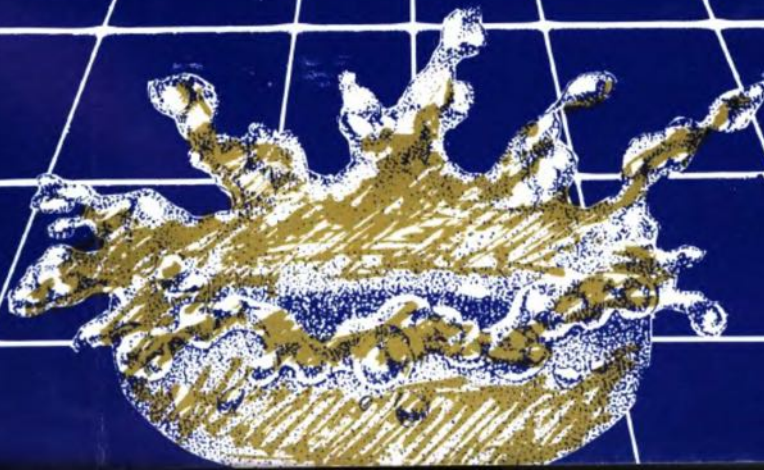


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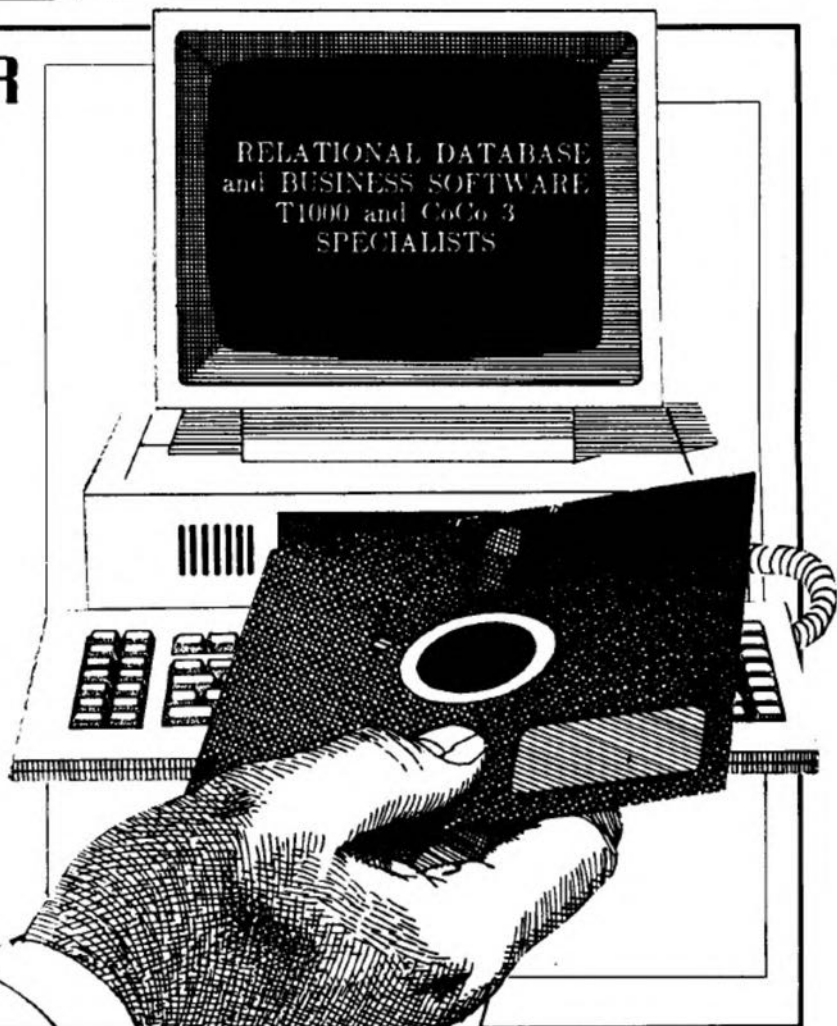
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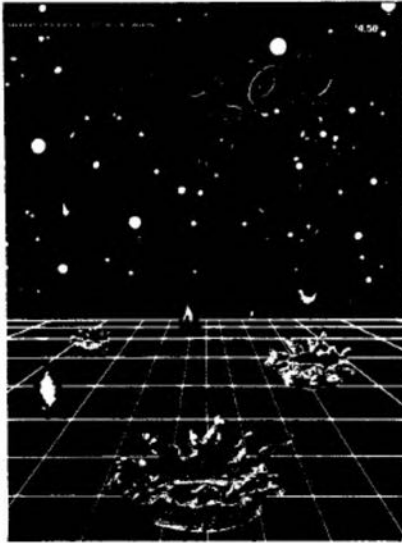
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PRO DESIGN 11
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SPECIAL PRICE THIS MONTH





WHO IS THIS MAGAZINE FOR?

