" 75 Seconds"
520 ATTR7,5:PRINT"C";:ATTR0,5:PR
INT" 100 Seconds"
530 ATTR7,5:PRINT"D";:ATTR0,5:PR
INT" 150Seconds"
540 ATTR7,5:PRINT"E";:ATTR0,5:PR
INT" 200Seconds"
550 IF SE$="A" THEN 570
560 LOCATE0,12:PRINT"
":LOCATE0,21
570 PRINT
580 ATTR2,5,U:PRINT"Selection:";
:ATTR7,5,B:PRINT" ";
590 AS=INKEY$:IF AS=""THEN 590
600 PRINT AS:ATTR0,5
610 IF AS="A" THEN MUL=1.5
620 IF AS="B" THEN MUL=2.4
630 IF AS="C" THEN MUL=3.3
640 IF AS="D" THEN MUL=5
650 IF AS="E" THEN MUL=7
660 M=16
670 SW=(MUL*.75*460)/M
680 PALETTE0,0
690 HSCREEN4
700 IFG=0 THEN GOSUB880
710 IF SE$<>"L" THEN GOSUB 1130
720 IF SE$="C" THEN700 ELSE IF S
E$="S" THEN 1470 ELSE IF SE$="A"
THEN 700
730 IF FS$="C" THEN 700 ELSE IF
FS$="S" THEN 1470
740 CLS:POKE&HFFD8,0
750 IF SE$="L" THEN GOSUB1560
760 OPEN"1",#1,NM$
770 PALETTE0,0:PALETTE1,54:HSCRE
EN4
775 HCOLOR1,0
780 INPUT #1,MUL
790 GOSUB880
800 HLINE(0,191)-(0,191),PSET
810 FORX=16TO639
820 INPUT #1,Y
830 HLINE -(X,Y),PSET
840 NEXTX
850 CLOSE #1
860 IF INKEY$="M"THEN90 ELSE860
870 '
880 'DRAW GRATICULE
890 POKE&HFFD9,0
900 PALETTE2,56:PALETTE1,60:PALE
TTE0,0:PALETTE3,33
910 FORH=16TO639 STEP16
920 HCOLOR3,0
930 HLINE(H,8)-(H,187),PSET
940 NEXTH
950 HLINE(320,0)-(320,8),PSET
960 FORT=0TO191STEP4
970 HSET(317,T,3):HSET(319,T,3)
980 NEXTT
990 FORV=16 TO 191STEP16
1000 HLINE(16,V)-(639,V),PSET
1010 NEXTV
1020 FORT=0TO639STEP4
1030 HSET(T,95,3):HSET(T,97,3)
1040 NEXTT
1050 IF FS$="S" THEN 1100
1060 FOR CAL=0 TO80 STEP8
1070 HCOLOR 2,0:HPRINT(CAL,0),IN
T(TIME)+1:TIME=TIME+3*MUL
1080 NEXT CAL
1090 TIME=0
1100 HCOLOR1,0
1110 POKE&HFFD8,0
1120 RETURN
1130 '
1140 REM DRAW TRACE
1150 PALETTE1,54
1160 IFD$="Y"THENQ=1:WRITE#1,MUL
1170 POKE&HFFD9,0
1180 HCOLOR1,0
1190 HLINE(0,191)-(0,191),PSET
1200 CL=1
1210 FORX=16TO639STEPQ
1220 HCOLORCL,0
1230 IFINKEY$="M"THENPOKE&HFFD8,
0:GOTO90
1240 U=JOYSTK(0):V=JOYSTK(1)
1250 Y=175-2.5*JOYSTK(2)
1260 POKE&H7000+X,Y
1270 YA=Y
1280 HLINE -(X,Y),PSET
1290 IF STP=YA THEN POKE65313,60
:CNT=1:CL=6
1300 IF STP+BND/2<YA THEN POKE65
313,52:CL=1
1310 IF STP-BND/2>YA THEN POKE65
313,60:CL=6
1320 ONMUL GOSUB1510,1520,1530,1
540,1550
1330 DLY=MTL*.75
1340 YTIM=(DLY-.75)*560)/M
1350 HCOLOR 3,0
1360 FOR T=1TOYTIM:NEXTT
1370 NEXTX
1380 '
1390 'DISK SAVE
1400 IF D$="N" OR D$=""THEN 1460
1410 POKE&HFFD8,0:FORX=16 TO 639
1420 Y=PEEK(28672+X)
1430 WRITE #1,Y
1440 NEXT X
1450 IFD$="Y"THEN POKE&HFFD8,0:C
LOSE #1
1460 GOTO 1830
1470 IF INKEY$="M" THEN90ELSE147
0
1480 ATTR0,5:CLS:PRINT:PRINT:INP
UT"EXIT TO BASIC? Y/N";EX$:IFEX$
="N" THEN GOTO90
1490 POKE&HFFD8,0
1500 END
1510 MTL=1:RETURN
1520 MTL=2.3:RETURN
1530 MTL=3.8:RETURN
1540 MTL=5.5:RETURN
1550 MTL=6.8:RETURN
1560 CLS:LOCATE10,2:ATTR3,2,U
1570 PRINT"Disk Control Menu";:A
TTRO,5
1580 PRINT:PRINT:PRINT:PRINT
1590 PRINT" Which Drive? (0-3)";
:ATTR7,5,B:PRINT" ";
1600 DV$=INKEY$:IF DV$<"0" OR DV
$>"3" THEN 1600
continued on page 57
```

PRINTER to COCO

PART 2

CoCo 32K + Teleprinter
UTILITY

by Frank Rees

I HAVE PREPARED Basic loader programs for Printer 2 for the MC10 and CoCo. Graham shall advise if both are to be published and/or availability on tape, but as they have much in common, the story will be told as one.

A Basic loader is a very handy way to load a machine language program and make a ML or binary tape for quick loading into a desired memory location for future use.

It can, like an "assembler" be used to make a relocated version which involves auto changing address code in the program before the ML tape is made, often needed with other than 68XX family because of their relocation problems.

This particular loader has been written so a ML tape can be made where you choose the start location ("L") of the program, or it is done automatically for you to suit the size of memory you have.

In addition, info about start, finish, and program length enable you to change data in the Basic loader or poke changes in the ML program after loading so that the number of characters per line, screen on with printer, or baud rate changes can be easily implemented.

In mentioning baud rate, it is interesting to note that on power up on the MC10 is faster than the CoCo as the Mico baud rate count is &HC000 while the CoCo's is &H9000.

Most lines in both programs perform the same function, and the following info may be of interest to students of such things.

Location 254-255 is used a number of times in both loaders, as they are to:

1. Be used as a flag to indicate that "Printer 2" is loaded into memory.

Both locations would be poked to 0 to load "Printer 2" into memory again, and should not be

done in the CoCo if it has already been EXECuted.

Cold start, reload the Basic loader and run.

2. It hold RAM top (new) while "clear" in line 340 clears L during an auto location of program at RAM's end.

Line 300 finds RAM top and calculates the new value. Lines 330 and 480 check where Basic starts.

Characters per line is initially 68 but can be changed say to 32 or 64 by poke L,N where L = start + 41 in CoCo, and start + 72 in Mico.

N = Number of characters per line required.

Screen and Printer on CoCo together: Location start + 72 now 33. Poke with 141.

Note: Method used for this is a simple one. Poke changes causes an occasional character to be missing on screen, but NOT on printer.

Baud Rate: If out or changed to 45.45 baud for RTTY use in your teleprinter may require that changes be made to start + 226, start + 227 or start + 196 in CoCo, and start + 197 in Mico.

For the RTTY user, as mentioned, baud rate count may require changes with a slight count increase most likely. As you can now serially output computer at 45.45 baud in baudot code, and switch current loop with the optocoupler interface (safe driver), you can now transmit a copy of your latest program directly to the teleprinter(s) of listener(s) wherever they may be.

Letters are always welcome and promptly replied. Include SASE. Write to:

Frank Rees
27 King Street.
Boort 3537
Victoria

The Listing:

```
0 GOTO10
3 SAVE"248:3":END'9
10 REM %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
20 REM %
%
30 REM %      P R I N T E R 2
FOR SEIMENS 100 TELEPRINTER %
40 REM %
%
50 REM %      FRANK REES 27 KING
ST. BOORT 3537 VICTORIA %
60 REM %
%
70 REM %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
100 REM
110 REM      - COCO BASIC LOADER V
ERSION -
120 REM      RELOCATABLE AS IS .
130 REM      START ANY LOCATION.
140 REM      ENTRY      - START      -
150 REM      FINISH    - START + 307-
160 REM
170 REM      L=START
180 REM      L=16075 STANDARD 16K
190 REM      L=32450 EXPANDED 32K (
64K)
200 REM      L= BELOW BASIC OTHER
210 REM
220 IF PEEK(254) OR PEEK(255) <>
0 THEN GOTO 430
230 CLS :PRINT@484,"PRINTER2 FR
ANK REES BOORT ";
240 PRINT@196,"LOCATION"
250 PRINT@260,"CHOICE ...YOUR (Y
)"
260 PRINT@334,"AUTO (A)"
270 AN$=INKEY$:IF AN$=""THEN GOT
O 270
280 IF AN$ <> "Y" THEN GOTO 300
290 PRINT@275,"L=";:INPUT L: GOT
O 310
300 L=PEEK(39)*256+PEEK(40)-307
310 POKE 254,INT(L/256):POKE 255
,L-256*INT(L/256)
320 L=PEEK(254)*256+PEEK(255)
330 IF L < PEEK(25)*256+PEEK(26)
THEN GOTO 350
340 CLEAR150,L
350 L=PEEK(254)*256+PEEK(255)
360 FOR LOC= L TO L+307
370 READ D:POKE LOC,D
380 CS=CS+D
390 PRINT@35,"LOADING DATA ";D
```

continued next page

from previous page

```
400 PRINT@69,CS
410 NEXT LOC
420 IF CS <> 29509 THEN CLS:PRIN
T@200,"DATA ERROR":END
430 CLS:PRINT@72,"PROGRAM LOADED
"
440 PRINT@136,"PREPARE TO TAPE"
450 PRINT@484,"PRINTER2 FRANK RE
ES BOORT";
460 L=PEEK(254)*256+PEEK(255)
470 PRINT@258,"MARK TAPE.... ST
ART=";L
480 M$="": IF L < PEEK(25)*256+PE
EK(26) THEN GOTO 500
490 M$="CLEAR150,"+STR$(L)+": "
500 M$=M$+"CLOADM:EXEC"
510 PRINT@322,M$
520 PRINT@386,"PRESS ENTER WHEN
READY"
530 REM CSAVEN COCO
540 AN$=INKEY$: IF AN$="" THEN GO
TO 540
550 CLS:PRINT@196,"TAPE SAVE IN
PROGRESS"
570 ST=L: REM START OF PROGRAM
610 ENTRY=ST:REM ENTRY TO PROGRA
M
640 FINISH=ST+308: REM FINISH OF
PROGRAM
650 MOTORON:FOR D = 1 TO 5000: N
EXT D
690 CSAVEN"PRINTER2",ST,FINISH,E
NTRY:REM RECORD IT
700 CLS:PRINT@196,"PROGRAM SAVED
```

from page 55

