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— CONF88 —

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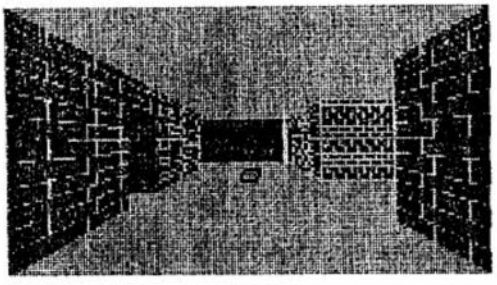
Color Computer 3



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Minimum System Req:

128k Color Computer 3

Program Enhanced with 512k

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In a Nutshell

Well, we really out-did ourselves this time!

Last month (June) we were two weeks late, and we thought, "Aargh! It's late!".

Now, we're 4 weeks overdue and everyone has been ringing us up and asking, "Where is my magazine?". The official reason? The people who print our magazines thought, "Well, they're a day late, and we've got 4 other customers waiting to have their material printed - we'll do the four customers now."

We arrived at Warwick on late day number two and find that those 4 other parties would take about an extra one to two weeks - and they've been waiting longer than we have! They got priority ... and we waited. That's how the story goes, anyway ... Nonetheless, we're back!

Competitions: What We Look For

Just what do we look for when we announce a competition? Simple points below may explain:

: Music - These programs can involve simplicity, creative art, originality (to a degree) and musical structure (no out-of-tune notes). - Can be written in any program, eg Orchestra-90CC, Music+, Lyra, Symphony-12, Musica 1, Musica 2, Basic ... etc. :

Games - There are many types of games around, like kamakasi (shoot 'em 'till you drop), strategic (dirty ways of getting your enemy in the most inconspicuous ways), educational (learn by playing games), and many more. - Games can come in any language, eg, Basic, ML, Basic09, OS-9, Pascal, C, etc. -

Things we look for:

colour (or attempted), sound, ease of use, quickness (how fast the ball bounces), etc. :

Utility - Again, like games, utilities incorporate things like ease of use, how many people could benefit from this (eg a disk utility), size (to an extent), and, in most cases, how it goes about doing the job (programming skills come in here).

Now anyone can enter any of the competitions. The closing date is 15th September, 1988, and will be announced at Conf'88.

Conf '88: Lotza Fun

Conf'88 has been one of my favorite things to look forward to.

I get to meet those people who submit programs to the magazine, those who read the magazine, and you get to meet those who produce the magazine. (Finally putting a face to a name and/or a voice can be quite interesting - one never knows what the other person looks like.)

In most cases, you'll be meeting the people whose programs appear in the magazine.

Not only that, you'll be able to sit-in on some VERY interesting lectures. The subjects of these lectures are mentioned in detail somewhere else in the magazine.

For those who are not really computer orientated, try this: The whole weekend will be fun. Imagine waking up to wildlife instead of the passing subway!

What about a bushwalk? You can go by yourself, or you can wait for Karen to show you around (she knows the area VERY well!).

Alternatively, you can go for a scenic hunt. There's the 'Best-Of-All Lookout, which looks over northern New South Wales, Murwullimbah, Mt Warning and beyond! The scenery in the hinterland of the Gold Coast is awesome!

Feel like lieing in the grass, basking in the sun? No problem! Overall, the perfect weekend to get away from it all.

Last Notes: More Programming Notes!

* All a hacker needs is a tight PUSHJ, a loose pair of UUOs, and a warm place to shift.
* Hardware fault: see 'Software Fault'.
* Hackers know all the right MOVs.
* Computers are not intelligent. They only think they are.
* CPU: a random number generator.
* Data Transmission: a method of corrupting someone else's data from a safe distance.
* IBM: It's Better Manually.
* A Law of programming: "Make it possible for programmers to write in English, and you will find the programmers cannot write in English"
* How many programmers does it take to change a light bulb? - None. It's a hardware problem. - Four: one to analyse the problem, one to write the instructions, one to check and debug the instructions and one to perform the operation.
* Software fault: See 'Hardware Fault'.
* How many IBM processors does it take to perform a logical shift left? 33. 32 to hold all the bits, and one to push from the right.

Bye!

Alex

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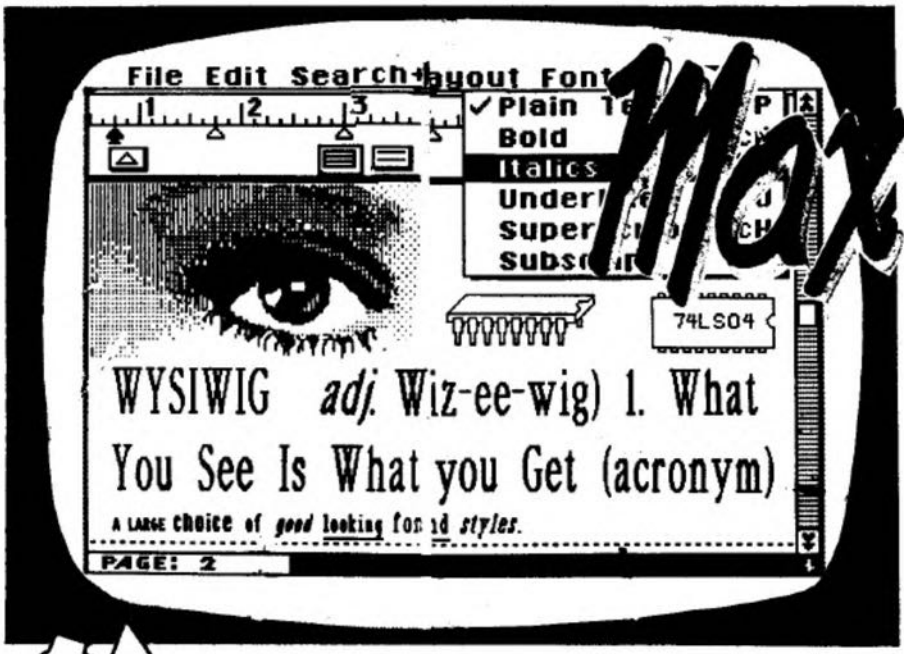

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LETTERS

Dear Graham,

As I have just received my June issue of Softgold I have just received the final piece of evidence that I and possibly others are being ripped off.

I was a subscriber when Greg Wilson was editor of Australian Rainbow. I was later to be a subscriber to Australian CoCo which suited my Colour Computer and young family members.

Slowly but surely other computers were catered for in Australian CoCo latter to be known as Softgold.

From November 1987, the magazine has changed rapidly from being for Tandy Colour Computers to now as listed in June Softgold - "About Softgold", page 5, quote: "This magazine is for computer users - especially Tandy 1000, 2000 and 3000 series users. Softgold magazine is just as valuable to IBM computer users."

My annual subscription in September 1987 was paid in good faith for a magazine to suit my family's Colour Computer.

Since November 1987 I have been seeing less and less value for my subscription dollar. It would appear from reading page 64 June Softgold I should be subscribing to Australian CoCo, as it is the only magazine that now suits our computer.

Receiving Softgold is a bit like being sent an air conditioner when I really need a heater.

Unfortunately, I am not conveniently near enough to a Tandy User Group and have relied on my Tandy magazine as my sole support, both in Bombala and now in Scone.

While Terry Gravolin is listed as the Upper Hunter contact, he no longer has a Tandy computer or subscribes to either of your magazines. I am in casual contact with 3 new young CoCo 3 owners, but am unable to recommend my present magazine as being of any help to them.

I have in the past received much pleasure and help from your magazines, but as present I feel cheated, negleted and p----d off at the loss personal feeling that Greg originally put in his magazine and you also were able to do that.

Hope this constructive feedback might jerk your original cords of motivation and caring.

Kevin Hair,
Scone, NSW

Dear Kevin,

I was saddened to receive your letter because apart from anything else, it shows that I'm not good at communicating - a very disturbing situation if that's what one does for a living!

On page 5 of April's Softgold, under the heading "Changes" I detailed what was happening with Softgold Magazine and what you could do to remedy the situation - that is, either swap to Australian CoCo, or use the credit to purchase something from us, or obtain a refund.

I can only assume that my "blurb" is too long! I'll have to be less wordy next time!

I am aware of your standing with us. Your name has been a familiar one to us over the years even though we have not met. I have taken the opportunity to send you free of charge Nov '87 - June '88 Australian CoCo Magazine. This is obviously the magazine you should be receiving. I hope you find them of value.

Terry Gravolin has not informed me that he wishes to be taken off the list of contacts. I will call him about that soon. I hope you'll continue to subscribe to Australian CoCo Magazine. We don't like to lose contact with old friends!

Graham.

Dear Graham,

I am very sorry for not writing sooner to thank you, but here it is.

I thoroughly enjoyed the day I had with you guys at HQ, and I hope that I wasn't too much of a pest. After reading about the new changes to the magazine, I was overjoyed. It means I only have to buy one magazine.

I have just bought OS-9 level 2 and it is UNREAL! When will the IBM version come out?

I am looking for some software for my birthday and I was wondering if you had any ideas..

I am very sorry for not being able to see you at the Ringwood meet, but as I said, I was on camp. It was unreal, but five days without CoCo was a bit much.

In your music competitions, what do you look for, and will there be a section for Logo pictures in the Graphics competition?

Well, that's about all I have to say, except that you do a great job and I had a great day!

Hamish Purdey,
Doncaster. Vic.

Ps, Looking forward to heaps more programs.

Pps, I love the changes to the mags, and I wish you every luck with them.

Hamish,

OS-9 for MS-DOS? Surely you jest! I jest can't think of anything worse - the IBM could never keep up!

It was nice to see you on the Gold Coast - we always enjoy meeting our readers when they pop in on holidays.

As for music competitions; as music is primarily used these days to entertain people, the first thing that we look for in a music program is its entertainment value.

In the past, some very simple programs have scored better than more complex ones, because they sounded better.

The software package that really impresses me for people your age is "Where in the World is Carmen Sandiego?".

Unfortunately "Carmen" requires a disk drive and 128K CoCo 3.

"Carmen" is a detective adventure game par excellence.

Another new program is the one by Nicholas Marentes about to hit the Tandy store near you - watch out, it's hot!

Finally, if you're wanting software to print magazines, then the new Desktop publishing software for the CoCo 3 is very useful.

As for Logo programs, we welcome all programs to this magazine, no matter what language they use. We especially encourage Logo programmers to send us their work, because this language is so useful for readers with young children.

See ya next holiday!
Graham.

*

Dear Graham,

I am 15 years old, and I have a problem in getting to Conf '88, as I have no transport and would be catching a bus to the Gold Coast.

Unless there was a local bus going Koonjewarra way, I would have no way to get there from the Gold Coast.

Mark

Mark,

Thank you for your letter. There will be transport to Koonjewarra. Just indicate that you require assistance when you book for Conference. Cost is yet to looking forward to seeing you there!
Graham

*

I have a suggestion for your magazine - I think you should put in a Pen Pals page. I'm sure there are a lot of people in Australia that would like one, especially me.

If anyone has asked the same question, please send their letter into the magazine.

I am very interested in getting a penpal.

Andrew Green,
Taree, NSW

Andrew,

That's a good idea - we'll put it to our readers. If there are any of you looking for pen-pals, write this month and we'll either match you up with someone or put your letter in the magazine for everyone to see.
Graham

Dear Graham,

I have a really snazzy database utility (at least I think it is) which I want to enter in your utilities competition.

I am, however, still polishing up bits here and there. What is the latest time for entry? I don't want to miss the bus, and I would like to know that entering (or winning) does not void my rights (copyright) to the program!

Michael Shoobridge,
Blackburn, VIC.

Michael,

The closing date for all competitions is September 15th, 1988.

All programs submitted to this magazine remain the propety of their author. However please note that this magazine reserves the right to use such programs as it sees fit from time to time.

This works well for authors who may want to use the magazine to get a "basic" version of a program out to the people, but who may also wish to sell or distribute privately a more complete version.
Graham.

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COCO NEWS

WITH GRAHAM MORPHETT

How Do You Relax?

Our society is suffering from a higher incidence of heart failure and tension related problems than ever before.

Fortunately, more than at any other time in human history, we now understand more about the human body and how it can be made to cope with these problems.

One way is to use a hobby such as computing to take your mind from the really difficult problems of the day.

There is no better hobby than computing. I have to say that - I'm biased. But by itself, computing as a hobby perhaps lacks some of the essentials which help us cope with modern life.

Many of us in the computer industry are now combining a high energy interest such as jogging or aerobics or bushwalking with what we do behind the keyboard.

You may consider that running or tearing around over some bit of country may be anything but relaxing, but such is not the case.

I grant that it is tiring. In fact on a recent trip, Wilfred Egert from Tandy had me fighting for breath at one stage as he and his daughter led a headlong rush up a precipitous cliff. But at the end of the day, tired as we were, we managed to admit that we hadn't thought about work for a whole weekend, and that we were refreshed.

That following week, we achieved more at work than we had for the previous three.

Computing is a great way to relax at home.

Provided the task is not work related, you can lose yourself for hours in the task at hand.

New thoughts are stimulated; new ideas are developed; and a sense of achievement is inevitable as we learn more.

In hand with an intelligent exercise program, computing can make the difference between a mediocre existance, and a fun life!

Sorry, We're Late.

What a month - if this is supposed to be the quiet season for computer sales, I'm going to the Simpson Desert in December!

Last month we were delayed by both our own 'busyness' and by the printer - in fact because we were late we totally lost our path in the printer's schedule.

This month it looks like we'll be late - but hopefully not so late.

We apologise. We hope to be back to normal with September's magazines.

The extra time we've had has been very handy. We've used it to train some new staff members and to get to know our Desktop Publishing software (Ventura).

In fact July's magazines are likely to be something of a milepost in that they represent the zenith of our older production style.

Provided all goes well, this magazine should have quite a bit in it from the new desktop publishing system.

Tandy Sales

On sale this month at your local Tandy store are a number of computer and non computer items that you'll want to buy - especially at the prices being offered! In fact some bear checking out - just to see if they really are true!

For example, we heard that Basic 09 is being sold in some shops at just $5.00!

Less headdy stuff, but none the less big news for those of you in the market for a walkman, is Tandy's decision to reduce to $99.95, the price of the 14-1037 stereo recorder.

Tandy also have a new walkman on sale - it is a top of the line model with auto reverse and a very high quality sound. It sells for $199.95

There is a car radio which features digital tuning and 12 watt per channel sound and which normally sells for $329.95 - in August being sold at $199.95.

Tandy have also released two new CB radios - one is quite small and is only $179.95.

Those of you with the first Tandy 1000 will be impressed with the new 286 card - it will boost the performance of your door stopper by up to 600%

And CoCo 3's are on sale again - as are the CM 8 monitors that go with them. Good stuff!

Finally, there is a computer book sale and a heap of components being cleared out at amazing prices.

Good one Tandy - about time you had a real sale!

Conf '88

Please note the additional information in this magazine regarding Conf '88. October isn't that far away now and things are starting to get exciting!

I hope you'll be a part of this conference. I have a feeling it will be the best we've ever done. If you check

the list of speakers, you'll see what I mean. In addition to the information printed elsewhere in this magazine, Karen has asked me to mention the following points:

1. It is now clear that you can stay over at Koonjewarre for up to five additional nights.

The cost is $25/night in a four bed room and does not include meals which are available on site.

2. All delegates please note that you need to bring pillows and blankets. This is information were were supposed to have known except that noone told us... if you get my drift!

3. In my best Kylie Mole voice I'm supposed to also inform you that the bushwalks are "rooly excellent" and that you'd have to be spick to miss them.

Competitions Close Soon!

The programming contests we run every year all close for this year on September 14th.

There is still no sure winner for the Tandy Programming Contest - which is a shame because the prize is really worth the effort.

But I'm sure like last year, we'll get a heap of last minute entries.

We have categories in all programming fields and the games and utilities competitions are always fiercely fought.

Stop Press!!

There was no August 1988 issue of this magazine. Please see next month's magazine for full details.

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335 Bay St	03 596 3985
Camberwell	Tandy
662 Burke Rd	03 882 8297
Chadstone	Tandy
B12 Chadstone Shop Center	03 569 4454
Cheltenham	Tandy
20 Station rd	03 584 4871
Clayton	Tandy
331 Clayton Rd	03 544 6169
Coburg	Tandy
61 Watefield Rd	03 350 4640
Dandenong	Tandy
Sh1	03 791 6972
Deer Park	Tandy
Sh86 Deer Park Shop. Cntr	03 363 6015
Doncaster	Tandy
Sh76 Westfield ShopTown.	03 848 9121
East Doncaster	Tandy
T34 The Pines Shop Center	03 842 8275
Elsternwick	Tandy
Sh2 486 Glenhuntly Rd	03 582 6887
Footscray	Tandy
118 Hopkins St	03 68 4493
Forest Hill	Tandy
37 Mahoneys Rd	03 877 6797
Frankston	Tandy
Sh1a Cnr Beach & Olsen St	03 781 1527
Greensborough	Tandy
Sh73 Grnsbrgh Shop. Cntr	03 434 5822
Keysborough	Tandy
Parkmore Shopping Center	03 798 5099
Lilydale	Tandy
Sh717 Chirnside Shop Cntr	03 726 5338
Malvern	Tandy
220 Glenferrie Rd	03 509 7982
Maribyrnong	Tandy
Sh3 Highpoint Shop Cntr	03 318 5077
Melbourne	Tandy
272 Lonsdale St	03 663 3193
Melbourne	Tandy
284 Bourke St	03 370 5039
Moonee Ponds	Tandy
22 Holmes Rd	03 370 5039
Moorabbin	Tandy
Cnr Nepean & Redholmes St	03 553 3573
Mulgrave	Tandy
Waverly Gardens Shop.Cntr	03 547 0898
Mt Waverly	Tandy
9 Hamilton Place	03 227 0551
Narre Warren	Tandy
Sh34 Fountain Gate Sh.Cnt	03 704 6698
Northcote	Tandy
329 High St	03 489 6532
Northland	Tandy
Sh6 Northland Shop.Cntr	03 470 1069
Prahan	Tandy
251 Chapel Rd	03 51 2111
Preston	Tandy
312 High St	03 478 3462
Richmond	Tandy
416 Bridge Rd	03 428 2997
Ringwood	Tandy
Cnr New St & Whitehorse R	03 879 3424
Sunshine	Tandy
17 Dickson St	03 311 8711
Springvale	Tandy
Sh2 228 Springvale Rd	03 547 8451
St Kilda	Tandy
Sh2 149 Acland st	03 534 4113
Watsonia	Tandy
Sh6 Diamond View Shop.Cnt	03 435 0152
Werribee	Tandy
Sh34 Werribee Plaza	03 749 4042
Werribee	The Werribee Photo Shop
76 Watton St	037 41 7089
Watrina South	Tandy
Sh103a Knox City Sh.Cntr	03 221 6050
Araratt	Araratt Auto Accessorie
188 barkly St	053 52 2666
Ballarat	Tandy
65 Bridge St Mall	053 31 4913
Benalla	Benalla Electronics
61 Carrier St	057 62 4155
Bendigo	Tandy
Sh19 Fountain Plaza	054 42 3035
Cobden	Cobden Pharmacy
43 Curdie St	055 95 1057
Cohuna	Cohuna Pharmacy
85 King St George St	054 56 2617
Corio	Tandy
Sh30 Corio Shop.Cntr	052 75 2348
Echucha	Webster Electrics
220 Packenham St	054 82 2956
Geelong	Tandy
171-181 Moorabool St	052 9 8731
Hastings	Easy Hire Electronics
Sh3	059 79 3411
Horseham	Lindsay Smith Radio
49a Roberts Ave	053 82 1042
Kerang	Kerang Amcal Pharmacy
28 Victoria St	054 52 1010
Kilmore	Kilmore Lighting Specs
25 Sydney St	057 82 1790
Kyabram	Gorr's Pharmacy
174 Allan St	058 52 2186
Leongatha	Rob's Camera & Elec.
22 McCartin Sst	056 62 3227
Melton	Computer Shack
51 Bakery Square	037 43 1233
Mildura	Unipart center
48 Madden Av	050 23 2882
Moe	The WA Purvis Stores
22-32 Moore St	051 27 1477
Mornington	Harding & Trapp
168 Main St	059 75 2222

Brighton — Tandy
1525 Brighton Rd — 08 298 7130
Colonnades — Tandy
Sh8 Colonnadel Shop Cntr — 08 384 3752
Christies Bch — Tandy
27 Beach Road — 08 382 3757
Elizabeth — Tandy
Sh71 Elizabeth City Cente — 08 252 1292
Findon — Tandy
Sh1 127 Findon Rd — 08 268 2364
Gilles Plains — Tandy
Sh12 Gillies Plains Shop. — 08 261 8334
Glenelg — Tandy
42-44 Jetty Road — 08 295 4181
Glen Osmond — Tandy
401 Glen Osmond Rd — 08 79 1446
Kilkenny — Tandy
Sh74 Westfield ShopTown. — 08 268 1144
Marion — Tandy
Sh143 Westfield Shop.Cntr — 08 298 1167
Modbury — Tandy
Sh28 Tea Tree Plaza — 08 264 1214
Norwood — Tandy
252 The Parade — 08 31 3130
Prospect — Tandy
Sh35 Northpark Shop.Cntr — 08 269 3738
Salisbury — Tandy
Sh6 Parabanks Shop.Cntr — 08 258 6266
Rosewater — Tandy
156 Grand Junction Road — 08 47 6180
Unley — Tandy
129 Unley Rd — 08 272 6313
Westlakes — Tandy
Westlakes Mall — 08 356 9629
W.Terrace Pl. — Tandy
Sh3 W.Terrace Plaza — 08 273 5949
Gawler — Harnett & George
94 Murray St — 085 22 1543
Kadina — Kadina Auto Supplies
Taylor & Goyder Sts — 088 21 1666
Kangaroo Is. — Sight & Sound
Sh2 Queenscliff Sh.Villag — 084 82 2599
Lobethal — Pay 'N Pak
73 Main St — 083 89 6056
Loxton — Scarfes Eletronics
2 Edward St — 085 846 7000
Macclesfield — Redwood Trading Co
-- — 08 388 9028
Mt Gambier — SE Electronics
Sh16 Odeon Plaza — 087 25 0034
Port Pirie — Smiths Electrical
82-84 Ellen St — 086 32 1688
Pt Lincoln — Basshams TV & Computers
22 Liverpool St — 086 82 2788
Victor Harbour — Victor Hardware Co
105 Victoria St — 085 52 2085
Whyalla — Tandy
37e Patterson St — 086 45 9144
Marion — Tandy Computer Dept
Sh143 Westfield Shop Cntr — 08 298 8533
Modbury — Tandy Computer Dept
Sh11 Tea Tree Plaza Shop. — 08 264 1214

Australian Capital Territory

Belconnen — Tandy
Sh116 Beconnen Mall — 062 51 1139
Canberra City — Tandy
Sh6 The Boulevarde — 062 49 8942
Fyshwick — Tandy
Cumberland Court — 062 80 5530
Canberra City — Tandy Computer Dept
Sh6 The Boulevarde — 062 49 8942

Queensland

Brisbane City — Tandy
381 Adelaid St — 07 83 5133
Brisbane — Compudata Aust.
Sh62 City Plaza — 07 229 4420
Brookside — Tandy
Sh17 Brookside Shop.Cntr — 07 355 6860
Canon Hill — Tandy
Sh220 Galaxy Shop.Plaza — 07 390 6619
Capalaba — Tandy
Sh110 Capa.Shop.Center — 07 245 4767
Carina — Tandy
Sh32 Carindale Sh.Cntr — 07 398 9063
Chermside — Tandy
Sh17 Chermside Shop. Cntr — 07 359 7180
Fort. Valley — Tandy
191 Brunswick St — 07 252 4036
Fort. Valley — Tandy
301 Wickham St — 07 252 9000
Indooropilly — Tandy
Sh124 — 07 378 8590
Lutwyche — Tandy
Cnr Bradshaw/Lutwych Rd — 07 52 3217
Mt Gravatt — Tandy
Sh4 1961 Logan Rd — 07 343 5796
Mt Ommany — Tandy
Sh20 Centenary Shop Cntr — 07 376 3434
Redcliff — Tandy
Sh12 Sutton Center — 07 284 8476
Redbank — Tandy
Sh303 Redbank Plaza — 07 288 5780
Springwood — Tandy
Sh 10 The Mall — 07 808 1258
Strathpine — Tandy
Sh34 Westfield Shop.Cntr — 07 205 6169
Sunnybank — Tandy
Sh27 Sunnybank Plaza Sh. — 07 345 5239
Sunnybank Hill — Tandy
Sh7 Sunnybnk Shop.Cntr — 07 273 5949
Toombul — Tandy
Sh10 Westfield Shop Cnte — 07 266 9831
Woodridge — Tandy
Sh26 Woodridge Plaza — 07 208 0093
Stones Corner — Tandy
457 Logan Rd — 07 394 1010
Wynnum — Tandy
108 Edith St — 07 396 6979
Aitkenvale — Sun City Electronics
Natahn Plaza — 077 75 4004
Ayr — Burdekin Office Supplys
Sh13 Landara Shop Center — 077 83 2904
Boonah — AD & R Tait
Railway St — 075 63 1962
Bowen — The Computer Hut
21 William St — 077 86 2220
Bundaberg — Tandy
Sh5 Sugarland Shop Cntr — 071 72 4122
Caboolture — Beerburrum Electronics
31 King St — 071 95 6836
Cairns — Tandy
Sh40 Earville ShopTown — 070 54 5453
Caloundra — Humes Electro-Mart
9 Tay St — 071 91 4270
Cannonvale — Whitsunday Electronics
Sh17 Cannonvale Shop.Fair — 079 46 6854
Charters Towr — Inland Electronics
129 Gill St — 077 87 3744
Dalby — Universal Services
76 Cunningham St — 074 62 3228
Emerald — Ken Hart Amcal Chemist
48 Egerton St — 079 82 1164
Gatton — T&C Electronics
17 Railway St — 075 62 1686
Gayandah — Grants Electrical
21 Meson Ave — 071 61 1307
Gladstone — Tandy
29 Tank St — 079 72 1761
Gympie — Gympie Musicland
50 Mary St — 071 82 3226
Ingham — Mason's Electronics
77 Cartwright St — 077 76 3188
Ipswich — Tandy
Bell St — 07 281 6733
Karumba — B&B Supermarkets
3 Yappar St — 077 45 9188
Kawana Waters — Kawana Sound Bar
Sh3 Kawana Shop Town — 074 44 2272
Kingaroy — The Silicon Center
Kingaroy Mall — 071 62 4666
Longreach — Saunders Electronics
30 Swan St — 074 58 2146
Mackay — Chasely House
7 Sydney St — 079 51 2889
Maroochydore — Sunshine Tv Shop
30 Ocean St — 071 43 1611

Computer Hut Software

For CoCo 2 software

Phone 077 86 2220

Maryborough — Kingston Pharmacies
Maryborough Bazaar Shop. — 071 22 1099
Moronbah — Moranbah Musicland
Town Square — 079 50 6969
Mt Isa — Outback Electronics
71 Barkly Hiway — 077 43 3475
Nambour — Tandy Electronics Deal.
24 Anne St — 071 41 3011
Noosa Junction — Noosa Electronics
Sh2 Arcadia Walk — 071 47 5866
Norfold Island — ABC Hobby Center
Burnt Road — 001167232167
Pacific Fair — Tandy
Pacific Fair Shop Center — 075 50 2144
Rockhampton — Center State Electronic
229 Mulgrave St — 079 27 4894
Rockhampton — Tandy
Cnr East & William Rd — 079 27 7500
Roma — Barry McCabe Chemist
84 McDowall St — 074 22 2211
St George — St George Retravision
117 Victoria St — 074 25 3956
Southport — Tandy
Sh94 Scarborough Fair — 075 32 5353
Southport — Goldsoft
28/207 Currumburra Ashmore — 075 39 6177
Thursday Is. — CR & P Jones
Douglas St — 060 69 1118
Toogoolawah — Alan Roughan Chemist
89 Cressbrook Rd — 075 83 1341
Toowoomba — Tandy
135 Margaret St — 076 32 7807
Toowoomba — Computer Bytes & PC's
Ruthven St., — 076
Townsville — Tandy
Sh54 The Willows Shop Cnt — 077 73 7273
Townsville — Sun City Electronics
Nathan Plaza — 077 75 4004
Tweed Heads — Tandy
Sh1 69 Wharf St — 075 36 4357
Warwick — Audivision
Sh21 147 Panlerin St — 076 61 3131
Weipa — Cape York Pharmacy
Nanum Center — 070 69 7412

Morwell Tandy
Sh36 Midvalley Shop.Cntr 051 34 6060
Morwell Turpin & Wilson
47 Buckley St 051 34 2453
Pakenham Pakenham Photo & Art
Sh4 059 41 1562
Portland Portlan Electronics
39 Julia St 055 23 1179
Rosebud B&T Electronics
Sh13 059 86 3134
Rosebud Guardian Chemist
3 Boneo Rd 059 86 8288
Sale Barlee's Hardware
363 Raymond Sst 051 44 1477
Sealake Stubbs Newsagency
54 Best St 050 70 1404
Seamour Logi Computer Center
Sh1 057 92 3677
Shepparton Tandy
154/6 High St 058 21 1796
Sunbury Smit's Electronics
34 Gap Rd 03 744 1355
Swan Hill Dunoon the Chemist
211 Campbell St 050 32 2838
Terang Terang Computers
121 High St 055 92 1088
Traralgon Grants Pharmacy
103 Seymore St 051 74 2000
Wangaratta STY Beardmores
42 Norton St 057 21 5111
Warranmool The Unipart Center
160a Koroit St 055 62 7417
Warragul Royline Studios
16 Smith St 056 23 1582
Wodonga North East Electronics
73 High St 060 24 1104
Wodonga Gippsland & Northern
71 Thomas Mitchell Rd 060 24 1400
Wonthaggi Gippsland Photo Serv.
72 McBride Ave 056 72 1749
Wycheproof Elston Rural Services
271 Broadway Rd 054 37 584
Ballarat Tandy Computer Dept
65 Bridge St Mall 053 31 7064
Dandenong Tandy Computer Dept
12 McCrae Street 03 793 4777
Frankston Tandy Computer Dept
Sh2 Beach/Olsen Rd 03 781 1049
Greensborough Tandy Computer Dept
Sh73 Grnsbrgh Shop Center 03 434 5022
Maribrnong Tandy Computer Dept
Sh3 Highpoint Shop Center 03 318 5077
Melbourne City Tandy Computer Dept
284 Bourke St 03 663 3091
Moorabbin Tandy Computer Center
1001 Nepean Hwy 03 553 3299

Northern Territory

Alice Springs Ascom Electronics
76 hartley Sst 089 52 1713
Darwin Darwin Newsagency
26 Ccaveaght St 091 41 0641
Gove Sonovision
Endeavour Sq Town.Center 089 87 1155
Katherine Tandy
Numbulwar TBA
Tennant Creek Tennant Creek Newsagent
123 Paterson St 089 62 2664

List
Your
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A
Year!

Tasmania

Burnie Hilder Business Equipm.
81 Mount Sst 004 31 2655
Bellerive Tandy
Sh28 Eastlands Shop.Cente 002 44 6300
Devonport Bestronics
4a Kempling St 004 24 6759
Glenorchy Tandy
Northgate Shopping Center 002 72 1601
Hobart Tandy
123 Liverpool St 002 31 0212
Launceston Tandy
Cnr York/Charles St 003 31 8942

Western Australia

Armadale Tandy
Sh29 Armadale Shop.Cntr 09 399 4435
Bentley Tandy
Sh21 La Plaza Shopping Cn 09 458 4129
Belmont Tandy
Sh17 Belmont Shop.Center 09 478 1664
Cannington Tandy
Sh9 Corusel Shop Center 09 451 2174
Cottesloe Tandy
Grove Plaza 09 383 2279
Flinders Sq. Tandy
Sh14 Flinders Sq. Shop. Cent 09 444 0770
Fremantle Tandy
Sh1 59 High St 09 335 4131
Garden City Tandy
Sh77 Garden City Shop Cnt 09 364 8202
Innaloo Tandy
Sh35 Innaloo Shop Cntr 09 446 8392
Karrenyup Tandy
Sh87 Karrinyup Shop Cntr 09 446 2422
Maddington Tandy
Sh28 Maddington Plaza 09 459 7045
Midland Gate Tandy
Sh34 Midland Gate 09 274 2000
Mirrabrooka Tandy
Sh19 Mirabrook Shop Cntr 09 344 1549
Newman Tandy
Sh8 Newman Blvd Shop Cntr 08 75 1734
Perth Tandy
208 Beafort St 09 328 6503
Perth Tandy
856 Hay St 09 322 3521
Phoenix Tandy
Sh16 Phoenix Shop.Cntr 09 418 5754
Subiaco Tandy
169 Rokeby Rd 09 382 2214
Whitford City Tandy
Sh15 Whitford Shop Center 09 401 8063
Albany Albany TV Services
168 Albany HWay 098 41 1385
Bunbury Tandy
Sh5a Bunbury City Plaza 097 21 7011
Brusselton McKays of Brusselton
40 Prince St 097 52 1355
Esperance Esperance Toyworld
12 Andrew Sst 09 71 2504
Geraldon Geraldon TV & Radio
20-26 Anzac Pde 099 21 2777
Kalgoorlie Todays Electronics
295 Hannon St 090 21 5212
Karratha Tuned In Electronics
722 Dolphin Way TBA
Mandurah Lance Rock Retravision
6 Sholl St 095 35 1246
Manjimup McKays South West Store
38 Gilbert St 097 71 1170
Merredin Pharmacy 94
94 Barrack St 090 41 1653
Narrogin Westparts
32 Egarton St 098 81 2422
Rockingham TV Joe
33 Rockingham Rd 095 27 1806
Two Rocks Yanchep Sun City
Sh7 Town Center 095 61 1063
Fremantle Tandy Computer Dept
Sh1 59 High St 09 335 4131
Perth Tandy Computer Dept
856 Hay St 09 322 3519

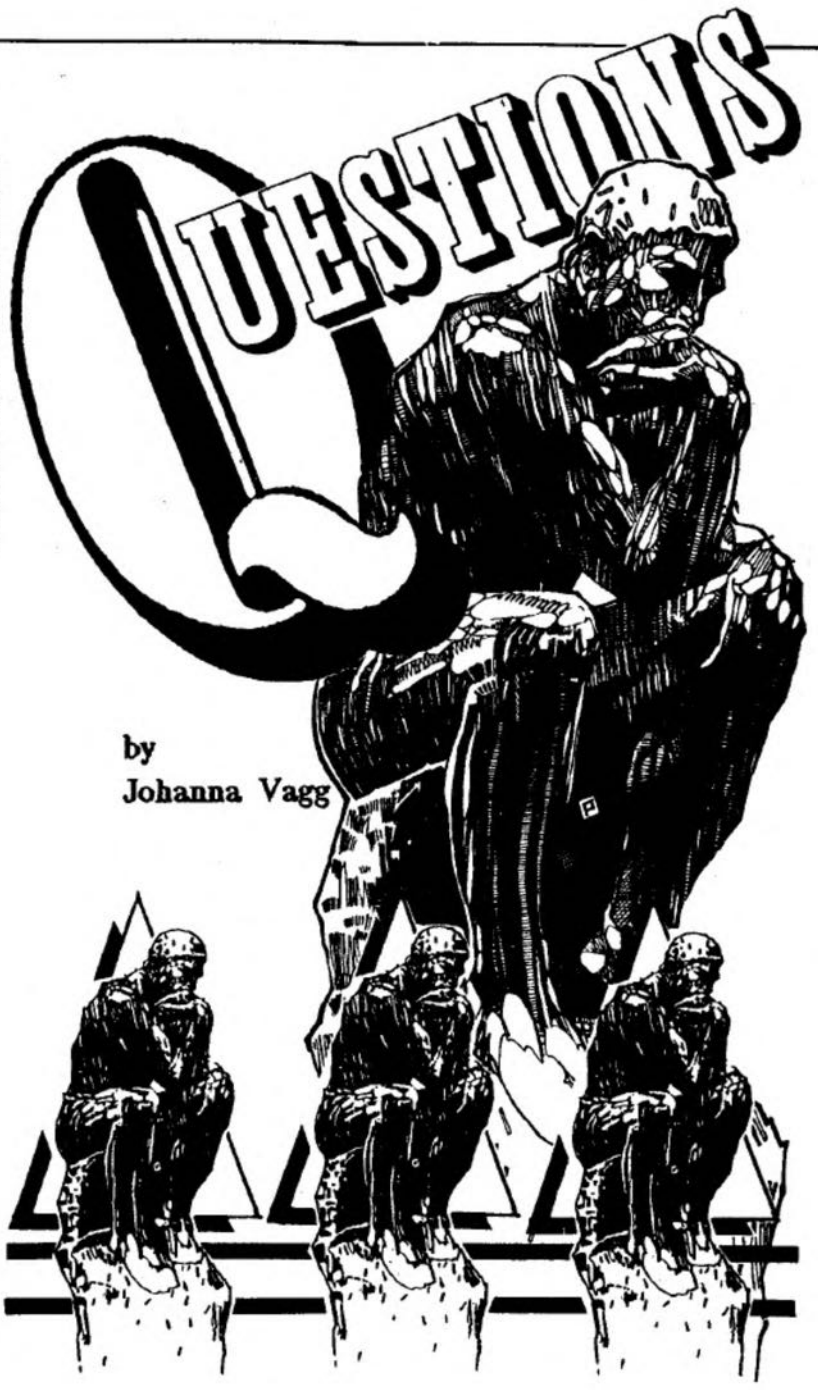
South Australia

Adelaide Tandy
94 Gawler Place 08 223 3842
Adelaide Southern Cross
52 King William St 08 212 7007
Blackwood Tandy
Sh4 Shpherds Crt 08 278 6292

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

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

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



by
Johanna Vagg

DEAR JOHANNA,
Thank you for the disk of programs by you, Richard and Stephen Bell.