This magazine is for computer users – especially users of Viatel, Tandy Colour Computer users, Tandy MC-10 computers, Tandy 1000 and 2000's and IBM PC's and compatibles.

WHO PROVIDES THE MATERIAL IN THIS MAGAZINE

The readers of this magazine supply the information you will find here. All of it has been volunteered and remains the property of the individual authors.

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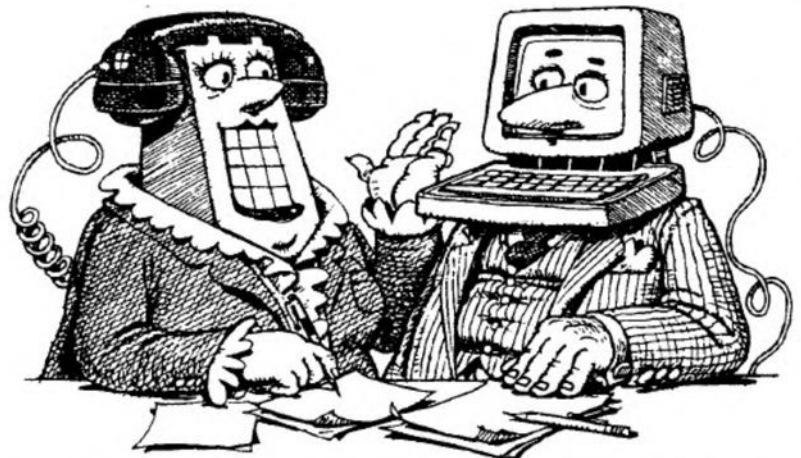
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Clubroom

This Magazine

If you have been purchasing Australian CoCo Magazine because of the easier level of programming, or because of the Viatel content, or because of the T1000 or MC 10 content then this magazine, "Softgold" is still the magazine for you!

Melbourne

Hold your breath Melbourne! This month you get Moomba - then you get me!!

I'll be there the week after Moomba, from 10th March to 15th March.

At 7.00 pm Wednesday 11th March, I'll be attending the Users' Group at Ringwood. Everyone is welcome.

I realise that last time I was in Melbourne I went to Ringwood, so I hope the other groups will understand that this is not meant to be seen as favoritism. It's just that Andrew and friends have the most amazing organisation and seem to be able to put a meeting together like this at such short notice.

There will be a \$1 entry fee to cover the cost of the rooms and of supper.

So, if you live in Melbourne, I hope you'll come along, we'd love to see you!

Melbourne Bash

Following inevitably on the heels of the event just described, is an extended Bash of the Viatel kind on the Friday and Saturday evenings.

The Friday evening bit looks like being at a Chinese Restaurant yet to be nominated.

The Saturday evening Bash is being organised by the Melbourne Viatelians. It sounds quite ominous, because as I write

this, they won't tell me about their plans!

However, should you be interested in attending any of these events, details will be on Com Station 642's Clubroom on Viatel. You can also obtain details from the Ringwood meet contact or from our office.

Competitions

We announce the Grafix competition for 1987!

Last year this competition produced some excellent results. This year we'll have to divide the competition between CoCo 2's and CoCo 3's because of their widely differing abilities.

There will be a special prize for an animated picture, and the Judge has intimated that she can be bribed if your picture is of a space theme or a landscape!

Don't worry about the judge (who this year is Martha G.), if you have a great grafix idea other than a space scene or a landscape, get it in EARLY!! We'll see you get treated with generosity!

The main thing is to start working on those ideas you've had hanging around that you just haven't done anything about, because the competition closes on the 31st July, 1987.

And don't forget the big competitions now get into gear in earnest for this year too!

Biggest of the big is the Tandy Games Award in which the winner will have his or her program purchased by Tandy for resale by them at christmas time.

The contest is open to CoCo 2 and CoCo 3 programmers, and has already catalysed some excellent work!

Like all our other contests, this contest closes strictly on 31st July, 1987.

In addition to the Games contest, there will also be the usual awards in Utilities programming, OS 9 programming, Applications programming, MS DOS programming and more.

All awards will be presented at Conf '87 in Sydney in August.

Best of CoCoOz #11 ON DISK

This disk - and note it is DISK ONLY - is a series of Bob Horne's Education programs for the Tandy Colour Computer with one or two other authors added for good measure.

The programs appeared in Australian CoCo Magazine in 1986 and represent the cream of an experienced teacher's programming for his primary aged classes.

Conf '87

Conf '87 will be in late August. Plan to be there.