```
1610 ATTRO,5:PRINT
1620 DRIVE VAL(DV$):PRINT
1630 PRINT" What is the name of
your Plot?":PRINT" (1-8 Letters)
"
1640 PRINT:PRINT" Name:";
1650 ATTR7,5:LINEINPUT NMS:NMS=L
EFT$(NMS,8):NMS=NMS+STRING$(8-LE
N(NMS),32):ATTRO,5
1660 RETURN
1670 OPEN "O",#1,NMS:RETURN
1680 CLS:LOCATE15,6:ATTR3,2,U:PR
INT"FAST PLOT";:ATTRO,5:PRINT:LO
CATE2,10:ATTR7,5:PRINT"S";:ATTRO
,5:PRINT" Single sweep with grat
icule."
1690 LOCATE2,12:ATTR7,5:PRINT"C"
;:ATTRO,5:PRINT" Continuous swee
p, no graticule.";
1700 ATTR2,5,U:LOCATE2,14:PRINT"
Selection";:ATTR7,5,B:PRINT" ";
1710 FS$=INKEY$: IF FS$="" THEN 1
710
1720 MUL=1
1730 IF FS$="S" THEN G=0 ELSE IF
FS$="C" THEN G=1 ELSE IF SF$<>"
C" OR SF$<>"S" THEN 1710
1740 RETURN
1750 ' ERROR HANDLING
1760 IF ERNO<>20 GOTO1800
1770 IF ERNO =20 THEN CLS:PRINT"
DRIVE NOT READY! STRIKE ANY KEY"
1780 AS=INKEY$: IF AS="" THEN 178
0
```

```
"
710 PRINT@261,"ANOTHER COPY (Y/N
)"
720 AN$=INKEY$: IF AN$="" THEN GOT
O 720
730 IF AN$="Y" THEN GOTO 430
740 CLS:PRINT@196,"TELEPRINTER C
ONNECTED ?"
750 PRINT@261,"EXEC";ST;" THEN L
LIST":END
1000 DATA 246,1,103,190,1,104,23
1,141,0,69
1010 DATA 175,141,0,66,198,126,4
8,141,0,34
1020 DATA 247,1,103,191,1,104,48
,141,0,2
1030 DATA 159,157,141,0,53,16,11
1,137,255,208
1040 DATA 134,68,151,155,134,118
,23,0,162,134
1050 DATA 13,141,29,57,50,98,141
,21,52,4
1060 DATA 214,111,92,53,4,43,10,
38,3,126
1070 DATA 162,144,33,3,126,163,1
0,32,3,126
1080 DATA 130,115,52,22,31,137,3
1,168,52,2
1090 DATA 26,80,31,152,18,18,18,
18,129,13
1100 DATA 38,4,141,101,32,74,129
,12,38,13
1110 DATA 198,10,52,4,141,93,53,
4,90,38
1120 DATA 247,32,57,128,32,36,2,
```

```
1790 CLS:GOTO 150
1800 CLS:PRINT"FILE NOT PRESENT,
STRIKE A KEY"
1810 AS=INKEY$: IF AS="" THEN 181
0
1820 CLS:GOTO 150
1830 POKE&HFFD9,0:HLIN(0,191)-(
0,191),PRESET
1840 IF SE$="S" THEN 1900
1850 IF FS$="S" THEN 1900
1860 FOR X=16 TO 639 STEP Q
1870 Y=PEEK(28672+X)
1880 HLINE-(X,Y),PRESET
1890 NEXT X
1900 RETURN
1910 GOSUB 2010
1920 PRINT:PRINT:PRINT" Do you
need Instructions? ";:ATTR7,5,B:
PRINT" ";
1930 ST$=INKEY$: IF ST$="" THEN 1
930 ELSE IF ST$="Y" GOTO 2040 EL
SE IF ST$="N" GOTO 1950
1940 IF ST$<>"Y" OR ST$<>"N" GOT
O 1920
1950 GOSUB 2010
1960 PRINT:PRINT
1970 INPUT" Enter Setpoint (40-
150)";STP
1980 INPUT" Enter Bandspread (0
-50)";BND: IF BND>50 THEN 1980
1990 PRINT:PRINT:PRINT:PRINT:LC=
24
2000 RETURN
2010 CLS:ATTR3,2,U:PRINT" Setpo
int and Bandwidth":ATTR0,5
2020 PRINT:PRINT
```