I have been reading a lot of back issues of Softgold and CoCo and have found you to be great reading and very helpful as well. I hope you keep going and don't get discouraged.

My husband and I are both very keen golfers. I originally purchased CoCo to do minutes, newsletters and accounting for the Golf Club. I haven't yet found a reliable accounting program (for the CoCo 3) with minus figures, so I am using a spreadsheet ... it's not really efficient. I also find it a bit hard being pushed for time and having 20 pages of minutes to be printed and not being able to use the screen at the same time.

I am very impressed with Richard's work. Your program 3MEXHAT is fabulous and you should be proud of it.

Our Riverland Users Group gets up and running (hopefully) on the 12th April. I will let you know how it all goes.

I think Richard's and Stephen's work will be ideal for the night, which will be mainly for the children who don't know how to use their CoCo's.

Thanks so much,
Lauren Brown
Loxton SA

Dear Lauren,

Thank you for the nice words. I expect to be writing for CoCo for some time to come. I am rather proud of 3MEXHAT and also of Richard's work. I am very proud to know young Stephen Bell (8). Let's hope his programs will soon be published. My 3MEXHAT has not been published yet either; only my penfriends (with a CoCo 3) have a copy.

I haven't done much on the computer relating to accounting and writing minutes. Maybe someone else will be able to suggest an accounting program.

I have heard that the new Telewriter, for the CoCo 3, has a printer spooler, ie you can send your 'document' to the printer and immediately start writing the next one, or editing the current one to make it suitable to send to someone else, eg if you have several people to whom you wish to write much the same material.

If you let me know more about the newsletters you would like to produce, maybe I could help.

Tandy have a Home Publisher program. I have seen it and I know that it is not 100% suitable for your printer (DMP 130). I also suspect that it would be too slow for you. There is also CoCo Newsroom, but I have not seen it, so I can't comment. I cannot afford such luxuries, but I have found a number of programs in various magazines, with which I can make my printer do lots of different things.

One program you may see mentioned soon is TEXTGRFX by Frank Buttigieg. I thoroughly recommend it. With it you will be able to make your printer 'write' in script! I have been given an early copy. (Thanks Frank.) (Ed's note - see pages inside this magazine!)

I wish you success with your User Group. Send the details to Goldsoft if you would like to be included in the list of contacts.

Johanna

*

Dear Johanna,

Over the weeks, we have been using that fantastic tape you sent us. We finally have DUMP16K

working perfectly ... thanks especially for the help with that one. Tracy and Danny are enjoying the different things they can now print out.

There is a little thing I don't seem to be able to understand; ie the TAB statement you use in some of your programs, eg where you print 'A McVagg Production' at the bottom of your letter border programs.

Many thanks to you and all of your family from all of us
Dennis Cooper
Kingswood NSW

Dear Dennis,

I'm glad you finally have DUMP16K working. I knew it should work on your DMP105. It seems from what you told me over the phone that you were using the disk version. If you use that one with a tape system, your dump would start one third down the screen and then also print one third of a screenful of rubbish after two thirds picture.

The TAB statement is really quite simple, once you know. When your printer is in 'normal' size print, it prints 80 characters per line; if you want to print something which is 10 characters long and you want it at the right edge, you would use TAB(70). This will tab 70 'spots' and start printing at 71, finishing at 80. In my McVagg programs, the message is 19 characters long and the printer is in condensed. Your printer, in condensed, prints 133 characters per line ... 133 minus 19 equals 114. My printer has microfont, which, like condensed on mine, prints 136 characters per line, so I use TAB(117). Does that explain it?

Try it. If you use TAB(114) for a McVagg Production while you are not in condensed, it will tab the whole line plus a bit more!

The above explanation is adequate; but if you are a REAL computer person who begins counting with zero, then you will know that TAB(70) tabs to the 71st 'spot' and begins printing there, because the first position is 0, not 1; so TAB(1) is the second position etc.

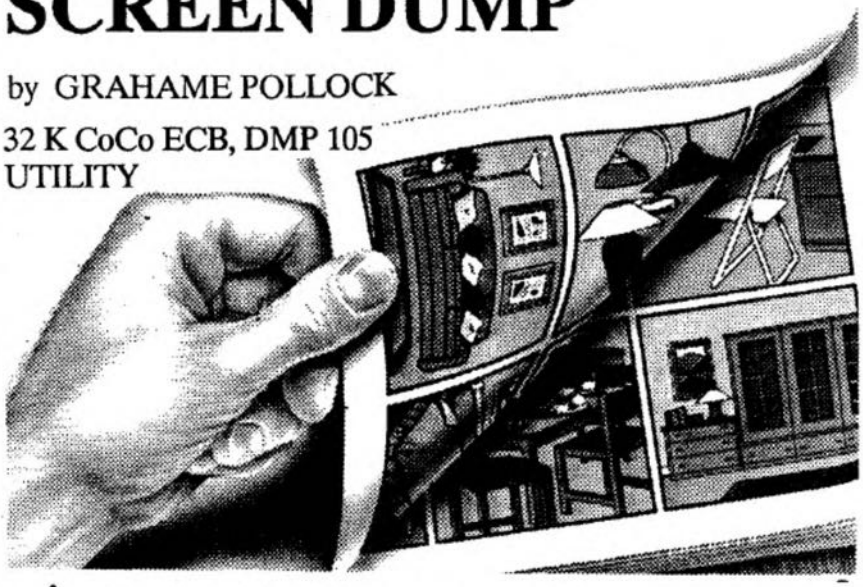
Richard asked me the other day why this century is called the Twentieth Century. My answer was in the form of two questions: "How old are you?" (11) and: "In what year are you?" He knew he was in his twelfth year. I went on to explain why there are so many mistakes in Sale of the Century when the question begins with the words "In which decade.." most people seem to have trouble 'thinking' like a computer. This particular area has given me quite a few headaches. It appears I am not yet a REAL computer person.

Johanna

MACHINE LANGUAGE SCREEN DUMP

by GRAHAME POLLOCK

32 K CoCo ECB, DMP 105
UTILITY



A FEW YEARS ago, I wrote a Basic screen dump for my DMP-105. It worked, but it was very, very S-L-O-W (20 minutes)!

I have a M.L. program which is much faster, but the printout is larger and one edge is cut off.

I began to search for a faster screen dump with a normal sized printout. I found a very good one inside a program called "IDENTIKIT". The dump is very neat and a good bit faster than mine. This one takes about 12 minutes.

A definite improvement!!

I still wanted a faster dump, so I wrote one in machine language. This took quite a bit of time to develop, but it was worth it.

The result was a screen dump that takes just 90. That's right, just one and a half minutes!!!

You can use the machine language screen dump as a stand alone program or you can add it to the end of one of your existing programs and use it as a subroutine.

Line 8001 contains the POKE for 2400 baud rate on the DMP-105. If you're only using 600 baud (silly you!!), then leave that line out.

You can put the dump in any position. 0 will put it on the left of the page and 224 will put it on the right of the page.

Make sure that you type the DATA in lines 8008 - 8012 correctly. One small error will mean that the program will not work properly.

This dump should work with any of the Tandy printers, but make sure you're on the correct baud rate (line 8001).

Bye for now!

The Listing:

```
0 GOTO8000
1 '***MACHINE LANG. SCREEN DUMP***
2 '***FOR THE COCO***
3 '***AND THE DMP-105***
4 '***BY GRAHAME POLLOCK***
5 SAVE"190":SAVE"190:2":END'UTL
8000 CLS:PRINT"DMP105 SCREEN DUMP BY G.POLLOCK"
8001 POKE150,18:'FOR 2400 BAUD
8002 P=256*PEEK(&H25)+PEEK(&H26):P=P-&HA4:CLEAR200,P
8003 P=256*PEEK(&H25)+PEEK(&H26):P=P-&HA4:FORX= 0 TO &HA4:READ A$:A=VAL("&H"+A$):POKE P+X,A:NEXT
8004 INPUT"POSITION 0- 224";PN
8005 PMODE4,1:SCREEN1,1
8006 PRINT#-2,""
8007 POKE&H407,0:POKE&H408,PN:EXECP
8008 DATA 86,FE,97,6F,86,12,AD,9F,A0,2,9E,BA,BF,4,0,30,89,17,A0,BF,4,5,7F,4,4,10,BE,4,7,10,8C,0,0,27,A,86,80,AD,9F,A0,2
8009 DATA 31,3F,20,F0,10,8E,80,1,10,BF,4,2,10,8E,0,0,BE,4,0,86,80,E6,84,F4,4,2,26,3,B8,4,3,31,21,30,88,20,10,8C,0,3,2D
8010 DATA 7,BC,4,5,2D,2,20,9,78,4,3,10,8C,0,7,26,DB,74,4,2,AD,9F,A0,2,86,1,B7,4,3,B6,4,2,81,0,26,BF,BE,4,0,30,1
8011 DATA BF,4,0,B6,4,4,4C,B7,4,4,81,20,2D,A4,7F,4,4,BE,4,0,30,89,0,C0,86,D,AD,9F,A0,2,BC,4,5,2E,6,BF,4,0,16,FF,75
8012 DATA 39
```

BIORHYTHM IS another small program that asks you for your birthdate and name, and then asks you when you would like your biorhythm chart printed.

At the beginning, you have the option of printing your biorhythm chart to any printer (even the TP-10 - Ed!).

BIORHYTHM

by DAVID PHILLIPS
ANY CoCo plus optional printer
APPLICATION

The Listing:

```
0 GOTO10
3 SAVE"153D:1":SAVE"153D:3":END'
APP
10 '*****************************
20 '**********BIORYTHM**********
30 '*******PRINTER VERSION******
40 '*******BY DAVID PHILIPS*****
50 '*****************************
60 CLEAR200:CLS
70 L=0:T=11:P=3.14159265
80 PRINTTAB(8)"**BIORHYTHYM**":P
RINT
90 INPUT"DO YOU WANT A PRINTOUT
Y OR N";Z$:IFZ$<>"Y"AND Z$<>"N"
THEN90
100 PRINT"ENTER BIRTH DATE"
110 GOSUB410:GOSUB510:JB=JD
120 INPUT" PLEASE ENTER YOUR FIR
ST AND      LAST NAME";N$
130 IF Z$="N" THEN 220
140 PRINT#-2,"BIORHYTHMS ARE NAT
URAL RYTHYMS THAT AFFECT THE WAY
 YOU THINK FEEL AND BEHAVE.":PRI
NT#-2,"THE ANCIENT CHINEESE KNEW
 OF THEIR EXISTENCE. TODAY IT IS
 BELIEVED BY THOSE"
150 PRINT#-2,"WHO ADVOCATE BIORH
YTHYMIC THEORY THAT THERE ARE 3
CYCLES WE GO THROUGH THAT VARYIN
 LENGTH  FROM EACH OTHER.":PRINT
#-2," THESE ARE:":PRINT#-2," 1.P
HYSICAL. THIS CYCLE IS 23 DAYS L
ONG AND AFFECTS HOW YOU FEEL"
160 PRINT#-2," 2.EMOTIONAL.  THI
S CYCLE IS 28 DAYS LONG AND AFFE
CTS YOUR EMOTIONS.":PRINT#-2," E
VER WONDERED WHY SOME DAYS YOU J
UST FELT 'PISSED OFF' FOR NO REA
SON?":PRINT#-2," 3.INTELLECTUAL.
 THIS CYCLE LASTS 33 DAYS AND AF
FECTS YOUR LOGICAL THINKING."
170 PRINT#-2," THAT'S WHY SOME D
AYS YOU CAN'T SEEM TO WORK OUT 1
+1 OTHER DAYS  EVERTHING'S A  BR
EEZE.":PRINT#-2," FOR THE 1ST 1/
2 OF EACH CYCLE AS IT RISES YOU
ARE IN APOSITIVE ASPECT.":PRINT#
-2," IN THE 2ND 1/2 AS IT FALLS
YOU ARE IN A NEGATIVE ASPECT.
180 PRINT#-2," IE: YOU FEEL TIRE
D MORE OR CAN'T SEEM TO THINK AS
 QUICK.":PRINT#-2,"ON THE DAY TH
AT ANY CYCLE CHANGES FROM + TO -
 OR - TO + THIS IS A CRITICAL DA
Y.ON THESE DAYS THEORY SAYS YOU
ARE MORE PRONE TO ACCIDENTS."
190 PRINT#-2,"IF TWO CYCLES CROS
S OVER THE 0 POINT AT THE SAME T
IME, THIS IS A DOUBLE CRITICALDA
Y. IF ALL THREE CROSS OVER AT TH
E SAME TIME IT IS A TRIPPLE CRIT
ICAL DAY.ON   THESE DAYS YOU SHO
ULD TAKE EXTRA CARE IN EVERYTHIN
G YOU DO AND SAY."
200 PRINT#-2," FOR FURTHUR INFOR
MATION IT IS SUGGESTED YOU GET A
 BOOK ON BIORHYTHMS FROM YOUR LO
CAL LIBRARY."
210 PRINT#-2,"PERSONAL BIORHYTHM
 CHART FOR ";N$:PRINT#-2,"BIRTHD
ATE ";D;"/";M;"/";Y
220 PRINT"ENTER START DATE FOR C
HART"
230 GOSUB410:GOSUB510:JC=JD
240 IFJC>=JB THEN270
250 PRINT"CHART DATE CAN'T BE EA
RLIER THAN BIRTH DATE"
260 SOUND8,8:PRINT:GOTO100
270 FORK=1TO1000:NEXT
280 N=JC-JB
290 GOSUB590
300 N=JC-JB
310 V=23:GOSUB680
320 V=28:GOSUB680
330 V=33:GOSUB680
340 GOSUB860
350 PRINTC$;TAB(8);L$:IF Z$="Y"
THEN PRINT#-2,C$;TAB(8);L$
360 JC=JC+1:L=L+1:IFL<12THEN300
370 PRINT"'E'=END,SPACE=GO ON";
380 R$=INKEY$:IFR$=""THEN380
390 IFR$="E"THEN60
400 L=0:GOTO290
410 PRINT
420 INPUT"DAY(1TO31)";D
430 D=INT(D):IFD<1ORD>31THEN420
440 INPUT"MONTH(1-12)";M
450 M=INT(M):IFM<1ORM>12THEN440
460 INPUT"YEAR";Y
470 Y=INT(Y):IFY<0THEN460
480 IFY>99THEN500
490 Y=Y+1900:PRINTY;"ASSUMED"
500 RETURN
510 W=0:IFM<3THENW=-1
520 JD=INT(1461*(Y+4800+W)/4)
530 B=INT(367*(M-2-W*12)/12)
540 IFB<0THENB=B+1
550 JD=JD+B
560 B=INT(INT(3*(Y+4900+W)/100)/
4)
570 JD=JD+D-32075-B
580 RETURN
590 CLS
600 IF Z$="Y" THEN PRINT#-2,"AGE
 ";INT(N/365.25);" YEARS.  YOU A
RE ";N;" DAYS OLD AT THE START O
F THIS CHART."
610 IF Z$="Y" THEN ZZ=ZZ+1:IFZZ>
1THEN620 ELSE PRINT#-2,TAB(10);"
BIORHYTHM":PRINT#-2,"--DATE--";T
AB(12);"DOWN";TAB(19);"0";TAB(24
);"UP":PRINT#-2,TAB(8);:FORK=1TO
T+T+1:PRINT#-2,CHR$(176);:NEXT:P
RINT#-2,""
620 PRINTTAB(10);"BIORHYTHM"
630 PRINT"--DATE--";TAB(12);
640 PRINT"DOWN";TAB(19);"0";TAB(
24);"UP"
650 PRINTTAB(8);
660 FORK=1TOT+T+1:PRINTCHR$(175)
;:NEXT:PRINT
670 RETURN
680 W=INT(N/V):R=N-(W*V)
690 IFV><23THEN740
700 L$=CHR$(32):FORK=1TO4
710 L$=L$+L$:NEXT
720 L$=LEFT$(L$,T)+CHR$(175)+LEF
T$(L$,T)
730 IFV=23THENC$="P"
740 IFV=28THENC$="E"
750 IFV=33THENC$="I"
760 W=R/V:W=W*2*P
770 W=T*SIN(W):W=W+T+1.5
780 W=INT(W):A$=MID$(L$,W,1)
790 IFA$="P"ORA$="E"ORA$="*"THEN
C$="*"
800 IFW=1THEN840
810 IFW=T+T+1THEN850
820 L$=LEFT$(L$,W-1)+C$+RIGHT$(L
$,T+T+1-W)
830 RETURN
840 L$=C$+RIGHT$(L$,T+T):RETURN
850 L$=LEFT$(L$,T+T)+C$:RETURN
860 W=JC+68569:R=INT(4*W/146097)
870 W=W-INT((146097*R+3)/4)
880 Y=INT(4000*(W+1)/1461001)
890 W=W-INT(1461*Y/4)+31
900 M=INT(80*W/2447)
910 D=W-INT(2447*M/80)
920 W=INT(M/11):M=M+2-12*W
930 Y=100*(R-49)+Y+W
940 A$=STR$(D):W=LEN(A$)-1
950 C$=MID$(A$,2,W)+"/"
960 A$=STR$(M):W=LEN(A$)-1
970 C$=C$+MID$(A$,2,W)+"/"
980 A$=STR$(Y):W=LEN(A$)-1
990 C$=C$+MID$(A$,W,2)
1000 RETURN
```

THIS ARTICLE IS mainly for Johanna Vagg and anyone possessing Speech System's Incorporated Supervoice Speech Synthesizer. I have become rather sick of having to type ..

```
RUN"SPEAK
D5
6/^S15^A7
CLEAR 50
```

That's the sequence I go through everytime I turn on my CoCo. So I've written a program to do it for me. I call it the "Supertok Setup" ("SV" on the CoCoOz tape/disk). Here's how it works:

"Supertok Setup" does everything that "Speak" does. It firstly sets up memory and loads "SUPERTOK/BIN" in if neccessary. Note that Supertok must be on the same disk as "Setup".

Now here's the first advantage of my program. It allows you to boot up Supervoice ready for use with a custom set of parameters.

These are saved in a file, "SV/DAT", which must be resident on the disk in the same drive as the setup program.

When you first run the "Supertok Setup", it will indicate a parameter file error and proceed to initialize the file.

Here are the parameters currently available and valid response to each:

Parameter:	Response:
Speed	1- 15
Articulation ..	1- 8
Frequency	1-255
Volume	1-'15
Autoexec	0- 2

As the computer prompts you for a parameter, enter the appropriate figure, or hit <enter> to leave it unchanged. You should be familiar with all of the parameters except the last one, "Autoexec". If you aren't using the disk version of Edtasm+, you may wish to skip the next two paragraphs.

The fifth parameter allows you to tell the computer to by-pass the menu of Supertok Setup and proceed directly to either Basic or Edtasm+. This simply saves you having to type "B" or "E" at the menu.

If you are only using Basic, set "Autoexec" at 1. If you are only using Edtasm+, set "Autoexec" at 2. Otherwise, if you intend using Edtasm+ and Basic, set "Autoexec" to 0. Note that this autoexecute facility only operates when you boot up Supervoice after having just turned on the computer.

After setting up the parameter file, you should arrive at the "Supertok Setup" menu. Simply type "B" to exit to Basic, "E" to execute Edtasm+ from disk*, or "M" to alter any of the parameters you have just set.

Really, there isn't much more to say about the program, except that I now have almost no use whatsoever for "Speak".

* Note: I "Superpatched" Edtasm+ onto the disk, under the title of "ED/BIN". It loads into the following memory locations:

```
Start Add: &H0E00
  End Add: &H37FF
 Exec Add: &H0E00
```

I have written the program specifically for this version of the Editor/Assembler, so you may have to modify it to run different versions. Change ED+ in line 48 to the name of your Editor/Assembler.

Notes: Future Ideas

How does backing up a disk onto 7 minutes of audio cassette sound? (Sounds good to me - Ed!)

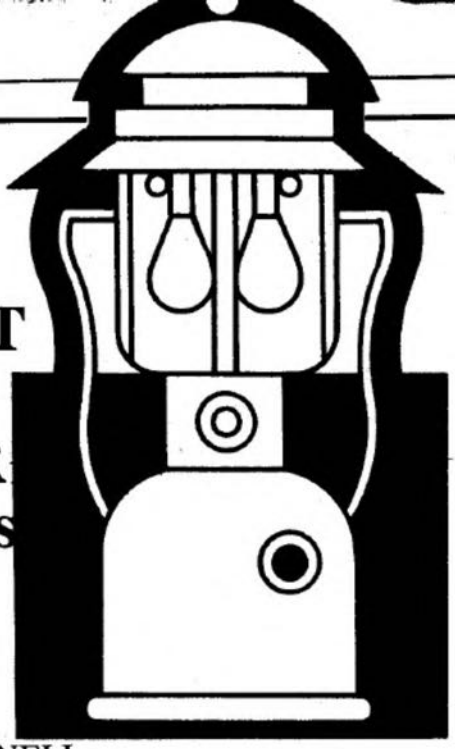
SUPERTOK SETUP

by ANDREW HART APPLICATION

The Listing:

```
1 '***SUPERTOK SETUP PROGRAM***
2 '*COPYRIGHT 1988 - A G HART*
3 PCLEAR 8:CLEAR 128,&H57FF:C$=C
HR$(94):P$="SAFV"
4 CLS:PRINTTAB(9);"SUPERTOK SETU
P":PRINTTAB(4);"COPYRIGHT 1988 -
 A G HART":PRINTSTRING$(32,131);
5 ' SET DRIVE
6 DRIVE PEEK(235):PRINT"DRIVE #"
;CHR$(48+PEEK(235));"."
7 ' CHECK FOR SUPERTOK DRIVER
8 IF PEEK(&H5800)=&H7F AND PEEK(
&H5805)=&H20 THEN 12
9 S=1:PRINT"LOADING SUPERTOK DRI
VER ..."
10 LOADM"SUPERTOK"
11 ' INITIATE 'SAY' COMMAND
12 EXEC &H5816:DEFUSR0=&H5805
13 ' SET PARAMTERS TO USER DEFAU
LT
14 PRINT"SETTING USER DEFAULT PA
RAMETERS."
15 OPEN"D",#1,"SV/DAT",1:FIELD #
1,1 AS B$
16 IF LOF(1)<>5 THEN E=1:GOTO 18
17 FOR T=1 TO 4:GET#1,T:A$=A$+C$
+MID$(P$,T,1)+MID$(STR$(ASC(B$))
,2):NEXTT:GET#1,5:M=ASC(B$)
18 CLOSE #1:IF E=1 THEN 60 ELSE
A$=USR0(A$)
19 PRINT"SUPERTOK DRIVER - READY
."
20 ' INITIATE SCREEN ECHO
21 IF PEEK(&H168)<&H80 THEN 27 :
'HOOK ALREADY IN PLACE
22 S=1:A=&H5810
23 B=&H167:'OUTPUT HOOK
```

```
24 POKE A,PEEK(B):POKE A+1,PEEK(
B+1):POKE A+2,PEEK(B+2)
25 POKE B,&H39
26 POKE B+1,PEEK(A+4):POKE B+2,P
EEK(A+5):POKE B,PEEK(A+3)
27 PRINT"SCREEN ECHO - INITIATED
."
28 PRINTSTRING$(32,131);
29 HLINE"SUPERTOK SETUP..."
30 S=S*M:IF S=1 THEN A$="B":GOTO
 42 ELSE IF S=2 THEN A$="E":GOTO
 42
31 ' OPTIONS
32 PRINTTAB(13);"OPTIONS"
33 PRINT"B - EXIT TO BASIC":PRIN
T"E - EXIT TO EDTASM+"
34 PRINT"M - MODIFY USER DEFAULT
 PARAMTERS"
35 PRINTSTRING$(32,131)
36 HLINE"OPTIONS.."B.E.M"
37 A$=INKEY$:IF A$<>"B" AND A$<>
"E" AND A$<>"M" THEN 37
38 IF PEEK(345)<>247 THEN 40 ELS
E IF A$="B" THEN HLINE"RETURN TO
 BASIC" ELSE IF A$="E" THEN HLIN
E"RUN EDTASM+" ELSE IF A$="M" TH
EN HLINE"MODIFY YUZER DEFOLT PAR
RAAMMEHTERS"
39 GOTO 37
40 IF A$="M" THEN 51
41 ' ACTIVATE SCREEN ECHO
42 PRINTCHR$(92):CLS
43 ' PERFORM EXIT
44 IF A$="E" THEN 48
45 ' EXIT TO BASIC
46 PCLEAR 1:CLEAR 50:NEW
47 ' EXIT TO EDTASM+
48 LOADM"ED+"
49 EXEC
50 ' CHANGE USER DEFAULT PARAMET
ERS
51 CLS:PRINTTAB(11);"PARAMETERS"
:PRINTSTRING$(32,131);:HLINE"PAR
RAMMEHTERS..."
52 P$(1)="SPEED":P$(2)="ARTICULA
TION":P$(3)="FREQUENCY":P$(4)="V
OLUME":P$(5)="AUTOEXEC"
53 S$(1)=P$(1):S$(2)=P$(2):S$(3)
="FREEQUENCY":S$(4)="VOLYUME":S$
(5)="AUTOE EXECK"
54 OPEN"D",#1,"SV/DAT",1:FIELD #
1,1 AS B$
55 FOR T=1 TO 5:IF E=0 THEN GET#
1,T ELSE IF T=1 THEN LSET B$=CHR
$(10) ELSE IF T=2 THEN LSET B$=C
HR$(5) ELSE IF T=3 THEN LSET B$=
CHR$(233) ELSE IF T=4 THEN LSET
B$=CHR$(15) ELSE LSET B$=CHR$(0)
56 PRINT P$(T);" >";ASC(B$):A$=U
SR0(S$(T)+"."+STR$(ASC(B$))+" ..
CHAINGE ^N1G#TO ^N1F#")
57 LINEINPUT"? ";A$:IF A$="" THE
N A=ASC(B$):GOTO58 ELSE A=VAL(A$
):IF A<>INT(A) OR (T<4 AND A<1)
OR ((T=1 OR T=4) AND A>15) OR (T
=2 AND A>8) OR (T=3 AND A>255) O
R (T=5 AND A>2)THEN PRINT"INVALI
D PARAMETER ENTRY.":HLINE"INVALI
D PARRAAMMEHTER ENTRY..":GOT
58 A$=USR0(STR$(A)):LSET B$=CHR$
(A):PUT#1,T:NEXTT
59 CLOSE #1:RUN
60 ' RESET PARAMETER FILE
61 PRINT"ERROR READING USER DEFA
ULT":PRINT"PARAMETER FILE.":HLIN
E"ERROR READING YUZER DEFOLT PAR
RAAMMEHTER FILE."
62 KILL"SV/DAT":PRINT"RESETTING
PARAMETER FILE ...":HLINE"REESET
TING PARRAAMMEHTER FILE..":GOTO
52
63 END
64 SAVE"176C:1":SAVE"176C:3":END
'APP
```



LIGHT UP YOUR CoCo's LIFE

by MARK SNELL
HARDWARE MODIFICATION

HAVE YOU ever returned from a weeks holiday to find that someone left the @$*% computer on? I have.

Last christmas I had converted a program that played a heap of Christmas carols. I got sick of it and I turned the TV off to shut it up. Later in the afternoon I went to my sisters place, and when I came back a few days later, I nearly fried my hand on the case.

About two weeks later, we were due for a meeting of the Maroondah CoCo Club (Ringwood).

It was brought up and we decided to have a hardware night to put a small LED in.

This hardware mod should work on any CoCo 1 or 2 and can probably be made to work on the CoCo 3.

It is easy. All you need are:

* 1 red lead
* 1 x 470 ohm resistor, striped yellow, purple, brown and gold
* 2 small pieces of wire 30cms in length, 1 red, 1 blue
* 1 soldering iron and solder
* sticky tape of some sort
* pliers
* 2 drill bits: 1 small 5/64
  1 a bit smaller than the led
  I used 3/16

Step 1: unplug CoCo, open the case (don't lose screws), put the 'lid' upside-down next to the cartrige port.

2: look down where the cartrige port connects to the circuit board. Mark pins 9 and 33 with a dob of solder.

3: look at the LED. Hold it up to a strong light. Inside there should be one side which is bigger than the other. This side may also have a longer leg or be marked in some way. This

5: Solder the blue wire to the negative (opposite) side of the LED.

6: Put a piece of tape over the led legs and the resistor so that if it falls it will not 'zap' anything.

7: Twist the two wires together leaving 3cms at the end.

8: Solder the red wire to pin 9.

9: Solder the blue wire to pin 33.

10: Clear everything away and switch on the computer. The light should come on. If not, try reversing the wires (computer off).

11: When it works, get the small drill and drill a hole through the case in the curved part in the corner above the break key.

12: Enlarge the hole with the other drill. Use one size smaller than you think you will need (you can make it bigger but not smaller).

13: push the LED in and close the case. Watch out for the wires. There is enough slack to open it, if you are careful.

If you have any problems contact me at ...

Mark Snell
4 Oxley St
Lake Cathie, 2445

... or give me a ring on (065) 855 622.

WORD FIND

by TOM LEHANE
16k CoCo
EDUCATIONAL GAME

MOST WORD search puzzle programs require a printer to get a hard copy of the game puzzle.

The program WORD FIND uses only the first half of the text screen to create a small word puzzle.

The computer will choose a three letter word from the data and hide that word a number of times amongst random letters from the same word.

The object of the game is to count the number of times the word appeared.

After you enter your answer, the computer will print where the words are hidden, in lowercase.

The game will continue when you answer (Y) for yes to play again prompt.

Because of the random routine used to scramble the chosen word, any words of four or more letters (I find), the computer would sometimes only print one full word, so to make the game more challenging only words of three letters are used.

The Listing:

```
0 GOTO 10
3 SAVE"201:0":SAVE"201:2":END'ED
U
10 REM ************************
20 REM *      WORD FIND       *
30 REM * BY TOM LEHANE 1988  *
40 REM ************************
50 REM
60 CLEAR500:DIM A$(300),A(26)
70 GOTO 230
80 REM * repeat routines *
90 FOR X=1 TO 32
100 PRINTCHR$(131);
110 SOUND200,1:NEXT X:RETURN
120 REM
130 REM empty A(26)
140 FOR X=1 TO 26
150 A(X)=0:NEXT
160 N=0:RETURN
170 REM wait for inkey and rnd
180 REM while waiting
190 G$=INKEY$
200 IF G$="" THEN K=RND(204):GOT
0190
210 RETURN
220 REM intro
230 CLS:PRINT
240 PRINT TAB(10)"WORD FIND"
250 PRINT:PRINT"THE COMPUTER WIL
L CHOOSE A THREE";
260 PRINT"LETTER WORD AND HIDE T
HAT WORD"
270 PRINT"A NUMBER OF TIMES AMON
GST RANDOM";
280 PRINT"LETTERS FROM THE CHOSE
N WORD."
290 PRINT"THE OBJECT OF THE GAME
 IS TO"
300 PRINT"COUNT THE NUMBER OF TI
MES THE"
310 PRINT"WORD APPEARED.AFTER YO
U HAVE"
320 PRINT"ENTERED YOUR ANSWER TH
E COMPUTER";
330 PRINT"WILL PRINT WHERE THE W
ORDS ARE"
340 PRINT"HIDDEN.THE GAME WILL C
ONTINUE"
350 PRINT"WHEN YOU ANSWER YES TO
 THE PLAY"
360 PRINT"AGAIN PROMPT. ENTER TO
 START"
370 GOSUB 190
380 CLS:PRINT@74,"WORD FIND"
390 PRINT@356,CHR$(139)+CHR$(129
)"OM"
400 PRINT@390,CHR$(132)"EHANE (1
988)"
410 T=T+1
420 READ A$(T)
430 IF A$(T)="XXX"THEN 460
440 GOTO 410
450 REM start game
460 T=T-1
470 K=RND(T)
480 IF K=LW THEN 470
490 LW=K
500 CLS
510 PRINT"THE WORD TO FIND IS ("
A$(K)")"
520 GOSUB 90
530 PRINT@64,"";
540 '
550 FOR M=1 TO 192
560 R=RND(3)
570 L$=MID$(A$(K),R,1)
580 PRINTL$;
590 '
600 C$=RIGHT$(C$,3-1)+L$
610 IF C$=A$(K)THEN N=N+1:A(N)=M
620 NEXT M
630 GOSUB 90
640 PRINT"HOW MANY TIMES DID THE
 WORD "A$(K)" APPEAR";:INPUT G
650 '
660 IF G=N THEN PRINT"CORRECT":C
=C+1
670 IF G<>N THENPRINT"WRONG":W=W
+1
680 PRINT"THE WORD APPEARED "N;"
 TIMES"
690 GOSUB 90
700 FOR X=1 TO N
710 Z=1085+A(X)
720 FOR S=1 TO 3
730 SOUND200,1
740 POKE Z,PEEK(Z)-64
750 Z=Z+1:NEXT S
760 NEXT X
770 GOSUB 130
780 PRINT"PLAY ANOTHER GAME (Y=Y
ES)";
790 GOSUB 190
800 IF G$="Y" THEN 470
810 CLS:PRINT TAB(10)"SCOREBOARD
"
820 GOSUB 90
830 PRINT@131,"CORRECT ANSWERS."
C
840 PRINT@195,"WRONG   ANSWERS."
W
850 PRINT:GOSUB 90
860 END
870 REM data for game
880 DATA ACE,ACT,AGE,AIM,AIR,ALE
890 DATA AND,ANT,ANY,APE,ARE,ARK
900 DATA ARM,ART,ASH,ASK,ATE,BAD
910 DATA BAG,BAN,BAR,BAT,BAY,BED
920 DATA BEG,BET,DIB,BIG,BIN,BIT
930 DATA BOG,BOW,BOX,BOY,BUG,BUM
940 DATA BUN,BUS,BUY,BYE,CAB,CAM
950 DATA CAN,CAP,CAR,CAT,COB,COG
960 DATA COT,COW,CRY,CUB,CUE,CUP
970 DATA CUT,DAM,DAY,DEN,DEW,DIG
980 DATA DIM,DIP,DOG,DON,DOT,DRY
990 DATA DUG,DYE,EAR,EAT,ELK,ELM
1000 DATA END,ELF,FAD,FAN,FAR,FA
T
1010 DATA FED,FEW,FIG,FIN,FIR,FI
T
1020 DATA FIX,FLY,FOG,FOX,FRY,FU
N
1030 DATA GAP,GAS,GEM,GIN,GUM,GU
N
1040 DATA HAM,HAT,HAY,HEN,HEX,HI
D
1050 DATA HIT,HUT,ICE,ICY,INK,IV
Y
1060 DATA JAB,JAR,JAW,JOB,JOG,JO
Y
1070 DATA JET,JIB,KEG,KEY,KID,KI
M
1080 DATA LAB,LAD,LAP,LAW,LAY,LI
D
1090 DATA MAD,MAN,MAP,MAT,MAY,ME
N
1100 DATA NOW,NUT,NIP,NUT,OAK,OA
R
1110 DATA OIL,ONE,OUT,OWL,OWN,PA
D
1120 DATA PAL,PAN,PAT,PAW,PEA,PE
G
1130 DATA PIE,POT,PIN,RAG,RAM,RA
T
1140 DATA RED,RIB,RIG,RIM,RIP,RO
W
1150 DATA SAD,SAT,SAW,SET,SEW,SE
A
1160 DATA SIR,SIT,SIX,SKI,SKY,SO
N
1170 DATA SPY,SUE,SUN,TAB,TAG,TO
M
1180 DATA TAN,TAP,TIC,TOE,TOY,TO
W
1190 DATA USE,VAN,VAT,VIM,YES,YE
T
1200 DATA WAR,WAS,WAX,WAY,WEB,WE
T
1210 DATA WIG,WIN,WON,ZIP,ZOO
1220 DATA XXX
```

WEATHER PROGRAM PART V

by HARRY HOFFMAN
APPLICATION

THIS PROGRAM concludes the first half this series. It is written exclusively for a group of people who have almost been forgotten - the TP-10 printer owners.