As readers will know, we plan to hold it in Sydney, however, I admit to overlooking Conf '87 a bit. I'll have to get cracking! More next month!

Welcome!

Not only do we make it into Canada (in considerable numbers now), but these days we also go to Malaysia, New Guinea, New Zealand, CoCos Island (Land of Robinson Crusoe) and now Russia!!

We welcome our Russian readers and look forward to seeing them participate in this magazine in the near future!

T1000 News

By mid March, the T1000EX - Tandy's home and school IBM PC compatible will be in the stores.

You might wonder why the EX computer has been designed this way, however anyone with space problems will quickly tell you!

Despite the fact that the computer is compact, it has real MS DOS power, with 256K on board, a disk drive and expandability available through the PLUS series of boards.

Extra drives are available in the guise of both 5.5" @ 360K and 3.5" @ 720K.

The 5.5" drive will retail for \$499 whilst the 3.5" drive will retail for \$549.

Obviously the 3.5" drive has the advantage of being able to store more info, but there is more to it than that.

This is the new format IBM have adopted for all their PC software, so it follows that at sometime in the future, IBM compatibles will have 3.5" drives as standard equipment.

But for now, you will need access to both types in order to maintain that all important ability to run anything written for your computer.

Meanwhile, the popularity of the SX continues unabated in the US and is causing further delays to the delivery of SX's in Australia.

The SX is now due in April.

You can see the SX, EX and the 3000 HL at the PC '87 show in Sydney this month at Centrepoint.

Also released for the show will be Tandy's new Computer Catalogue - the first in some time, so it is especially welcome!

Speaking of the 3000 HL (Tandy's XT compatible), this machine is now in the Computer Centres and Zenix (multi user operating system) has been released for it. Tandy has a full accounting suite available now for this machine too. Zenix is currently around \$1000 whilst the accounting suite is nearer \$4000.

CoCo News

Did Tandy Go Far Enough?

A number of the groups have had conversations with me recently on the question of whether the CoCo 3 goes far enough in terms of being a sufficiently capable alternative computer.

There are a number of new computers around at present which at first seem to offer

tremendous advantages, and many have found it difficult to see any advantage in purchasing the CoCo 3.

In fact several owners have been so disappointed, they have already sold their new CoCo 3's!

In my opinion, this is a highly precipitative act.

Of course there will be some whose computer needs change.

Those with business interests especially, will find that the real world virtually dictates that they now need a T1000 compatible.

Again, many of you have progressed so quickly, especially with OS 9, that some may now need a computer such as the Amiga or the ST 1040 to meet your needs.

But for the greater number of us, the CoCo 3 is a low cost alternative (see Silicon Craft's ad this month!!!), which offers very adequate speed, more than adequate graphics, sufficient memory, and a very high degree of compatibility with the previous CoCo's programs.

In fact it is this high compatibility rate which is causing some to get upset when they find that the "3" won't run

an individual piece of software. (Told you I didn't like VIP!!)

As Ken Allen said last month in his column, you MUST treat the "3" as a new computer, or you will only get 50% out of it.

None the less, there are still some criticisms to be leveled at it.

Although the Basic is intended only to allow you to run and enhance your previous "2" or "1" programs, I believe it should have included a screen editor and it should have made sprite graphics available, apparently quite possible, through simple Basic commands.

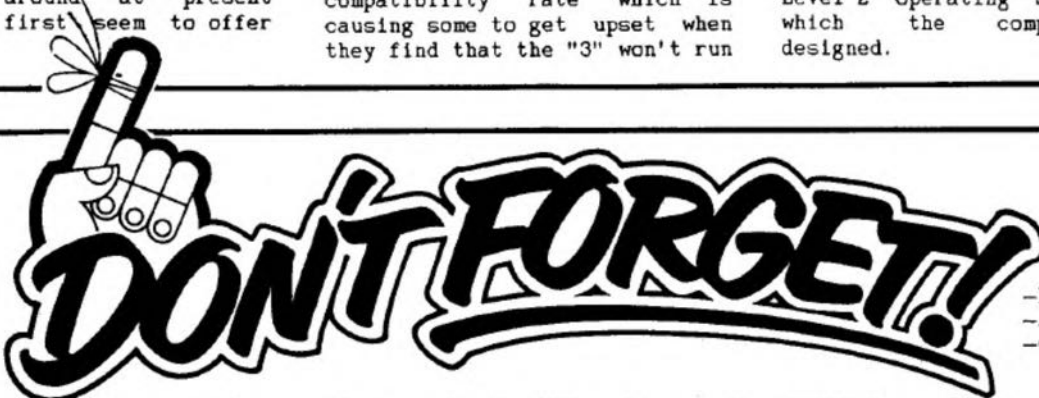
It should also have been given auto key repeat.