```
32,51,129
1130 DATA 64,36,246,141,103,52,1
6,31,137,58
1140 DATA 230,137,0,4,53,16,52,4
,166,137
1150 DATA 0,3,196,128,52,4,161,2
24,39,16
1160 DATA 231,137,0,3,134,126,23
0,137,0,3
1170 DATA 38,2,134,118,141,35,53
,2,141,31
1180 DATA 53,2,31,138,53,2,129,1
3,39,10
1190 DATA 12,156,214,156,209,155
,37,4,141,5
1200 DATA 15,156,53,20,57,134,80
,141,2,134
1210 DATA 68,132,127,198,0,68,36
,2,198,2
1220 DATA 247,255,32,52,16,142,9
,0,48,31
1230 DATA 38,252,53,16,77,38,232
,57,141,0
1240 DATA 53,16,57,0,72,120,74,1
04,116,90
1250 DATA 76,74,94,100,250,98,88
,70,120,122
1260 DATA 108,110,102,66,84,96,1
06,78,76,112
1270 DATA 92,92,94,124,100,114,8
6,198,242,220
1280 DATA 210,194,218,244,232,20
4,214,222,228,248
1290 DATA 216,240,236,238,212,20
2,224,206,252,230
1300 DATA 250,234,226,94,122,100
,204,70
2030 RETURN
2040 PALETTE0,0:PALETTE8,8:CLS1
2050 POKE&HFFD8,0
2060 LOCATE0,0:ATTR7,0:PRINTSTRI
NG$(40,127)
2070 FOR X=1TO21:LOCATE0,X:PRINT
CHR$(124):LOCATE39,X:PRINTCHR$(1
24):NEXTX
2080 LOCATE0,22:PRINTCHR$(124)+S
TRING$(38,127)+CHR$(124);
2090 LOCATE10,2:ATTR1,0,U:PRINT"
Setpoint and Bandspread";:ATTR3,
0
2100 LOCATE3,5:ATTR1,0,U:PRINT"S
etpoint";:ATTR3,0
2110 PRINT"Set a point for avera
ge";:LOCATE12,6:PRINT"control of
relay output.";
2120 LOCATE3,8:ATTR1,0,U:PRINT"B
andspread";:ATTR3,0
2130 LOCATE14,8:PRINT"A control
system needs";:LOCATE14,9:PRINT"
to have smooth operation";
2140 LOCATE14,10:PRINT"for effec
tive output.";:LOCATE14,12:PRINT
"To ensure this happens";
2150 LOCATE14,13:PRINT"a gap bet
ween Switch-On";:LOCATE14,14:PRI
NT"and Switch-Off should";:LOCAT
E14,15:PRINT"be set.";
2160 ATTR1,0:LOCATE3,20:PRINT"Press
any key to advance.";
2170 AS=INKEY$: IF AS="" THEN 217
0
2180 PALETTE0,0:ATTR0,5
2190 GOTO 1950
```

HIGHLIGHTING COMMENTS

in a BASIC PROGRAM

32K ECB (16K modifiable)
UTILITY

by George McLintock

I PURCHASED A DMP-105 when they were on special a while back. Its' print quality is not as good as the Brothers EP-44, but the running cost of the ribbons is a lot less, and it provides an acceptable quality for a lot of the word processing type of work that I do.

My old dot matrix printer, a Dick Smith GP-80, is a very reliable machine and I still use it as well. It's slower than the new one, but has its own advantages.

One of the more interesting features of the DMP-105 is its range of print styles and the amount of variations that can be obtained through software printer control characters.

I have submitted a small utility, called HIGHLITE, which allows the use of some of these features when listing a BASIC program.

One of the problems with larger BASIC programs is to be able to identify those parts of the code which perform the various functions within the total program.

BASIC provides the REM statement to allow comments to be included in a program, but with larger programs it can be difficult to find the comments in the total listing.

The utility submitted inserts three extra bytes of printer control codes at the start and end of each comment in a BASIC program.

Specific printer control codes are set up in the utility by POKE's to certain addresses. To further highlight comments, the utility also changes the normal upper case characters for comments in the program to lower case characters. This feature can be by-passed by other POKE's.

Highlighting Options

Three printer control codes appear sufficient for the

various options available with the DMP-105. It also appears sufficient to provide a change of character style for most other printers.

For the CGP-115 printer plotter it allows for a change in pen color for comments, and you can still come back to the original pen for normal printing. The option to change the case of characters in the comment is independent of the printer control characters.

Underlining comments is the simple option, but you can also change to elongated or condensed print as well as underline with three print control characters.

You can also insert an extra line feed before and after each comment if you pass up the underline.

A useful feature of the DMP-105, which is not adequately described in the manual, is the ability to vary the length of the line feed to any depth. You are not restricted to half or three quarter spacing, but can select any spacing you like!

The '27 90 n' and '27 91 n' control sequences provide this capability, eg '27 91 18' will provide one and a half spacing for all printing that follows until it is changed. A '27 90 18' will give an immediate one and a half line feed, after which the printer returns to normal spacing.

This feature allows for a variable gap at the start and end of each comment line.

Using the Utility

The utility is a machine language program (168 bytes) which is relocatable and can be loaded into any convenient area of memory for execution.

It is submitted as a BASIC program with DATA statements to be POKE'd into CLEAR'ed memory at 32000. (ML source code also provided - see listing 2.)

If you have a 16K CoCo change the value of 32000 to 16000 throughout.

To use, RUN this BASIC program. Then (C)LOAD the BASIC program to be altered and EXEC 32006.

The modified program can then be LLIST'ed and all comments will be emphasised in the listing

You can also (C)SAVE the modified version of the program and keep it in this form. It will continue to execute normally and does not require any further special treatment, except that if you later EDIT a comment line, use insert and delete to do so. Don't use H as this will remove the control codes that return the printer to normal.

This utility increases the size of the BASIC program by 6 bytes for each comment. There is no check that there is sufficient memory available to hold the larger program. On the basis that if you are that short of memory, there will be no comments in the program anyway.

Changing Options

The printer control codes to be inserted into the BASIC program are stored at locations 32000 to 32005, when the utility is loaded from address 32000. If you change the location in memory, they are at the same relative position with respect to the execute address.

The first three bytes are inserted into the Basic program immediately following a REM token. The last three are inserted immediately before the zero which marks the end of the BASIC line. Whatever characters are POKE'd into these locations will be inserted into the program at these positions.

If your printer does not provide variable character style, you can use them to put a couple of ** at the start and end of each comment.

Don't ever put zeros in any of these bytes, it upsets BASIC.

Control characters set here are '27 20 15' (decimal) to start condensed printing and underlining, and '14 27 19' to restore the printer to normal.

Any other control codes can be POKE'd to replace these

The routine to convert upper case to lower case can be eliminated by POKE'ing 18 (decimal - no op) into locations 32103 and 32104.

Restore the Program to Normal

If you retain the program in its amended form, there may be circumstances when you want to return it to normal. For example, to submit it to these magazines, or to change the print control characters to suit a different printer.

It is also useful if you want to add more comments to an existing modified program.

Remove the adjustments, add the comments, and then re-adjust again. If you want to add new comments without restoring it first, leave 3 blanks at the start and end of them, so that it will work OK when you do restore to normal.

The utility includes a feature to do this. It works the same as before, except that you EXEC 32010 instead of 32006. This will restore the program to normal.

If you wish to remove the print control characters only, and leave the comments as lower case characters, POKE 18 (decimal) into locations 32134 and 32135.

If you execute the undo routine with a program that has not been modified, you will lose the first and last three characters of all comment lines. If the original comment is less than 6 bytes long, then the following program line will be corrupted. If this happens to be the last line of the program, you will also lose the end of program marker for BASIC.

The utility uses memory locations 64 to 66 for temporary storage of values during its operation. This is part of the memory used by Basic for its operations with floating point numbers, and can be used as temporary storage for operations of this nature. For this utility, it saves a few bytes of ML code to use this memory instead of memory within the utility itself.