It will print a temperature chart on the TP-10 printer by using the files created by the first or/and second program.

These programs cannot just be used to record outside temperatures.

For example, if you are a fruit or vegetable farmer, you can use these programs to keep track of your coldroom temperatures or your green house, etc ...

I hope you can use these programs.

The Listing:

```
0 GOTO80
1
2
3 SAVE"110:1":SAVE"110:3":END'AP
P
10 '****************************
20 '* TEMPERATURE PRINTOUT FOR*
30 '* TP 10   PRINTER & DISC  *
40 '* BY HARRY HOFFMANN       *
50 '* CROWS NEST CARAVAN PARK *
60 '* CROWS NEST QLD 4355     *
70 '****************************

80 CLEAR2000:DIMDF$(150)
90 '**************************
    ** CHANGE <OK> TO  <HH> **
    **************************

100 POKE44014,72:POKE44015,72
110 ' ************************
      **  SPECIAL CLS POKE  **
      **  TYPE CLS 0 TO 255 **
      ************************
    120 FOR I=43288 TO 43302:POK
E I,18:NEXT I
130 DIM H(31):DIM L(31)
140 CLS147
150 PRINT@133," TEMPERATURE PRIN
TOUT";
160 PRINT@199,"FOR  TP-10 & DISC
";
170 PRINT@270,"BY";
180 PRINT@328,"HARRY HOFFMANN";
190 PRINT@394,"CROWS NEST";
200 GOSUB220:GOTO260
210 '**************************
     ** TITLESONG BY HARRY    **
     ** HOFFMANN CROWS NEST   **
     **************************

220       FORX=1TO3:PLAY"T6O3V30L
4CV20L8CV10CL8V30CL16V20CV10CL8V
30DL16V20DV10L8V30EL16V20EV10EL4
V30CL8V16CV10CL4V30FL8V20FV10FL4
V30EL8V20EV10EL4.V30DL8.V20DV10D
":NEXT
230       FORX=1TO3:PLAY"V30L8GV2
0L16GV10G":NEXT:PLAY"V30L4.GL8.V
20GV10GV30L8FV20L16FV10FV30L4EV2
0L8EV10EL4V30DL8V20DV10DL2V30GL4
V20GV10G"
240       PLAY"V30L8GV20L16GV10GV
30L4.GV20L8.GV10GV30L8FV20L16FV1
0FV30L4EV20L8EV10EL4V30DL8V20DV1
0DL1V30CL4V20CV15CL2V10CV5C"
250 RETURN
260 CLS213
270 GOSUB370
280 PRINT@226," DO YOU NEED INST
RUCTIONS ? ";
290 PRINT@450,STRING$(28,32);
300 I$=INKEY$
310 IFI$=""THENPRINT@451,STRING$
(26,"Y");:FORX=0TO300:NEXT
320 IFI$="Y"THEN1220
330 IFI$=""THENPRINT@451,STRING$
(26,"N");:FORX=0TO300:NEXT
340 IF I$<>"N"THEN300
350 CLS233
360 GOSUB370:GOTO400
370 PRINT@33," TEMPERATURE BY HA
RRY HOFFMANN";
380 RETURN
390 CLS185:GOSUB370
400 PRINT@98,"INPUT MONTH AND YE
AR (MM/YY)";
410 PRINT@162,"";:INPUT DT$:PRIN
T@190,STRING$(2,PEEK(1533));
420 DT=VAL(LEFT$(DT$,2))
430 IF DT<1 OR DT>12 THEN PRINT@
454,"illegal input";:GOSUB1200:G
OTO390
440 IF LEN(DT$)<>5 THEN PRINT@45
4,"illegal input";:GOSUB 1200:GO
TO390
450 PRINT@258," IS THE DATE CORR
ECT - "DT$;
460 PRINT@354," Y/N ";
470 I$=INKEY$:IF I$=""THEN PLAY"
C":GOTO 470
480 IF I$="N"THEN 390
490 IF I$="Y"THEN 500 ELSE SOUND
 100,5:GOTO450
500 IF DT=1 OR DT=3 OR DT=5 OR D
T=7 OR DT=8 OR DT=10 OR DT=12 TH
EN DS=31:GOTO550:'*SET NUMBER OF
 DAYS*
510 IF DT=4 OR DT=6 OR DT=9 OR D
T=11 THEN DS=30:GOTO550:'*SET NU
MBER OF DAYS*
520 YR=VAL(RIGHT$(DT$,2))+1900:'
AFTER 1999 CHANGE LAST NUMBER (1
900) TO 2000
530 IF DT=2 AND YR/4 <> INT(YR/4
) THEN DS=28 ELSE DS=29:'* CHECK
 FEB.FOR DAYS AND SET DAYS TO 28
 OR 29 ***
540 '*LOADING DATA**
550 CLS233:GOSUB370
560 F$=LEFT$(DT$,2)+"*"+RIGHT$(D
T$,2)+"TEM"
570 I$=INKEY$:IFI$=""THENPRINT@1
96,CHR$(128)"please"CHR$(128)"in
sert"CHR$(128)"disc"CHR$(128)"no
w"CHR$(128);:FORX=0TO750:NEXT
580 IFI$=""THENPRINT@196,"  PRES
S ANY KEY PLEASE  ";:FORX=0TO750
:NEXT:GOTO570
590 CLS154:GOSUB370:PRINT@194,"
LOADING ";F$;" NOW";
600 PRINT@298," PLEASE WAIT ";
610 '** CHECK-DISC-FOR-FILE ROUT
INE** THANKS TO BILL TOTTINGHAM
FOR THIS ONE ** RAINBOW APRIL/19
86, PAGE 18-20 **
620 FOR X=3TO11
630 DSKI$ 0,17,X,AF$,BF$
640 CF$=AF$:GOSUB730
650 IF DF$(F)=F$ THEN790
660 CF$=BF$:GOSUB730
670 IF DF$(F)=F$THEN790
680 IF LEFT$(AF$,8)=F$ THEN790
690 NEXTX
700 CLS154:GOSUB370:PRINT@224,"
FILE ";F$;" DOESN'T EXIST";
710 EXEC44539
720 GOTO1280
730 FORM=1TO128STEP32
740 F=F+1
750 DF$(F)=MID$(CF$,M,8)
760 IF DF$(F)=F$ THEN790
770 NEXTM
780 RETURN
790 OPEN "I",#1,F$
800 FORS=1TO DS
810 IFEOF(1)=-1THEN850
820 INPUT#1,L(S)
830 INPUT#1,H(S)
840 NEXTS
850 CLOSE#1
860 CLS234:GOSUB370
870 '** EXCUSE FOR WORKING **
880 PRINT@224,"SORRY I'M PRINTIN
G - PLEASE WAIT";
890 '
900 '**** PRINTING ROUTINE ****
910 '
920 PRINT#-2,CHR$(13):'CARR.RETU
RN + LINE FEED
930 PRINT#-2,"TEMPERATURE FOR ";
DT$
940 A=46
950 '** CHR$(26)=CARR.RETURN ONL
Y-NO LINEFEED**
960 IFA/5=INT(A/5)THENPRINT#-2,S
TRING$(31,95)CHR$(26);:PRINT#-2,
USING"###";A;:PRINT#-2,CHR$(26);
970 PRINT#-2," ";
980 FORS=1TO DS
990 IFH(S)=>A AND L(S)=<A THENPR
INT#-2,CHR$(234);ELSEPRINT#-2,CH
R$(224);
1000 NEXTS
1010 PRINT#-2,CHR$(13);
1020 A=A-1:IFA=-11THEN1030ELSEGO
TO960
1030 PRINT#-2,"00000000011111111
11222222222233"
1040 PRINT#-2,"12345678901234567
890123456789O1"
1050 PRINT#-2,STRING$(5,13)
1060 CLS138
1070 '
1080 '** 10 MINUTES LATER **
1090 '**   IT IS DONE     **
1100 '
1110 PRINT@140,"--SWET--";
1120 PRINT@195,"-THAT'S OVER--HO
W ABOUT--";
1130 PRINT@266,"ANOTHER ONE?";
1140 PRINT@334,"Y/N";
1150 I$=INKEY$:IF I$=""THEN PLAY
"B":GOTO1150
1160 IF I$="N"THEN1280
1170 IF I$<>"Y"THEN 1150
1180 GOTO860
1190 '**DELAY S-R**
1200 FORX=0TO2000:NEXTX:RETURN
1210 '**INSTRUCTIONS***
```

Continued on P.59

RAINFALL PART VI

by HARRY HOFFMAN
APPLICATION

THIS IS the start of the rainfall series. The following five programs (including this one) are very similar to the first five, except that they record, print and display the rainfall rather than temperatures.

Living here in Queensland where rain is almost as rare as pink snow, I find these programs rather an unnecessary luxury.

As I said last month, they can be used in other applications, where water is applied more regularly than up here in Queensland.

If you have any ideas to improve any of these programs, please don't hesitate to do so.

The Listing:

```
0 GOTO20
1 SAVE"122:1":SAVE"122:3":END'AP
P
2 ******************************
3 ** 3RFL-DAT/BAS PROGRAM  BY **
4 **       HARRY HOFFMANN      **
5 ** CROWS NEST CARAVAN PARK  **
6 ** CROWS NEXT QLD 4355      **
7 ******************************
8 '
9 '
10 ***************************
   ** CHANGE <OK>  TO <HH>  **
   ***************************

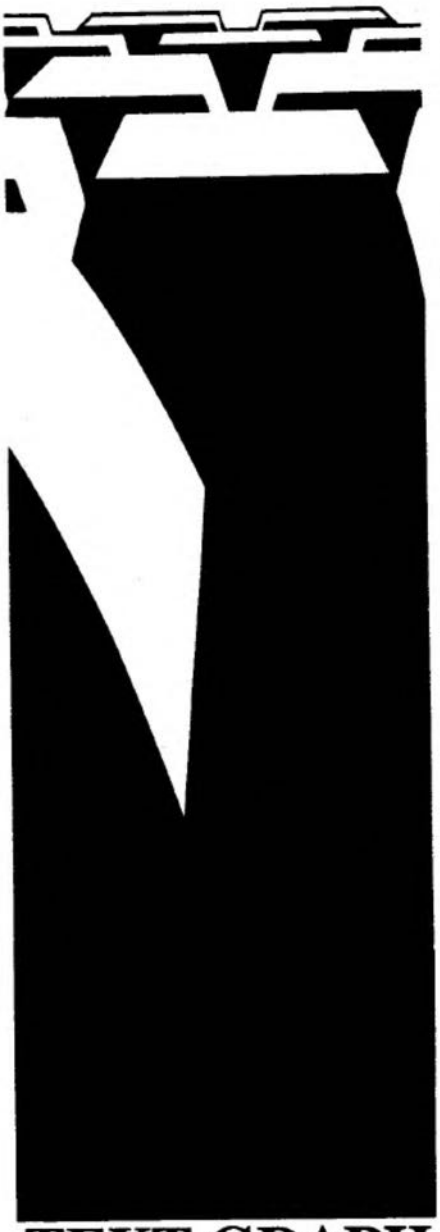
20 POKE44014,72:POKE44015,72
30 ' ************************
     **  SPECIAL CLS POKE  **
     **  CLS 0 TO 255      **
     ************************

40 FOR I=43288 TO 43302:POKE I,1
8:NEXT I
50 '*****************************
    * THIS PROGRAM WAS WRITTEN *
    * ON A COCO 3 BUT SHOULD   *
    * RUN ON ANY  COCO 2 DECB  *
    *****************************

60 CLEAR5000
70 DIM H(31)
80 DIM D$(75)
90 E$=CHR$(128)
100 A$(1)=E$+"insert"+E$+"disc"+
E$+"any"+E$+"key"+E$
110 A$(2)=" INSERT DISC ANY KEY
"
120 D=1
130 CLS213
140 PRINT@100," RAINFALL    DATA
 INPUT ";
150 PRINT@171," FOR DISC ";
160 PRINT@238," BY ";
170 PRINT@296," HARRY HOFFMANN "
;
180 PRINT@362," CROWS NEST ";
190 PLAY"T16":FORX=1TO4:FORY=5TO
30:PLAY"V=Y;C":NEXT:PLAY"CCCCC":
FORY=30TO5STEP-1:PLAY"V=Y;C":NEX
TY,X
200 FORX=0TO50:NEXT:SOUND200,10:
FORX=0TO50:NEXT
210 CLS137
220 GOSUB1700
230 PRINT@133," PROGRAM TO INPUT
 DATA ";
240 PRINT@205," FOR ";
250 PRINT@264," RAINFALL IN mm "
;
260 PRINT@333," ON A ";
270 PRINT@393," DAILY BASIS ";
280 SCREEN0,1
290 GOSUB320:GOTO360
300 *****************************
    * TITLE SONG BY H.HOFFMANN *
    *****************************

310 ** IDEA FROM CRAIG STEWARD-C
OCO MAGAZINE MAY/1987 PAGE 61 --
THANKS CRAIG ***
320 FORX=1TO3:PLAY"T6O3V30L4CV20
L8CV10CL8V30CL16V20CV10CL8V30DL1
6V20DV10L8V30EL16V20EV10EL4V30CL
8V16CV10CL4V30FL8V20FV10FL4V30EL
8V20EV10EL4.V30DL8.V20DV10D":NEX
T
330 FORX=1TO3:PLAY"V30L8GV20L16G
V10G":NEXT:PLAY"V30L4.GL8.V20GV1
0GV30L8FV20L16FV10FV30L4EV20L8EV
10EL4V30DL8V20DV10DL2V30GL4V20GV
10G"340 PLAY"V30L8GV20L16GV10GV3
0L4.GV20L8.GV10GV30L8FV20L16FV10
FV30L4EV20L8EV10EL4V30DL8V20DV10
DL1V30CL4V20CV15CL2V10CV5C"
350 RETURN
360 CLS249
370 GOSUB1700
380 PRINT@98,"INPUT MONTH AND YE
AR (MM/YY)";
390 PRINT@162,"";:INPUT DT$:PRIN
T@190,STRING$(2,PEEK(1533));
400 DT=VAL(LEFT$(DT$,2))
410 IF DT<1 OR DT>12 THEN PRINT@
454,E$"illegal"E$"input"E$;:GOSU
B1350:GOTO360
420 IF LEN(DT$)<>5THEN PRINT@454
,E$"illegal"E$"input"E$;:GOSUB13
50:GOTO360
430 PRINT@258," IS THE DATE CORR
ECT - "DT$;
440 PRINT@354," Y/N ";
450 I$=INKEY$:IF I$=""THEN PLAY"
T255V15C":GOTO450
460 IF I$="N"THEN360
470 IF I$<>"Y"THEN SOUND100,5:GO
TO 360
480 CLS234
490 GOSUB1700
500 PRINT@229,A$(1);:FORZ=1TO30:
NEXT
510 PRINT@229,A$(2);:FORZ=1TO25:
NEXT
520 IF INKEY$=""THEN500
530 F$=LEFT$(DT$,2)+"*"+RIGHT$(D
T$,2)+"RFL"
540 '** CHECK DISC FOR FREE GRAN
ULES **
550 IF FREE(0)<2 THEN CLS181:GOS
UB1700:PRINT@161,"SORRY,NOT ENOU
GH SPACE ON DISC";:GOTO560 ELSE
GOTO 590
560 PRINT@227," PLEASE INSERT OT
HER DISC ";
570 PRINT@289,"AND PRESS ANY KEY
 TO CONTINUE ";
580 EXEC44539:GOTO550
590 GOSUB1370:IF D<>1THEN1620
600 CLS145
610 GOSUB1700
620 '** FORCED FILE INPUT ROUTIN
E TO EXAMINE FILE BEFORE MESSING
 IT UP **
630 OPEN "I",#1,F$
640 PRINT@98," FILE ";F$;" open
";
650 IF EOF(1)=-1THEN730
660 FOR S=1TO31
670 IF EOF(1)=-1THEN730
680 INPUT#1, H(S)
690 PRINT@226," RAIN FOR ";:PRIN
TUSING"##";S;:PRINT"/";DT$;" = "
;
700 PRINT@354," mm = ";:PRINTUSI
NG"###";H(S);
710 FOR DL=1TO700:NEXTDL
720 NEXTS
730 CLOSE#1
740 PRINT@98," FILE ";F$;" close
d ";
750 IF S<1THEN S=1
760 PRINT@162,S-1;" ENTRIES ";
770 FORX=1024+384TO 1535:POKEX,2
41:NEXTX
780 PRINT@418," [E] = EXTEND FIL
E  ";
790 '
800 '** ATTENTION **
810 '** THIS INPUT <N> WILL ERRA
SE EXISTING FILE AND START THE S
AME AT INPUT NO.1 **
820 PRINT@450," [N] = NEW FILE
   ";
830 PRINT@482," [Q] = QUIT PROGR
AM ";
840 I$=INKEY$:IF I$=""THEN PLAY"
O5T255V31B":GOTO840
850 IF I$="E"THEN PLAY"O3":GOTO9
00
860 IF I$="N"THEN PLAY"O3":T=1:G
OTO1170
870 IF I$<>"Q"THEN840
880 GOTO1660
890 '**FILE EXTENSION ROUTINE**
900 CLS198:GOSUB1700
910 OPEN"I",#1,F$
920 PRINT@98," FILE ";F$;" open
<I>";
930 OPEN"O",#2,"RAINTEMP/DAT"
940 PRINT@130," FILE RAINTEMP op
en <O>";
950 FOR T=1TO S-1
960 IF LOF(1)=-1THEN1000
970 INPUT#1, H(T)
980 PRINT#2,H(T)
990 NEXTT
1000 CLOSE#1
1010 PRINT@98," FILE ";F$;" clos
ed<I>";
1020 PRINT@194,E$"input"E$"new"E
$"data"E$"now"E$"please"E$;
1030 PRINT@386," mm RAIN FOR ";:
PRINTUSING"##";T;:PRINT"/";:PRIN
TDT$;:PRINT" = ";:INPUT H(T):PRI
NT@414,STRING$(2,PEEK(1024));
1040 PRINT@450," IS THIS CORRECT
```

Continued on P.60



TEXT GRAPH

by FRANK BUTTIGIEG

CoCo 3 , DMP 110

UTILITY

IN THE FIRST two screens, I will explain briefly all available key functions.

The third screen is the main screen. This is designed to help you locate the cursor at all times.

The top line gives a status signal, eg ...

'*-*=54 chr's'

... the '*'s are the delimiters to show where your text starts and ends in that line you're in. When you reach the second '*', you will hear a beep sound - it will then automatically do a carriage return and a line feed on the screen as well as on the printer.

<- = Back space key: if you have typed 10 characters of text and you noticed that the 5th character was a mistake, all you do is backspace to that mistake and you have 2 choices:

1 - Blot the mistake out with 'Liquid Paper', wait until it dries, and then type in the right character, or ...

2 - you can 'black' out the typo by pressing the <SHIFT+UP ARROW>.

<SHIFT+LEFT ARROW> is an underlining function key.

<CLEAR> to clear screen. The cursor will return to the top.

<RIGHT ARROW> will let you place the cursor anywhere on the screen by answering 3 questions that will appear 1 by 1 on the bottom left of the screen.

When you have answered all 3 questions, the cursor will go to your selected screen position and the questions will be wiped off.

Remember that if you have done some text work in this area, it will be destroyed by the routine.

<SHIFT+0> is to toggle upper/lower CASE. At the top left corner, there's a flashing black on yellow u/l indicator, and for an unknown reason, it does not change with the upper/lowercase toggle, even though the toggle works.

So I have introduced a 3rd keystroke to change the indicator to show the correct key function. See the next function below.

<DOWN ARROW> does 2 things ...

1 - it will change the upper/lower case indicator to show the correct keying.

If you are in uppercase and you changed it to lowercase, the indicator will still show uppercase, unless you press the <DOWN ARROW> key ...

2 - it will also turn off the DRAW ON function. See below.

<CTRL> will turn on draw mode. It means that all the numerals from 0 to 9 have now become draw lines respectively. Also, every character will be screened in 'Black on Yellow' background to remind you that the printer will now draw lines, not numbers.

Because it will be a much shorter line feed than the text, there won't be any gaps between the vertical lines.

To turn off the draw mode, press the down arrow.

<SHIFT+UP ARROW> will print a 'Black Block'...

All CoCo 3 characters within the keyboard are available in the text mode ... DRAW Mode also has all the characters with the exception of the numerals.

The 2nd line of the text screen (in cyan) is a sector guide. Each '0' represents a sector numbered 0 to 3; see your printer's manual for more about sectors).

Each '-' represents 0 to 15 dots, with each sector (up to 2) = 16 <-'s>, adding up to a total of 256 dots per sector.

The 3rd sector = 12 <-'s> only = 176 dots, which all together equals 960 dots made available for the DMP110 printer.

The 3rd line is a compilation of current screen cursor and printer head dot position, eg,

Xpos= indicates current screen column cursor position.
Ypos= indicates current screen line cursor position.
Hpos= indicates current printer head position.
Sector= indicates current sector.
Spos= indicates current dot position within sector.

The 4th line is the current screen character's position indicator (0 to 63).

The file hardcopy Mode explained:

This section is for OPTION 7 in the main menu.

I use TW-64 Word Processor which gives me a choice of 3 screens of 50, 64 and 80 columns. When you're creating a file, don't use the embedded commands of the TW-64 Editor, otherwise they'll be printed as garbage when you use TEXTGRFX to print the file.

I normally have TW's 'Lines per page' set to 60. I always use the <CLEAR+V> command to check if what I typed in is longer than 1 page.

If I have typed more than 1 page, I tap the <ENTER> key 20 times to skip to the top of next page.

Always save the files in binary as well as in ASCII, because TEXTGRFX only reads ASCII files.

It is always a good idea to make 2 saves just in case one of them will bomb out on you. When

prompted, select the desired file width and press <ENTER> and the Filename (optional) or press <ENTER> again

Soon you'll hear the cassette whining and the printer buzzing.

As for OPTIONS 1 to 5, they are the same as BRDRGRAF, found in Australian CoCo Feb '88, page 34.

The Listing:

```
0 'A PRINTER UTILITY PROGRAM TO
LET YOU PRINT IN HANDWRITING LET
TERING STYLE, AS WELL AS BORDER
GRAPHICS.
1 GOTO4
2 'TEXTGRFX...Frank X Buttigieg
   23/4/88.(c).a FIXBee Product
3 SAVE"187":SAVE"187:2":END'UTL
4 'POKE383,158
5 RGB:WIDTH32:CLS
10 IFPEEK(65314)/2<>INT(PEEK(653
14)/2)THENPRINT@224,"PLEASE ALSO
 TURN THE PRINTER ON!":GOTO10ELS
EPOKE65497,0:POKE150,88
11 GOSUB50:PRINT@300,"Reading";
12 DIMS(208),C(208),N(88),V(192)
,D(80)
15 POKE359,57:POKE65314,88
17 POKE57414,17:POKE63052,64:POK
E63105,64:POKE63112,44:POKE63113
,0:POKE63601,128:POKE63605,43:PO
KE63606,128
20 ONBRKGOTO370
25 GOTO5500
30 GOSUB50:GOTO270
50 CLS:PRINT"  $$$$$$$$$$$$$$$$$
$$$$$$$$$$     $      <<<TEXTGRFX
>>>       $     $ NEW ALPHA-NUMER
ICS PLUS $     $ BORDER GRAPHICS
 UTILITY $     $    for DMP-110 &
 CoCo3   $     $ By Frank Buttig
ieg 4/88 $     $$$$$$$$$$$$$$$$$
$$$$$$$$$$
60 PRINT#-2,CHR$(18);CHR$(27)CHR
$(14);CHR$(27)CHR$(19);
70 RETURN
80 PRINTTAB(2):INPUT"Enter..1st.
#";N1:IFN1<128GOSUB350:GOTO80ELS
EIFN1>255GOSUB360:GOTO80
90 PRINTTAB(9):INPUT"2nd.#";N2:I
FN2<128GOSUB350:GOTO90ELSEIFN2>2
55GOSUB360:GOTO90
100 PRINTTAB(9):INPUT"3rd.#";N3:
IFN3<128GOSUB350:GOTO100ELSEIFN3
>255GOSUB360:GOTO100
110 PRINTTAB(9):INPUT"4th.#";N4:
IFN4<128GOSUB350:GOTO110ELSEIFN4
>255GOSUB360:GOTO110
120 PRINTTAB(9):INPUT"5th.#";N5:
IFN5<128GOSUB350:GOTO120ELSEIFN5
>255GOSUB360:GOTO120
130 PRINTTAB(9):INPUT"6th.#";N6:
IFN6<128GOSUB350:GOTO130ELSEIFN6
>255GOSUB360:GOTO130
140 PRINTTAB(9):INPUT"7th.#";N7:
IFN7<128GOSUB350:GOTO140ELSEIFN7
>255GOSUB360:GOTO140
150 PRINTTAB(9):INPUT"8th.#";N8:
IFN8<128GOSUB350:GOTO150ELSEIFN8
>255GOSUB360:GOTO150
160 RETURN
170 POKE65314,56:GOSUB50:PRINTTA
B(3)"Start @ SECTOR (0-3)";:INPU
TS1
180 PRINTTAB(3)"Start @ POS. (0-
240)";:INPUTX1
190 PRINTTAB(3)"End   @ SECTOR (
0-3)";:INPUTS2
200 PRINTTAB(3)"End   @ POS. (0-
240)";:INPUTX2:IFS2=3ANDX2>176TH
ENX2=176
210 PRINTTAB(3)"How many [BLOCKS
] across       (Maximum 60).";:
INPUTCH
220 PRINTTAB(3)"[BLOCKS] per Col
umn...";:INPUTLN:GOTO270
230 GOTO260
240 PRINT#-2,CHR$(27)CHR$(16)CHR
$(S1)CHR$(X1);:FORR=1 TOCH:PRINT
#-2,CHR$(N1)CHR$(N2)CHR$(N3)CHR$
(N4)CHR$(N5)CHR$(N6)CHR$(N7)CHR$
(N8);:NEXT:RETURN
250 PRINT#-2,CHR$(N1)CHR$(N2)CHR
$(N3)CHR$(N4)CHR$(N5)CHR$(N6)CHR
$(N7)CHR$(N8);:RETURN
260 GOSUB240:PRINT#-2,CHR$(13);:
FORL=1TOLN:PRINT#-2,CHR$(27)CHR$
(16)CHR$(S1);CHR$(X1);:GOSUB250:
PRINT#-2,CHR$(27)CHR$(16)CHR$(S2
);CHR$(X2);:GOSUB250:PRINT#-2,CH
R$(13);:NEXT
262 GOSUB240:PRINT#-2
270 WIDTH32:CLS:GOSUB50:POKE6531
4,80:PRINTTAB(1)"<1> - Print opt
.<5> again       <2> - Print opt
.<5> across only.<3> - Print abo
ve's CHR(#)'s... <4> - Create a
new Design...    <5> - Same desi
gn, new Border.. <6> - Typewrite
r mode..."
272 PRINTTAB(1)"<7> - Hardcopy F
ile from tape....Select...";:INP
UTAP
280 IFAP<1ORAP>7GOTO270
290 IFAP=1GOTO230
300 IFAP=2THENS1=S1:X1=X1:CH=CH:
GOSUB240:GOTO270
310 IFAP=3GOSUB340:GOTO270
320 IFAP=4GOSUB80:GOTO270
330 IFAP=5THENCH=0:GOTO170
333 IFAP=6GOTO900
334 IFAP=7GOTO500
335 GOTO270
340 PRINT#-2,CHR$(30);CHR$(19);C
HR$(15);CHR$(27)CHR$(19);CHR$(27
)CHR$(15);:PRINT#-2,TAB(2)"Your
CHR$(s) are ("N1");("N2");("N3")
;("N4");("N5");("N6");("N7");("N
8")":PRINT#-2,CHR$(14);CHR$(18);
CHR$(27)CHR$(14);:GOTO270
350 PRINTTAB(6)"No less than [12
8]":RETURN
360 PRINTTAB(6)"No more than [25
5]":RETURN
370 PRINT#-2,CHR$(30);CHR$(19);C
HR$(14);CHR$(27)CHR$(15);CHR$(13
);:STOP
500 WIDTH64:CLS5:LOCATE15,0:ATTR
5,4:PRINT"-*- TEXTGRFX...File pr
int Mode -*-":ATTR2,4:LOCATE0,2:
PRINT"";:INPUT"<50>, <64) or <80
>...characters per line...";N
501 LOCATE0,1:FORR=1TO6:ATTR7,4:
PRINT"0123456789";:NEXT:PRINT"01
23":ATTR2,4
502 IFN=50THENT=0:W=80:GOTO503EL
SEIFN=64THENT=1:W=32:GOTO503ELSE
IFN=80THENT=0:W=160:GOTO503ELSE5
00
503 IFN=80THENPRINT#-2,CHR$(27)C
HR$(15);ELSEPRINT#-2,CHR$(27)CHR
$(14);
504 H=W:INPUT"Enter File Name...
(optional)...";M$
505 PRINT#-2,CHR$(27)CHR$(16)CHR
$(0)CHR$(H);
510 IFLEN(M$)>8GOTO500
570 POKE65496,0:OPEN"I",#-1,M$
580 POKE65496,0:LINEINPUT#-1,FB$
:POKE65497,0
585 IF EOF(-1)GOTO899
590 L=LEN(FB$):PRINTFB$:IFL=0GOT
O760
600 FORB=1 TOL:A$=MID$(FB$,B,1)
610 A=ASC(A$)
620 IFA=0THENCLOSE#-1:GOTO270
630 IFA=13GOTO760
632 IFA=91GOSUB6544
634 IFA=93GOSUB6548
636 IFA=94GOSUB6569
638 IFA>95GOTO655
640 IFA<32 ORA>122 THENNEXT:GOTO
760ELSEIFA=13GOTO760
645 IFA>31ORA<65GOTO710
650 IFA>64ORA<91GOTO720
655 IFA>96ORA<123GOTO700
700 ON A-96 GOTO800,801,802,803,
804,806,807,808,809,810,811,812,
813,814,815,816,817,818,819,820,
821,822,823,824,825,826
710 ON A-31 GOTO853,854,855,856,
857,858,859,860,861,862,863,864,
865,866,867,868,869,870,871,872,
873,874,875,876,877,878,879,880,
881,882,883,884,885
720 ON A-64 GOTO827,828,829,830,
831,832,833,834,835,836,837,838,
839,840,841,842,843,844,845,846,
847,848,849,850,851,852
750 IFN=50THENH=H+16ELSEIFN=64TH
ENH=H+14ELSEIFN=80THENH=H+8
755 IFN=50 ANDH=>880GOTO760ELSEI
FN=64 ANDH=>912GOTO760
756 NEXT
760 H=W:PRINT#-2,CHR$(13);CHR$(2
7)CHR$(49);CHR$(27)CHR$(49);CHR$
(27)CHR$(49);CHR$(27)CHR$(16)CHR
$(0)CHR$(H);
765 IF B<L THENNEXTELSE580
800 GOSUB6005:GOTO750
801 GOSUB6010:GOTO750
802 GOSUB6015:GOTO750
803 GOSUB6020:GOTO750
804 GOSUB6025:GOTO750
806 GOSUB6030:GOTO750
807 GOSUB6035:GOTO750
808 GOSUB6040:GOTO750
809 GOSUB6045:GOTO750
810 GOSUB6050:GOTO750
811 GOSUB6055:GOTO750
812 GOSUB6060:GOTO750
813 GOSUB6065:GOTO750
814 GOSUB6070:GOTO750
815 GOSUB6075:GOTO750
816 GOSUB6080:GOTO750
817 GOSUB6085:GOTO750
818 GOSUB6090:GOTO750
819 GOSUB6095:GOTO750
820 GOSUB6100:GOTO750
821 GOSUB6105:GOTO750
822 GOSUB6110:GOTO750
823 GOSUB6115:GOTO750
824 GOSUB6120:GOTO750
825 GOSUB6125:GOTO750
826 GOSUB6130:GOTO750
827 GOSUB6570:GOTO750
828 GOSUB6572:GOTO750
829 GOSUB6574:GOTO750
830 GOSUB6576:GOTO750
831 GOSUB6578:GOTO750
832 GOSUB6580:GOTO750
833 GOSUB6582:GOTO750
834 GOSUB6584:GOTO750
835 GOSUB6586:GOTO750
836 GOSUB6588:GOTO750
837 GOSUB6590:GOTO750
838 GOSUB6592:GOTO750
839 GOSUB6594:GOTO750
840 GOSUB6596:GOTO750
841 GOSUB6598:GOTO750
842 GOSUB6600:GOTO750
843 GOSUB6602:GOTO750
844 GOSUB6604:GOTO750
845 GOSUB6606:GOTO750
846 GOSUB6608:GOTO750
847 GOSUB6610:GOTO750
848 GOSUB6612:GOTO750
849 GOSUB6614:GOTO750
850 GOSUB6616:GOTO750
851 GOSUB6618:GOTO750
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852 GOSUB6620:GOTO750
853 GOSUB6000:GOTO750
854 GOSUB6500:GOTO750
855 GOSUB6502:GOTO750
856 GOSUB6504:GOTO750
857 GOSUB6506:GOTO750
858 GOSUB6508:GOTO750
859 GOSUB6510:GOTO750
860 GOSUB6512:GOTO750
861 GOSUB6514:GOTO750
862 GOSUB6516:GOTO750
863 GOSUB6518:GOTO750
864 GOSUB6520:GOTO750
865 GOSUB6522:GOTO750
866 GOSUB6524:GOTO750
867 GOSUB6526:GOTO750
868 GOSUB6528:GOTO750
869 GOSUB6550:GOTO750
870 GOSUB6552:GOTO750
871 GOSUB6554:GOTO750
872 GOSUB6556:GOTO750
873 GOSUB6558:GOTO750
874 GOSUB6560:GOTO750
875 GOSUB6562:GOTO750
876 GOSUB6564:GOTO750
877 GOSUB6566:GOTO750
878 GOSUB6568:GOTO750
879 GOSUB6530:GOTO750
880 GOSUB6532:GOTO750
881 GOSUB6547:GOTO750
882 GOSUB6536:GOTO750
883 GOSUB6549:GOTO750
884 GOSUB6540:GOTO750
885 GOSUB6542:GOTO750
898 GOTO585
899 CLOSE#-1:GOTO270
900 CLS:POKE65314,48:PRINT"
   Typewriter Mode":PRINT"Press...":PRINT"<F2> for MAIN MENU":PRINT"<CLEAR> to clean up SCREEN":PRINT"<Rt/ARROW> to TAB Printer's HEAD possition & SCREEN possition...";:PRINT"<Lt/ARROW>to erase a 'TYPO' with";
902 PRINT" the help of a Correction  Fluid else press <SHIFT+Up/ARROW>  to cancel   TYPO    instead     of Correction Fluid...
905 PRINT"<SHIFT-0>then press<DOWN/ARROW>  To toggle between UPPER & lower -case characters...
906 PRINT"<SHIFT-Lt/ARROW> to Under-line
909 PRINT"                ANY-KEY";:EXEC44539
910 CLS:PRINT"          Typewriter Mode":PRINT:PRINT"Press...":PRINT"<CTRL> - To activate DRAW ON
   <Down/ARROW> - To turn DRAW OFF":PRINT:PRINT"WARNING...Always remember that  when you're in DRAW  Mode ON,   indicated by Yellow Background,"
912 PRINT"the Line-Feed on the Printer is narrower than when in Text Mode.So if you intend to mix Draw    with Text you must allow the    difference...
914 PRINT"                ANY-KEY";
929 EXEC44539
930 C$=STRING$(36,32)
940 WIDTH64:CLS5:H=48:J=H/16:K=4:G=0:I=48:T=0
945 PRINT#-2,CHR$(27)CHR$(16)CHR$(G)CHR$(I);
950 PALETTE0,63:PALETTE8,0:CLS:PRINT"*-*=54 Chrs:(_)=B/Space:(F2)=Menu:CTRL=Draw ON:D/Arw=Draw OFF"
955 LOCATE0,1:ATTR2,5:PRINT"0--*----------1---------------2----------3-------*---Ppos";:ATTR2,4:GOSUB2005
956 LOCATE0,3:ATTR2,5:PRINT"0--*->---1---------2---------3---------4---------5----<-*---Xpos";:ATTR2,4:GOSUB2300
957 IFPEEK(&H11A)=255GOSUB960ELSEGOSUB962
959 EXEC44539:GOTO1000
960 LOCATE3,1:ATTR2,1,B:PRINT"UPPER-CASE";:ATTR2,5:LOCATEJ,K:RETURN
962 LOCATE3,1:ATTR2,1,B:PRINT"lower-case";:ATTR2,5:LOCATEJ,K:RETURN
1000 A$=INKEY$:IFA$=""GOTO1000
1005 IFA$=CHR$(97)GOSUB2000:GOSUB6005
1006 IFA$=CHR$(98)GOSUB2000:GOSUB6010
1007 IFA$=CHR$(99)GOSUB2000:GOSUB6015
1008 IFA$=CHR$(100)GOSUB2000:GOSUB6020
1009 IFA$=CHR$(101)GOSUB2000:GOSUB6025
1010 IFA$=CHR$(102)GOSUB2000:GOSUB6030
1011 IFA$=CHR$(103)GOSUB2000:GOSUB6035
1012 IFA$=CHR$(104)GOSUB2000:GOSUB6040
1013 IFA$=CHR$(105)GOSUB2000:GOSUB6045
1014 IFA$=CHR$(106)GOSUB2000:GOSUB6050
1015 IFA$=CHR$(107)GOSUB2000:GOSUB6055
1016 IFA$=CHR$(108)GOSUB2000:GOSUB6060
1017 IFA$=CHR$(109)GOSUB2000:GOSUB6065
1018 IFA$=CHR$(110)GOSUB2000:GOSUB6070
1019 IFA$=CHR$(111)GOSUB2000:GOSUB6075
1020 IFA$=CHR$(112)GOSUB2000:GOSUB6080
1021 IFA$=CHR$(113)GOSUB2000:GOSUB6085
1022 IFA$=CHR$(114)GOSUB2000:GOSUB6090
1023 IFA$=CHR$(115)GOSUB2000:GOSUB6095
1024 IFA$=CHR$(116)GOSUB2000:GOSUB6100
1025 IFA$=CHR$(117)GOSUB2000:GOSUB6105
1026 IFA$=CHR$(118)GOSUB2000:GOSUB6110
1027 IFA$=CHR$(119)GOSUB2000:GOSUB6115
1028 IFA$=CHR$(120)GOSUB2000:GOSUB6120
1029 IFA$=CHR$(121)GOSUB2000:GOSUB6125
1030 IFA$=CHR$(122)GOSUB2000:GOSUB6130
1050 IFA$=CHR$(34)GOSUB2000:GOSUB6502
1052 IFA$=CHR$(39)GOSUB2000:GOSUB6512
1054 IFA$=CHR$(44)GOSUB2000:GOSUB6522
1056 IFA$=CHR$(46)GOSUB2000:GOSUB6526
1058 IFA$=CHR$(58)GOSUB2000:GOSUB6530
1060 IFA$=CHR$(59)GOSUB2000:GOSUB6532
1062 IFA$=CHR$(63)GOSUB2000:GOSUB6540
1064 IFA$=CHR$(33)GOSUB2000:GOSUB6500
1066 IFA$=CHR$(45)GOSUB2000:GOSUB6524
1068 IFA$=CHR$(47)GOSUB2000:GOSUB6528
1070 IFA$=CHR$(64)GOSUB2000:GOSUB6542
1072 IFA$=CHR$(40)GOSUB2000:GOSUB6514
1074 IFA$=CHR$(41)GOSUB2000:GOSUB6516
1076 IFA$=CHR$(61)GOSUB2000:GOSUB6536
1078 IFA$=CHR$(36)GOSUB2000:GOSUB6506
1080 IFA$=CHR$(37)GOSUB2000:GOSUB6508
1082 IFA$=CHR$(38)GOSUB2000:GOSUB6510
1084 IFA$=CHR$(42)GOSUB2000:GOSUB6518
1086 IFA$=CHR$(35)GOSUB2000:GOSUB6504
1088 IFA$=CHR$(94)GOSUB2000:GOSUB6569
1090 IFA$=CHR$(43)GOSUB2000:GOSUB6520
1092 IFA$=CHR$(91)GOSUB2000:GOSUB6544
1094 IFA$=CHR$(93)GOSUB2000:GOSUB6548
1096 IFA$=CHR$(60)GOSUB2000:GOSUB6547
1098 IFA$=CHR$(62)GOSUB2000:GOSUB6549
1100 IFZZ=0THENIFA$=CHR$(49)GOSUB2000:GOSUB6552ELSE1101
1101 IFZZ=1THENIFA$=CHR$(49)GOSUB2000:GOSUB6630
1102 IFZZ=0THENIFA$=CHR$(50)GOSUB2000:GOSUB6554ELSE1103
1103 IFZZ=1THENIFA$="2"GOSUB2000:GOSUB6632
1104 IFZZ=0THENIFA$=CHR$(51)GOSUB2000:GOSUB6556ELSE1105
1105 IFZZ=1THENIFA$="3"GOSUB2000:GOSUB6634
1106 IFZZ=0THENIFA$=CHR$(52)GOSUB2000:GOSUB6558ELSE1107
1107 IFZZ=1THENIFA$="4"GOSUB2000:GOSUB6636
1108 IFZZ=0THENIFA$=CHR$(53)GOSUB2000:GOSUB6560ELSE1109
1109 IFZZ=1THENIFA$="5"GOSUB2000:GOSUB6638
1110 IFZZ=0THENIFA$=CHR$(54)GOSUB2000:GOSUB6562ELSE1111
1111 IFZZ=1THENIFA$="6"GOSUB2000:GOSUB6640
1112 IFZZ=0THENIFA$=CHR$(55)GOSUB2000:GOSUB6564ELSE1113
1113 IFZZ=1THENIFA$="7"GOSUB2000:GOSUB6642
1114 IFZZ=0THENIFA$=CHR$(56)GOSUB2000:GOSUB6566ELSE1115
1115 IFZZ=1THENIFA$="8"GOSUB2000:GOSUB6644
1116 IFZZ=0THENIFA$=CHR$(57)GOSUB2000:GOSUB6568ELSE1117
1117 IFZZ=1THENIFA$="9"GOSUB2000:GOSUB6646
1118 IFZZ=0THENIFA$=CHR$(48)GOSUB2000:GOSUB6550ELSE1119
1119 IFZZ=1THENIFA$="0"GOSUB2000:GOSUB6648
1200 IFA$=CHR$(65)GOSUB2000:GOSUB6570
1202 IFA$=CHR$(66)GOSUB2000:GOSUB6572
1204 IFA$=CHR$(67)GOSUB2000:GOSUB6574
1206 IFA$=CHR$(68)GOSUB2000:GOSUB6576
1208 IFA$=CHR$(69)GOSUB2000:GOSUB6578
1210 IFA$=CHR$(70)GOSUB2000:GOSUB6580
1212 IFA$=CHR$(71)GOSUB2000:GOSUB6582
1214 IFA$=CHR$(72)GOSUB2000:GOSUB6584
1216 IFA$=CHR$(73)GOSUB2000:GOSUB6586
1218 IFA$=CHR$(74)GOSUB2000:GOSU
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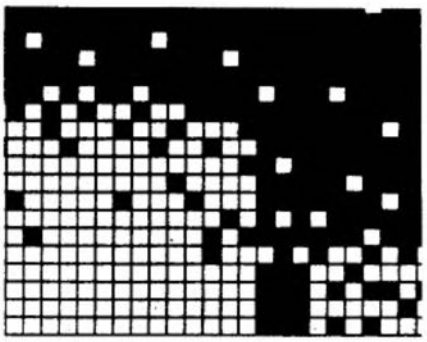
B6588
1220 IFA$=CHR$(75)GOSUB2000:GOSU
B6590
1222 IFA$=CHR$(76)GOSUB2000:GOSU
B6592
1224 IFA$=CHR$(77)GOSUB2000:GOSU
B6594
1226 IFA$=CHR$(78)GOSUB2000:GOSU
B6596
1228 IFA$=CHR$(79)GOSUB2000:GOSU
B6598
1230 IFA$=CHR$(80)GOSUB2000:GOSU
B6600
1232 IFA$=CHR$(81)GOSUB2000:GOSU
B6602
1234 IFA$=CHR$(82)GOSUB2000:GOSU
B6604
1236 IFA$=CHR$(83)GOSUB2000:GOSU
B6606
1238 IFA$=CHR$(84)GOSUB2000:GOSU
B6608
1240 IFA$=CHR$(85)GOSUB2000:GOSU
B6610
1242 IFA$=CHR$(86)GOSUB2000:GOSU
B6612
1244 IFA$=CHR$(87)GOSUB2000:GOSU
B6614
1246 IFA$=CHR$(88)GOSUB2000:GOSU
B6616
1248 IFA$=CHR$(89)GOSUB2000:GOSU
B6618
1250 IFA$=CHR$(90)GOSUB2000:GOSU
B6620
1252 IFA$=CHR$(21)GOSUB2000:GOSU
B6002
1254 IFA$=CHR$(95)GOSUB2000:GOSU
B6004
1900 IFA$=CHR$(13)THENH=48:GOSUB
1950:GOSUB2005:J=H/16:K=K+1:GOSU
B2400:PRINTA$;:GOSUB2300:IFK=>23
GOTO940
1905 IFA$=CHR$(32)THENA$=CHR$(5)
:GOSUB2000:GOSUB6000
1910 IFA$=CHR$(8)ANDH>48THENH=H-
16:GOSUB1950:GOSUB2005:GOTO1912
ELSEIFH=48GOSUB1950:GOSUB2005:GO
TO1912 ELSE1915
1912 J=H/16:SOUND1,1:LOCATEJ,K:P
RINT#-2,CHR$(27)CHR$(16)CHR$(G)C
HR$(I);
1915 IFH=>912THENA$=CHR$(13):SOU
ND1,10:GOTO1900
1920 IFA$=CHR$(9)GOSUB2050
1925 IFA$=CHR$(12)GOTO940
1930 IFA$=CHR$(10)THENZZ=0:GOTO9
57
1935 IFA$=CHR$(4)GOTO270
1939 IFA$=CHR$(189)THENZZ=1
1940 GOTO1000
1950 IFH<48GOTO1000 ELSEIFH<256
THENG=0:I=H:RETURN ELSEIFH<512 T
HENG=1:I=H-256:RETURN ELSEIFH<76
8 THENG=2:I=H-512:RETURN ELSEIFH
<960 THENG=3:I=H-768:RETURN ELSE
IFH>912THENA$=CHR$(13):GOTO1900
1999 GOTO1000
2000 PLAY"L255T255O3C":IFZZ=1THE
NATTR2,1:PRINTA$;:H=H+16:J=H/16:
GOSUB1950:GOTO2005ELSEIFZZ=0THEN
ATTR2,4:PRINTA$;:H=H+16:J=H/16:G
OSUB1950
2005 LOCATE1,2:ATTR2,4:PRINT"Xpo
s";J;"-*- Ypos";K;"-*- Hpos";H;"
-*- Sector";G;"-*- Pos";I;:LOCAT
EJ,K:RETURN
2050 SOUND200,5:LOCATE1,20:PRINT
"In which SECTOR to print @";:IN
PUTG
2060 LOCATE1,21:PRINT"At what PO
SITION in SECTOR";G;::INPUTI:IFG
=0ANDI<48THENI=48:GOSUB2200 ELSE
IFG=3ANDI>128THENI=128:GOSUB2200
 ELSEGOSUB2200
2070 LOCATE1,22:PRINT"which <Ypo
s> to jumb to";:INPUTQ:IFQ<4THEN
Q=4
```