There have been some problems with the Basic, however I believe that these problems have largely been dealt with.

So, did Tandy go far enough? Yes! Very adequately so! The computer is a bargain at the price!

Not only is it a bargain, it is capable of running your old software very adequately, AND it is just about to have released for it the very powerful OS 9 Level 2 Operating System, for which the computer was designed.

- OS9 Level 2
- Viatel
- Telgraf
- Question time

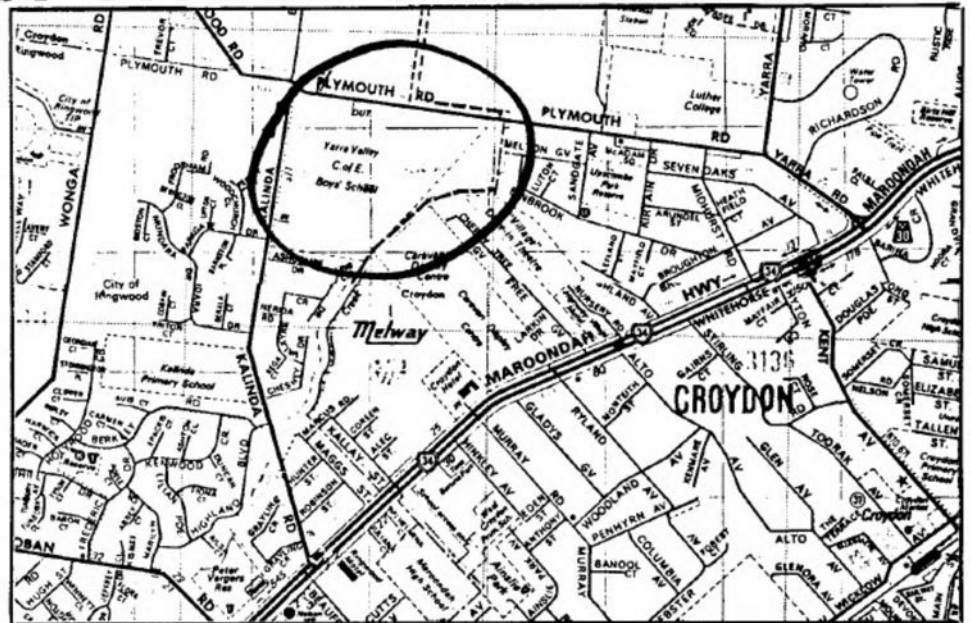


- Ron Wright
- Jerome Siappy
- Graham Morphett

USER GROUP MEETING

WEDNESDAY
the 11th
7PM

YARRA
VALLEY
HIGH
SCHOOL



See 'Clubroom' for more details

Let's wait and see just what the OS 9 Level 2 system does for your CoCo 3!

And speaking of OS 9 Level 2, the word is that it will be in the stores at the end of this month.

Price Increases

No one likes to see prices rise. Least of all us! We've been containing or absorbing rises due to the lack of value in the Aussie dollar for sometime now.

This magazine especially, has become something of a problem because of changes to the costs associated with production of it.

So effective immediately, we have had to increase the price of this magazine.

In addition to this price increase, we've looked again at the cost increases related to the production of our disks and tapes. As a result, there will be an increase in the cost of these too.

The news is not totally bad, because as is usual with our price rises, we will accept subscriptions at the old figures for this month only!

The offer applies to anyone, regardless of when their subscriptions fall due.

Club News

The Sunshine Computer Club meets at the Sunshine campus of the Footscray T.A.F.E. and the contact is Ian Buttriss phone 03 314 3240. Their address is PO Box 111 Sunshine Vic. 3020.

The club has 12 members and meets every 3 weeks. If you live in the area, why not go along and see what its all about!

There are big changes happening in the Latrobe Valley area.

In a letter from Leigh Dawes recently, he tells us that the Latrobe Valley Group has split in three.

The new groups now meet separately in Moe, Morwell and Traralgon.

The new contacts are Jim Welsh, Jeff Sheen and Leigh Dawes respectively.

Speaking of the Latrobe Valley, their Bulletin goes from strength to strength! Joseph (above) is the Editor now and Leigh Dawes carries the can for proof reading! Brave lad! Our proof reader prefers to remain unidentified!

Bill Bower from Launceston sent a note to say that he is setting up a group in

Launceston. Bill has been contact there for a while now, and his number is 003 44 1584 (AH).

We now have a contact in Ingleburn. He is Stephen Ridgway and his phone number is 02 605 7382.