```
6 ' PRINTER CONTROL CODES ARE AT
M+163 TO M+168
10 CLEAR 200,32000
20 M=32000:M1=M
30 LN=150:FOR X=0 TO 168 STEP 25
:IF X<149 THEN N=25 ELSE N=18
40 GOSUB 100:NEXT X
50 CLS:PRINT "HIGHLIGHT MACHINE L
LANGUAGE NOW INMEMORY FROM";M1;"
TO";M1+167:PRINT
60 PRINT "IT CAN BE (C)SAVED
FROM THEREFOR LATER USE":PRINT
70 PRINT "OR USED NOW ON ANY BAS
IC PROGRAM"
75 PRINT:PRINT "EXEC ADDRESS";M1
+6:PRINT "RESTORE EXEC";M1+10
80 STOP
90 '
100 PRINT LN;:A=0:FOR Y=0 TO N-1
110 READ C$:B=VAL("&H"+C$):A=A+B
:POKE M,B:M=M+1
120 NEXT Y:READ C$:IF A<>VAL("&
H"+C$) THEN PRINT "ERROR IN LINE
NO";LN:STOP
130 LN=LN+10:RETURN
140 '
150 DATA 1B,14,F,E,1B,13,F,40,20
,4,86,1,97,40,33,8C,EF,9E,19,30,
4,A6,80,26,1D,64D
160 DATA EC,84,26,F6,9E,19,1F,12
,30,4,A6,80,26,FC,AF,A4,EC,84,26
,F2,30,2,9F,1B,9F,B56
170 DATA 1D,9F,1F,39,81,82,27,4,
81,83,26,D7,E6,1E,C1,FF,27,D1,9F
,41,D,40,26,38,9E,A28
180 DATA 1B,1F,12,31,26,10,9F,1B
,A6,82,A7,A2,9C,41,26,F8,EC,40,E
D,81,A6,42,A7,80,A6,E28
190 DATA 3,27,6,8D,E,A7,80,20,F6
,A6,43,A7,80,EC,44,ED,81,20,9E,8
1,41,2D,6,81,5A,A44
200 DATA 2E,2,8B,20,39,A6,3,27,8
,8D,15,A7,80,20,F6,A6,3,A7,80,26
,FA,EC,3,26,F6,9C6
210 DATA ED,84,9E,41,16,FF,78,81
,61,2D,6,81,7A,2E,2,80,20,39,6F6
```

The Listing:

```
1 '** HIGHLIGHT
BY GEORGE MCLINTOCK
8/04/87
2 GOTO 10
3 SAVE"230:3":END'8
4 ' THIS PROGRAM SETS UP A ML UT
ILITY TO EMPHASISE COMMENT STATE
MENTS IN A BASIC PROGRAM
5 ' FOR A 16K MACHINE CHANGE 320
00 TO 16000
```

PROGRAM	LOC	DESCRIPTION	ORG	ST	EQU	ST
	00100	* ROUTINE TO HIGHLIGHT COMMENTS IN A BASIC				
	00110	* LOC 64-66 IS BASICS FP NUM				
	00120	*				
7D00	00130	ORG	32000			
	00135	* CODE IS RELOCATABLE IS ORG'D HERE FOR				
CONVENIENCE ONLY	0000	00140	ST	EQU	0	
	0002	00150	ST1	EQU	2	
	0003	00160	ED	EQU	3	
	0004	00170	ED1	EQU	4	
	0040	00180	SW	EQU	64	
	0041	00190	SAV	EQU	65	
	00200	*				
7D00	1B14	00210	TABLE	FDB	\$1B14	ST
7D02	0F	00220		FCB	15	ST1
7D03	0E	00230		FCB	14	ED
7D04	1B13	00240		FDB	\$1B13	ED1
		00250	*			

7D06	0F	40	00260	ADD	CLR	<SW		
7D08	20	04	00270		BRA	START		
7D0A	86	01	00280	EXCL	LDA	#1		
7D0C	97	40	00290		STA	<SW		
7D0E	33	8C EF	00300	START	LEAU	TABLE,PCR		
7D11	9E	19	00310		LDX	<25	START BASIC	
7D13	30	04	00320	NXTL	LEAX	4,X		
7D15	A6	80	00330	NXTC	LDA	,X+		
7D17	26	1D	00340		BNE	CONT	CHECK	
7D19	EC	84	00350		LDD	,X	2 ZEROS IS END OF	
PROGRAM								
7D1B	26	F6	00360		BNE	NXTL		
			00370	* RESET POINTERS				
7D1D	9E	19	00380	LINE1	LDX	<25		
7D1F	1F	12	00390	LINE	TFR	X,Y	SAVE FOR LATER	
7D21	30	04	00400		LEAX	4,X		
7D23	A6	80	00410	LOOP	LDA	,X+	FIND END LINE	
7D25	26	FC	00420		BNE	LOOP		
7D27	AF	A4	00430		STX	,Y	STORE IN POINTER	
7D29	EC	84	00440		LDD	,X		
7D2B	26	F2	00450		BNE	LINE	NOT END	
7D2D	30	02	00460		LEAX	2,X	START VARS	
7D2F	9F	1B	00470		STX	<27	RESET BASIC POINTERS	
7D31	9F	1D	00480		STX	<29		
7D33	9F	1F	00490		STX	<31		
7D35	39		00500		RTS			
			00510	* TEST FOR REM TOKENS				
7D36	81	82	00520	CONT	CMPA	#\$82		
7D38	27	04	00530		BEQ	REMK		
7D3A	81	83	00540		CMPA	#\$83		
7D3C	26	D7	00550		BNE	NXTC	NOT COMMENT	
7D3E	E6	1E	00560	REMK	LDB	-2,X	EXCLUDE 2 BYTE	
7D40	C1	FF	00570		CMPB	#\$FF	TOKENS	
7D42	27	D1	00580		BEQ	NXTC		
7D44	9F	41	00590		STX	<SAV	SAVE ADDRESS	
7D46	0D	40	00600		TST	<SW	TEST OPERATION	
7D48	26	38	00610		BNE	REMOVE		
			00620	* MOVE PROGRAM UP 6 BYTES				
7D4A	9E	1B	00630		LDX	<27		
7D4C	1F	12	00640		TFR	X,Y		
7D4E	31	26	00650		LEAY	6,Y		
7D50	109F	1B	00660		STY	<27		
7D53	A6	82	00670	R1	LDA	,-X		
7D55	A7	A2	00680		STA	,-Y		
7D57	9C	41	00690		CMPX	<SAV		
7D59	26	F8	00700		BNE	R1		
			00710	* INSERT 3 BYTES START PRINT CONTROL				
7D5B	EC	40	00720		LDD	ST,U		
7D5D	ED	81	00730		STD	,X++		
7D5F	A6	42	00740		LDA	ST1,U		
7D61	A7	80	00750		STA	,X+		
			00760	* MOVE COMMENT BACK				
7D63	A6	03	00770	R2	LDA	3,X		

7D65	27	06	00780	BEQ	INSEND
7D67	8D	0E	00790	BSR	CONVT
7D69	A7	80	00800	STA	,X+
7D6B	20	F6	00810	BRA	R2
			00820	* INSERT 3 BYTES END PRINTER CONTROL	
7D6D	A6	43	00830	INSEND	LDA ED,U
7D6F	A7	80	00840	STA	,X+
7D71	EC	44	00850	LDD	ED1,U
7D73	ED	81	00860	STD	,X++
7D75	20	9E	00870	BRA	NXTC
			00880	* CONVERT UPPER CASE TO LOWER CASE	
7D77	81	41	00890	CONVT	CMPA #65
7D79	2D	06	00900	BLT	NO
7D7B	81	5A	00910	CMPA	#90
7D7D	2E	02	00920	BGT	NO
7D7F	8B	20	00930	ADDA	#32
7D81	39		00940	NO	RTS
			00950	*	
			00960	*REMOVE PRINT CONTROL CHARACTERS	
			00970	* REMOVE FIRST THREE BYTES	
			00980	*	
7D82	A6	03	00990	REMOVE	LDA 3,X
7D84	27	08	01000	BEQ	ISEND2
7D86	8D	15	01010	BSR	CONVT2
7D88	A7	80	01020	STA	,X+
7D8A	20	F6	01030	BRA	REMOVE
			01040	* REMOVE LAST THREE BYTES	
			01050	* AND REST OF PROGRAM UP IN MEMORY	
7D8C	A6	03	01060	ISE3	LDA 3,X
7D8E	A7	80	01070	ISEND2	STA ,X+
7D90	26	FA	01080	BNE	ISE3
7D92	EC	03	01090	LDD	3,X
7D94	26	F6	01100	BNE	ISE3
7D96	ED	84	01110	STD	,X
7D98	9E	41	01120	LDX	<SAV
7D9A	16	FF78	01130	LBRA	NXTC
			01140	* CONVERT BACK TO UPPER CASE	
7D9D	81	61	01150	CONVT2	CMPA #97
7D9F	2D	06	01160	BLT	NO2
7DA1	81	7A	01170	CMPA	#122
7DA3	2E	02	01180	BGT	NO2
7DA5	80	20	01190	SUBA	#32
7DA7	39		01200	NO2	RTS
			01210	*	
	7DA8		01220	ZZEND	EQU *
	7D0E		01230	END	START

00000 TOTAL ERRORS



H2SAVE and H2VIEW

Graphics Utility

by Colin North

THE MINI HUSBAND

16K ECB

MUSIC by Mal McLauchlan

H2VIEW AND H2SAVE are two programs I devised so I could save and load HSCREEN pictures off disk and tape.

Run "H2SAVE" to save your pictures to disk or tape and RUN"H2LOAD" to load and view your graphics pictures.

The Listing:

```

0 GOTO10
3 SAVE"165B:3":END'8
10 GOTO70
20 '##### H2VIEW #####
30 '### BY COLIN NORTH ###
40 '##### DEC 86 #####
50 '
60 SAVE"H2VIEW":END
70 POKE&HFFB,30
80 CLS:PRINT@192," THIS PROGRAM
WILL ALLOW YOU":PRINT" TO VIEW
HSCREEN2 PICTURES":PRINT" SAVE
D WITH H2SAVE"
90 PRINT@460,"any key"
100 EXEC44539
110 CLS:PRINT@35,"TO VIEW HSCREE
N2 PICTURES"
120 FORX=1090 TO 1116:POKEX,202:
NEXT
130 POKE&HE6C6,18:POKE&HE6C7,18
140 PRINT@224
150 INPUT" ENTER DRIVE NO":D
160 INPUT" ENTER FILENAME":F$
170 INPUT" ENTER HSCREEN#":H
180 DRIVE D
190 OPEN"1",#1,F$+"/BAS"
200 FORX=&HFFB0 TO &HFFC0
210 P=PEEK(X)
220 INPUT#1,P
230 POKEX,P
240 NEXT
250 CLOSE#1
260 CLS:N$=F$
270 PRINT@198,N$" LOADING"
280 FOR I=&H70 TO &H73
290 POKE &HFFA2,I
300 F$=N$+"/HR"+CHR$(I-64)
310 LOADMF$
320 NEXTI
330 POKE &HFFA2,&H7A
340 HSCREEN2
350 HPRINT(7,23),"PRESS ANY KEY
FOR NEXT FILE"
360 EXEC44539
370 WIDTH32
380 POKE&HFFB,30:POKE&HFFC,0
390 GOTO140

```

The Listing:

```

0 GOTO10
3 SAVE"165A:3":END'10
10 GOTO70
20 '##### H2SAVE #####
30 '### BY COLIN NORTH ###
40 '##### DEC 86 #####
50 '
60 SAVE"H2SAVE":END
70 CLS
80 PRINT" THIS PROGRAM WILL SAV
E A":PRINT" PICTURE FROM THE HS
CREEN2":PRINT" GRAPHICS SCREEN.
"
90 PRINT:PRINT" IT WILL ALSO SA
VE THE VALUES":PRINT" THAT ARE
STORED IN THE":PRINT" PALETTE R
EGISTERS SO THAT THE":PRINT" CO
RRECT COLORS CAN BE VIEWED":PRIN
T" WHEN YOU USE H2VIEW."
100 PRINT:PRINT" RUN ANY BASIC
HSCREEN2 GRAPHIC PROGRAM AND PR
ESS BREAK.":PRINT" LOAD AND RUN
H2SAVE AND":PRINT" FOLLOW PROM
PTS."
110 PRINT" any key"
120 EXEC44539
130 CLS:PRINT
140 PRINT" DO NOT PRESS RESET":
PRINT:PRINT" THIS WILL RESET TH
E REGISTERS":PRINT" TO NORMAL"
150 PRINT@460,"any key"
160 EXEC44539
170 CLS:PRINT@34,"A PROGRAM TO S
AVE HSCREEN2"
180 FORX=1090 TO 1115:POKEX,202:
NEXT
190 PRINT@224:INPUT" ENTER FILEN
AME":F$
200 OPEN"0",#1,F$+"/BAS"
210 FORX=&HFFB0 TO &HFFC0
220 P=PEEK(X)
230 PRINT#1,P
240 NEXT
250 CLOSE#1
260 CLS:N$=F$
270 FORI=&H70 TO &H73
280 POKE &HFFA2,I
290 F$=N$+"/HR"+CHR$(I-64)
300 SAVEMF$,&H4000,&H5FFF,44539
310 NEXTI
320 POKE &HFFA2,&H7A

```

THE OTHER NIGHT I was watching television, and saw a French night-club singer performing in an American film.

I realised I had the number, "Le Petit Mari" (or, "The Mini-Husband") in an album of French songs, so I put the catchy tune and amusing words into a CoCo program.

It's a little different!

The Listing:

```

1 '***FRENCH SONG LE PETIT MARI
(THE MINI-HUSBAND)*****
***SET TO COCO BY MAL MCLAUCHLAN
*****MARCH,1987*****
2 GOTO 10
3 SAVE"204B:3":END'6
10 CLS:PRINT@200,"LE PETIT MA
RI":PRINT@231,"(THE MINI-HUSBAN
D)":
20 FOR X=1190 TO 1209:POKE X,191
:NEXT X
30 FOR X=1286 TO 1305:POKE X,191
:NEXT X
40 POKE1222,191:POKE 1254,191:PO
KE1241,191:POKE 1273,191
50 FOR DL=1 TO 1500:NEXT DL
60 CLS4:PRINT@8,"THE MINI-HUSBAN
D":PRINT@96,"I HAVE A LITTLE HU
SBAND, I CAN TELL YOU HE
IS SMALL! AND A TINY NUTSHEL
L HOUSE,HA!HA! I HAVE BUILT WHERE
HE CAN STAY ";
70 PRINT@224,"HEY!HEY!":PRINT@25
6,"THERE'S A LITTLE BIT LEFT OVE
R, HE'S A MINI-SIZE I'D SAY!"
80 PRINT@483,"TRANSLATION FROM F
RENCH";
90 FOR RPT=1 TO 2
100 PLAY"T4L803CL4FL8GL4AL8B-O4L
4.CL8CDO3L4B-L8AL4G04L8CO3L4.AP
8"
110 PLAY"L8B-O4CL4DL8CO3L4B-L8AL
4B-L8B-B-AB-O4L4CO3L8B-L4AL8GL4A
L8AA"
120 PLAY"GAL4B-L8B-L4AL8AL4GL8GL
4GL8B-L4AL8GL4FL8EL2.FP4"
130 NEXT RPT
140 GOTO 140

```


SUBMITTING YOUR WORK

Ah! So you've finally finished that program? And you say to yourself, "What a great program that would make for CoCo Magazine/Softgold Magazine!"

And so you wonder to yourself, "How am I going to send this program in to the magazine?". Some time goes by and you suddenly realise, "Hey, there's an article in this month's magazine about submitting your work. I'll read through that and maybe that'll help me."

So you rip the magazine out of your stack of other CoCo/Softgold magazines and read the article on how to submit your program.

It reads ...

"... we accept programs stored on both tape and disk ONLY along with a hard copy of the program(s) (optional only; we use it here as a reference to see what the program is/does) and suitable instructions.

Saving to Tape

Each program would be best saved three times with the last save being in ASCII. The tapes we recommend you use are either a C30 or less (the reason for that is that tapes longer than C30 have a tendency to tear).

It'd be even better if you could include some instructions along with the program, either as a separate program or in the wordprocessors listed below.

Saving to Disk

With disk, you'd be best to save it three times with the last save being in ASCII. Also, the extension name for the second and third copy should be different, so to distinguish the three copies. A simulation is given below.

'... I have just saved 3 copies of a program called "HORSE". The directory listing would be:

```
HORSE BAS 0 B 3
HORSE 1 0 B 3
HORSE 2 0 A 3'
```

Any instructions could be saved in the same system using either a program or in the wordprocessors listed below.

Wordprocessors we use.

Here is a list from our most preferable wordprocessors to the drastic measure one could take to tell us how your program works.

1. Telewriter/Telepatch
2. Scripsit
3. PenPal
4. VIP Writer
5. Any form of data file.
6. Instructions written in a separate program."

"Oh wow!", you think to yourself as you read it with awe and astonishment. So you go about your busy little way saving your program and instructions to tape or disk. Then you say to yourself, "Where do I send it?"

You read the article on ...

"... any articles and programs should be sent to this address:

Submissions Editor,
Freeport 5
PO Box 1742,
Southport, Qld, 4215

All mail to this address need not be paid for.

All tapes and disks received will be returned after three months in case we need to refer to something or re-print something."

So place your tape/disk along with your hardcopy of the listing in a postpack (or suitable wrapping) and pop it in the mail.

All done!!

GOLDSOFT

P.O. BOX 1742, SOUTHPORT. QLD. 4215 Phone (075) 39-6177

Goldsoft Price list as at March, 1987

Please tick your requirements.

HARDWARE

CoCoConnection: \$206.00 ()
Video Amp: With Sound - \$35.00 ()
Without Sound - \$25.00 ()
The Probe: \$49.95 ()

GOLDLINK

Access Goldlink #642# on Viatel with a 1200/75
baud moden. Annual subscription: \$39.75 ()

SOFTWARE

Magazines, Tapes & Disks

Australian CoCo (Advanced Programs for your CoCo):

Magazines:	Tape () or Disk ()
12 Months \$39.95 ()	12 Months \$123.75 ()
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1 Month \$ 4.50 ()	1 Month \$ 16.50 ()

Softgold (Programs for your CoCo):

Magazines	Tape () or Disk ()
12 Months \$39.95 ()	12 Months \$123.75 ()
6 Months \$24.95 ()	6 Months \$ 74.25 ()
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Gold Disk - Available Quarterly:

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The CoCo3 Tape/Disk:

1 - Tape: \$10.00 Disk: \$16.00 ()
2 - Tape: \$10.00 Disk: \$16.00 ()
3 - TAPE: \$10.00 DISK: \$16.00 ()

"Say the Wordz":

Two Curriculum based speller programs for
your Tandy Speech/Sound Pack: \$29.95
Req. 32K + Tandy Speech Pack ()

Best of CoCoOz - \$16.00

A selection of programs from Australian
CoCo Magazine.

	Tape:	Disk:
# 1 - Education:	()	()
# 2 - Games 16K:	()	()
# 2 - Games 32K:	()	()
# 3 - Utilities:	()	()
# 4 - Business :	()	()
# 5 - Adventure:	()	()
# 6 - Preschool:	()	()
# 7 - Graphics :	()	()
# 8 - Games 16K:	()	()
# 9 - Games 32K:	()	()
#10 - Education:	()	()
#11 - Education:	-	()

BRIC-A-BRAC

Blank Tapes: 12 @ \$18.00 ()
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(Stop between numbers - b.h. else
 a.h.; but, hyphen between = both)

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