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2100 GOSUB2200:J=H/16:K=Q:PRINT#
-2,CHR$(26);CHR$(27);CHR$(16);CH
R$(G);CHR$(I);:FORTT=20TO22:LOCA
TE0,TT:PRINTC$;:NEXT:GOSUB2300:G
OTO1000
2200 IFG=0THENH=I:RETURN ELSEIFG
=1 THENH=I+256:RETURN ELSEIFG=2
THENH=I+512:RETURN ELSEIFG=3 THE
NH=I+768:RETURN
2300 FORTT=1TO23:LOCATE59,TT:ATT
R2,5:PRINT"";:LOCATE0,TT:PRINT""
;:NEXT:FORTT=0TO60:LOCATETT,23:P
RINT"";:NEXT:LOCATE44,23:ATTR4,5
:PRINT"a FiXBee Product";:ATTR2,
4:LOCATEJ,K:RETURN
2400 IFZZ=0THENATTR2,4:PRINT#-2,
A$;CHR$(27)CHR$(49);CHR$(27)CHR$
(49);CHR$(27)CHR$(49);CHR$(27)CH
R$(16)CHR$(G)CHR$(I);:RETURNELSE
IFZZ=1THENATTR2,4:PRINT#-2,A$;CH
R$(27)CHR$(16)CHR$(G)CHR$(I);:RE
TURN
5000 DATA32,16,40,36,24,28,32,32
5005 DATA32,16,30,37,35,24,8,16
5010 DATA32,16,24,36,36,36,32,32
5015 DATA32,24,36,36,63,16,32,32
5020 DATA32,32,40,20,44,32,32,32
5025 DATA32,72,62,9,17,34,32,32
5030 DATA32,16,76,82,86,62,16,32
5035 DATA32,16,62,21,10,24,32,32
5040 DATA32,32,32,25,32,32,32,32
5045 DATA32,64,80,61,16,32,32,32
5050 DATA32,16,62,21,44,32,32,32
5055 DATA32,32,22,25,38,32,32,32
5060 DATA32,60,8,4,56,4,24,32
5065 DATA32,60,8,4,4,24,32,32
5070 DATA32,16,24,36,36,36,24,8
5075 DATA32,32,126,20,18,44,32,3
2
5080 DATA32,16,12,18,12,126,64,3
2
5085 DATA32,32,28,8,8,28,32,32
5090 DATA32,32,16,8,36,26,32,32
5100 DATA32,32,18,31,34,34,32,32
5105 DATA32,32,28,32,32,32,28,32
5110 DATA32,32,28,32,16,12,16,32
5115 DATA32,28,32,28,32,28,32,32
5120 DATA32,16,8,36,24,24,36,32
5125 DATA32,16,76,80,80,60,32,32
5130 DATA16,72,68,66,74,58,36,32
5150 DATA0,62,9,9,9,62,0,0
5152 DATA0,63,37,37,37,26,0,0
5154 DATA0,30,33,33,33,18,0,0
5156 DATA0,63,33,33,33,30,0,0
5158 DATA0,63,37,37,37,33,0,0
5160 DATA0,63,5,5,1,1,0,0
5162 DATA0,30,33,33,41,57,0,0
5164 DATA0,63,4,4,4,63,0,0
5166 DATA0,0,33,63,33,0,0,0
5168 DATA0,16,33,33,31,1,0,0
5170 DATA0,63,8,12,18,33,0,0
5172 DATA0,63,32,32,32,32,0,0
5174 DATA0,63,2,4,2,63,0,0
5176 DATA0,63,2,12,16,63,0,0
5178 DATA0,30,33,33,33,30,0,0
5180 DATA0,63,9,9,9,6,0,0
5182 DATA0,30,33,41,49,94,0,0
5184 DATA0,63,9,9,25,38,0,0
5186 DATA0,34,37,37,37,25,0,0
5188 DATA0,1,1,63,1,1,0,0
5190 DATA0,31,32,32,32,31,0,0
5192 DATA0,7,24,32,24,7,0,0
5194 DATA0,31,32,30,32,31,0,0
5196 DATA0,33,18,12,18,33,0,0
5198 DATA0,1,2,60,2,1,0,0
5200 DATA0,33,49,41,37,35,0,0
5250 DATA0,0,34,63,32,0,0,0
5252 DATA0,0,34,49,41,38,0,0
5254 DATA0,0,18,33,37,26,0,0
5256 DATA0,0,24,20,18,63,0,0
5258 DATA0,0,39,37,37,25,0,0
5260 DATA0,0,24,36,38,25,0,0
5262 DATA0,0,49,9,5,3,0,0
5264 DATA0,0,26,37,37,26,0,0
5266 DATA0,0,6,9,9,62,0,0
5268 DATA0,0,30,41,37,30,0,0
5270 DATA0,4,2,127,2,4,0,0
5300 DATA0,16,11,7,16,11,7,0
5302 DATA0,16,11,7,0,0,0,0
5304 DATA0,64,44,28,0,0,0,0
5306 DATA0,0,48,48,0,0,0,0
5308 DATA0,0,51,51,0,0,0,0
5310 DATA0,64,59,27,0,0,0,0
5312 DATA0,2,81,9,6,0,0,0
5314 DATA0,0,47,0,0,0,0,0
5316 DATA0,8,8,8,8,8,8,0
5318 DATA0,32,16,8,4,2,1,0
5320 DATA0,62,65,25,25,33,30,0
5322 DATA0,28,34,65,0,0,0,0
5324 DATA0,0,0,0,65,34,28,0
5326 DATA0,18,18,18,18,18,18,0
5328 DATA0,36,42,127,42,18,0,0
5330 DATA64,38,22,8,52,50,1,0
5332 DATA0,54,73,73,54,48,72,0
5334 DATA8,42,28,127,28,42,8,0
5336 DATA20,20,127,20,127,20,20,
0
5338 DATA0,8,8,62,8,8,0,0
5340 DATA0,127,65,65,0,0,0,0
5342 DATA0,0,0,0,65,65,127,0
5344 DATA0,8,20,34,65,0,0,0
5346 DATA0,0,0,65,34,20,8,0
5350 DATA124,126,3,3,3,3,3,3
5352 DATA3,3,3,3,3,3,124,126
5354 DATA31,63,96,96,96,96,96,96
5356 DATA96,96,96,96,96,96,63,31
5358 DATA127,127,0,0,0,0,0,0
5360 DATA0,0,0,0,0,0,127,127
5362 DATA96,96,96,96,96,96,96,96
5364 DATA3,3,3,3,3,3,3,3
5366 DATA64,96,48,24,12,6,3,1
5368 DATA1,3,6,12,24,48,96,64
5500 FORX=0TO207:READS(X):S(X)=S
(X)+128:NEXT
5502 FORX=0TO207:READC(X):C(X)=C
(X)+128:NEXT
5503 FORX=0TO87:READN(X):N(X)=N(
X)+128:NEXT
5504 FORX=0TO191:READV(X):V(X)=V
(X)+128:NEXT
5505 FORX=0TO79:READD(X):D(X)=D(
X)+128:NEXT
5510 GOTO30
6000 FORR=0TO7-T:PRINT#-2,CHR$(1
28);:NEXT:RETURN
6002 FORR=0TO7-T:PRINT#-2,CHR$(1
92);:NEXT:RETURN
6004 FORR=0TO7-T:PRINT#-2,CHR$(2
55);:NEXT:RETURN
6005 FORR=0TO7-T:PRINT#-2,CHR$(S
(R));:NEXT:RETURN'a
6010 FORR=8TO15-T:PRINT#-2,CHR$(
S(R));:NEXT:RETURN
6015 FORR=16TO23-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6020 FORR=24TO31-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6025 FORR=32TO39-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6030 FORR=40TO47-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6035 FORR=48TO55-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6040 FORR=56TO63-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6045 FORR=64TO71-T:PRINT#-2,CHR$
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(S(R));:NEXT:RETURN
6050 FORR=72TO79-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6055 FORR=80TO87-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6060 FORR=88TO95-T:PRINT#-2,CHR$
(S(R));:NEXT:RETURN
6065 FORR=96TO103-T:PRINT#-2,CHR
$(S(R));:NEXT:RETURN
6070 FORR=104TO111-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6075 FORR=112TO119-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6080 FORR=120TO127-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6085 FORR=128TO135-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6090 FORR=136TO143-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6095 FORR=144TO151-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6100 FORR=152TO159-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6105 FORR=160TO167-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6110 FORR=168TO175-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6115 FORR=176TO183-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6120 FORR=184TO191-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6125 FORR=192TO199-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN
6130 FORR=200TO207-T:PRINT#-2,CH
R$(S(R));:NEXT:RETURN'z
6500 FORR=56TO63-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'!
6502 FORR=0TO7-T:PRINT#-2,CHR$(V
(R));:NEXT:RETURN'"
6504 FORR=144TO151-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'#
6506 FORR=112TO119-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'$
6508 FORR=120TO127-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'%
6510 FORR=128TO135-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'&
6512 FORR=8TO15-T:PRINT#-2,CHR$(
V(R));:NEXT:RETURN'
6514 FORR=88TO95-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'(
6516 FORR=96TO103-T:PRINT#-2,CHR
$(V(R));:NEXT:RETURN')
6518 FORR=136TO143-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'*
6520 FORR=152TO159-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'+
6522 FORR=16TO23-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN',
6524 FORR=64TO71-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'-
6526 FORR=24TO31-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'.
6528 FORR=72TO79-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'/
6530 FORR=32TO39-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN':
6532 FORR=40TO47-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN';
6536 FORR=104TO111-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'=
6540 FORR=48TO55-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'?
6542 FORR=80TO87-T:PRINT#-2,CHR$
(V(R));:NEXT:RETURN'@
6544 FORR=160TO167-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'[
6547 FORR=176TO183-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'<
6548 FORR=168TO175-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN']
6549 FORR=184TO191-T:PRINT#-2,CH
R$(V(R));:NEXT:RETURN'>
6550 FORR=72TO79-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN'0
6552 FORR=0TO7-T:PRINT#-2,CHR$(N
(R));:NEXT:RETURN'1
6554 FORR=8TO15-T:PRINT#-2,CHR$(
N(R));:NEXT:RETURN
6556 FORR=16TO23-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN
6558 FORR=24TO31-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN
6560 FORR=32TO39-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN
6562 FORR=40TO47-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN
6564 FORR=48TO55-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN
6566 FORR=56TO63-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN
6568 FORR=64TO71-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN'9
6569 FORR=80TO87-T:PRINT#-2,CHR$
(N(R));:NEXT:RETURN'^
6570 FORR=0TO7-T:PRINT#-2,CHR$(C
(R));:NEXT:RETURN'A
6572 FORR=8TO15-T:PRINT#-2,CHR$(
C(R));:NEXT:RETURN
6574 FORR=16TO23-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6576 FORR=24TO31-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6578 FORR=32TO39-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6580 FORR=40TO47-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6582 FORR=48TO55-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6584 FORR=56TO63-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6586 FORR=64TO71-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6588 FORR=72TO79-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6590 FORR=80TO87-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6592 FORR=88TO95-T:PRINT#-2,CHR$
(C(R));:NEXT:RETURN
6594 FORR=96TO103-T:PRINT#-2,CHR
$(C(R));:NEXT:RETURN
6596 FORR=104TO111-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6598 FORR=112TO119-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6600 FORR=120TO127-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6602 FORR=128TO135-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6604 FORR=136TO143-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6606 FORR=144TO151-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6608 FORR=152TO159-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6610 FORR=160TO167-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6612 FORR=168TO175-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6614 FORR=176TO183-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6616 FORR=184TO191-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6618 FORR=192TO199-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN
6620 FORR=200TO207-T:PRINT#-2,CH
R$(C(R));:NEXT:RETURN'z
6630 FORR=0TO7:PRINT#-2,CHR$(D(R
));:NEXT:RETURN
6632 FORR=8TO15:PRINT#-2,CHR$(D(
R));:NEXT:RETURN
6634 FORR=16TO23:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6636 FORR=24TO31:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6638 FORR=32TO39:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6640 FORR=40TO47:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6642 FORR=48TO55:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6644 FORR=56TO63:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6646 FORR=64TO71:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
6648 FORR=72TO79:PRINT#-2,CHR$(D
(R));:NEXT:RETURN
```

SOME USEFUL HINTS FOR CoCo USERS

by ARTHUR SLADE

Slow scrolling through Orange.
This is a powerful little Poke that will slow your scrolling by creating a horizontal LIST.
Type: POKE359,60 <ENTER> and see what I mean.
Add a Colon (:) and SCREEN0,1, e,g POKE359,60:SCREEN0,1 <ENTER> and you'll be slow scrolling across an Orange screen.
To return to normal green, Type: POKE359,126. <ENTER>
Note..This will not work with a Disk Controller plugged in.

What's your ROM No. ?
EXEC41175 <ENTER>
If you have the new ROMs, the Extended Basic will indicate Version 1.1.
Color Basic will indicate either Version 1.2, or 1.3, depending on your CoCo 2 Model.

COMPUTER RESOURCE DATABASE

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

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

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

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

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

BUSINESS

Name:	Hardware:	Source:	Price:	Rate:
MAILIST PRO	BOTH	B	$ 39.95	@@
COMP. CHQ BOOK	BOTH	B	$ 39.95	@@
NEWSROOM	COCO 3	B	$ 99.95	@@@
COLOR SCRIBE	COCO 3	B	$ 99.95	@@@
WORD POWER 3	COCO 3	B D	$ 130.00	***
IMS	BOTH	B	$ 250.00	@@@
SCULPTOR	COCO 3 512K	D B F	$ 295.00	****
SCREEN STAR	COCO 3 512K	B	$ 99.95	@@
TEXT FORMATTER	COCO 3	B	$ 69.95	@@@
DYNASTAR	BOTH	D	$ 180.00	@@
TELEWRITER-64	COCO 2 64K	B	$ 84.95	****
TELEWRITER-128	COCO 3	B	$ 140.00	****
VIP-WRITER	COCO 2 64K	B	$ 98.95	@@@
VIP-DATABASE	COCO 2	B	$ 84.45	@@@
VIP-SPELLER	COCO 2	B	$ 77.95	@@@@
BEST OF #4	BOTH	C	$ 16.00	***
VIP CALC	BOTH	B	$ 84.45	@@@
BUS A/C SYSTEM	COCO 2	B	$ 112.95	@@
STYLO PACK	COCO 3	D	$ 359.94	****
STYLO III	COCO 3	D	$ 203.94	****
DYNACALC (OS9)	BOTH	D	$ 179.94	****
D'CALC (RSDOS)	COCO 2 64K	D	$ 179.94	****

GAMES

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

Key to codes:

A - Tandy
B - Blaxland
C - Goldsoft
D - Paris Radio Electronics
E - Computer Hut Software
F - MPD Products

Rating explination:

* is used for products we have used or tested.

@ is used for the reputation of a product.

The number of symbols define the opinion or reputation, ie:
1 symbol is a poor rating and 4 symbols is a good rating.
Lack of symbols simply means that we have not commented on the product.
It does not infer that the product is of poor quality.

BEST OF #8	BOTH	16K	C	$ 16.00	***
BEST OF #9	BOTH	32K	C	$ 16.00	***
MEDIC	COCO 2	16K	E	$ 10.95	@@
DATA FALL	COCO 2	16K	E	$ 14.95	@@@
CITY	COCO 2	16K	E	$ 14.95	@@
BEAM RIDER	COCO 2	16K	E	$ 33.45	@@@@
DEFENSE	COCO 2	16K	E	$ 27.95	@@@
LIGHT RUNNER	COCO 2	16K	E	$ 27.95	@@@
MS GOBBLER	COCO 2	32K	E	$ 27.95	@@@
ROBOT BATTLE	COCO 2	16K	E	$ 27.95	@@@
PENGON	COCO 2	16K	E	$ 33.45	@@
STORM ARROWS	COCO 2	16K	E	$ 27.95	@@
TRAVLIN TOAD	COCO 2	32K	E	$ 27.95	@@@
CUBIX	COCO 2	32K	E	$ 27.95	@@@
DEVIOUS	COCO 2	32K	E	$ 33.45	@@@
TRAPFALL	COCO 2	16K	E	$ 27.95	@@@
MAZE ESCAPE	COCO 2	32K	E	$ 27.95	@@
ASTRO BLAST	COCO 2	32K	E	$ 27.95	@@@
DEVIL ASSAULT	COCO 2	16K	E	$ 33.45	@@@
FLYING TIGERS	COCO 2	16K	E	$ 27.95	@@@
GALAX ATTACK	COCO 2	16K	E	$ 27.95	@@@
GHOST GOBBLER	COCO 2	16K	E	$ 27.95	@@@

EDUCATIONAL

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

GRAPHICS

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

MUSICAL

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

ADVENTURES

Name:	Hardware:	Source:	Price:	Rate:
NUKE LOVE BOAT	COCO 3 512K	B	$ 59.95	**
MAGIC OF ZANTH	COCO 3	B	$ 69.95	@@@
KINGS QUEST 3	COCO 3	B	$ 79.95	@@@@
CALADURIL	BOTH	B	$ 59.95	@@@@
ESCAPE: 2012	COCO 2 64K	B	$ 56.00	@@
ROBOT ODDY.	COCO 2 64K	B	$ 69.95	@@
BEST OF #5	BOTH	C	$ 16.00	***
WAR OF THE WRDS	COCO 2 64K	E	$ 50.45	@@@
BLACK SANCTUM	COCO 2 64K	E	$ 33.45	@@@
CALIXTO ISLAND	COCO 2 64K	E	$ 33.45	@@@
SEA SEARCH	COCO 2 64K	E	$ 33.45	@@@
SHENANIGANS	COCO 2 64K	E	$ 33.45	@@@
TREKBOER	COCO 2 64K	E	$ 33.45	@@@
VORTEX FACTOR	COCO 2 64K	E	$ 33.45	@@@
WARP FACTOR X	COCO 2 64K	E	$ 39.45	@@@
PRESRVE QUANDIC	COCO 2 64K	E	$ 44.95	@@@@
MARTIAN CRYPT	COCO 2 32K	E	$ 33.45	@@@
DRAGON BLADE	COCO 2 64K	E	$ 33.45	@@@
SYZYGY	COCO 2 32K	E	$ 33.45	@@@
BLACKBEARDS IS	COCO 2 32K	E	$ 33.45	@@@
DARKMOOR HOLD	COCO 2 64K	E	$ 33.45	@@@
ATLANTIS ADV	COCO 2 16K	E	$ 24.45	@@
4 MILE ISLAND	COCO 2 16K	E	$ 19.95	@@
SPORTS CAR ADV	COCO 2 16K	E	$ 14.95	@@
GRENADA INVASN	COCO 2 16K	E	$ 16.95	@@
ESPIONAGE IS.	COCO 2 32K	E	$ 19.95	@@@
KNGDM OF BASHAM	COCO 2 32K	E	$ 19.95	@@
ALCATRAZ	COCO 2 32K	E	$ 19.95	@@@
SPACE ESCAPE	COCO 2 32K	E	$ 27.95	@@@
MANSION OF DOOM	COCO 2 32K	E	$ 27.95	@@@
IS. OF FORTUNE	COCO 2 32K	E	$ 27.95	@@
BOMB SCARE	COCO 2 32K	E	$ 27.95	@@@
FUNHOUSE	COCO 2 32K	E	$ 27.95	@@@
STALAG	COCO 2 32K	E	$ 27.95	@@
DOOM AT 2100	COCO 2 32K	E	$ 27.95	@@
STONE OF ROKAN	COCO 2 32K	E	$ 27.95	@@@
TUCKER'S MINE	COCO 2 32K	E	$ 27.95	@@
BEACON	COCO 2 32K	E	$ 27.95	@@
ADV. COMBO	COCO 2 32K	E	$ 44.95	@@@

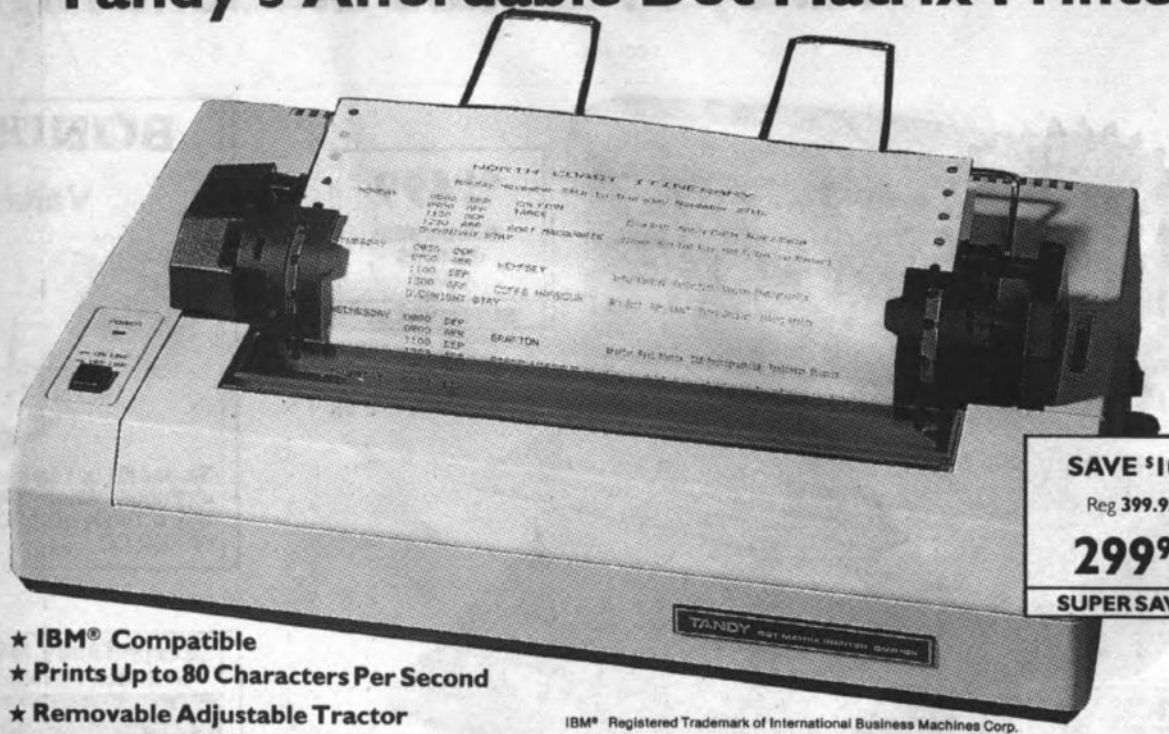
APPLICATIONS

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

HARDWARE

Name:	Hardware:	Source:	Price:	Rate:
10MB DRIVE	BOTH	B	$1299.00	@@@@
20MB DRIVE	BOTH	B	$1599.00	@@@@

Tandy's Affordable Dot Matrix Printer!



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DMP-106. Our versatile dot matrix printer is ideal to use for data processing, graphics and typewriter quality letters. You can use it with our range of computers or with any IBM compatible PC you already own. Prints 80 upper and lower case characters per line (8x9 matrix) at 43 lines per minute. With elongated and condensed modes. Prints original, plus one copy. Come in and have a look today, because at this incredible sale price, the DMP-106 is one of the most affordable all-purpose printers around! Incorporates color computer-compatible serial interfaces. 26-2802

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★ **Write Your Own Programmes with the Built-In BASIC or Assembly Language!**
★ **With 65 Built-In Scientific Functions**
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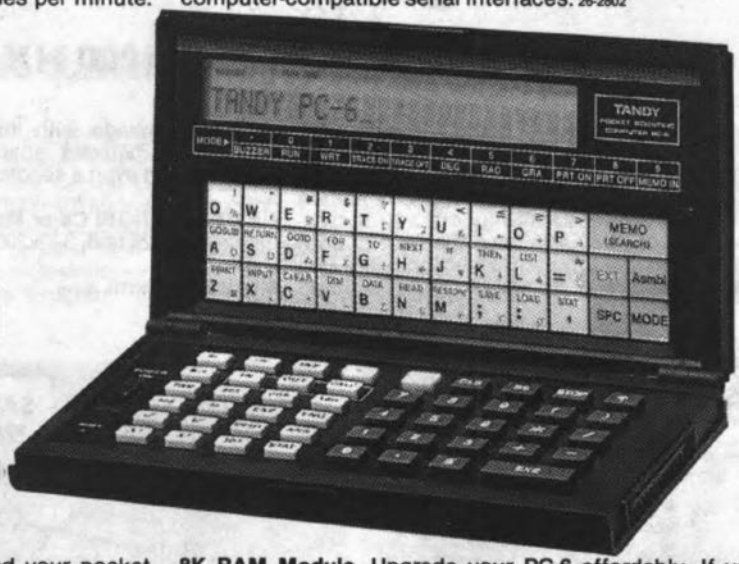
Discover the computer that lets you work whenever and wherever you want at a great low price. Ideal for engineers and students. This powerful little computer performs up to 65 scientific calculations and lets you write your own programmes in BASIC or assembly language. Includes a special function to retain your data after switching the power off. 24-character LCD readout, 8K RAM with built-in Note and Address files. Battery included.

26-3672 ..... **229.95**



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BONUS Value

Starter Kit is Yours as a Bonus When You Buy a Tandy 1000 HX or 1000 TX!

Fast-Loading Tandy 1000 HX

Tandy 1000 HX. The first home computer with MS-DOS (in ROM) built-in! MS-DOS loads automatically in seconds — just insert diskette and you're ready! Features a high-capacity built-in 8.89cm disk drive and also supports a 13.3cm external disk drive so you have the best of both worlds! Your first program is also included! Personal DeskMate 2, an easy-to-use integrated software package with six different applications, also includes adapters for joysticks, monitors and even a second disk drive.
25-1053 ..... **1499.00**

NEW! CM-5 RGBI Color Monitor. 33cm screen displays 80x25 text, 320x200 graphics.
25-1043 ..... **599.00**

Monitor Platform. 26-210 ..... **99.95**

Every Tandy 1000 Includes Personal

★ **Compose and Edit Correction Free Letters, Memos and School Reports**

Here's a program so easy to use, it'll have you "up and running" the first day. DeskMate 2 uses the plain English phrases, it also takes advantage of the Tandy 1000's

VM-2 Monochrome Monitor

★ **30cm Green Phosphor Screen**

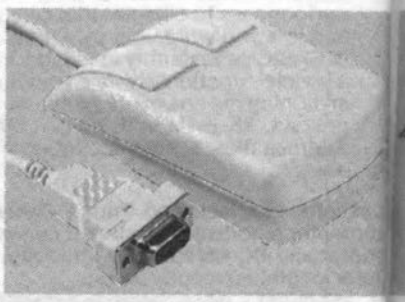
★ **For Tandy 1000/SX/HX/EX/TX/3000**

Add the final touch to your computer with the VM-2 monochrome monitor for clear quality viewing. Features 30cm green phosphor screen, non-glare and non-interlaced. 26-3211
Reg 349.95 ..... **Sale! 199.95**

13.3cm External Drive

★ **Add More Storage to Your Computer System**

Add 360,000 characters of memory to your Tandy 1000 EX/HX computer with this 13.3cm external disk drive. Not only will it add more storage room but it makes backing up of disks easy!
25-1060 Reg 499.00 ..... **299.00**



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★ **Gives You Greater Convenience in Cursor Control**

Tandy Serial Mouse. Quick and eas cursor control. Works with Microso Windows, Personal DeskMate & mar other PC compatible software. Plugs i to any 9-pin serial port. 25-1040 ..... **79.**

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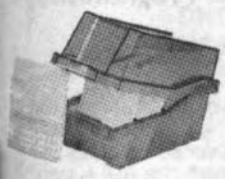

Includes Pk 3 8.89cm diskettes, 8.89cm disk storage box, diskette pen & MS-DOS: The Basics Book.
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80286-Based Tandy 1000 TX Computer

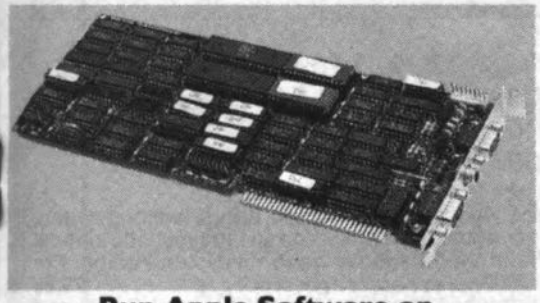
Tandy 1000 TX. The 8-MHz 80286 microprocessor provides far greater processing speed than ordinary PCs. You can go right to work because the Tandy 1000 TX includes graphics adapters, parallel printer and joystick adapters, built-in serial port speaker and headphone sockets, plus Personal DeskMate 2 — your first easy-to-use software program. There's even room to add a second internal 8.89cm or 13.3cm disk drive so you can use existing 13.3cm software as well as the new releases on 8.89cm diskettes. 25-1600 ..... **2299.00**

NEW! CM-11 High Resolution RGBI Color Monitor. A superior monitor that gives clear quality viewing. 33cm screen displays 80x25 text, 640x200 graphics. 25-1024 ..... **999.00**

HX & TX Computer DeskMate 2

★ **Enter Your Budget then Make Countless "What if. . .?" Calculations**

superior graphics, with pull down menus and dialogue boxes that are used to select function and you can use the keyboard or optional mouse for your convenience.

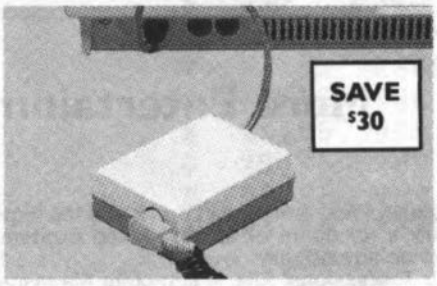


Run Apple Software on Tandy's 1000/SX & TX

TRACKSTAR 128. Supports the use of an optional Apple-compatible drive so that you can use existing drive equipment and use Apple II software that is copy protected, with half-sectoring techniques. Software which does not use a sector copy-protection scheme on the diskette media will run using the Tandy 1000 SX/TX drives. Supports Apple DOS 3.3, Pro-DOS® and Apple Pascal.
25-1028 ..... **799.00**

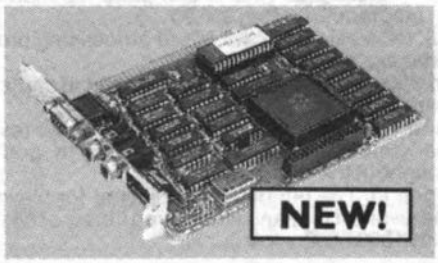
Universal Keyboard Adapter

Universal keyboard adapter lets you connect an IBM-compatible keyboard to the Tandy 1000/1000 SX/TX. For use with special-purpose software. 25-1030
Reg 229.95 .... **Sale! 199.95**



NEW! EGA Hi-Res Graphics Adapter

EGA/CGA Graphics Adapter. For Tandy 1000 SX/TX/3000. Displays up to 16 colors with resolution of 640x200. Also includes 256K of memory. You have no extra chips or "piggy-back" cards to buy. 25-3048 ..... **399.95**



MS-DOS Software SALE

Tandy's Three Most Popular Software Games in One Pack! Fantastic Value!

- ★ An Excellent Assortment of Programmes for a Super Low Price!
- ★ With Exciting 3-D Visual Effects

SAVE $174.85
Reg 204.85
79.95
SUPER SAVER

An assortment of programmes the whole family will enjoy: **Kings Quest III.** Discover secret spells to free yourself from the evil wizard with realistic graphics to add to the excitement. **Mixed-Up Mother Goose.** A delightful 3-D animated nursery rhyme adventure for children. Includes a colour map of Mother Goose Land. **Space Quest II.** Stop an invasion of the galaxy with this 3-D space adventure.
25-9666 ..... **79.95**

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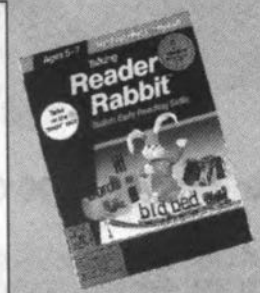
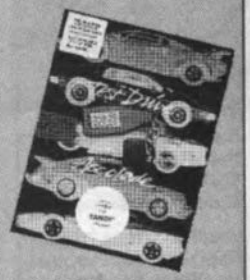
Managing Your Money. A comprehensive financial/management programme for organized budgeting.
25-1159 Reg 399.95 **Sale! 299.95**





Entertainment and Educational Software

Reader Rabbit. Four animated games to help develop fundamental reading and spelling skills. For ages 5-10. 25-1216 ..... **89.95**
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Police Quest. An excellent programme for anyone interested in a cop's life. Experience day to day routine in 3-D graphics. 25-9664 ..... **64.95**
Test Drive. Here's your chance to test out five of the world's most exotic cars without breaking the bank. 25-9665 ..... **64.95**

More Entertainment and Professional Software

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PFS: Professional File. A complete file management/reporting program. 25-1171 Reg 399.95 ..... **Sale! 349.95**
PFS: Professional Write. Word processing program for busy managers. 25-1172 Reg 399.00 ..... **Sale! 349.00**
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Silent Service. Submarine simulation, brings exciting action, great strategy, detailed graphics and an ultra-realistic simulation of a World War II submarine in the South Pacific. For Tandy 1000/3000. 25-1193 ..... **79.95**
Printshop. Printshop brings out the artist in you! Create and print your own greeting cards, letterheads, calendars, signs and more! 25-1304 Reg 109.95 ..... **Sale! 89.95**
Gunship. An exciting helicopter, gunship simulation program to develop your skills. 25-1305 ..... **89.95**
221B Baker Street. Sherlock Holmes, Dr. Watson, Irene Adler & Inspector Lestrade must solve thirty of the most difficult & intriguing cases to test their abilities. Here's your chance to be a part of the mystery and adventure! 25-9661 ..... **64.95**
F-16 Falcon. Fly the F-16 Fighter plane and enjoy a feeling of exhilaration as you've never felt before. 25-9662 ..... **59.95**

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DRIVE 40T DSDD	BOTH	B	$ 630.00	@@@
MONITOR	BOTH	B	$ 300.00	@@@@
HI-RES INTRFACE	COCO 3	B	$ 19.95	@@@@
COCO 3 128K	BOTH	B	$ 370.00	****
MULTIPACK	BOTH	B	$ 199.95	***
DMP-106 PRINTER	BOTH	B	$ 399.00	***
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ECB UNRAVLED.	BOTH	B	$ 79.95	@@@
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US RAINBOW MAG	BOTH	D B	$ 9.95	**
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UTILITY

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OS-9 LEVEL 2	COCO 3	B	$ 129.95	****
DESKMATE 3	COCO 3	B D	$ 129.95	***
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MULTIVUE	COCO 3	D	$ 99.95	@@@

THE WIZ	COCO 3 512K	B D	$ 140.00	@@@
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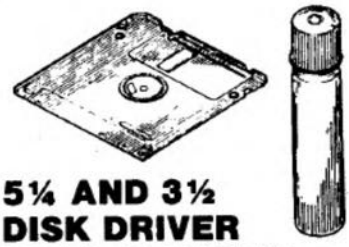
OS-9 SOLUTION	BOTH	D	$ 83.94	@@@
RAMDISK	COCO 3 512K	B	$ 39.95	@@@

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

Accessories to keep your system running

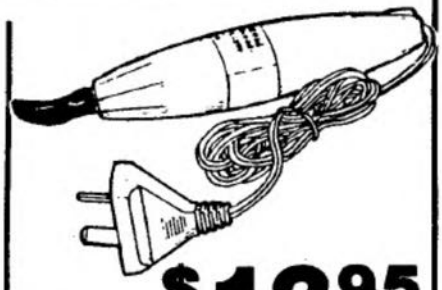
MAGNETIC BULK ERASER

$39.95



5¼ AND 3½ DISK DRIVER HEAD CLEANER

$6.55 ea



HEAD DEMAGNETISER

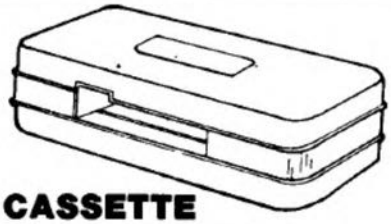
$13.95

GOLDSOFT DISKETTES 5¼ DS DD

BOX OF 10

$17.99

TAPE HEAD CARE KIT $4.35



CASSETTE TAPE ERASER

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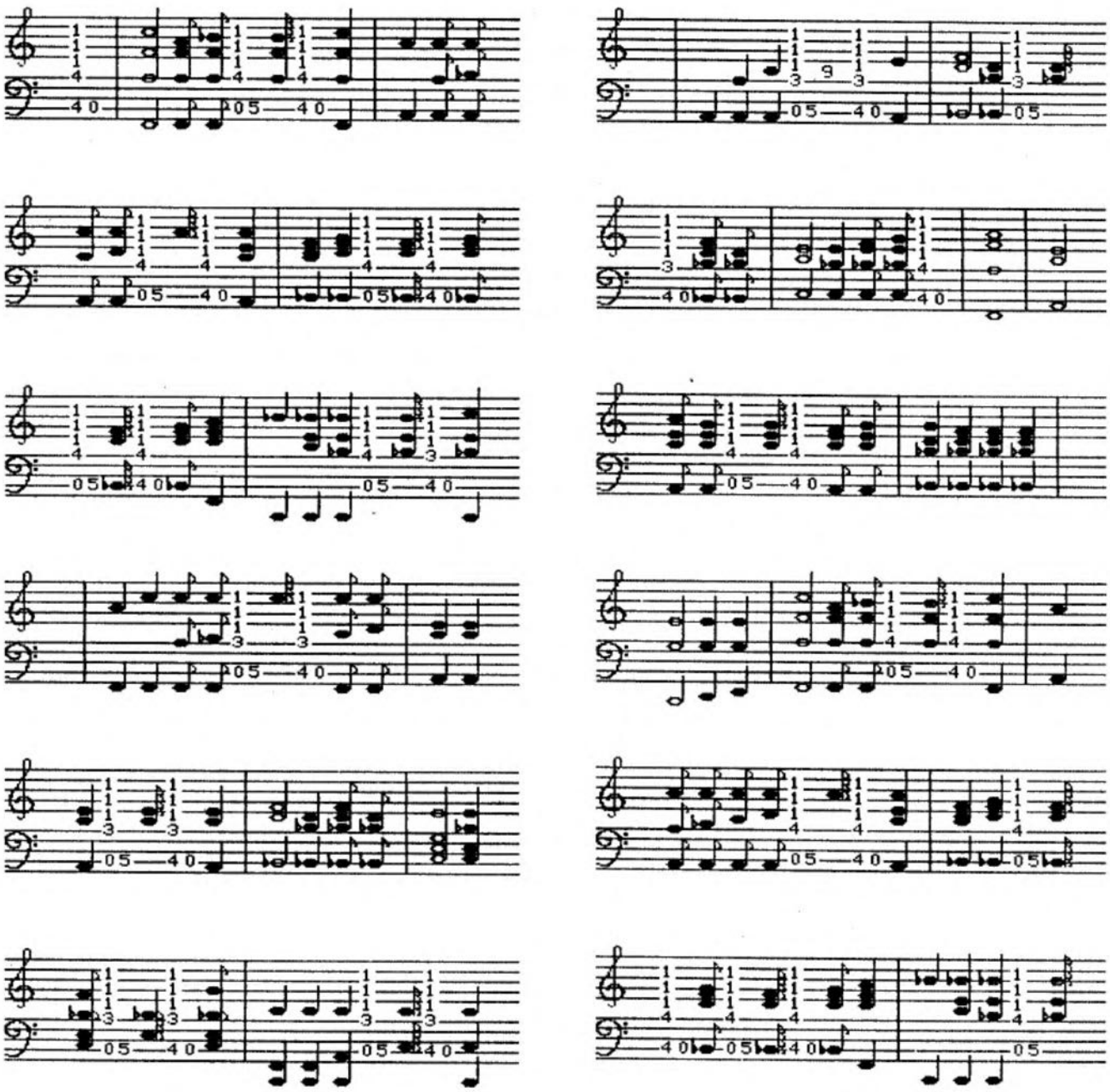
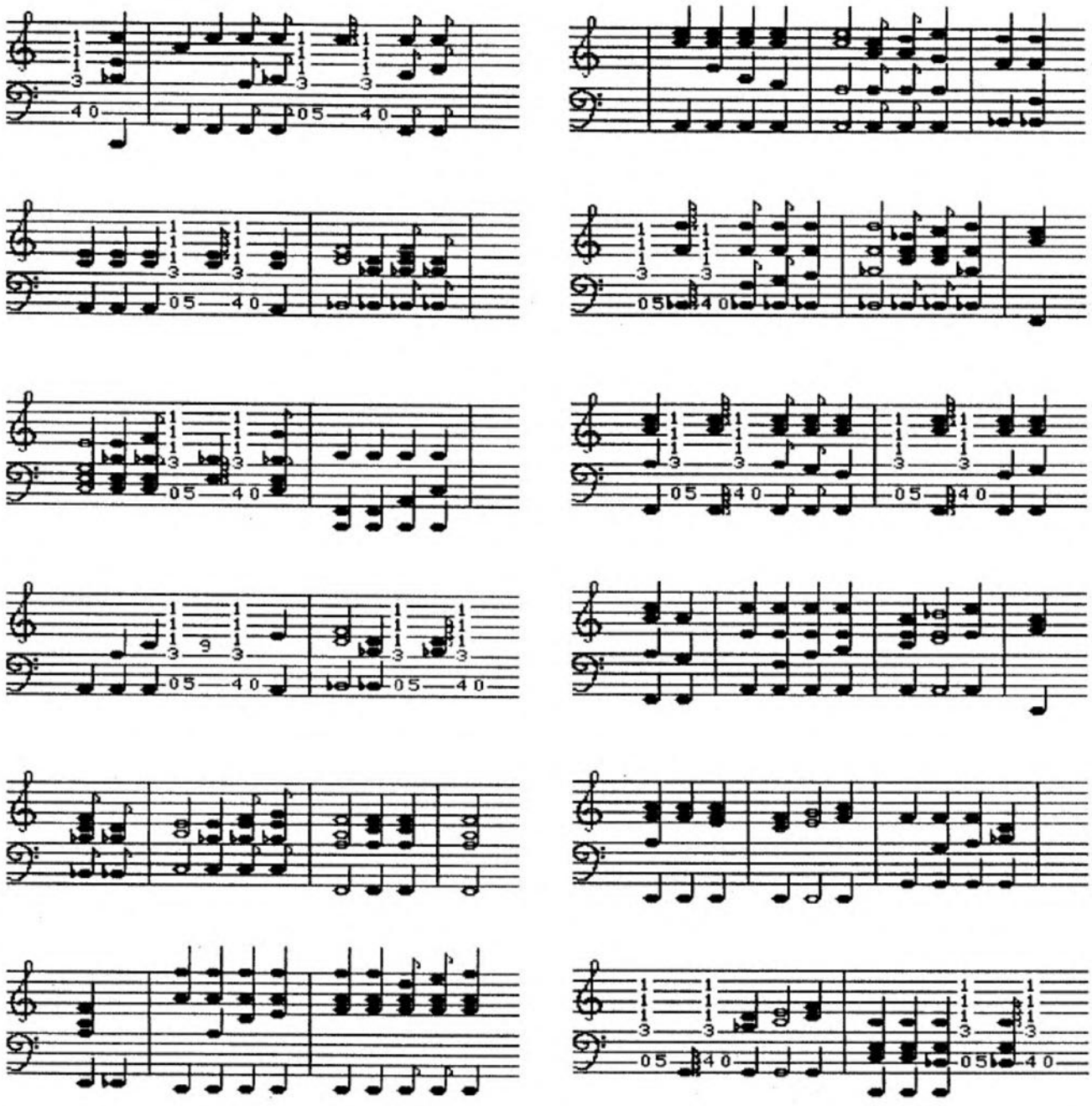
ALTOGETHER NOW...

"I started a joke"

THIS IS A MUSICA II file called "I Started a Joke", which was originally made by the Bee-Gees, and which I have reproduced. It is all my own work.





Here's More Hints And Tips

For those owners of the TP10 printer who have no doubt found that the thermal paper is hard to find in Tandy stores, here is a solution.

Teletype rolls of paper are thermal and are exactly twice the width of the TP10 paper and about twice the length.

By cutting the rolls in half with a band saw, you will have a good supply which you will be able to roll onto the original spools. The cost is $15 per roll, also half price.

Jim Rogers

*

When saving programs on tape and you want a nice even gap between them do this.....

First SKIPF the last program on your tape, then type:

```
MOTORON:FOR X=1 TO 5000:NEXT:
CSAVE"your program name "
```

Let the pause off or set rec/play, and then press enter. Computer counts to 5000 before dumping the program, and presto, you always know how far it is to the next program. No more long unnescessary gaps or ruined programs that were saved on the end of the last one.

For the 1st program on a tape, I make X=10000 - that gives you a nice start past the bumpy bits.

Check every save IMMEDIATELY with a SKIPF. Don't just hope it was O.K.

*

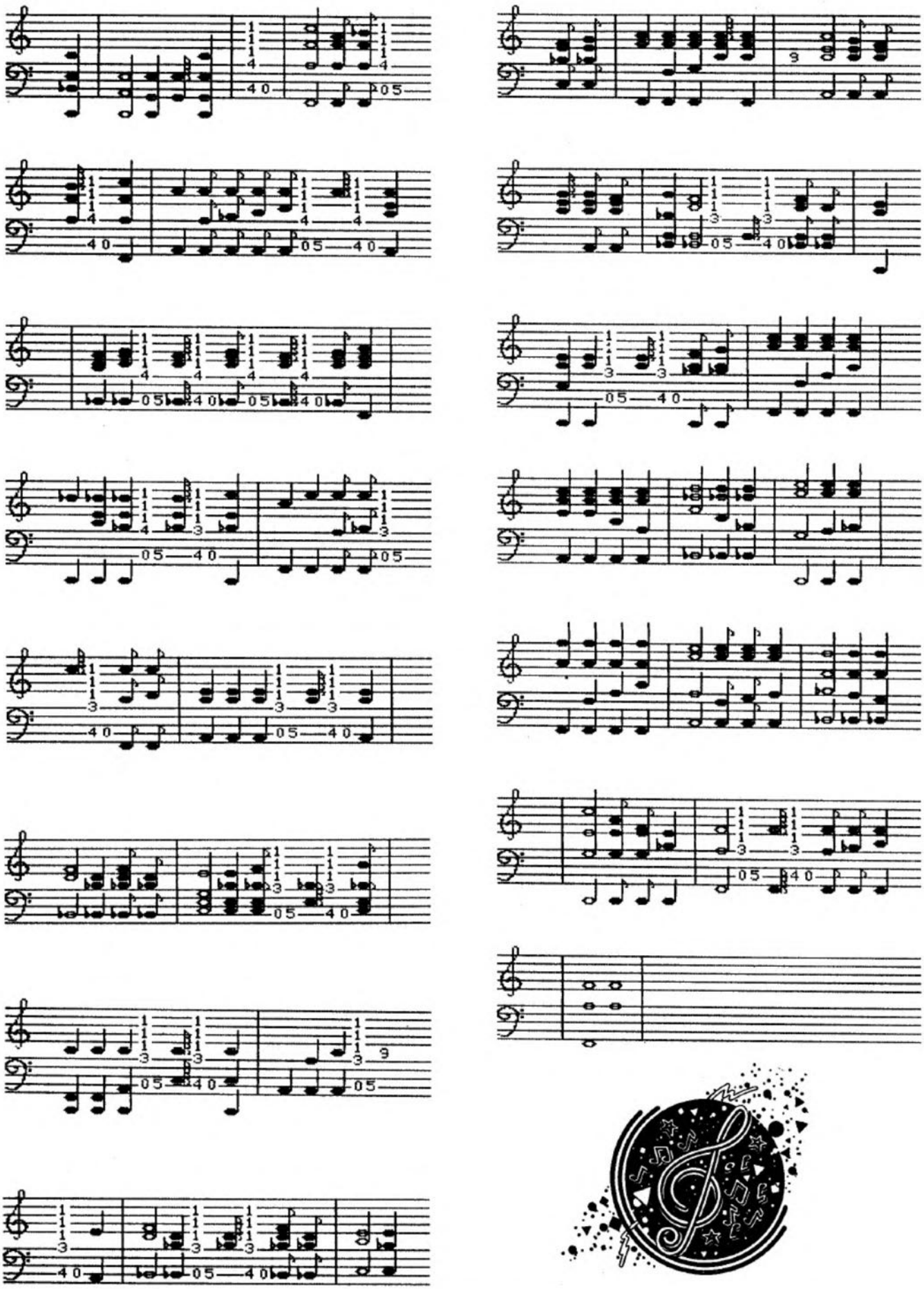
June's CoCo 3 programs were subject to a bug-attack.

Nearly all programs wouldn't RUN properly, even though there weren't any visible syntax errors or other related problems in them.

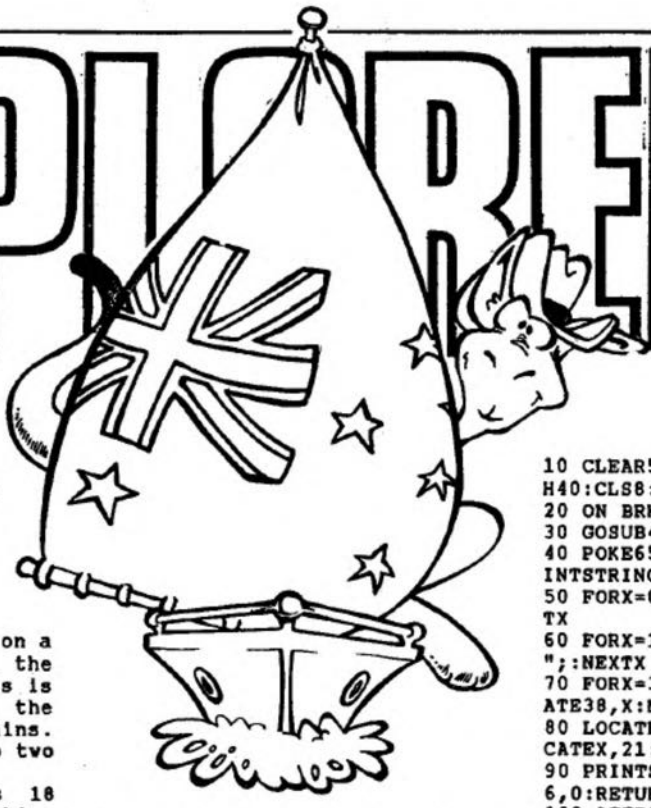
Even more stranger - any line after being EDITed would work, even though the line itself wasn't changed!

The only answer to the problem was to save the entire program in ASCII (ie, adding the ,A option on the end of the SAVE or CSAVE command), which would filter out all unseen bugs.

This works, and any program which was previously held in the clutches of gremlins would be bug-free!



EXPLORERS



by BOB HORNE

CoCo 3, DISK, PRINTER
EDUCATIONAL

I HAVE BEEN working on a reference disk for the past 12 months and this is a sample ONLY of what the original disk contains. Actually, it has grown to two disks.

My original disk has 18 coastal explorers. I am working on one at the moment on land exploreres and have completed 6 of these. Because this submissions is a sample, I have combined two from each disk to give you an idea.

This program will be split in three parts - part one this month will be option one on the main menu - "Coastal exploreres".

Options two and three will appear in September and October respectively, so don't fear if you get an error.

The Listing:

```
1 REM************START**********
2 GOTO10
3 SAVE"200":SAVE"200:2":END'EDU
10 CLS:WIDTH40
20 ONBRK GOTO60
30 CLS5:ATTR2,4:LOCATE7,5:PRINT"
COASTAL AND LAND EXPLORERS":LOCA
TE19,7:PRINT"OF":LOCATE15,9:PRIN
T"AUSTRALIA":LOCATE12,16:PRINT"C
OPYRIGHT  1988"
40 LOCATE19,18:PRINT"BY":LOCATE1
5,20:PRINT"BOB  HORNE"
50 FORX=1TO2000:NEXTX:RUN"MENU
60 CLS5:ATTR2,4:RUN
```

The Listing:

```
1 REM************MENU***********
2 GOTO10
3 SAVE"200A":SAVE"200A:2":END'AP
P
10 CLS:WIDTH40
20 ONBRK GOTO210
30 CLS5:ATTR2,4:LOCATE6,3:PRINT"
Which would you like :-";
40 LOCATE6,7:PRINT"1 - Coastal e
xplorers";:LOCATE6,9:PRINT"2 - L
and explorers";:LOCATE6,11:PRINT
"3 - Brief facts";:LOCATE6,14:PR
INT"Please press 1, 2 or 3";:IN$
=INKEY$
50 IN$=INKEY$:IF IN$="" THEN50
60 IF IN$<"1" OR IN$>"3" THEN50
70 CLS5:ATTR3,2:ON VAL(IN$) GOTO
80,140,200
80 ATTR2,4:LOCATE6,3:PRINT"Which
 would you like:":LOCATE6,5:PRIN
T"1 - Houtman.":LOCATE6,7:PRINT"
2 - Tasman."
90 LOCATE5,10:PRINT"Please type
a number 1 or 2";:LOCATE5,11:INP
UT"and press <ENTER> ";A$:A=VAL(
A$)
100 IF A<1 OR A>2 THENCLS5:GOTO8
0
110 ON A GOTO120,130
120 RUN"HOUTMAN
130 RUN"TASMAN
140 ATTR2,4:LOCATE6,3:PRINT"Whic
h would you like:"
150 LOCATE6,5:PRINT"1 - Across t
he Blue Mountains.":LOCATE6,7:PR
INT"2 - Cunningham.":LOCATE5,10:
PRINT"Please type a number 1 or
2":LOCATE5,11:INPUT"and press <E
NTER> ";A$:A=VAL(A$)
160 IF A<1 OR A>2 THENCLS5:GOTO1
50
170 ON A GOTO180,190
180 RUN"BLUE MTS
190 RUN"CHAM
200 RUN"FACTS
210 CLS5:ATTR2,4:RUN
```

The Listing:

```
1 REM*********HOUTMAN***********
2 GOTO10
3 SAVE"200B":SAVE"200B:2":END'ED
U
10 CLEAR500:CLS:PALETTE CMP:WIDT
H40:CLS8:ATTR2,4
20 ON BRK GOTO890
30 GOSUB40:GOTO100
40 POKE65497,0:CLS4:ATTR2,4,U:PR
INTSTRING$(41,32);
50 FORX=0TO38STEP2:LOCATEX,1:NEX
TX
60 FORX=1TO21:LOCATE39,X:PRINT"
";:NEXTX
70 FORX=3TO21STEP2:LOCATE1,X:LOC
ATE38,X:NEXTX
80 LOCATE1,21:FORX=0TO38STEP2:LO
CATEX,21:NEXTX
90 PRINTSTRING$(41,32);:POKE6549
6,0:RETURN
100 ATTR2,4:FORX=11TO13:LOCATE9,
X:PRINTSTRING$(18,32);:NEXTX:LOC
ATE9,12:PRINT" Frederik Houtman.
";:LOCATE0,22:FORX=1TO2000:NEXTX
110 L=39:D=0:RESTORE:PALETTE1,54
:CLS2:ATTR0,1:FORX=1TO3:READA$:G
OSUB600:PRINT:NEXTX:GOSUB500
130 CLS2:FORX=1TO3:READA$:GOSUB6
00:PRINT:NEXTX:GOSUB500
140 CLS2:FORX=1TO3:READA$:GOSUB6
00:PRINT:NEXTX:GOSUB550
200 GOSUB40:ATTR2,4:FORX=7TO15:L
OCATE4,X:PRINTSTRING$(31,32);:NE
XTX
210 LOCATE5,8:PRINT"Press <SPACE
BAR> for the map.";:LOCATE5,10:P
RINT"Press <A> to see again.";:L
OCATE5,12:PRINT"Press <M> to ret
urn to menu.";:LOCATE5,14:PRINT"
Press <P> to print to printer.";
:LOCATE0,22:IN$=INKEY$
220 IN$=INKEY$:IF IN$="" THEN220
230 IF IN$=CHR$(32) THENGOSUB300
:GOTO200
240 IF IN$="A" THEN110
250 IF IN$="M" THEN RUN"MENU"
260 IF IN$="P" THENGOSUB700:GOTO
200
270 GOTO220
300 IF FL=1 THEN POKE59078,18:PO
KE59079,18:HSCREEN2:GOTO370 ELSE
FL=1:HSCREEN2:HCLS:PALETTE1,0
310 HDRAW"C1S12BM155,0GLG3DGU4GD
GDFD3GD3FD2DF2GH2UHDFDF4D3F3S4BL
9DUBR9":HDRAW"S12DFDFD3FDFDF2D3F
GUDFD2GLD3R2F2R7E3RE3R3ER3FER4E2
U2ERERERER6ER2ER
320 HPAINT(10,10),5,1
330 HCOLOR8:HPRINT(0,0),"FREDERI
K HOUTMAN"
340 HCOLOR2:HPRINT(3,6),"Dirk Ha
rtog I.":HPRINT(9,11),"Houtmans"
:HPRINT(9,12),"Abrolohos":HPRINT
(22,16),"Fremantle"
350 PALETTE7,38:HDRAW"S4C7BM118,
155R10NG4NH4M+40,-5U18H8M-5,-10U
8H10U10M-20,-5
360 HCOLOR4:HLINE(60,181)-(262,1
91),PSET,BF:HCOLOR5:HLINE(60,181
)-(262,191),PSET,B
370 HCOLOR6:HPRINT(8,23),"PRESS
<ENTER> WHEN READY.":IN$=INKEY$
```

The Listing:-