Finally, Wyong users should contact John Wallace as he has meetings arranged for this year in one of the local halls. He asks that we point out that this hall is built to cope with disabled people, so if you live in that area and own a Tandy or IBM computer, you have no excuses!!

Photos Please!

Its all very well for these Viatellians to have their photos in the mag from time to time, but we'd like to get some of the Users' Groups in there too!

So come on Liverpool, Perth, Wagga...all of you, how about a couple of photos of your group. We'd be especially interested to see photos of your group at any event you attend as a group, such as computer shows, fetes, parties etc.

InterTAN Verses Tandy

Here begins change number two! Last month we told you about the change to the Tandy name.

We're now informed that we misunderstood the change - but then I think most of the staff did too when the change was announced!

The latest is that the Tandy stores and the products sold there will still be known as "Tandy".

InterTAN (Australia) Pty. Ltd. now owns the Tandy stores, and that's the extent of the change, so we can continue to call our computers "Tandy computers"!

Understand? Good! Explain it to me!

The Tandy Store Award

The Store award for March goes to Maitland store which has as its manager super keen Denis Bailey.

As is usual in these cases, we've had letters about this man, but despite the letters, we have decided to confer this month's award on Tandy Maitland.

Congrats Denis, keep up the good work!



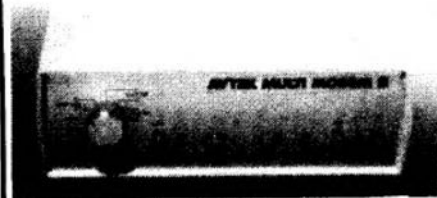
AVTEK PUT THEIR MESSAGE ACROSS

At a time when Australian manufacturers seem to be looking for the light at the end of the tunnel, at least one local outfit seems to have found it.

Avtek, the Lane Cove based telephone modem designers and manufacturers attracted the interest of the giant mainframe database company, Computer Telecommunications Corp.



AVTEK Mini MODEM



AVTEK Multi MODEM

CTC, for obvious reasons, has more than a trivial interest in getting the necessary hardware into the marketplace to bring access to their educational database within everybody's reach.

A long hard look at the field attracted CTC to Avtek resulting in their acquisition by CTC and a welcome injection of funds to the enterprising Oz manufacturer.

The Avtek Minimodem II is now standard equipment in a CTC software/hardware package on offer to 10,000 Australian schools and also incorporating the IBM JX3 Color Computer.

Now, who says Oz manufacturers can't do better!

Spotlight

THE WINNERS

People keep asking me, "where is all the CoCo 3 software?"

Well, after this competition, I can tell you!!

It is right here in this magazine, in Australian CoCo Magazine - and in the disks and tapes that will come from these publications!

We've been inundated with excellent quality programs for the CoCo 3!

I'm only mentioning one name so far as winners in this competition go, because his program, "Artist", is so good!

But other entrants take heart! The next competition deadline is 31st July, 1987 - there is a lot of time yet to catch up and surpass the efforts of Craig Stewart - the author of "Artist", a program which appears this month in Australian CoCo and which is an EXCELLENT graphics creation utility.

"ARTIST" uses the 16 colour screen to make beautiful pictures which can be saved to disk or tape.

CoCoOz this month has two files from this program which show the magnificent effects you can create!

Congratulations go to Craig, who wins a selection of Tandy CoCo products including a set of Joysticks, a Koala Pad and a box of disks - prizes to the value

of about \$200.00!

And thanks go to Tandy for these prizes, their participation on this occasion has certainly proved valuable!

The Music Competition was supposed to be smaller again in scope!

But it blew out because we received music in Basic, in Music + format, in Musica format, and in Orchestra 90 format.

Tricky to judge of course, so we opted for the coward's way out and decided to award prizes in all four categories!!

Again we received music from many people. Thank you to all who entered the competition - please try again!

In the Basic section, Johanna Vagg and family won the prize with their clever use of the PLAY statement to produce some interesting effects.

In fact Craig Stewart discovered one of the same effects, but the family from Forbes took the experiment further!

Johanna's Basic music winner is "Laura".

In the Music + section, Johanna Vagg also won with her rendition of "Ave Maria".

Johanna specialises in using this program so we weren't surprised in the least when she won this section of the competition.

Harvey Smith won the Musica section with his rendition of "Stardust" by Hoagy Carmichael.

Musica is available from Computer Hut Software and is a very useful program to have if you enjoy creating music on your computer.

Finally, Michael Monck won the Orchestra 90 section with two pieces, "Axel" and "Popcorn".

Orchestra 90 is a ROM pack program you can purchase from Tandy which provides Organ quality stereo music, and which plugs into the ROM port of your CoCo.

Michael's two music files show this ROM pack off to considerable advantage.

The winners of each of the sections of the Music Competition all receive two boxes of our DSDD disks.

Congratulations

Feedback

NEED HELP? Write to Graham, to Dr CoCo or leave a message on Viatel and we'll do our best to answer your enquiry in these columns as soon as possible.

LETTERS

Dear Graham,

After a couple of hours work, I finally came up with a simple way of changing the border colours in the 40 and 80 column text screens on the CoCo 3.

In the 40 column mode LPOKE 516158,C and in the 80 column mode LPOKE 516167,C where C is the colour number.

Also, for some reason, the speed up poke on the CoCo 3 is different than that of other CoCo's.

On the CoCo 3, it is POKE 65497,0.

I hope you find this information useful.

Phillip Dort
Boronia, Vic

Phillip,

Thank you for that information, we tried it and it looks great.

Graham.

*

Dear Graham,

I have a few questions to ask your staff.

Firstly is the COBOL language available for the CoCo.

Secondly is there a battery backup system for the CoCo so that you do not wipe the memory when you switch the main power source off.

Thirdly is it worth buying disk drives and printers from America. I know they are cheaper even with the Australian dollar the way it is, but I am talking about the warranty, mail, etc.

Finally could you send me a list of stores (some of them) that sell Colour Computer Software and Hardware if it's not too much trouble.

Templeton Staines
Cootamundra. NSW.

Templeton,

COBOL is available from Paris Radio Electronics, who advertise in Australian CoCo Magazine. Their phone number in Sydney is (02) 344 9111.

I have heard, unfortunately not at first hand, that somebody

has done this. However, it would be a difficult job as CoCo uses static RAM chips that are either ON or OFF. When the system dies, so do the RAM chips. If you did want to keep a battery backup of your RAM (like the Microbee's) the conventional wisdom is you would have to have Dynamic RAM chips and re-wire the RAM circuitry slightly.

We don't have a comprehensive list of stores which supply software and hardware for the Colour Computer.

In general terms, Computer Hut Software imports most of the games and utilities for the CoCo whilst Paris Radio Electronics and Blaxland Computer Services service OS-9 and hardware needs.

Graham

*

Dear Graham,

As a new owner of a Tandy 1000 I am interested in the Golddisk 1000 re how many issues and how much will it cost me to order the complete set.

I would also like you opinion of the COMBI/1000 - single slot 640K memory, RS232, DMA board available from ASP Microcomputers.

William Boardman
Pt. Lincoln, SA

William,

This board is an economic and useful edition to your Tandy 1000. We recommend you buy it.

Graham

*

Dear Graham,

I was reading the January 1986 issue of Australian CoCo Magazine, and in particular the article entitled "Whats on CoCoOz", beginning on page 45.

On CoCoOz number 21, there is an obscure reference to OS8. It states; "OS8 - The system for experimenters! Access just under 128K on any system!"

What I wanted to know was, what exactly is OS8? Is it purely a software modification or is it a hardware alteration? How can I access 128K?

Currently I own a 64K Extended Colour Basic CoCo2, which is tape based., and I am finding the 32K somewhat limiting to my expanding interests.

Any information you can supply would be greatly appreciated.

Congratulations on an excellent magazine. I learn something new every month.

Noel Hall,
Dallas, VIC

Noel,

OS8 is a system we've just revived for the Woodrow's Wonder Computer on Viatel. OS8 has been credited with many capabilities, but perhaps its greatest useage is by the State Rail Authority in one of Australia's states (can't remember which one) to maintain their "Time Tables".

OS8 is able to maintain scheduling of trains in that state with an error factor of +/- 2 months.

As you can see, OS8 is highly desirable as an addition to any computer, particularly with the computer owner who wants to go bald, or who enjoys tension in his work.

Unfortunately, due to the wild enthusiasm (emphasis on WILD) with which OS8 has been adopted by WW owners, the system is temporarily unavailable for Tandy owners.

We recommend that only users with a sense of humour attempt to operate OS8 as it does require some getting used to!

Graham

*

Dear Graham,

I have been buying your magazines for about 15 months now, and find that although the local content is much improved your program listings are of a very poor quality.

I also know that no notice will be paid to the comments contained within this letter.

Firstly let me say that I would much prefer to subscribe to an Aussie magazine rather than the US one you are trying

to emulate.

But until I consider that I am receiving value for my hard earned dollar will go on buying the magazine I consider gives me that value.

Your magazines continues with such glaring inaccuracies that I can remain silent no longer. Please edit articles from the US. You publish word for word and DO NOT even change references to US Rainbow page numbers.