```
1 REM*********TASMAN***********
2 GOTO10
3 SAVE"200C":SAVE"200C:2":END'ED
U
10 CLEAR500:CLS:PALETTE CMP:WIDT
H40:CLS8:ATTR2,4
20 ON BRK GOTO890
30 GOSUB40:GOTO100
40 POKE65497,0:CLS8:ATTR2,4,U:PR
INTSTRING$(41,32);
50 FORX=0TO38STEP2:LOCATEX,1:NEX
TX
60 FORX=1TO21:LOCATE39,X:PRINT"
";:NEXTX
70 FORX=3TO21STEP2:LOCATE1,X:LOC
ATE38,X:NEXTX
80 LOCATE1,21:FORX=0TO38STEP2:LO
CATEX,21:NEXTX
90 PRINTSTRING$(41,32);:POKE6549
6,0:RETURN
100 ATTR2,4:FORX=10TO14:LOCATE9,
X:PRINTSTRING$(20,32);:NEXTX:LOC
ATE9,12:PRINT" Abel Jansen Tasma
n.";:LOCATE0,22:FORX=1TO2000:NEX
TX
110 L=39:D=0:RESTORE:PALETTE1,54
:CLS2:ATTR0,1:FORX=1TO3:READA$:G
OSUB600:PRINT:NEXTX:GOSUB500
120 CLS2:FORX=1TO3:READA$:GOSUB6
00:PRINT:NEXTX:GOSUB500
130 CLS2:FORX=1TO3:READA$:GOSUB6
00:PRINT:NEXTX:GOSUB550
200 GOSUB40:ATTR2,4:FORX=7TO15:L
OCATE4,X:PRINTSTRING$(31,32);:NE
XTX
210 LOCATE5,8:PRINT"Press <SPACE
BAR> for the map.";:LOCATE5,10:P
RINT"Press <A> to see again.";:L
OCATE5,12:PRINT"Press <M> to ret
urn to menu.";:LOCATE5,14:PRINT"
Press <P> to print to printer.";
:LOCATE0,22:IN$=INKEY$
220 IN$=INKEY$:IF IN$="" THEN220
230 IF IN$=CHR$(32) THENGOSUB300
:GOTO200
240 IF IN$="A" THEN110
250 IF IN$="M" THEN RUN"MENU"
260 IF IN$="P" THENGOSUB700:GOTO
200
270 GOTO220
300 IF FL=1 THENPOKE59078,18:POK
E59079,18:HSCREEN2:GOTO440 ELSE
FL=1:HSCREEN2:HCLS:PALETTE1,0
310 HDRAW"S8C1BM194,35FR2BURBGDF
R3EUEU3EU5EHEU2EFDFDFD3FEF2D3FRD
3RD3RF3RFGF2D2FURFD2FDRF2DFD2UFD
GD2BRBU7D2BD5BLFU2D3"
320 HDRAW"D2GD2GD3GDG4DGD2G2DGD2
"
330 HDRAW"D2GL4G2L2HUHG3H2L2HL2H
2U3HLBGL3ERFBEEUH2D2GLEU2EU3HD2G
DG2D2H2UH3UHL3HL3GL3
340 HDRAW"GL2GL2GLGLGD2G2L6GLGDL
DGL3HL2HUREUHU2H2'JH2U2HUH2UH4UDF
3EH2F2U2H3U3UHU2ED2RU2E2RE3GR2E2
RER2E3UE2UGU3E2DF2URUHUR2U2EFHER
HERURERF3GRER
350 HDRAW"RFU2H2EURHE2DURURFREUH
LBLL3GR3EBRREDRFR2FRFERE3G4REGR2
HRFGDLGDRBRRDLUBLG2DFRFREFRF
360 HDRAW"BM223,162DBR9DBD3D2GD2
ULDGL2UH2EHU2R2FR4
370 HPAINT(10,10),5,1
380 HCOLOR8:HPRINT(0,0),"ABEL TA
SMAN":HPRINT(27,0),"SECOND VOYAG
E":HPRINT(29,1),"1644"
390 HPRINT(6,23),"FIRST VOYAGE 1
642.":HCOLOR2:HPRINT(28,19),"VAN
":HPRINT(26,20),"DIEMEN'S":HPRIN
T(28,21),"LAND"
400 HPRINT(27,2),"Cape York":HPR
INT(27,3),"Peninsula":HPRINT(1,9
),"N.W.Cape"
410 HDRAW"S4C7BM187,185M206,180R
10NH3NG3R10F4F2R3E3RE3UR20
420 HDRAW"BM213,0D5NE3NH3D5GD15G
2D5G2D2GL2U3H2L3G2H5L4GL5H3UE3U2
LURE5U2H2LE4U2L5G5L4H3L4H2L6G2ND
2HL8G3D2F3G4
430 HDRAW"D3G2D2F2L2H6L4G3LG3LGD
3G5D2L3G2LG3LG2D9GD2G5L3GLGLGLG3
L4G4LG5L2G3D3L3M20,30
440 HCOLOR4:HPRINT(9,11),"PRESS
<ENTER> WHEN READY.":IN$=INKEY$
450 IN$=INKEY$:IF IN$="" THEN A=
A+1
460 IF A=20 THEN A=0:PALETTE7,63
:FORX=1TO10:NEXTX:PALETTE7,38
470 IF IN$=CHR$(13) THEN PALETTE
7,38:WIDTH40:RETURN
480 GOTO450
500 PRINT:PRINT"Press <ENTER> fo
r more.";:LOCATE0,23:IN$=INKEY$
510 IN$=INKEY$:IF IN$<>CHR$(13)
THEN510 ELSE RETURN
550 PRINT:PRINT"Press <ENTER> to
 continue.";:LOCATE0,23:IN$=INKE
Y$
560 IN$=INKEY$:IF IN$<>CHR$(13)
THEN560 ELSE RETURN
600 IF LEN(A$)<=L THEN B$=A$:GOS
UB640:RETURN
610 FORT=L TO1STEP-1:IF MID$(A$,
T,1)=" " THEN630
620 NEXTT
630 B$=LEFT$(A$,T):GOSUB640:A$=R
IGHT$(A$,LEN(A$)-T):GOTO600
640 PRINT#D,B$:RETURN
700 D=-2:RESTORE:CLS3:ATTR3,2:PR
INT"TURN PRINTER ON AND SET PAPE
R.":PRINT:PRINT"PRESS <ENTER> WH
EN READY.":IN$=INKEY$
710 GOSUB450:PRINT#D,"ABEL JANSE
N TASMAN":PRINT#D:FORX=1TO9:READ
A$:GOSUB600:NEXTX:D=0:RETURN
800 DATA"  In August,1642, Abel
 Jansen Tasman was sent by the G
overnor General of the Dutch Eas
t Indies to discover new lands f
or the purpose of trade and to f
ind a way from the East Indies t
o South America."
810 DATA"  He was in charge of t
wo ships, the HEEMSKIRK and the
ZEEHAEN. He first visited Maurit
ius and then sailed South of New
 Holland. In November, he reache
d the West coast of Tasmania."
820 DATA"  He explored the Sout
h and East coasts of Tasmania as
 far as Storm Bay. A party was s
ent ashore for wood and water. A
lthough they heard voices, they
did not see any natives. Animal
tracks like those of a tiger ver
e seen."
830 DATA"  Several large trees
had steps in them a little less
than 2 metres apart. Tasman dedu
380 IN$=INKEY$:IF IN$="" THEN A=
A+1
390 IF A=20 THEN A=0:PALETTE7,63
:FORX=1TO10:NEXTX:PALETTE7,38
400 IF INKEY$=CHR$(13) THEN WIDT
H40:PALETTE7,38:RETURN
410 GOTO380
500 PRINT:PRINT"Press <ENTER> fo
r more.";:LOCATE0,23:IN$=INKEY$
510 IN$=INKEY$:IF IN$<>CHR$(13)
THEN510 ELSE RETURN
550 PRINT:PRINT"Press <ENTER> to
 continue.";:LOCATE0,23:IN$=INKE
Y$
560 IN$=INKEY$:IF IN$<>CHR$(13)
THEN560 ELSE RETURN
600 IF LEN(A$)<=L THEN B$=A$:GOS
UB640:RETURN
610 FORT=L TO1STEP-1:IF MID$(A$,
T,1)=" " THEN630
620 NEXTT
630 B$=LEFT$(A$,T):GOSUB640:A$=R
IGHT$(A$,LEN(A$)-T):GOTO600
640 PRINT#D,B$:RETURN
700 D=-2:RESTORE:CLS3:ATTR3,2:PR
INT"TURN PRINTER ON AND SET PAPE
R.":PRINT:PRINT"PRESS <ENTER> WH
EN READY.":IN$=INKEY$
710 GOSUB380:PRINT#-2,"FREDERIK
HOUTMAN":PRINT#-2:FORX=1TO9:READ
A$:GOSUB600:NEXTX:D=0:RETURN
800 DATA"  Houtmans Abrolohos i
s a group of islands and reefs 7
0km West of Geraldton, Western A
ustralia. The island group was d
iscovered by Frederik de Houtman
, in 1619."
810 DATA"  The ships DORDRECHT
and AMSTERDAM, in charge of Hout
man, set sail from the Cape of G
ood Hope. In less than six weeks
 they sailed more than 6000km an
d anchored off the coast a littl
e South of the present site of F
remantle on 19 July."
820 DATA"  They were unable to
land because of rough seas. By 2
3 July, a fierce gale had blown
up and both ships lost their anc
hors and they set out to sea aga
in."
830 DATA"  They set a course No
rthwards and on 29 July, just be
fore dawn, they sighted low land
 and broken water which warned o
f reefs."
840 DATA"  Houtman in his journ
al warned that anyone following
the coast would be in danger fro
m the reefs."
850 DATA"  The group of islands
 and reefs became known as Houtm
ans Abrolohos. This is a Portugu
ese word which means LOOKOUT or
KEEP YOUR EYES OPEN."
860 DATA"  The islands were the
 site of the first known murder
by Europeans in Australia. In 16
29, the Batavia, a Dutch ship ca
rrying valuable cargo, was wreck
ed on one of the islands."
870 DATA"  Francois Pelsart, co
mmander of the ship, took a smal
l boat North for help. During hi
s absence, some of the crew muti
nied and killed more than 100 pa
ssengers."
880 DATA"  Another Dutch ship c
arrying treasure, the ZEEWYK, wa
s wrecked on the Abrolohos in 17
27. Its crew built a sloop from
the wreckage and continued their
 voyage to Batavia, now Jakarta.
"
890 PALETTE1,54:REM***RUN
```

Continued on P.59

SCREEN DUMP

by GEORGE McLINTOCK

UTILITY

THIS IS A screen dump for the PMODE 4 screen and a Tandy printer. While a number of these have appeared in the past, this one has some features which I haven't noticed in other dumps.

It includes some routines which I developed a few years ago, and have now put together in a single program, together with some new ones.

It was put together for someone who wanted a screen dump for a DMP-130, and I decided to submit it to the magazine because it might be useful for other users.

It can be easily changed to suit any Tandy compatable printer, and can also be modified to suit an Epson type compatable printer, or any other printer which does 8 dots of graphics at a time.

The routines were developed originally for the old Dick Smith System 80 printer, and are based on dumps which are limited to 480 dots across the page (ie 80 columns by 6 dots per character).

Newer printers provide an option for more dot positions across the page and some of the options included here could be done differently for these printers.

However, as most of the layout options are coded in Basic, it would be fairly easy to change the program to utilize some of the features available with these newer printers if desired.

Options available include:

- A border around the dump
- Single or double size dumps
- Position the dump anywhere across the page
- Produce a mirror image of the screen
- Combine two pictures into a single dump
- Invert the screen
- Can be converted to Epson type compatable printers and similar

The main feature of the program is that the actual layout and printing of the dump is coded in Basic, so it is quite easy to change it to suit any Tandy compatable printer, or to vary the layout procedure.

ML routines are used to extract the pixils from the screen and create a normal Basic string for the bit patterns to be printed. These strings can then be modified as required by the Basic program before they are printed.

Other ML routines are used for some functions which are very slow if coded in Basic. In general, the program will keep up with most printers, and the dumps operate at a reasonable speed.

PRINTER GRAPHICS

All Tandy printers have a common procedure for printing normal graphics, which is a column of seven dots at a time down the page for each dot position across the page.

If the printer prints in the last dot position across the page, then the printer does an automatic carriage return for the next line. If the print head does not move to the last dot position, then a carriage return (CHR$(13)) is required to start the next line.

For Tandy printers, all characters to be printed in graphic mode must be greater than 127, ie the high order bit for each character must be on.

It is this requirement which limits graphics to seven dots per column compared with eight dots for some other printer types. This has its own advantages in that it is not necessary to tell the printer how many characters to print in graphic mode, and control codes are recognised at any time.

The only real difference between Tandy printers for graphics printing is the control codes required to start and end graphics mode. The older Tandy printers used CHR$(8) to start and CHR$(15) to end graphics.

The DMP 105,130 and some others use CHR$(18) to start and CHR$(30) to end graphics.

The control characters used to start and end graphics printing in this program are in Line 380 (to start), and Line 350 (to end). As submitted, the program is set for the DMP 105 and similar and may have to be changed to suit different printers.

The equivalent codes for some other printers are included elsewhere in this issue. However, it should be noted that the Epson compatible and other type printers print eight column dots at a time and require more changes to the program to be able to use these routines.

CHANGES FOR EPSON TYPE PRINTERS

These routines can be changed fairly easily to suit Epson type compatable printers. This can be done by pokes to the ML routine so that it will perform the same functions with 8 dots per byte, and some changes to the Basic program.

The pokes required are as follows, where M equals the start of the ML routine:

```
POKE M+&H35,8
POKE M+&H60,32
POKE M+&H61,13
POKE M+&H7F,16
POKE M+&HD6,18
POKE M+&HD7,18
POKE M+&HEF,&H46
POKE M+&HF0,&H56
POKE M+&HF1,&H57
```

These pokes will change the ML routine to extract 8 pixils per byte to be printed, with the top dot in the column corresponding to the low order bit in the byte.

While this might suit some printers, the Epson requires the top dot in the column to correspond to the high order bit in the byte, not the low order.

To reverse this, there is a ML routine included (at M+&H121), which will rotate the bits as extracted to suit an Epson printer, ie the top dot as the high order bit in each character, with the rest of the dots in the column organised in the correct sequence.

This routine should only be called for a printer which prints 8 dots at a time, and requires the top dot to be the high order bit in the character to be printed.

The pokes also change the double size routine to work with 8 bits per character.

In addition to these pokes, you need to make the following changes to the Basic program:

: Change the PRINT#-2 commands to suit, ie include the number of characters to print, and any other special codes required before sending the actual bit patterns to be printed. These lines are at 680, 690, 1100 and 1640.

: Change the number of loops performed for each dump, from the 28 required for 7 bits per line to 24 as required for 8 bits per line. These changes are to the FOR .. NEXT loops in lines 580, 970, 1200 and 1480 and alter the IF test in lines 670 and 1680 (for the bottom border).

: Delete the calls to USR3 in lines 670, 1070, 1220 and 1680. These calls adjust for the lesser number of bits in the last row for Tandy printers.

: For printers with the top dot in the low order bit, change the code which forms the bottom border. This is done by replacing line 720 with ...

```
IF B=1 THEN C=128 ELSE IF B=2
THEN C=192 ELSE C=124
```

: For Epsons and others with the top dot in the high order bit, reverse lines 720 and 750.

These lines set the mask required for the top and bottom borders.

They have to suit the printer. Also for Epson type printers, add EXEC RX to the end of the lines which extract the bits from the screen (but before the comments and IF statements.

This command will reverse the pixels. RX is defined in the program now. These lines are 560, 590, 950, 980, 1180 and 1210.

: If the printer does not perform an automatic carriage return after printing in the last dot position, then renove the ";" at the end of lines 1100 and 1640.

Or, add whatever codes are required to get a line feed.

These modifications have been tested on an 8 dot printer with the top dot as the high order bit, which confirms that the bit patterns come out OK. These printers can vary substantially in the other aspects of printing graphics, so you have to get these from your own manual.

CHANGES FOR A CASSETTE SYSTEM

The ML routines here use the actual addresses for the graphic screen for disk Basic, with default FILES. To change for a non-disk system:

```
POKE M+0,32
POKE M+2,6
POKE M+4,30
```

Cassette systems can have only one serial file open at a time. To combine two pictures together, you have to change the input/output operations to suit a serial file, and modifify the logic for the combined dump to suit a single file open.

For Tandy printers, the Basic strings to be printed can be input/output to serial files without any problems. (All characters are greater than 127.)

However, for Epson type printers, you are likely to have problems because the bit patterns in the strings can be the same as Basic delimeters, and there is no easy way to get around this one, except to convert each byte to an ASCII number for output and back again on input.

The easy way to combine strings with a cassette system is to have the first picture on a tape file, and take the second picture from the screen.

To do this, delete lines 1170, 1310 and 1470 and replace the following lines with ...

```
1160 OPEN "O",#-1,N$
1190 PRINT #-1,A$(0):PRINT#-1,A$
(1)
1230 PRINT#-1,A$(0): PRINT #-1,A
$(1)
1460 OPEN "I",#-1,N$

1490 Replace the GET#1,X with
LINE INPUT #-1,AA$

1500 Replace the GET#1,X+1 with
LINE INPUT #-1,AA$

1525 IF X=1 THEN A$(0)=USR1(A$(0
)) ELSE A$(0)=USR2(A$(0))

1530 Delete the GET#2,X and
replace the BB$ in the MID$
statement with A$(0)

1540 Delete the GET#2,X+1 and
replace the BB$ in the LEFT$
statement with A$(1)
```

You should also change the message in 1290 and 1420 to reflect these changes, and add a reminder to check tape recorder ready.

OPERATIONS PERFORMED

The actual screen dump is performed as a number of separate independent operations, and it is this breakdown into steps which allows the various options to be implemented.

The first operation is to extract the pixels from the graphic screen and convert them to Basic strings containing the patterns required for printing.

Once these strings have been extracted, they can be manipulated as normal Basic strings, ie saved to disk or tape, split up and recombined in different ways and modified by other commands, eg to add the border etc.

The disk operations here put the strings into direct access files, so that it will suit an Epson type printer as well without changing.

The direct access files are written with a length of 256 bytes, but read back with a length of 128. This sort of operation can be done with direct access files provided the logic of the program is structured to suit. The read back is limited to 128 bytes, so that two files can be open at the same time without using a FILES command (which would move the graphic screen).

Inputting the files in this way does not cause any additional disk access operations. With a file length of 128, each physical disk access will read in 256 bytes, and the second GET from each file simply moves the next record from the disk read in buffer to the actual file buffer.

EXTRACTION OF PIXELS FROM GRAPHIC SCREEN

The Pmode 4 graphic screen is 256 bytes wide, and requires 256 bytes to hold the characters to be printed for each line across the page. This is too large for a single Basic string, so they are held in two separate strings (each of 128 bytes) which are adjoining elements of an array, eg A$(0) and A$(1).

The first element (A$(0)) holds the characters which represent the left hand side of the screen, and the second element (A$(1)) holds the right hand side of the screen.

The routine is executed as a USR call, with the first array element as the parameter, eg A$(0)=USR2(A$(0)).

To avoid problems with manipulating string data in normal string space, the actual data for these strings are returned in page 5 of the graphic screen. The program uses PCLEAR 5, with the fifth page used for the storage of string data.

The first call to the routine uses a different entry point as it sets the routine to the start of the graphic screen, while subsequent calls update these pointers. The first call is to USR1 while subsequent calls are to USR2.

DOUBLE SIZE DUMPS

For the double size dump, each pixel on the screen is expanded to 4 dots on the paper (twice the width and twice the dept).

However, normal printers have 480 dots across the page, so the full width of the screen cannot be doubled (full double width would require 512 dots across the page).

Hence, the double size dump is based on selecting 240 bytes from the 256 extracted, and doubling the size of these 240 bytes only. The 240 bytes selected are moved to a separate string before calling this routine.

Doubling the size will produce 4 new strings, each 240 bytes long. The total of 5 strings required are set up as an array eg DIM B$(4), where B$(0) is the source string to be expanded and B$(1) to B$(4) contain the new strings created. Of the result strings ...

B$(1) contains the top half of the line for the left hand side of the screen
B$(2) contains the top half of the line for the right hand side of the screen
B$(3) contains the bottom half of the line for the left hand side
B$(4) contains the bottom half of the line for the right hand side

The calling sequence for this routine is B$(0)=USR4(B$(0)).

The data in the new strings created are held in the fifth graphic screen (above the A$() strings) while the source string is held in normal string space.

This routine is coded so that it is not restricted to a string of 240 bytes, and will expand any sized string according to the procedure outlined above.

CREATE MIRROR IMAGE

These dumps are based on extracting pixels from across the screen only, so a mirror image is not normally created.

However, you may at times wish to create a mirror image of the screen and this routine produces one.

The routine is entered by an EXEC command and simply reverses the pixels as extracted from each row of the screen, ie it exchanges byte 1 with byte 256, byte 2 with 255 etc to byte 128 with 129. This is one way of reversing an unwanted mirror image effect created during some dumps, and is used here to produce the effect when required.

This routine is specific to the extract routine used here and operates on the data strings for A$() as they exist in the fifth graphic page. As written, it cannot be used to produce a mirror image for a normal string.

CLEAR UNWANTED PIXILS

Seven bits per line of print does not produce a whole number when extracting 192 lines of pixels. The last row extracted will have only 3 rows of valid dots, with the bottom 4 rows being garbage. This routine simply blanks out the bottom 4 rows to leave the three top rows only.

It is executed with a USR call, and operates on a single string only. Hence it must be called twice to do both A$(0) and A$(1).

While it may appear more logical to perform this operation as a single call to do the complete line of print (as for the mirror image one), this extract routine was developed initially for a different program using a different procedure in the Basic program, and it hasn't seemed necessary to recode it.

REVERSE PIXILS

This is a small routine included to allow the dump to be converted for an Epson type printer. It rotates the characters extracted so that bit 0 is exchanged with bit 7, bit 1 with 6, bit 2 with 5 and bit 3 with 4.

It changes the pattern so that the top dot in each column to be printed corresponds to the high order bit in the character to be printed.

INVERT SCREEN

This routine simply inverts the graphic screen, ie if a pixel is on, it turns it off and if a pixel is off then it turns it on.

Pictures on the graphic screen can be drawn with the background color pixels being either on or off. If the background color is pixels on, then the paper dump will be mainly black with the actual picture being paper color.

If you don't want this, then you can invert the screen to produce a normal black picture on the paper.

Alternatively, of course, you may wish to produce a dump where the picture is paper color with a black background. If so, then you can invert a normal screen to produce this effect.

If you like a black background, then with some non-Tandy printers you may have to allow the print head time to cool down between successive dumps. For some printers, continuous operations doing dumps with a black background can be bad for print head life.

All Tandy type printers that I have seen working protect the print head from over heating by regular pauses during the dump.

While this might slow the dump down a bit, it does protect the head. Even so, for any printer, a single double size dump should be reasonable, if you allow it to cool down before doing the next one.

If you want to be cautious with a non Tandy printer, you can add appropriate pauses at regular intervals in the FOR .. NEXT loops which actually prints the dumps.

BORDER AROUND THE DUMP

The border around a dump is put there by the Basic program after the strings are extracted from the screen. It is created quite simply, by ensuring that all dots around the edge of the picture to be printed are on.

This is done by OR'ing an appropriate mask into the bytes which form the edges of the picture.

This means that the border is formed inside the picture, rather then by adding extra dots to the outside of the picture.

For the double size dump, the border is added before the dots are expanded, so that the border size is also doubled, ie the border can only be 2,4 or 6 dots wide.

The limit of 3 dots for the border size is there to simplify the coding for the bottom border. The last line extracted for a Tandy printer is only 3 dots high so this becomes the limit.

As these functions are coded in Basic, you can alter these aspects fairly easily if you don't like the way they are implemented here.

SET UP OF ML ROUTINES

The ML routines with this program are set up to be included at the end of the Basic program so that they form part of the Basic program itself.

This is a procedure I use regularly and have described in more detail in earlier submissions.

If you type the program in, then the first time you run it, the ML routines will be installed and you get a message to say that you can (C)SAVE it for later use.

If you (C)SAVE it again, after installing the ML routines, then the ML routines will always load as part of the Basic program, even though you cannot see that they are there.

You can still EDIT the program normally and RENUM it etc without damaging the ML routine.

It will still be there when you (C)SAVE the modified version.

The only operation which will remove the ML routine is to (C)SAVE it in ASCII (ie with ',A' after the SAVE), and then reload the ASCII version.

ML routines set up in this way must be relocatable, so you can always move them to another part of memory if you wish.

The Listing:

```
1 '** SCREEN DUMP FOR PMODE 4
      BY GEORGE MCLINTOCK
2 GOTO 10
3 SAVE"205:1":SAVE"205:3":END'UT
L
4 '
5 'SCREEN DUMP FOR PMODE 4 SCREE
N AND TANDY PRINTERS
6 'WITH OPTIONS FOR BORDERS, MIR
ROR IMAGE, 2 PICTURES TOGETHER,
AND DOUBLE SIZE
7 'CAN BE CONVERTED TO EPSON PRI
NTERS - SEE ARTICLE
10 'CALLED SCNDUMP - VERS 2
20 GOTO 1710
30 PRINT:PRINT "ENTER CHOICE ";
40 A$ = INKEY$: IF A$="" THEN 40
50 PRINT A$: RETURN
60 PCLEAR 5: PMODE 4,1: CLEAR 80
00
70 DIM A$(1),B$(4),A$,B$,X,Y,W,B
80 M = PEEK(27)*256+PEEK(28) - 3
19
90 DEFUSR1 = M + &H12 'EXTRACT F
IRST LINE
100 DEFUSR2 = M + &H1B 'EXTRACT
REST LINES
110 DEFUSR3 = M + &H8F 'BLANK LA
ST LINE
120 DEFUSR4 = M + &HA2 'EXPAND P
RINT LINE
130 IX = M + &H106 'MIRROR IMAGE
140 IV = M + &HFB 'INVERT SCREEN
145 RX = M+&H121 'REVERSE PIXIL
DOTS
150 CLS: PRINT "SCREEN DUMP FOR
PMODE 4"
160 PRINT "BY GEORGE MCLINTOCK"
170 PRINT:PRINT "1 SCREEN TO PRI
NTER"
180 PRINT "2 SCREEN TO DISK"
190 PRINT "3 DISK TO PRINTER"
200 PRINT "4 INVERT SCREEN"
210 PRINT "5 LOADM GRAPHIC SCREE
N"
220 PRINT "6 DISPLAY PICTURE"
230 PRINT "7 EXIT PROGRAM"
240 GOSUB 30
250 A=VAL(A$): IF A<1 OR A>7 THE
N PRINT "INVALID":GOTO 170
260 ON A GOTO 430,1140,1290,270,
310,280,350
270 EXEC IV:GOTO 150 'INVERT SCR
EEN
280 PRINT "PRESS ENTER TO DISPLA
Y PICTURE  IN GRAPHIC SCREEN":PR
INT "THEN PRESS ANY KEY TO RETUR
N TO THE MENU"
290 GOSUB 40:SCREEN 1,1:GOSUB 40
300 GOTO 150
310 PRINT:PRINT "ENTER FILE NAME
 TO LOAD":PRINT "INCLUDING THE E
XTENSION"
320 PRINT "EG PICTURE.BIN  IF SA
VED WITH   SAVEM"
330 LINE INPUT N$
340 LOADM N$:GOTO 150
350 PRINT#-2,CHR$(30) 'PRINTER T
O NORMAL
360 STOP
370 A=PEEK(&HFF22): IF (A AND 1)
 <> 0 THEN PRINT "SWITCH PRINTER
 ON":PRINT "AND PRESS ENTER":INP
UT A$:GOTO 370
380 PRINT#-2,CHR$(18) 'SET GRAPH
IC MODE
390 RETURN
400 PRINT:PRINT "Y TO PRODUCE MI
RROR IMMAGE":PRINT "OR ENTER FOR
 NORMAL DUMP"
410 GOSUB 40:IF A$="Y" THEN XM=2
 ELSE XM=0
420 RETURN
430 PRINT:PRINT "ENTER SIZE OF B
ORDER (0-3) ";
440 GOSUB 40
450 B = VAL(A$): IF B > 3 THEN P
RINT "TOO LARGE":GOTO 430
460 GOSUB 400
470 PRINT:PRINT "ENTER SIZE (1-2
) ";
480 GOSUB 40
490 IF A$ = "2" THEN 900
500 PRINT:PRINT "PRESS ENTER FOR
 CENTRE OF PAGE"
510 INPUT "OR ENTER SIZE OF LEFT
 MARGIN";A$
520 IF A$="" THEN LM = 112 ELSE
LM=VAL(A$)
530 IF LM <0 OR LM > 223 THEN PR
INT "TOO LARGE":GOTO 500
540 'DO SINGLE SIZE DUMP
550 GOSUB 370:SCREEN 1,1
560 A$(0)=USR1(A$(0)) 'FIRST LIN
E
570 X=1:GOSUB 640
580 FOR X=2 TO 28
590 A$(0)=USR2(A$(0)) 'NEXT LINE
600 GOSUB 640
610 NEXT X
620 GOTO 150
630 '
640 IF XM <> 0 THEN EXEC IX
650 GOSUB 830 'SIDE BORDERS
660 IF X=1 THEN GOSUB 740 'TOP B
ORDER
670 IF X=28 THEN GOSUB 710:A$(0)
=USR3(A$(0)):A$(1)=USR3(A$(1)) '
LAST LINE
680 IF LM > 0 THEN PRINT#-2,STRI
NG$(LM,128); 'LEFT MARGIN
690 PRINT #-2,A$(0);A$(1)
700 RETURN
710 IF B=0 THEN RETURN
720 IF B=1 THEN C=4 ELSE IF B=2
THEN C=6 ELSE C=7
730 GOTO 760
740 IF B=0 THEN RETURN
750 IF B=1 THEN C=1 ELSE IF B=2
THEN C=3 ELSE C=7
760 FOR Y=1 TO LEN(A$(0))
770 D=ASC(MID$(A$(0),Y,1)): MID$
(A$(0),Y) = CHR$(D OR C)
780 NEXT Y
790 FOR Y = 1 TO LEN(A$(1))
800 D=ASC(MID$(A$(1),Y,1)): MID$
(A$(1),Y) = CHR$(D OR C)
810 NEXT Y
820 RETURN
830 IF B=0 THEN RETURN
840 FOR Y = 1 TO B
850 MID$(A$(0),Y) = CHR$(255)
860 MID$(A$(1),LEN(A$(1))-Y+1) =
 CHR$(255)
870 NEXT Y
880 RETURN
890 'DOUBLE SIZE DUMP
900 PRINT:PRINT "NORMAL DUMP EXC
LUDES 8 PIXILS   FROM EACH SIDE
OF SCREEN"
910 PRINT "PRESS ENTER IF THIS O
K":PRINT "OR ENTER SIZE TO EXCLU
DE FROM   LEFT SIDE OF SCREEN (0
-16)":INPUT A$
920 IF A$="" THEN L=8:R=8 ELSE L
=VAL(A$):R=16-L
930 IF L<0 OR L>16 THEN PRINT "I
NVALID":GOTO 900
940 GOSUB 370:SCREEN 1,1
950 A$(0)=USR1(A$(0)) 'FIRST LIN
E
960 X=1:GOSUB 1030
970 FOR X=2 TO 28
980 A$(0)=USR2(A$(0))
990 GOSUB 1030
1000 NEXT X
1010 GOTO 150
1020 'SETUP & PRINT DOUBLE SIZE
DO BORDERS BEFORE EXPAND
1030 IF XM <> 0 THEN EXEC IX 'MI
RROR IMAGE
1040 A$(0)=MID$(A$(0),L+1): A$(1
)=LEFT$(A$(1),LEN(A$(1))-R) 'TO
PRINT
1050 GOSUB 830 'SIDE BORDER
1060 IF X=1 THEN GOSUB 740 'TOP
1070 IF X=28 THEN GOSUB 710: A$(
0)=USR3(A$(0)): A$(1)=USR3(A$(1)
)
1080 B$(0)=A$(0) + A$(1)
1090 B$(0)=USR4(B$(0)) 'EXPAND
1100 PRINT#-2,B$(1);B$(2);B$(3);
B$(4);
1110 RETURN
1120 '
1130 'SCREEN TO DISK FILE
1140 PRINT "ENTER FILE NAME ON D
ISK":LINE INPUT N$
1150 GOSUB 400:SCREEN 1,1
1160 OPEN "D",#1,N$,256
1170 FIELD #1,128 AS AA$,128 AS
BB$
1180 A$(0)=USR1(A$(0)):IF XM<>0
THEN EXEC IX
1190 LSET AA$=A$(0):LSET BB$=A$(
1):PUT #1,1 'TO DISK
1200 FOR X=2 TO 28
1210 A$(0)=USR2(A$(0)):IF XM<>0
THEN EXEC IX
1220 IF X=28 THEN A$(0)=USR3(A$(
0)):A$(1)=USR3(A$(1))
1230 LSET AA$=A$(0):LSET BB$=A$(
1):PUT #1,X
1240 NEXT X
1250 CLOSE
1260 GOTO 150
1270 '
1280 'DISK TO PRINTER
1290 PRINT "THIS ROUTINE COMBINE
S TWO FILES FROM DISK (PRODUCED
BY OPTION 2 THIS PROGRAM) INTO A
 SINGLE DUMPON PAPER"
1300 PRINT:PRINT "ENTER FILE NAM
E OF FIRST PICTURE";:LINE INPUT
N$
1310 PRINT "FILE NAME OF SECOND
PICTURE":LINE INPUT N1$
1320 PRINT:PRINT "ENTER SIZE OF
BORDER (0-3) ";:GOSUB 40
1330 B=VAL(A$):IF B > 3 THEN PRI
NT "TOO BIG":GOTO 1320
1340 IF B=0 THEN 1370
1350 PRINT "ENTER Y TO HAVE A BO
RDER BETWEENTHE TWO PICTURES":PR
INT "OR ANY OTHER KEY FOR NO BOR
DER  BETWEEN THEM"
1360 GOSUB 40:IF A$="Y" THEN BX=
2 ELSE BX=0
1370 PRINT:PRINT "THE NORMAL DUM
P EXCLUDES 8 PIXILFROM EACH SIDE
 OF BOTH PICTURES (TOTAL OF 32 P
IXILS)"
1380 PRINT "PRESS ENTER IF THIS
IS OK":PRINT "OR ANY OTHER KEY T
O CHANGE":GOSUB 40
1390 IF A$=CHR$(13) THEN L=8:R=8
:L1=8:R1=8:GOTO 1450
1400 PRINT "ENTER NUMBER OF PIXI
LS TO":PRINT"EXCLUDE FROM LEFT A
ND RIGHT SIDEOF ";N$
1410 INPUT "AS L,R ";L,R
1420 PRINT "ENTER NUMBER OF PIXI
LS TO":PRINT "EXCLUDE FROM LEFT
AND RIGHT SIDEOF ";N1$
1430 INPUT "AS L,R ";L1,R1
1440 IF L+R+L1+R1 <> 32 OR L<0 O
R R<0 OR L1<0 OR R1<0 THEN PRINT
 "MUST ADD TO 32":GOTO 1400
1450 GOSUB 370
1460 OPEN "D",#1,N$,128:OPEN "D"
,#2,N1$,128 'SPLIT BUFFER
1470 FIELD #1,128 AS AA$: FIELD
```

```
#2,128 AS BB$
1480 FOR X = 1 TO 56 STEP 2
1490 GET #1,X:A$(0)=MID$(AA$,L+1
)
1500 GET #1,X+1: A$(1) = LEFT$(A
A$,LEN(AA$)-R)
1510 IF B>0 AND BX=0 THEN A$(1)=
A$(1) + STRING$(B,128)
1520 GOSUB 1600
1530 GET #2,X:A$(0)=MID$(BB$,L1+
1)
1540 GET #2,X+1: A$(1)=LEFT$(BB$
,LEN(BB$)-R1)
1550 IF B>0 AND BX=0 THEN A$(0)=
STRING$(B,128) + A$(0)
1560 GOSUB 1660
1570 NEXT X
1580 CLOSE
1590 GOTO 150
1600 GOSUB 830 'SIDE BORDER
1610 IF X=1 THEN GOSUB 740
1620 IF X=55 THEN GOSUB 710
1630 IF B>0 AND BX=0 THEN A$(1)=
LEFT$(A$(1),LEN(A$(1))-B)
1640 PRINT#-2,A$(0);A$(1);
1650 RETURN
1660 GOSUB 830
1670 IF X=1 THEN GOSUB 740
1680 IF X=55 THEN GOSUB 710:A$(0
)=USR3(A$(0)):A$(1)=USR3(A$(1))
1690 IF B>0 AND BX=0 THEN A$(0)=
MID$(A$(0),B+1)
1700 GOTO 1640
1710 '
55000 LN=56000:FOR X=0 TO 316 ST
EP 25:IF X<299 THEN N=25 ELSE N=
16
55010 GOSUB 55030:NEXT X
55020 RESTORE:GOTO 55110
55030 PRINT LN;:A=0:FOR Y=0 TO N
-1
55040 READ C$:B=VAL("&H"+C$):A=A
+B
55050 NEXT Y:READ C$:IF A<> VAL(
"&H"+C$) THEN PRINT "ERROR IN LI
NE NO";LN:STOP
55060 LN=LN+10:RETURN
55070 '
55080 FOR Y= 0 TO N-1:READ C$:PO
KE A,VAL("&H"+C$)
55090 A=A+1:NEXT Y:READ C$:RETUR
N
55100 '
55110 M$="9E1B3089013C6F806F806F
809F1B39":Y=&H01DA
55120 B=0:FOR X=1 TO 30 STEP 2:N
=VAL("&H"+MID$(M$,X,2)):B=B+N:PO
KE Y,N:Y=Y+1:NEXT X
55130 IF B <> &H56F THEN PRINT "
ERROR IN LINE NO 55110":STOP
55140 EXEC &H1DA:CLEAR
55150 A=PEEK(27)*256+PEEK(28)-31
9:LN=56000
55160 FOR X=0 TO 316 STEP 25:IF
X<299 THEN N=25 ELSE N=16
55170 GOSUB 55080:NEXT X
55180 '
55190 PRINT:PRINT "SCNDUMP NOW A
DDED TO END OF     BASIC PROGRAM
":PRINT "AND EXTRA BASIC CODE DE
LETED"
55200 '
55210 DEL 55000-56120
55220 DEL 55000-56110
56000 DATA 28,1,E,0,26,1,0,0,0,0
,0,0,0,0,0,0,0,0,33,8C,F7,EC,56,
ED,5E,4A1
56010 DATA 6F,5D,33,8C,EE,86,80,
A7,84,A7,5,EC,58,AF,40,ED,2,ED,4
4,1F,2,AE,5E,86,8,B64
56020 DATA A7,5A,86,7,A7,5B,86,1
0,A7,5C,A6,0,E6,20,49,56,E7,A0,6
A,5A,26,F6,C6,8,E7,B90
56030 DATA 5A,30,1,6A,5C,26,EA,8
6,10,A7,5C,10,AE,44,30,88,10,6A,
5B,26,DC,10,AE,44,C6,953
56040 DATA 80,A6,20,46,8A,80,A7,
A0,5A,26,F6,6D,5D,27,7,6F,5D,30,
10,AF,5E,39,6C,5D,30,996
56050 DATA 89,FF,30,AF,5E,AE,40,
30,5,AF,42,EC,58,C3,0,80,20,99,1
0,AE,2,E6,0,27,B,9F1
56060 DATA A6,20,2A,4,84,87,A7,A
0,5A,26,F5,39,31,8D,FF,66,1F,13,
EC,2,ED,24,E6,84,E7,B99
56070 DATA 3D,E7,3C,AE,34,AF,20,
86,4,E7,45,AF,47,3A,33,45,4A,26,
F6,EE,24,AE,20,A6,C0,B1B
56080 DATA 46,56,57,46,56,57,46,
56,57,46,56,E7,3A,57,CA,80,E7,80
,E7,80,AF,20,E6,3C,3A,B30
56090 DATA 3A,30,1E,E6,3A,46,56,
57,46,56,57,46,56,57,57,CA,80,E7
,80,E7,80,6A,3D,26,CA,A87
56100 DATA 39,8E,E,0,63,80,8C,26
,0,26,F9,39,31,8D,FF,2,AE,38,1F,
13,C6,80,E7,3A,3A,93A
56110 DATA 3A,A6,C4,E6,82,A7,84,
E7,C0,6A,3A,26,F4,39,31,8D,FE,E7
,AE,38,6F,3A,86,8,A7,D3C
56120 DATA 3B,A6,84,46,59,6A,3B,
26,FA,E7,80,6A,3A,26,EE,39,721
57000 GOTO 60
```

The Listing:

```
00100 *CALLED SCNDUMP - FOR PMODE 4 SCREEN
00110 *CALLED WITH A$(0)=USR2(A$(0)) STRS TO BE PRINTED RETURNED IN A$(0) AND
        A$(1)
00120 * STRING DATA IN PAGE 5 GRAPHIC SCREEN
00130 *
00140 BYTES     EQU     16
00150 STLEN     EQU     128
00160 STRT      EQU     -12
00170 SCS       EQU     -10
00180 DSCN      EQU     -8
00190 CNT1      EQU     -6
00200 CNT2      EQU     -5
00210 CNT3      EQU     -4
00220 CNT4      EQU     -3
00230 SAVE      EQU     -2
00240 ST1       EQU     0
00250 ST2       EQU     2
00260 B1        EQU     4
00270 *
00280 *
00290 *DATA STORAGE
00300 *
00310   ORG     32000
00320   FDB     $2801   ST RET STRS
00330   FDB     $0E00   START SCREEN
00340   FDB     $2601   START WORK AREA
00350   FDB     0       -6 -5
00360   FDB     0       -4 -3
00370   FDB     0       -2 -1
00380 DATA      FDB     0       0 1
00390   FDB     0       2 3
```

```
00400    FDB     0       4 5
00410 *
00420 *
00430 *  SCREEN DUMP
00440 ZUSE1      LEAU    DATA,PCR
00450    LDD     SCS,U
00460    STD     SAVE,U
00470    CLR     CNT4,U
00480 ZUSE2      LEAU    DATA,PCR
00490    LDA     #STLEN  SET STRING LEN
00500    STA     ,X      FOR A$(0)
00510    STA     5,X     FOR A$(1)
00520    LDD     DSCN,U  USE FOR STRING STORAGE
00530    STX     ST1,U   SAVE VARPTR
00540 U21        STD     2,X     SET FOR BASIC
00550    STD     B1,U    SET FOR HERE
00560    TFR     D,Y
00570 * CONTINUE UNALTERED
00580    LDX     SAVE,U  THIS PART SCREEN
00590    LDA     #8
00600    STA     CNT1,U
00610    LDA     #7
00620    STA     CNT2,U
00630    LDA     #BYTES
00640    STA     CNT3,U
00650 * SPLIT A SCREEN BYTE TO 8 BYTES
00660 Q1         LDA     0,X
00670 Q2         LDB     0,Y
00680    ROLA
00690    RORB
00700    STB     ,Y+
00710    DEC     CNT1,U  DO 8 BITS
00720    BNE     Q2
00730    LDB     #8      RESET
00740    STB     CNT1,U
00750    LEAX    1,X     NEXT SC BYTE
00760    DEC     CNT3,U
00770    BNE     Q1
00780 * DO 16 BYTES SCREEN TO 128 BYTES IN STRING
00790    LDA     #BYTES
00800    STA     CNT3,U
00810    LDY     B1,U    STRING START
00820    LEAX    BYTES,X NEXT ROW
00830    DEC     CNT2,U  DO 7 ROWS
00840    BNE     Q1
00850 * PUT A ONE IN LAST BIT POSITION
00860    LDY     B1,U    STRING ADDR
00870    LDB     #STLEN
00880 Q3         LDA     0,Y
00890    RORA
00900    ORA     #$80
00910    STA     ,Y+
00920    DECB
00930    BNE     Q3
00940 *
00950    TST     CNT4,U
00960    BEQ     R1
00970 * SECOND HALF SCREEN
00980    CLR     CNT4,U
00990    LEAX    -BYTES,X
01000    STX     SAVE,U
01010    RTS
01020 * FIRST HALF OF SCREEN
01030 R1         INC     CNT4,U
01040    LEAX    -13*BYTES,X
```

BICENTENNIAL LETTERHEAD

by JOHANNA VAGG
16K CoCo AND DMP 110
GRAPHICS

THIS WAS written for the DMP-110. It will work on other Tandy printers, but won't look as good. It might be able to be improved if you change the '39' to a '40' in the READ statements and add a zero '0' to the end of each data line.

The end result will be that the print-out will be smaller than on the DMP-110 and the printing larger.

The Listing:

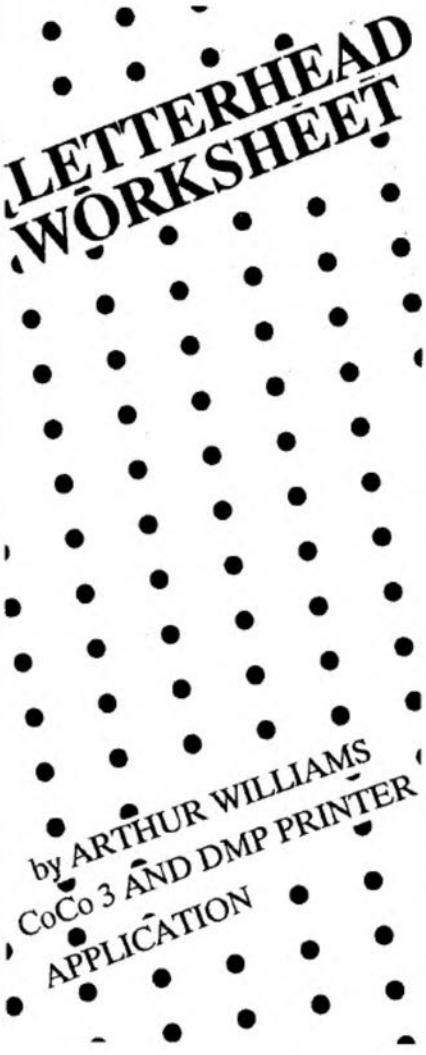
```
0 GOTO10
1 *****SEE REM LINES AT END*****
3 SAVE"197:1":SAVE"197:3":END'GR
F
5 ****BICENTENNIAL PROGRAM ENTRY
      BY JOHANNA VAGG
      9 BELAH STREET FORBES
10 A$=STRING$(32,143)
11 JV$="BY JOHANNA VAGG"
12 B$="bicentennial logo letterh
ead
13 CLS2:PRINT@64,A$;:PRINT@130,B
$;:PRINT@192,A$;:PRINT@258,B$;:P
RINT@320,A$;:PRINT@456,JV$;
14 FORT=1TO800:NEXT
15 PRINT@456,"";:INPUT"BAUD RATE
 POKE150,";BD
16 POKE150,BD
17 PRINT@488,"IS THIS FOR A DMP1
10?";
18 Y$=INKEY$:IF Y$=""THEN18
19 IF Y$="Y" THEN NP=15:GP=14:PT
=77:GOTO21
20 NP=19:GP=19:PT=20
21 PRINT#-2,CHR$(18)CHR$(27)CHR$
(GP)
22 FOR X=1 TO 39:READ F
23 F=F+128:AT$=AT$+CHR$(F):NEXT
24 FORX=1 TO 39:READF
25 F=F+128:AM$=AM$+CHR$(F):NEXT
26 FORX=1 TO 39:READF
27 F=F+128:AB$=AB$+CHR$(F):NEXT
28 FORT=1 TO 12:PRINT#-2,AT$;:NE
XT
29 PRINT#-2
30 FORT=1 TO 12:PRINT#-2,AM$;:NE
XT
31 PRINT#-2
32 FORT=1 TO 12:PRINT#-2,AB$;:NE
XT
33 DATA 0,0,0,0,64,96,48,80,32,1
6,64,96,48,80,96,112,96,64,0,64,
96,48,88,44,16,64,0,0,0,0,0,0,0,
0,0,0,0,0,0
34 DATA 24,44,22,75,101,50,25,12
,22,59,125,62,95,111,55,91,45,22
,75,101,50,25,12,6,3,1,0,0,0,0,0
```

Continued on P.50

```
01050    STX     SAVE,U
01060 *  SET UP TO DO A$(1)
01070    LDX     ST1,U
01080    LEAX    5,X      TO A$(1)
01090    STX     ST2,U
01100    LDD     DSCN,U
01110    ADDD    #STLEN
01120    BRA     U21
01130 *
01140 *  ZERO BITS 3-6
01150 *
01160 ZUSE3      LDY     2,X      STR ADDRESS
01170    LDB     0,X      STR LEN
01180    BEQ     T2       MAY BE ZERO
01190 T1         LDA     0,Y
01200    BPL     T3
01210 ZMC        ANDA    #$87
01220    STA     ,Y+
01230 T3         DECB
01240    BNE     T1
01250 T2         RTS
01260 *
01270 *
01280 *CALLED EXPAND - DOUBLE SIZE OF DUMP
01290 *CALLED BY B$(0)-USR4(B$(0) - WHERE B$(0) IS SOURCE
01300 *NEW LINES RETURNED AS
01310 * B$(1) & B$(2) FIRST LINE DOUBLE SIZE
01320 * B$(3) & B$(4) SECOND LINE
01330 *
01340 ZEXP       LEAY    DATA,PCR
01350    TFR     X,U
01360    LDD     2,X      SOURCE
01370    STD     B1,Y     SAVE IT
01380    LDB     ,X       STR LEN
01390    STB     CNT4,Y   KEEP
01400    STB     CNT3,Y
01410    LDX     STRT,Y   NEW STRS
01420    STX     ST1,Y
01430    LDA     #4
01440 LP1        STB     5,U      SET NEW STRS
01450    STX     7,U      IN ARRAY TO WS
01460    ABX              TO NEXT ONE
01470    LEAU    5,U
01480    DECA
01490    BNE     LP1
01500    LDU     B1,Y     RESET
01510 *
01520 * LOOP TO EXPAND PRINT STRING TO TWICE SIZE
01530 *
01540 LP2        LDX     ST1,Y    TO NEXT OUT
01550    LDA     ,U+      THIS BYTE
01560    RORA             0 TO CARRY
01570    RORB             TO B
01580    ASRB             DUPLICATE
01590    RORA             1 TO CARRY
01600    RORB             TO B
01610    ASRB             DUPLICATE
01620    RORA             MOVE BIT 2
01630    RORB
01640    ASRB
01650    RORA             BIT 3
01660    RORB             TO B
01670    STB     CNT1,Y   SAVE B
01680    ASRB             MAKE SPACE
01690    ORB     #$80     TURN ON
```

```
01700    STB     ,X+     2 COPIES
01710    STB     ,X+     TO OUTPUT
01720    STX     ST1,Y   SAVE X
01730    LDB     CNT3,Y  ST LEN
01740    ABX             ADJUST TO
01750    ABX             SECOND LINE PRINT
01760    LEAX    -2,X
01770    LDB     CNT1,Y  RESTORE B
01780    RORA            DO BIT 4
01790    RORB
01800    ASRB
01810    RORA            BIT 5
01820    RORB
01830    ASRB
01840    RORA            BIT 6
01850    RORB
01860    ASRB
01870    ASRB            MAKE SPACE
01880    ORB     #$80    TURN ON
01890    STB     ,X+
01900    STB     ,X+
01910 *
01920    DEC     CNT4,Y  DO ALL SOURCE
01930    BNE     LP2     BYTES
01940    RTS
01950 *
01960 *INVERT SCREEN
01970 *
01980 ZINV       LDX     #$0E00
01990 LIN1       COM     ,X+
02000    CMPX    #$2600
02010    BNE     LIN1
02020    RTS
02030 *
02040 *PRODUCE OR REVERSE MIRROR IMAGE EFFECT
02050 *EXEC AFTER EXTRACT AND ACT ON A$() STRINGS
02060 *
02070 ZREVSE     LEAY    DATA,PCR
02080    LDX     DSCN,Y  START A$(0)
02090    TFR     X,U
02100    LDB     #STLEN
02110    STB     CNT1,Y  TO COUNT
02120    ABX             TO END
02130    ABX             OF A$(1)
02140 V1         LDA     ,U      EXCHANGE
02150    LDB     ,-X
02160    STA     ,X      CHARACTERS
02170    STB     ,U+
02180    DEC     CNT1,Y
02190    BNE     V1
02200    RTS
02210 *
02220 *REVERSE DOTS FOR 8 DOTS PER LINE & HIGH ORDER BIT DOT 1
02230 *
02240 ZRX        LEAY    DATA,PCR
02250    LDX     DSCN,Y
02260    CLR     CNT1,Y  COUNTER
02270 VX1        LDA     #8
02280    STA     CNT2,Y
02290    LDA     ,X      NEXT BYTE
02300 VX2        RORA
02310    ROLB
02320    DEC     CNT2,Y
02330    BNE     VX2
02340    STB     ,X+
02350    DEC     CNT1,Y
02360    BNE     VX1
02370    RTS
02380 *
02390 ZZEND      EQU     *
02400    END     ZUSE1
```

```
130 DATA 32, 53, 34, 54
131 DATA 34, 54, 37, 52
132 DATA 35, 54, 36, 56
133 DATA 36, 56, 41, 54
134 DATA 43, 52, 42, 50
135 DATA 42, 50, 43, 45
136 'SANTA BY JOSEPH KOLAR
     DECEMBER 1983 RAINBOW
     SEE HOW SHORT IT CAN BE?
137 DRAW "C0S8C2BM125,20U2RU2E4R
5F2NRL3G4NDU3NEG2LDLFDL2 BR5BURE
NR2NFE2R4NU2NDF3D4G3LLDHL3M-3,-2
U3M+1,-2 BFDFNE2RNR4FR2ENH2EUBL2
NUL3EBUNLBRNFR2BUHGH"
138 DRAW "BD8BL5G3D3ND2R3NU2NF4D
2L2NLDGDRNURNURNURUHUF4R4NU2R2NU
2RE5NFHG4NH3L7R7E4 NU3E2NU2RERUN
LUNLR2UL3G2LGL2NF2H2L"
139 'DOVE - KOLAR AGAIN
140 DRAW "C0S8BM6,6R2M+2,+1UM+2,
+1UM+2,+1NM+3,+4U2FE M+5,+8R3M+5
,+1NM+7,+1HNR4U2NR4M-1,-2NR4M-1,
-2NR4EM-2,-1 R3M+9,+4M+2,+1D2G3
R3DF3BU4BL3E3R2F2DF2L2 DM-2,+3G3
M-4,+2M-4,+1"
141 DRAW "L3FLHL2FLHM+2,-1M+4,-1
M+2,-1U2M-2,-1 BG6 M-5,-2M-5,-2M
-5,-2M-5,-4 M+2,-1NF4M+3,-1NF4R2
ENF4R3M+4,+3M+3,+2 BU5BL7H2M-4,-
3M-6,-4"
142 DRAW "BM90,29M-1,+4EUERDGLGM
-1,+4RUERDGL2M-4,+5"
143 DRAW "BM90,29UHUEFDGDEU2EUER
DGLGU3HUEFDG"
144 DRAW "BM82,23DL"
145 FORT=1 TO 800:NEXT
146 CLS:PRINT"THE BIGGER THE PIC
TURE,                THE SLOWER
 THE PRINTING":PRINT:PRINT:PRINT
"1  DOVE":PRINT"2  SANTA"
147 PRINT"3  DOVE AND SANTA  (SL
OWEST)":PRINT"4  MR DAYDREAM":PR
INT"5  MR MUDDLE   (FASTEST)":PR
INT"6  MR MEN!"
148 I$=INKEY$:IF I$=""THEN148
149 '(L1,D1)-(L2,D2) IMAGINARY B
OX AROUND PICTURE IE THE SCREEN
AREA FOR PRINTING PROGRAM TO "RE
AD AND TRANSLATE"
150 'RR IS NUMBER OF REPEATS
151 IFI$="1" THEN L1=0:L2=118:D1
=2:D2=51:RR=4
152 IF I$="2"THEN L1=122:L2=188:
D1=3:D2=52:RR=7
153 IF I$="4" THEN L1=10:L2=99:D
1=89:D2=146:RR=5
154 IF I$="5" THEN L1=90:L2=147:
D1=80:D2=149:RR=8
155 IF I$="3" THEN L1=0:L2=220:D
1=0:D2=53:RR=2
156 IF I$="6"THEN L1=10:L2=160:D
1=80:D2=149:RR=3
157 PMODE4:SCREEN1,1
158 DIMPR$(150)
159 'ADJUST NUMBER OF REPEATS TO
 SUIT 80 DOT COLUMN PER INCH PRI
NTERS. (NO ADJUSTMENT OF REPEATS
 REQUIRED FOR 60)
160 GN$=CHR$(18)' GRAPHICS ON
161 FORY1=D1 TO D2 STEP7
162 FORX1=L1 TO L2
163 FORY2=0 TO 6
164 IF PPOINT(X1,Y1+Y2)=0 THEN N
B=NB+INT(2^Y2)
165 NEXT Y2
166 PR$(Y1)=PR$(Y1)+CHR$(NB+128)
:NB=0
167 NEXT X1:PRINT#-2,GN$;
168 FORR=1TORR:PRINT#-2,PR$(Y1);
:NEXT
169 PRINT#-2:NEXT Y1
171 PRINT#-2,CHR$(12)'FORM FEED
172 PRINT#-2,CHR$(30)
173 RUN146
```



I HAVE DESIGNED this program to help work out your graphics design on DMP printers. I personally use the DMP-105 printer and the CoCo 3.

The program is in two parts: part one is called "Headsht", and part two is called "Dots".

This will give the complete program on one sheet of printer paper.

The third program, "Boat", is an example of printer graphics done using the above programs.

Just fill in your dots and add them up and put them to your CHR$(???).

Good luck!

The Listing:

```
0 WIDTH 32
1 GOTO10
3 SAVE"143:1":SAVE"143:3":END'AP
P
5 GOTO 10
10 CLS 3
15 '*****************************
    **   PRINTHEAD WORKSHEET  **
    **           BY           **
    **      ARTHUR WILLIAMS    **
    *****************************
20 '*****************************
    *IDEAS FROM HARRY HOFFMANN *
    *     WORKSHEET PROGRAM    *
    * AND MAL MCLAUGHLAN GRAPHS*
    *****************************

25 S$="S"
30 PRINT@32,STRING$(32,S$);
35 PRINT@448,STRING$(32,S$);
40 PRINT@160+6,"PRINTHEAD WORKSH
EET";
45 PRINT@224+14,"FOR";
50 PRINT@288+9,"D.M.P.PRINTERS";
55 PRINT@385+6,"<ANY KEY TO STAR
T>";
60 EXEC44539
65 POKE149,0:POKE150,18
70 PRINT#-2,CHR$(30);CHR$(27);CH
R$(19);CHR$(13);CHR$(10);
75 PRINT#-2,CHR$(27)CHR$(54);CHR
$(27) CHR$(14);STRING$(9,32);CHR
$(15);"PRINTERHEAD WORKSHEET";
80 PRINT#-2,CHR$(14)CHR$(10)
85 PRINT#-2,CHR$(27);CHR$(15);
90 PRINT#-2,CHR$(27)CHR$(20)
95 FOR PR=1TO7
97 PRINT#-2,USING"###############
#";PR;
100 GOSUB120
105 NEXT PR
110 PRINT#-2,,STRING$(5,10);
115 END
120 PRINT#-2,CHR$(18);CHR$(27);C
HR$(16);CHR$(0);CHR$(91);
125 GOSUB 135:GOSUB160
130 GOTO190
135 PRINT#-2,CHR$(255);
140 FORX=1TO32
145 PRINT#-2,STRING$(17,128);CHR
$(255);
150 NEXT X
155 RETURN
160 PRINT#-2,CHR$(10);CHR$(27);C
HR$(16);CHR$(0);CHR$(91);CHR$(25
5);
165 FORX=1TO32
170 '**(17,192) PRINT 17 DOTS**
175 PRINT#-2,STRING$(17,192);CHR
$(255);
180 NEXTX
185 RETURN
190 PRINT#-2,CHR$(30);CHR$(27);C
HR$(56)
195 RETURN
```

From P.47

```
,0,0,0,0,0,0,0,0
35 DATA 0,0,1,1,0,0,0,0,0,0,0,1,
1,2,1,12,6,3,1,0,0,0,0,0,0,0,0,0
,0,0,0,0,0,0,0,0,0,0,0
36 PRINT#-2,CHR$(30)CHR$(27)CHR$
(NP)CHR$(27)CHR$(PT)
37 FORT=1 TO 12:PRINT#-2,"AUSTRA
LIA  ";:NEXT
38 PRINT#-2
39 FORT=1 TO 12:PRINT#-2,"1788-1
988  ";:NEXT
40 PRINT#-2,CHR$(27)CHR$(19)
41 REM THIS WAS WRITTEN FOR THE
   DMP110. IT WILL WORK ON OTHER
   TANDY PRINTERS, BUT WILL NOT
   BE AS GOOD
42 'IT CAN PROBABLY BE IMPROVED
    BY CHANGING THE 39 TO 40 (IN
    THE READS) AND ADDING A ZERO
    TO THE END OF EACH DATA LINE
43 'THE GRAPHICS WILL BE A BIT
    SMALLER THAN ON THE DMP110
    AND THE PRINTING, LARGER
```

The Listing:

```
program HardWare (Input, Output);
{  Returns system information to the screen.
}
type
    Bit = 0..1;                          { bit can only have value 0 or 1 }
    String16 = string [16];
    ArrType = array [0..15] of Bit;
    Word = String16;

var
   Ax : ArrType;                         { Result from Ax register        }
   BinNum : Word;
   i : Integer;



function Power (Base, Index : Real) : Integer;
{ Returns the result of Base to the power Index.
}
begin
     Power := Round (Exp (Ln (Base) * Index));
end; {Power}


function Binary (Num : Integer) : Word;
{  Converts an integer number into a binary string.
   Word is type string [16]
}
var
   BinNum : Word;


procedure Convert (Num : Integer;
                   var BinNum : Word);
begin
     if Num = 0 then
        begin
             if (Num mod 2) = 0 then
                BinNum := BinNum + '0'
             else
                 BinNum := BinNum + '1';
        end
     else
        begin
             Convert (Num div 2, BinNum);
             if (Num mod 2) = 0 then
                BinNum := BinNum + '0'
             else
                 BinNum := BinNum + '1';
        end;
end; {Convert}


begin
     BinNum := '';
     Convert (Num, BinNum);
     Binary := BinNum;
end; {Binary}

procedure GetInfo;
begin
     { Get hardware information }
     Intr ($11, i);
```

```
   { Convert i to a binary string }
     BinNum := Binary (i);

     { Convert binary string to array of 0..1 }
     for i := 1 to 16 do
         begin
              if BinNum [i] = '0' then
                 Ax [16 - i] := 0
              else
                  Ax [16 - i] := 1;
         end; {for}
end; {GetInfo}

procedure PrintDrives;
begin
     { How many drives in system }
     Write ('=> ':13);
     if Ax [0] = 0 then
        Writeln ('No disk drive')
     else
         begin
              i := Ax [7] * 2 + Ax [6] * 1 + 1;
              Write (i, ' disk drive');
              if i <> 1 then
                 Write ('s');
         end; {if}
     Writeln (' present.');
end; {PrintDrives}


procedure PrintVideo;
begin
     { What sort of video on startup? }
     Write ('=> ':13);
     Write ('Initial video mode is ');
     i := Ax [5] * 2 + Ax [4] * 1;
     case i of
          0 : ;          { unavailable }
          1 : Writeln ('40 x 25 BW.');
          2 : Writeln ('80 x 25 BW.');
          3 : ;          { unavailable }
     end; {case}
end; {PrintVideo}

procedure PrintDMA;
begin
     { Find if DMA is present }
     Write ('=> ':13);
     if Ax [8] = 0 then
        Writeln ('DMA present.')
     else
         Writeln ('No DMA present.');
end; {PrintDMA}


procedure PrintSerials;
begin
     { Find how many RS232 cards present }
     Write ('=> ':13);
     i := Ax [11] * 4 + Ax [10] * 2 + Ax [9];
     Write (i,' RS232 card');
     if i <> 1 then
        Write ('s');
     Writeln (' present.');
end; {PrintSerials}
```

Review:

PC Deskteam

Hi there, this is Julie again with another review.

PC-DESK TEAM is an application program, it allows you to have a number of helpful items at your fingertips.

When you own a business, there is nothing worse than having to look up a calendar or even asking your secretary what you have on that particular day.

Well now you don't need to do that, because with PC-DESK TEAM you can call up your own calendar and view exactly what you have to do today, and any coming events that you think you might be interested in:

The program gives you a note pad, where you can write down anything of importance, and any other bits of information.

It is a note pad when you don't want a note pad. Sorry a little joke. In your program you also have a clock which you can set to what time it is and it will continue to appear on the screen.

Remember those meetings when you were late because you were so engrossed in your work?

Well now you don't have to worry.

With PC-DESK TEAM alarm, you will never have to ask your secretary to remind you ever again.

The program allows you to have a built-in alarm in your computer, so when the time comes and you have that important meeting, the computer will let you know by releasing a chime, providing you have set the alarm on the computer and pressed (Y) for "chimes on".

Have you ever sat at your desk and looked around for half an hour for a calculator?

I know I have, once too often

Well this program allows you to have your own calculator at the press of a button.

So if you are sitting there and you need some figures added up urgently, you press F2 and up pops the calculator on the screen, ready for your calculations.

It evens prints them up on a page so you can see what you have just added.

F4 has your DOS commands, so if you, for some reason, have to go into GWBASIC, you can press F4 and it will automatically go into that mode ready for your instructions.

Then you have the option of either staying in GWBASIC or going back to the menu.

The program has a function called Phone Dialer.

Phone Dialer works when it is connected up to a telephone.

Continued next page

```
procedure PrintGames;
begin
     { Find if game I/O attached }
     Write ('=> ':13);
     if Ax [12] = 0 then
        Write ('No game')
     else
         Write ('Game');
     Writeln ('port/s available to system.');
end; {PrintGames}


procedure PrintParallel;
begin
    { Find number of parallel cards }
     Write ('=> ':13);
     i := Ax [15] * 2 + Ax [14];
     Write (i,' parallel port');
     if i <> 1 then
        Write ('s');
     Writeln (' available to system.');
end; {PrintParallel}

procedure PrintMemory;
begin
     { Find memory available after DOS installed }
     Write ('=> ':13);
     Intr ($12, i);
     Writeln ('Dos reports that there is ',i,' Kbytes available to system.');
end; {PrintMemory}


begin
     ClrScr;
     Writeln ('*****************************':50);
     Writeln ('**                         **':50);
     Writeln ('**   SYSTEM INFORMATION    **':50);
     Writeln ('**     by Leigh Dawes      **':50);
     Writeln ('*****************************':50);
     Writeln;
     GetInfo;
     PrintDrives;
     PrintVideo;
     PrintDMA;
     PrintSerials;
     PrintGames;
     PrintParallel;
     PrintMemory;
end.
```

From Previous page.

This program then allows you to store any numbers you wish, it also has a redial, and a quick dial.

You can hang up on somebody if you wish by pressing a key, instead of using the receiver.

There is also a printer function which allows you to print what you have just been working on, or if you wanted to print up your calendar for the month.

The best thing I like about this program is that it has a typewriter, which is better than a word processor.

You can create columns or any type of headings, or even set up your own type of display.

With this program you will never go wrong.

The last function I am going to tell you about is the Set Up, this is produced by pressing F9 in the menu.

When you have pressed that key, you will see, displayed on the screen, a set of colour options on what you would like, whether it be a background colour or change of screen colour.

So now you have read about PC-DESK TEAM why don't you buy it.

We would be glad to sell it to you for the low price of $14.25, from Goldsoft Publishing, PO Box 1742 Southport QLD 4215.

Anyway, bye for now, write to you soon, Julie.

TELEWRITER 64

ENHANCED PRINTER DRIVER

by PETER FOUCHE
CoCo 3
TELEWRITER 64 UTILITY

WHEN I first got Telewriter, I was disappointed because I couldn't underline, print in double width, bold, super/ subscript etc. I needed superscript and subscript for school work, as I am currently in year 11.

When I got my CoCo 3, it had a control key not used by Telewriter, so I copied WORDSTAR.

After completeing the file and justifying it, you go through and insert control codes. This is done by pressing control and a letter. The printer driver which normally works the same as the built in one, removes these and replaces them with escape codes of up to 254 characters long during printing.

These codes can be changed by the user by finding them in lines 3-8 of the program and editing them. This way it will work on any printer, and can be customized to your personal needs.

You can even have say bold and enlarged on one key. The format is "C$(n)=(whatever the code is eg. CHR$(27)+"C")". 'n' is a letter of the alphabet, ie a=1, b=2. Upper case and lowercase are the same. For example, if I wanted a CHR$(27)+CHR$(14) to be sent to the printer everytime I typed CTRL g, I would insert C$(7)=CHR$(27)+CHR$(14).

I wrote T64PRINT for my personal use, so it is very customized, but because of how it works you can modify it easily. The only bit that needs keeping is the bit which gets a line at a time from memory (lines 30-80). I have it set up to justify at the moment (ie both margins are straight) at 1200 baud. It is set up for a DMP-130. The numbers pressed with the CLEAR key down produce subscript for writing chemical formulae.

At present the control codes are as follows:

```
ctr w/e operates double length
ctr u/i operates underline
ctr d/f operates bold
ctr t/y operates italics
ctr  s/b/x  operates superscript
           and subscript

guide ctr=control [CTRL]  X/Y;
 x activates and y deactivates
```

T64PRINT has no upper margin, lower margin or much else, because I don't need them, but they shouldn't be a problem to put in. If you do make any modifications, of use it as a basis to write something better, then go for it, but please send it to CoCo. Hope you enjoy it!

The Listing:

```
0 POKE 65496,0
1 CLEAR 1000
2 DIM C$(26):POKE 150,18:'2400 B
AUD
3 C$=CHR$(27):C$(19)=C$+"S"+CHR$
(0):C$(2)=C$+"S"+CHR$(1):C$(24)=
C$+"X":C$(21)=CHR$(15):C$(9)=CHR
$(14):C$(4)=C$+CHR$(31):C$(6)=C$
+" ":C$(20)=C$+"B"+CHR$(1):C$(25
)=C$+"B"+CHR$(0)
4 C$(23)=C$+CHR$(14):C$(5)=C$+CH
R$(15)
5 GOTO9
6 SAVE"199A":SAVE"199A:2":END'UT
L
9 CLS:INPUT"DRAFT/N.L.Q? <D/N>";
D$:IF D$<>"D" AND D$<>"" AND D$<
>"d" AND D$<>"N" AND D$ <>"n" TH
EN 9 ELSE IF D$<>"N" AND D$<>"n"
 AND D$<>""THEN 20
10 PRINT#-2,CHR$(27)CHR$(18)
20 INPUT"CHR'S PER LINE?";LN:IF
LN=0 THEN LN=50 ELSE IF LN<>INT(
LN) OR LN<1 OR LN>120 THEN 20
25 INPUT"LEFT MARGIN";LM$:IF LM$
="" THEN LM=15 ELSE LM=VAL(LM$):
IF LM<0 OR LM<>INT(LM)OR LM+LN>1
20 THEN 25
26 PRINT#-2,CHR$(27)+"Q"+CHR$(LM
);
30 A=&H4146:A$=""
35 POKE 65497,0
40 P=PEEK(A)
50 IF P=94 THEN 100:EOL
60 IF P=92 THEN 100:EOTEXT
62 IF P=0 THEN SP=SP+1
63 IF P>&H6A OR P<&H62 THEN 64 E
LSE A$=A$+C$(2)+CHR$(P-&H31)+C$(
24):LN=LN+(2/3):A=A+1:GOTO 40
64 IF P<>157 THEN 68
65 P=PEEK(A+1):A=A+2:IF P<33 OR
P>64 THEN P=P-32
66 IF P<33 OR P>65 THEN 68
67 A$=A$+C$(P-32):GOTO40
68 IF CR=0 THEN CHS=CHS+1
70 A$=A$+CHR$(P+32)
80 A=A+1:GOTO 40
100 'GIVEN LINE, ACTUAL LENGTH,
AND NO OF SPACES,INSERT SPACES
102 PRINT"PROCESSING LINE#";Q+1
105 IF SP=0 OR PEEK(A+1)=92 OR P
=92 OR PEEK(A+1)=94 OR PEEK(A+1)
=0 THEN 160
110 X=LN-CHS:X1=INT(X/SP):X=X-(X
1*SP):B=-X1+1:B1=1
120 IF MID$(A$,B1,1)=" " THEN B=
B+1:B1=B1+1:SP=SP-1:GOTO 120
125 IF SP<1 THEN 160
130 FORT=1 TO SP
140 B=INSTR(B+X1+1-(X>=T),A$," "
)
150 A$=LEFT$(A$,B)+STRING$((X1-(
X>=T))," ")+RIGHT$(A$,LEN(A$)-B)
:NEXT
160 Q=Q+1:A$(Q)=A$:IF Q<10 AND P
<>92 THEN 200
170 POKE 65496,0:PRINT"PRINTING
LINE    1":PRINT#-2,A$(1):FORT=2
 TO Q:PRINT,T:PRINT#-2,A$(T):NEX
T:POKE 65497,0
180 Q=0
190 POKE 65497,0
200 IF P=92 THEN 220
210 A$="":SP=0:CR=0:CHS=0:A=A+1:
GOTO40
220 ' OPTION TO REPEAT
225 CLS:INPUT"ANOTHER COPY/RECOM
ENCE/END          <A/R/E>";A$
230 IF A$="A" OR A$="a"THEN 30
240 IF A$="R" OR A$="r" THEN 9
250 IF A$<>"E" AND A$<>"e" THEN
220
260 RUN"S/ASC"
```

CASHBOOK 3

by IAN LOBLEY

OS 9

Ed's note: due to popular demand, we are proud to re-publish the enhanced version of Ian Lobley's Cashbook program.

But due to the length of the programs involved, we will have to print it over a four month period. You will find the entire source listing on the CoCoOz disk for October.

There will be some programs missing from the listing, as some listings have been inadvertantly turned into packed Basic-09 code. (Once that's done, we can't unpack them!).

Please note: this is PART THREE!

WHEN THE COLOUR computer was first released by Tandy I sold one to a friend who then managed a Motel, a CoCo, disk drive and printer. We both looked around for a simple cash book program, but could not find one.

To save a beautiful friendship, I sat down one Easter weekend and wrote one for him. It was in Tandy's disk basic and it worked well.

When OS-9 was released, I re-wrote the program in Basic09, mainly because I was interested to know how easy (or difficult) OS9 and Basic09 were.

In the early stages, I had a lot of help from Warren Brown, until he recently moved to the United States. He was the Australian agent for Micro Ware. Warren knew everything about OS-9.

In part one of this series of articles, I hope to be able to show how the program was written and developed.

I have a twin disk drive system and used O-Pak for the screen layout. The screen width is 64 characters across, so if you haven't got O-Pak or something similar you will have to change a few procedures.

In the first article, we will set up a file for our cheque record, bank balance, start bank balance, company name and code/catagory list.

The first procedure will later run some procedures that will create these files.

If you only have a single disk system, don't give up. The program will still work under one drive.

To type up the programs, you'll need Basic09 with a memory of 20000 bytes.

For the time being, type in all the listings and save them as you go.

The Listing:

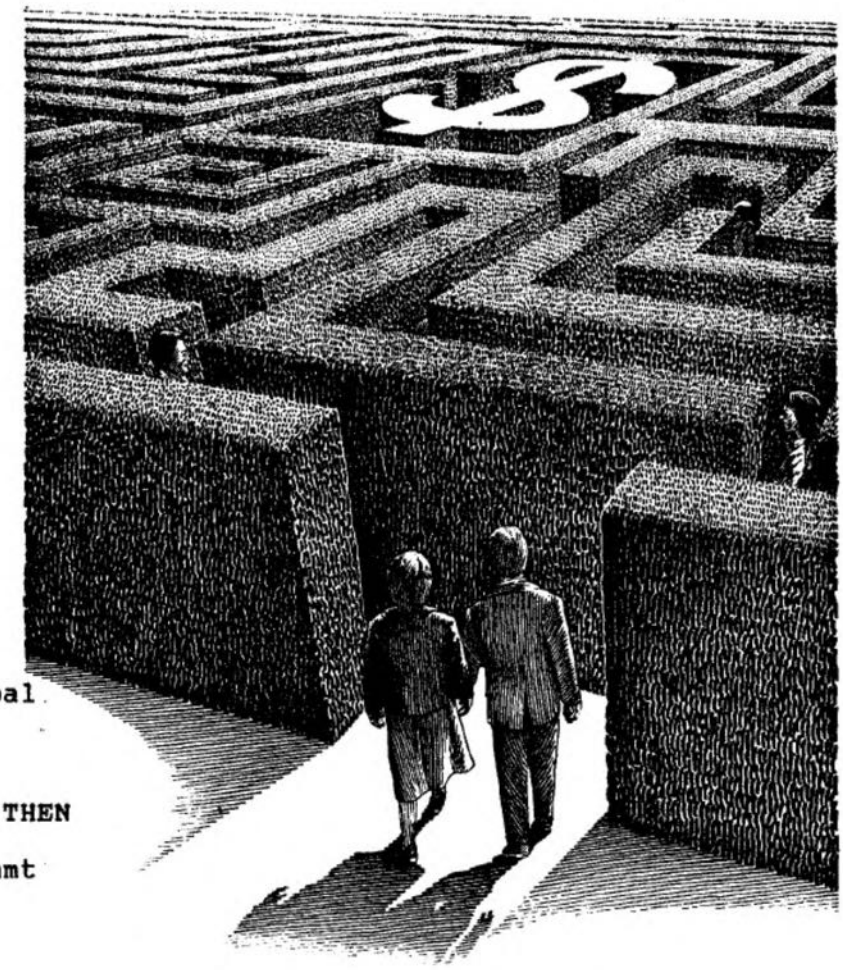
```
PROCEDURE search_month
PRINT CHR$(12)
DIM line:STRING[64]
line="----------------------------------------------------------------"
PRINT TAB(15); "****** P R I N T   M O N T H ******"
PRINT  \ PRINT
TYPE types_all=code:STRING[4]; name:STRING[20]
DIM types(30):types_all
TYPE record=date:STRING[8]; number:INTEGER; payee:STRING[25]; ammt