I expect information published to be accurate and up to date, but even your list of user group contacts is at least 3 years out of date. What information am I to believe in your magazine after finding so much I know to be false. I commend you for your efforts to produce an Australian Support medium for the CoCo etc, but a policy of continued improvement must be followed if your efforts are not to be in vain.

To date improvement has only been marginal and I do not find this acceptable.

I have gone into specific instances because this letter would turn into a manuscript.

I hope for accelerated improvements.

Harold H. Duncan

Harold,

Speaking for the team of people who work on this magazine and who put in many more hours than they are paid for, I can only say that we produce this magazine to the best of our ability.

The User Group Contact list is updated virtually every month although it was not updated for the January issue. This work is done well in advance of the preparation of the rest of the magazine and there can be a lead time of about two months between when information is sent and when it makes it to the magazine.

(Which is why Viatel is such a useful system to be on - information of this nature changes daily on that system.)

I am aware of a listing that we have had for Greenacre in South Australia which has been there since Greg's day.

Although I have recently been told to the contrary, it is only in the last month or so that I have been made aware that the lady in question is no longer interested in being a contact.

We can only make changes to the listing when we are informed that the changes exist. In this case, I am told that our office had been notified previously about this change but the first

I knew of it, was just recently when I received a letter regarding this change.

I trust that now we have taken the formidable step of dropping the US content, that those of you who feel the need for more Australian material will put your actions where your mouth is and supply some. We can't supply programs and articles of high quality out of thin air; they have to come from capable people such as yourself.

Finally, I defend the people who work so hard for us in paste-up, their's is a most difficult task and I'm sure that reference to the last 12 months of either of our magazines will show a definite growth in the quality of their work.

I'm not only pleased with what they do, I am impressed by it.

Graham

*

Dear Graham,

I have just got my new CoCo 3 and I am in need of a high res screen dump for my TP10 printer. Can you help me please.

David Kemp
Orange. NSW.

David,

I know of no screen dump available for the TP10 and I think I can say fairly safely that unless someone who currently owns a TP10 printer writes one in the next six months, it is unlikely we will be seeing one produced for the CoCo 3.

Graham

*

Dear Graham,

I would like to enquire if you have any 3-D rotational programs in your company as I would like to get hold of one.

A program that enters x,y,z coordinates from keyboard then calculates them in memory or on disk to be displayed on screen.

A program than can enter : Lines or Circles or both, enter all points and then perform the display.

If you have such a program please let me know as I am in great need of one.

My Address is:
Flat 3/23 Parke Cres
Alice Springs
NT, 5750

I have a 64K Colour Computer and disk drive and tape recorder.

Colin Gawn
Alice Springs. NT.

Colin,

The particular program you are

looking for is called Icosa and can be found in the "Best of CoCoOz #1 - Education".

Graham

*

Dear Graham,

Can you recommend any books which relate to the workings of the cartridge port. Also, are there any books which explain the memory setup of the 64K ECB computer in detail. If these books exist can you tell me the names of these books and possibly how much they cost.

I now buy the Australian CoCo Magazine and find it very informative. I like the hardware projects which deal with robotics. Other parts of the magazine are very helpful.

Thomas McManus
Huskisson. NSW.

Thomas,

We know of no book specifically dealing with the cartridge port.

However, we are about to twist Geoff Fialas arm, the acknowledged expert in Australia on the inner workings of the CoCo's I/O port. We are looking for to a most informative article from Geoff.

Watch this magazine for further developments! (Hi Geoff!)

Graham

When sending to us for anything, please detail what you require.

Recently we have had several instances of mix ups caused by people sending a cheque only in the post.

Even if you send your info on Viatel, or speak to us by phone, it is still necessary to detail what you want in a note you enclose with your money.



Dear Dr CoCo,

I own a 16K ECB grey case computer. I am enquiring if you could tell me where I can obtain a schematic diagram which suits my model of the CoCo.

Peter Traianos
MacLeod. VIC.

Peter,

There were at least 4 different grey case model computers made! You didn't tell me your model number (26-3????). Anyhow, we've taken a 'shot in the dark', and sent you a schematic diagram of the CoCo.

Hope it serves your purpose.

Dear Dr CoCo,

I have three queries concerning Australian Rainbow Magazine (which I greatly appreciate every month). These are:

1. In the February 1986 edition, on page 61, Bob Rosen introduced a new version of OS-9 v02.00.00. Does this imply a not too far in the future Australian release, and when would Tandy be likely to know about it? I intend purchasing OS-9 in the near future and would prefer the latest version. However, if it is not going to appear for sometime, I would buy v01.01.00. (is there a possible upgrade path to v02.00.00 via user groups etc?)

2. I have had some ideas for technical articles for Australian CoCo, and would like to know any preferred method of submission.