:REAL; item:STRING[4]
DIM chq_rec:record
DIM type_total(30):REAL
FOR x=1 TO 30
type_total(x)=0
NEXT x
RUN items(types)
DIM path:BYTE
DIM choice:STRING[1]
DIM search:STRING[2]
DIM count:INTEGER
DIM total:REAL
DIM total2:REAL
DIM deposits:REAL
total=0
total2=0
count=0
deposits=0
chq_rec.date=""
chq_rec.number=0
chq_rec.payee=""
chq_rec.ammt=0
chq_rec.item=""
INPUT "What Month to PRINT  <eg 06> ? ",search
IF LEN(search)<2 THEN
search="0"+search
ENDIF
```

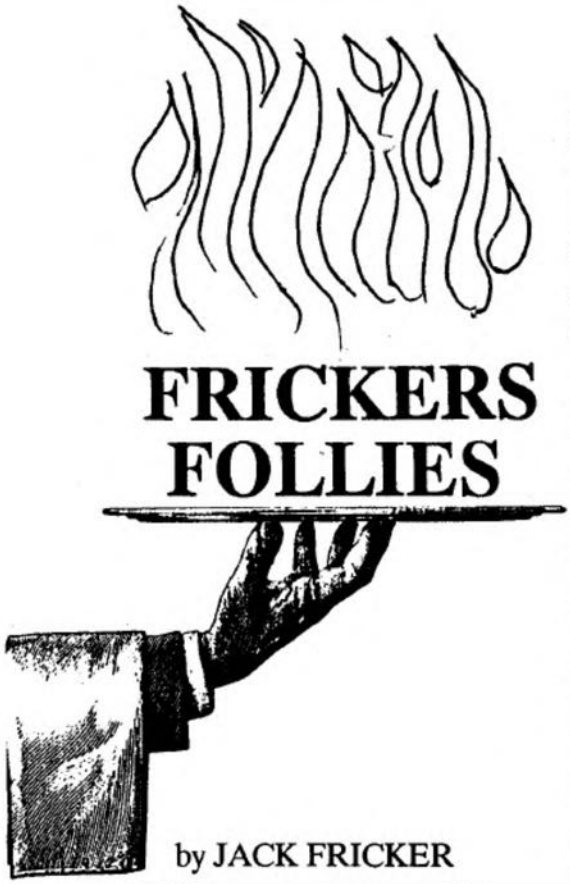
```
PRINT CHR$(12)
RUN title
OPEN #path,"chq_record"
WHILE NOT(EOF(#path)) DO
GET #path,chq_rec
IF MID$(chq_rec.date,4,2)=search THEN
IF LEFT$(chq_rec.item,3)="dep" THEN
deposits=deposits+chq_rec.ammt
RUN print_chq(chq_rec)
ELSE
total=total+chq_rec.ammt
FOR x=1 TO 30
IF chq_rec.item=types(x).code THEN
type_total(x)=type_total(x)+chq_rec.ammt
ENDIF
NEXT x
count=count+1
RUN print_chq(chq_rec)
ENDIF
ENDIF
ENDWHILE
PRINT
PRINT line
PRINT TAB(17); "Totals ";
PRINT TAB(37);
PRINT USING "r10.2^"; deposits;
CLOSE #path
PRINT TAB(48);
PRINT USING "r10.2^"; total
PRINT
PRINT line
FOR x=1 TO 30
IF type_total(x)<>0 THEN
total2=total2+type_total(x)
PRINT TAB(17); types(x).name;
PRINT TAB(48);
PRINT USING "r10.2^"; type_total(x)
ENDIF
NEXT x
PRINT
PRINT TAB(48);
PRINT USING "r10.2^"; total2
PRINT
PRINT  \ PRINT
INPUT "<enter> to Return ",choice
END


PROCEDURE see_bank
DIM choice:STRING[1]
DIM balance:REAL
PRINT CHR$(12)
DIM path:BYTE
balance=0
OPEN #path,"bank"
GET #path,balance
CLOSE #path
PRINT TAB(20);
PRINT "Balance = $";
PRINT USING "r10.2^"; balance
PRINT  \ PRINT
INPUT "<enter> to Return ",choice
END
```

```
PROCEDURE recalc
PRINT CHR$(12)
PRINT "**** BANK RECALCULATION ****"
PRINT
TYPE record=date:STRING[8]; number:INTEGER; payee:STRING[25]; ammt
:REAL; item:STRING[4]
DIM chq_rec:record
DIM path:BYTE
DIM choice:STRING[1]
DIM dep_tot:REAL
DIM chq_tot:REAL
DIM old_bal:REAL
DIM bank_bal:REAL
DIM calc_bal:REAL
calc_bal=0
bank_bal=0
old_bal=0
chq_tot:=0
dep_tot:=0
chq_rec.date=""
chq_rec.number=0
chq_rec.payee=""
chq_rec.ammt=0
chq_rec.item=""
OPEN #path,"start_bal"
GET #path,old_bal
CLOSE #path
PRINT "Start Balance ";
PRINT USING "t38,r10.2^"; old_bal
OPEN #path,"chq_record"
WHILE NOT(EOF(#path)) DO
GET #path,chq_rec
IF LEFT$(chq_rec.item,3)="dep" THEN
dep_tot=dep_tot+chq_rec.ammt
ELSE chq_tot=chq_tot+chq_rec.ammt
ENDIF
ENDWHILE
CLOSE #path
PRINT
PRINT " Deposits ";
PRINT USING "t38,r10.2^"; dep_tot
PRINT
PRINT " Cheques & Expenses ";
PRINT USING "t38,r10.2^"; chq_tot
PRINT
calc_bal=old_bal+dep_tot-chq_tot
PRINT "Calculated Balance ";
PRINT USING "t48,r10.2^"; calc_bal
PRINT
PRINT "To Make This Balance Your New Bank Balance press <y> "
INPUT "<enter> to Return ",choice
IF choice="Y" OR choice="y" THEN
OPEN #path,"bank"
PUT #path,calc_bal
CLOSE #path
ENDIF
END
```



```
PROCEDURE change_start_bal
DIM path:BYTE
DIM begin_bal:REAL
begin_bal=0
OPEN #path,"start_bal"
GET #path,begin_bal
PRINT "Start Balance = ";
PRINT USING "t20,r10.2^"; begin_bal
PRINT
INPUT "Input New Balance ",begin_bal
SEEK #path,0
PUT #path,begin_bal
CLOSE #path
```



FRICKERS FOLLIES

by JACK FRICKER

I WOULD LIKE to speak about getting computers to communicate with each other, as well as hooking a modem or a terminal to one.

OK, The first thing I would like to look at is the RS232 (serial) port on the CoCo. This is the 4 pin DIN socket that you may be using for the printer.

The RS232 standard was developed to provide means of hooking up equipment from different manufacturers.

This may seem obvious now, but was not always so. Each manufacturer had their own standards, and some still do.

The problem is that the standard is not always fully implemented on all systems. The RS232 standard consists of 25 control and power lines which use the DB25 connector.

Fortunately not all the possible lines are used or even defined, for most use only 4 lines. These are Earth (pin 0), TD or Transmit data (pin 3), RD or Receive data (pin 2), and a status line. Here is where the first of the problems arise - the status line can be either Carrier Detect (pin 8), or Data terminal Ready (pin 20).

Which one used depends whether it is connected to a modem or a data terminal. If a modem is being connected, then use CD (carrier detect) and if a terminal is being used, connect DTR.

There are other lines such as RTS or Request to send (pin 4), CTS or Clear to send (pin 5), and DSR or Data set ready (pin 6). Some of these lines are often joined together where they are implemented on one piece of apparatus and not on another.

For instance; when I had a data terminal hooked to my CoCo, I had to bridge pins 4 & 5 together and join pins 6, 8 & 20. This was joined at the 25 pin connector at the terminal end.

At the other end, pin 6, 8 and 25 were joined to the 4 pin din connector. Pin number 1 and pin 2 of the din goes to pin 3 of the DB25, pin 3 goes to pin numbers 1 and 7, and pin 4 of the din goes to pin 2 of the DB25.

This is how it is done for the terminal- a modem is almost exactly the same. The only difference is that some programs change the transmit and receive lines around. This means that if your cable doesn't work the way described here, reverse pins 2 and 3 on the DB25.

If you are using the deluxe RS232 or compatible cartridge, just connect pin 1 to pin 1, 2 to 2, 3 to 3, and so on. You may have to supply bridges between 4

VIATEL USER PROFILE

by DEN WHITTON

JEFF LARSON IS a name familiar to all readers of this magazine. His articles and submissions show that he knows more about the CoCo3 and OS9 than most people.

This is not really suprising when you see his super expanded mega-RAM CoCo 3 with twin double sided disk drives, hard disk and for all I know, double over-head under-hang. (I know he has all this hardware, because he is very meticulous and constant in his gloating over it to me.)

He knows I have a stock standard CoCo 3, and keeps reminding me.

On Viatel, specifically on Goldlink, he is one of the main OS9 advisers, and it is he who gives solutions to other peoples' problems. On the OS9 board he is serious. On the Clubroom board he is not.

On the Clubroom, Jeff is one of the main instigators of some very good jokes and puns, but more often than not the jokes and puns are appalling. He is, however, no worse than any other user, and is usually more coherent.

Running gags are the norm with Graham being the butt of most of them, and Jeff gives as good as he gets, but since the abuse and insults are good natured and not taken seriously, nobody really cares what is said.

Occasionally, though, a character appears that is geniunly abusive. These people do not have the wit to do more than string four-letter obscenities together and aim them at someone. These people draw down on themselves "The Wrath Of Larsen".

I have seen Jeff break knee-caps with one three line reply, and in one instance a three and a half page missive had an unsavoury character flayed alive, and set in motion a chain of events that led to him getting banned from Viatel altogether, much to the relief of many other users.

I didn't realise I was playing with such fire when I first started communicating with Jeff. I had just read the January 1987 CoCo, and a letter from him had been printed in which he criticises Goldlink for its lack of services. I dissagreed, and said so on clubroom, adding that I thought Jeff Larson was a whinger, Jeff then explained everything to me (he had dared Graham to print it) and that was the start of an extensive, profitable and highly amusing correspondence between us that continues to this day, or until this article is printed.

Finding Jeff on Viatel is not easy. Like many others he uses a nom-de-plume (nom-de-keyboard?). His is "Going Now." - this leads to his rather paradoxial opening line of "Hello. I'm Going Now." which causes confusion among new users who are not familiar with him. Once, he was known simply JEFF, printed in double height cyan characters on a red background. Then for no reason at all (which is as good a reason as any), everyone changed their names.

This caused Mike from Tasmania to put up the query, "has everyone gone stark raving mad?" The answer was yes, but no worse than usual. Everyone changed back to their old pseudonyn, exept for Jeff. There were a few other Jeffs floating around, so he kept his new name of "Going Now", printed in double height cyan letters on a red background.

If you are having trouble with OS9 or your CoCo 3, then Jeff is the one to talk to. He can be contacted through Graham, or quickly through Viatel.

and 5 and some others as before, depending on the equipment used.

That should be enough information to get you hooked up. The next thing is what to hook up to your computer.

One thing that you may wish to do is hook up an external terminal or even another computer as a terminal. Hooking another computer allows the exchange of data and programs between the 2 possibly different types of computers.

One thing that you will definately need is a "Comms Package". This is a program that enables the keyboard to be sent through the RS232 port and what comes from the other end to be displayed on the screen. Sounds simple enough, but it is actually quite a complex task.

The programs vary in complexity going from a dumb terminal to very powerful and complex programs with different protocols and file capture capabilities.

A dumb terminal program is the most basic: all this does is display the data coming in without any screen formatting or file capture. Screen formatting is where control codes are added at the other end to change the colour of the text and provide cursor control to clear the screen and position the cursor at any point on the screen.

The most commonly used is the Ansi-sys protocol. This is the one most used by bulletin boards, which was originally the IBM format and is the most used, because most of the BBS (Bulletin Board Systems) use IBM clones (nobody can afford the real one!).

There are also many different protocols used for the sending of programs. The first of these is ASCII. This protocol can only be used for text or ASCII data files. This is also known as the XON/XOFF protocol, because control sequences are used to stop and start the file transfer.

What happens here is the computer receiving the data will send the Xoff code when its data buffer is full, and when it has emptied the buffer, it will send the Xon code to the computer sending the data (the Host system), which will send until it again gets the Xoff code, and so on it goes until the entire file is sent.

The most commonly used file transfer protocol used is the XMODEM protocol. Ward and Christiansen were the fellows who came up with it, so it is known by that name as well. The way Xmodem works is it transfers the data in blocks. Each of these blocks is exactly the same length. Each of these blocks is transmitted with what is called a checksum. This is a single number which is arrived at by a complex formula and does what amounts to adding the ASCII values of each byte to make the checksum.

If the checksum sent does not match the checksum calculated by the receiving computer the block is resent. When that is received alright, the next block is sent. Standard Xmodem uses 128 byte blocks, other never protocols use larger blocks such as 256 bytes. The advantage of the larger blocks or packets is that less time is consumed with checksums.

If you are using OS-9 on the host computer, then there is a simple "Comms Package" - that is a part of OS-9 that handles the external terminal. Under OS-9, you may use Xterm which is a public domain terminal package that has the Xmodem protocol.

If you are using the CoCo, then you need to use a commercial terminal program, and I am not aware of any that allow the use of any but the Xon/Xoff protocol.

The most important thing to remember about directly wiring two computers together is that the transmit line one the first must go to the receive line on the second, and vice versa, the transmit on the second goes to the receive on the first.

A number of people have tried to connect both recieves and both transmits together, and were surprised when nothing worked.

If you are going to talk to computers in other places, you are going to need a modem (MOdulator DEModulator). These vary in prices from about $100 for a Do-it-yourself to about $500 for a Top of the line model.

There are varying speeds that modems use. The slowest is 300 baud (bits per second), up to 2400. There are others that use 9600 and above but, these are VERY expensive and not commonly used.

There are 3 standards we need to look at. These are V21 (300 baud), V22 (1200/1200), V23 (1200/75), and V22bis (2400,2400). Most BBS that you will use accept any of these, because the modem at the other end will recognise which baud you are using and adjust accordingly. Telecoms Viatel will only recognise 1200/75 baud and is the exception.

The baud rate is specified with the transmit speed last and the receive speed first. That means that 1200/75 will receive data at 1200 bits per second but can only transmit data at 75 bits per second. 75 Baud is about as fast as hand writing, and so is not suitable for sending large amounts of data. As an example, it may take 4 minutes to send a file at 300 baud, or 1 min at 1200 baud, or 30 seconds at 2400 baud, or 15 secs at 4800 and so on up to 19,200 baud where the file is almost received before it is sent.

Φ

From P.41

```
ced that the natives must be ver
y tall."
840 DATA"   A little further alo
ng, a ship's carpenter swam asho
re and planted the Dutch flag. T
asman took possession of the lan
d which he called Anthony van Di
emen's Land."
850 DATA"   Turning East, Tasman
 discovered the West coast of Ne
w Zeeland (The Land of the Sea).
 North-east from New Zealand, he
 discovered Tonga and Fiji. He t
hen sailed on to New Guinea and
arrived back in Java in June 164
3."
860 DATA"   In 1644, Tasman agai
n visited Australia exploring fr
om Cape York Peninsula to North
West Cape. His reports, however,
 did not encourage further explo
ration."
870 DATA"   Added to the map, ho
wever, were a further 3000km of
previously unknown or little-kno
wn coastline. He had also dispos
ed of the theory that New Hollan
d was bisected by a sea running
south from the Gulf of Carpentar
ia."
880 DATA"   Tasman later became
a successful merchant in Batavia
 (Jakarta)."
890 PALETTE1,54:ATTR2,4:RUN
@HH
```

Φ

From P.20

```
1220 CLS201:GOSUB370
1230 PRINT@105,CHR$(128)"instruc
tions"CHR$(128);:PRINT@162," THI
S PROGRAM WAS  DESIGNED ";
1240 PRINT@194," EXCLUSIVELY FOR
 THE  TP-10 ";:PRINT@226," PRINT
ER. SIMPLY PUT IN THE ";:PRINT@2
58," DATE  WHERE  REQUIRED  AND
";:PRINT@290," THE COMPUTER WILL
 GIVE YOU ";:PRINT@322," A TEMPE
RATURE PRINTOUT.... ";
1250 PRINT@354," USE FILES (MM*Y
YTEM/DAT) - ";:PRINT@386," MM=MO
NTH --- YY=YEAR       ";
1260 I$=INKEY$:IFI$=""THENPRINT@
428,"any"CHR$(128)"key";:FORX=0T
O300:NEXT
1270 IFI$=""THENPRINT@428,STRING
$(7,128);:FORX=0TO300:NEXT:GOTO1
260ELSEGOTO390
1280 CLS138:GOSUB370
1290 PRINT@235,CHR$(128)"finish"
CHR$(128);:PRINT@448,"";
1300 GOSUB220:END
1310  ************************
1320  * THIS PROGRAM WAS     *
1330  * CREATED BY           *
1340  * HARRY HOFFMANN       *
1350  * CROWS NEST CARAVAN PK *
1360  * CROWS NEST QLD 4355  *
1370  ************************

1380  ++++++++++++++++++++++++
1390  + ALL COMMENT LINES CAN +
1400  + BE OMITTED           +
1410  ++++++++++++++++++++++++
```

Φ

DRAGON LAND

by HUGHIE KERWIN

THIS IS A new section for all those people who are interested in role playing games.

The major game I play is Dragon Warriors by Dave Morris and Oliver Johnson and published by Corgi Books.

This is a brilliant and well set out system that is written with much common sense. It comes over as perfectly reasonable and plays well. It has one big advantage over many of its competitors in that it is relatively inexpensive.

Enough of my yakking. Drop me a line at either ...

Mark Snell
4 Oxley St,
Lake Cathie, NSW 2445

or ...

Dragonland,
PO Box 1742,
Southport, Qld 4215

... and let me know what role playing games you use and if you ever use your computer for it.

For those without a set of dice, you can use this small program. When prompted, enter the number of sides of the dice you want to roll, eg D20 for a twenty sided dice, and for a 4-sided dice, you enter D4.

You can set a default value for the most common dice used (change the 20 in line 20). Then all you have to do is press <ENTER>.

```
10 INPUT A
20 IF A=0 THEN A=20
30 PRINT RND(A)
40 GOTO 10
```

Thank's to Alex for the idea and encouragement. Hope the dice roll your way.

See you next month.

From P.21

```
? -";H(T);"Y/N";
1050 I$=INKEY$:IF I$=""THEN1050
1060 IF I$="N"THENPRINT@386,STRI
NG$(120,PEEK(1024));:GOTO1030
1070 IF I$<>"Y"THEN1050
1080 PRINT#2, H(T)
1090 PRINT@256,STRING$(250,PEEK(
1024));
1100 PRINT@357," ANY MORE DATA ?
  Y/N ";:SCREEN0,1
1110 I$=INKEY$:IF I$=""THEN1110
1120 IF I$="N"THENPRINT@357,STRI
NG$(25,198);:GOTO1550
1130 IF I$<>"Y"THEN1110
1140 PRINT@256,STRING$(250,198);
1150 T=T+1:GOTO1030
1160 '** NEW FILE ROUTINE **
1170 CLS150:GOSUB1700
1180 T=1:OPEN"O",#1,F$
1190 PRINT@98," NEW FILE ";F$;"
open <O> ";
1200 PRINT@162,E$"input"E$"data"
E$"now"E$"plaese"E$;
1210 PRINT@290," mm RAIN FOR ";:
PRINTUSING"##";T;:PRINT"/";DT$"
= ";:INPUT H(T):PRINT@318,STRING
$(2,PEEK(1535));
1220 PRINT@354," IS THIS CORRECT
 ?  Y/N ";
1230 I$=INKEY$:IF I$=""THEN1230
1240 IF I$="N"THEN PRINT@226,STR
ING$(250,150);:GOTO1210
1250 IF I$<>"Y"THEN1230
1260 PRINT#1,H(T)
1270 PRINT@418," ANY MORE DATA
Y/N ";
1280 I$=INKEY$:IF I$=""THEN1280
1290 IF I$="Y"THEN T=T+1:PRINT@2
26,STRING$(250,150);:GOTO1210
1300 IF I$<>"N"THENSOUND100,10:G
OTO1280
1310 CLOSE#1:CLS138
1320 PRINT@103," ALL FILES CLOSE
D ";:GOSUB1350
1330 GOTO1660
1340 ** DELAY ROUTINE **
1350 FORX=1TO3000:NEXT:RETURN
1360 ** CHECK-DISC-FOR-FILE ROUT
INE** THANKS TO BILL TOTTINGHAM
FOR THIS ONE ** RAINBOW APRIL/19
86, PAGE 18-20 **
1370 FOR X=3TO11
1380 DSKI$ 0,17,X,A$,B$
1390 C$=A$:GOSUB1470
1400 IF D$(F)=F$ THEN D=1:RETURN
1410 C$=B$:GOSUB1470
1420 IF D$(F)=F$ THEN D=1:RETURN
1430 IF LEFT$(A$,8)=F$ THEN RETU
RN
1440 NEXTX
1450 CLS154:GOSUB1700:PRINT@226,
" FILE ";F$;" DOESN'T EXIST";
1460 D=0:RETURN
1470 FORM=1TO128STEP32
1480 F=F+1
1490 D$(F)=MID$(C$,M,8)
1500 IF D$(F)=F$ THEN RETURN
1510 NEXTM
1520 RETURN
1530 '**FINISHING ROUTINE FOR**
1540 '**EXTENDING FILE       **
1550 CLS214:GOSUB1700
1560 CLOSE#2
1570 PRINT@194,"      ALL FILES
CLOSED      ";
1580 PRINT@258," RENAME FILE NOW
 PLEASE WAIT";
1590 G$=F$+"/DAT"
1600 KILL G$:RENAME"RAINTEMP/DAT
"TO G$
1610 GOSUB1350:GOTO1660
1620 PRINT@418," WONNA CREATE NE
W FILE  Y/N ";
1630 I$=INKEY$:IF I$=""THEN1630
1640 IF I$="Y"THEN T=1:GOTO1170
1650 IF I$<>"N"THEN1630
1660 CLS138:GOSUB1700
1670 PRINT@235,E$"finish"E$;:PRI
NT@416,"";
1680 GOSUB320:END
1690 ***  TITLE ROUTINE ***
1700 PRINT@34,CHR$(128)"rainfall
"CHR$(128)"by"CHR$(128)"harry"CH
R$(128)"hoffmann"CHR$(128);
1710 RETURN
1720 ############################
####### WRITTEN BY      (JULY 198
7) #### HARRY HOFFMANN
   #### CROWS NEST CARAVAN PARK
   #### CROWS NEST QLD 4355
   ##############################
#####
```

DR COCO

THE DOCTOR IS IN!

Dear Dr CoCo,
I refer to a bug that the CoCo 3 has - others have mentioned it as well. When the CoCo inserts extra characters, it then makes a new line number with the numbers it has inserted and puts the rest of your program as one line for the number it has inserted, eg

14950 bla bla bla
100 same line
300 again the same as 14950

... and so on.
CoCo will not list your program as separate lines, but as a whole program.
This has happened to me three times so far, and in one day!! MOST FRUSTRATING!
I would list the program and scan for the offending inserted line number and delete it. The program would then list each line as it should. Sometimes you would have to fix lines immediately following the inserted line number.
I have a disk-based system.
I decided after the third occurrence that the CoCo 3 was not saving (and/or loading) programs properly, and therefore it wasn't the CoCo's fault, but the disk's.
So I switched everything off (this includes unplugging the disk cable from the interface and unplugging the interface from the computer). I then went through the start-up procedure from scratch.
Something must not have been plugged in properly (probably the interface?), because I haven't had this bug since.
I hope this helps users who have this problem.
Jenny Hoad,
Rocklea, NSW

Jenny,
Thank you for that.
Another discovery I made to combat this problem was to save the program in ASCII, re-start the computer, and load the program in again.
Now since Basic sorts the line numbers from 0 to 65535, every line number will be entered as a new line. Then, all you have to do is delete the offending lines and everything is in order again!

Dear Dr CoCo,
I am writing to get some help on a few problems that I've come across.
A friend of mine talked me into getting a TRS-80 Colour Computer 2 with 16k. Since then its been upgraded to 64k with a disk drive. My friend then gave me two boxes of magazines. This is when I found a game that I would like to play.
The games are called "The CoCo Zone", "The Maze of Moycullen", and "The Mis-Adventures of Martha G.". They all stem out of the same magazine, Australian Rainbow Magazine, May 1986.
CoCoZone: I have typed the program in and then found there is no way to escape the jail or find the key.
The Maze of Moycullen: After typing it in, I found that things I needed weren't there.
The Mis-Adventures of Martha-G: I get an OM error in 4, only to find that there was a misprint after hours of tryihg to de-bug it. Line 4 and 5 are missing some statements and that's all I could find.
I've gone to my local Tandy shop and he can't help me. I have asked if these games were on disk, and no-one knows.
I would appreciate if you could help me find the games on disk or in a magazine without any mis-prints.
A.P. Chisari,
Mt. Isa, Qld

Mr Chisari,
In some adventures you might find yourself in a predicament that you cannot get yourself out of, and therefore have to start the game again.
This is the case with "The CoCoZone", and your present predicament which is being in jail. In short, that's the end of the adventure for you. I personally, and a few other of my more adventurous adventure freaks can't find any way of getting out.

And as for finding the key? That's part of the adventure - to find things and to use your head in some circumstances and your feet in others.

"The Maze of Moycullen" - I'm not too sure of what you mean there, so I'll have to leave it at that. If you could, please write again and give me some more information regarding your predicament.

"The Mis-Adventures of Martha" - there is one obvious misprint that I can see, and that is line 3.

Line 3 has, through a probable printer error, line 4 in it. The best thing to do is to re-enter line 3 and 4 again.

Line 4 starts after the variable TM is defined, or after 'TM=100'. After '100' is the start of line 4.

As for the ?OM errors, I can't help too much there, because the magazine introduction states the most likely cause of ?OM errors and how to type in your program.

Also, I'm sorry to say, but the Rainbow on disk/tape for that month (or any month for that matter) cannot be sold to anyone, for copyright reasons.

- - - Bargain Priced Software - - -

CoCo Pack - over 60 programs
Fun Pack - includes "CoCoSize"
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3 Pack I, 3 Pack II } for the CoCo 3 only

Each 'Pack' of programs $7, disk only
New Rainbow Pub'ns Box 286 Broadmeadow

Join in the fun.

CONF '88

Koonjewarre, Gold Coast, Qld.

October 1st and 2nd

JOIN IN THE FUN OF CONF '88
Conf '88 is at Koonjewarre on the Gold Coast of Queensland. The dates are 1st and 2nd October - that is, during the New South Wales and Victorian October school holidays.

Expo '88 will still be on at this time, so you can come up for Conf '88 and then see Expo '88.

Despite Expo '88, we've managed to hold prices to the same level as last year - quite a feat given the accommodation price rises during Expo in Queensland.

The Program: This year, the theme is "Computers in the Family", so we're encouraging you to involve your family in the weekend.

Apart from the computing themes, we'll have activities for the children, and something also for those who would prefer less computer involvement.

Koonjewarre offers some beautiful bush walks and a unique gathering of animal life for you to discover.

To provide you with an indication of the program for the weekend - and the speakers covering the subjects, the following provisional timetable is provided.

Saturday 1st October

9.00am	Stratergies for Developing Programs in Basic Johanna Vagg	Basic 09 Jack Fricker	MS DOS Tutorial Bruce Kerr and John Carmichael
12.00pm	Lunch		
2.00pm	Advanced ML Programming John Redmond	ML Programming for beginners John Carmichael	4GL's Brad McMaster
5.00pm	Bushwalk (Guided walk with Karen Court)		
7.00pm	Dinner and Awards		

Sunday 2nd October

9.00am	Advanced Basic George McLintock	Pascal (For MS DOS and OS 9 users) Bruce Kerr	Computers and Education Ross Eldridge
12.00pm	Lunch		
2.00pm	Supplier Addresses		
3.00pm	Hardware Mods Shad Ali & John Poxon	OS 9 Clinic Ron Wright & Alex Hartmann	Bushwalk Karen Court

The presentation dinner will take place on Saturday night where the winners of the prizes in the various competition categories will be announced.

Activities for children and non computer people have also been arranged. These include bushwalking, swimming (if the weather permits), card and board games and ball games. There is a playground for the littlies on site too.

There'll be an opportunity to renew friendships or make new ones; to meet some of the authors from our magazines; and to find the answer to those problems you've been experiencing all year.
Finally, should you like to discuss a subject not listed, phone or write and we'll attempt to include it during the weekend.

Failing that, mention your special interest during the weekend, and we'll attempt to get a group together to cover the subject.

The Speakers: This year we have a mix of old friends and new faces.

Of all our authors, Johanna Vagg's articles elicit more response than any. She could hold a Conf spellbound anytime single handed!

This mother of ten is always welcome at Conf - her insight, and her ability to relate to people's problems makes her tutorial a 'must'.

Jack Fricker is also no new face to our magazine readers.

Jack's speciality is OS 9 and he comes

to conference with broad experience in the CoCo, MS DOS and 68000 computer worlds.

Bruce Kerr has been a member of Goldsoft's staff since March, and in that time he has endeared himself to our readers with his talented and clearly written articles in Softgold Magazine.

We look forward to his tutorials, they will be a highlight of the conference.

John Redmond has lectured at every conference we've held so far - despite this, he has a growing band of devotees who value his ability to explain very complex subjects simply.

John has continued a series of articles on Forth in our magazines over the past four years and he will also be touching on Forth in his tutorial.

This year we wanted to invite two special tutorial leaders to conference. We asked three - in case one of them said no - it turns out that the three of them have accepted. Needless to say, we're not complaining!

The first of these is John Carmichael from Taree.

John has been wowing our readers for years with his excellent CoCo Machine Language programs, and he will be at conference this year to talk CoCo machine language AND MS DOS. We believe that his involvement will really make conference something special.

Another specially invited leader is George McLintock from Canberra.

Again George has a long term history of involvement with our magazine and his latest effort, a program which allows you to play a game between two differnt types of computer, really shows how far George has progressed.

We are indeed very proud that George could join us.

The third special invitee is Ross Eldridge who has spoken before.

Those who attended the conference we held in 1986 at Seagull's Rugby League Club may recall the excellent talk Ross gave on Education and Computers.

We asked Ross to do it all again - this time from his current perspective.

Since Seagull's, Ross has left the Education Department and now works with us. His comments will reflect the change from professional interest to that of a concerned parent.

Brad McMaster owns and operates MPD - a company which markets the 4GL program, Sculptor.

Brad will be talking about 4GL's in general as well as illustrating the talk with examples from Sculptor.

4GL's represent the state of the art in computer software - you'll be amazed with what Brad has to show you.

John Poxon and Shad Ali own and operate APD Developments, a company whose specialty is hardware solutions to complex problems.

Their company supplies a wide range of computer hardware, much of which they create themselves.

Their tutorial should be a most enlightening and interesting one for all computer owners.

For most of her life, Karen Court has been very interested in Australian animals and plants. She is an expert wildlife photographer, and a walk in the bush with her is a most educational experiance.

Karen will be leading the bushwalks at Conf '88 - make sure you join her for at least one.

Bargains! Traditionally, advertisers from our magazines use Conf to move stock - so Conf'88 is the place to find the bargains!

As an example, one supplier has software normally valued at $49.95 on sale this year at $5.00!

Bring some spending money!

Accommodation: Accommodation is in camp style rooms. Usually, there are about 10 beds to a room, but there are a few family rooms for early bookings.

Last year, those who shared the large rooms had a ball!

Some ladies asked to be separated from the rest of the group last year and again this year we will provide women's rooms for those who desire to use them.

Rates:

Accommodated

One person	$87.00
Family of 2	$155.00
Additional family members	$52.00 ea

This price includes supper Friday evening, breakfast, lunch, dinner and supper on Saturday, and breakfast and lunch on Sunday. PLUS accommodation on Friday and Saturday nights!

Non Accommodated

	One Day	Two Days
One person	$40.00	$58.00
Saturday Evening meal	$12.00	
Additional Family Members	$31.50	$45.50ea

This price includes morning tea, lunch and afternoon tea.

Payment

You may pay the total price when booking, or pay a deposit of $20 and pay the rest off by 7th September, 1988.

Conf '88 Registration Form

Name:.....

Address:.....

Phone:..... Number of people:.....

I am interested in attending tutorials on the following

subjects:.....

.....

Please find enclosed $.....
(Chq/Money Order/Bankcard/Visa/Mastercard)

Card No:.....

Signature:.....

MARTHAS TRADING POST

Well possums!! I've just been doing a few turns on my broomstick and I couldn't help but notice all that electronic trash you mere mortals seem to be hanging on to. Just like a lot of little bower birds, aren't we!! Ummmm!!

If any of you darling little possums would like to swap that junk for cash then why not place your ad here.

We'll run your ad for three months – and remember possums, let us know if your junk sells so we can adjust our records – and you never know, you just might be able to make enough money to purchase a super turbo charged "stick" like mine.

And possums – do it – now!

Martha.

*** Wanted ***

(jul '88)

* Video digitizer that works on a CoCo 3.

Phone David Kemp on (063) 62 2270.

***

(jul '88)

* OS-9 operating system, level 1.

Call Colin Gavn on (07) 357 9471 after 4.30pm.

*** For Sale ***

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