3. Finally, one small complaint. I appreciate the writers of M/L programs converting them into data statements etc, for people without an assembler. However, if no source code listing is printed as well, then it becomes very difficult to work out exactly how a program executes. This information would be beneficial to novice M/L programmers and people wishing to modify routines for their own purposes. At sometime, a source listing would have to occur.

Do you not print them due to spare considerations, or aren't they supplied to you?

Peter Milway
Dandenong. NSW.

Peter,

To answer you numerically:

1. OS-9 level 2 is to be released in Australia by Tandy by late March this year, the most up-to-date version

available for OS-9.

2. Submitting your programs:

With your program(s) we like them printed out on a printer, with full instructions.

If your program is a machine language program and you can supply the source code, we'd be pleased about that. (We usually don't get them, so we can't put them in the magazine.)

The instructions can be written up on Telewriter (preferred), Telepatch (preferred), VIP, Scripsit, Pen-Pal, or any ASCII file.

The program itself should be saved three times on the tape with one version in ASCII. The other side of the tape could hold the instructions.

If you send it in on a disk,

we'd like each program saved twice over with one copy in ASCII (ie if your program is called TOP, save the second ASCII version as TOP2).

3. All M/L programs we currently get are converted into BASIC data statements. We use a program called "MLDATGEN", a program to do the job for us (this program appeared in the early 1985 series of CoCo Magazines).

After they are converted, they are then RUN to see if they work. The actual M/L program itself you can find on the tape version of the same month.

Source Code listings we rarely get, and, if we do get them, we put them into the magazine.

SUBMITTING YOUR WORK

THIS IS A short article on how to submit any one of the following to the Australian CoCo or Softgold Magazine:

- Article
- Hardware Modifications
- Programs
- Letters
- anything contributing to the magazines.

Articles:

If you are sending an article, we would prefer that you send it in via a tape (saved three times) or disk. We don't really mind hand written or printed articles, its just that the letter takes longer to get in the magazine.

The wordprocessors we use are:

- Telewriter/Telepatch
- VIP
- Pen Pal
- Scripsit

Hardware Modifications:

When sending in a hardware modification, do like the above and send the instructions in via either tape (saved three times) or disk. Please include very well labelled and explained diagrams!!

Programs:

Programs take up a little more time than the above. With your program, we would like you to include:

- Instructions (no matter how small) saved on any one of the preferred wordprocessors.
- A hardcopy of the listing. (ie a print-out of the listing). This is so we can see how the program runs at-a-glance, detect and fix any bugs we might encounter.

- Saved onto either tape or disk. Instructions for both are as follows.

For disk users:

We support 40 track, double sided drives.

Save each program twice, one with the original filename, the second copy with, say a '1' at the end of the filename,

eg, The file we want to save twice is called "SUPER". The second copy could be called "SUPER1".

Why? In case the first one crashes, there's always the second one (yes, we've had some programs crash on us, but we were relieved when we found there was a second copy.)

As well, save the instructions in the same manner.

This applies with any other language you might send to us, whether it be OS-9, BASIC, BASIC09, Forth or whatever.

For tape users:

Save the program three times with the last copy being in ASCII.

Save the instructions the same manner.

Send all of it to:

Alex Hartmann
Goldsoft
Freepost 5
Southport
QLD, 4215

No postage is required on this address.

Letters and anything else:
Send it in to:

Goldsoft,
PO Box 1742
Southport, QLD
4215

COM • STATION 642

SWANLINE



by Samantha McCormick

THE NEW YEAR is traditionally the time for new beginnings, resolutions and all the inspiring stuff that, theoretically at least, causes hope to spring anew in flagging hearts. 1987 has GOT to be an improvement on 1986!

With this in mind we left our troubles behind us in NSW and headed for sunny QLD, the Gold Coast! Home of Goldlink itself!

We, being SWAN (H.R.H.), White Rabbit and Paragon - known to the uninitiated as Samantha, John and Robert - had been Viatel users and Goldlink fans for nigh on a year. There was simply no where else to go for Goldlink supporters! We were headed for our Mecca!

Ah the sunkissed beaches, the bronzed muscular men, the rolling surf, the bronzed muscular men, the holiday makers paradise, the bronzed muscular men.

Innocent folk that we were, Goldlink was our first port of call. "Hi Graham! Anything we can do?" Famous last words if I ever heard them.

Three weeks later I am still here, locked in the office, chained to the terminal, the novelty of updating rapidly wearing off with not a bronzed muscular man in sight. SOB!

To be fair, someone does pop in and feed me occasionally, and I have finally got my Care Board up and running, which (push, plug, hint), if you haven't yet noticed, can be accessed on page #642317#.

We've actually managed to put up quite a few new boards lately (they've all got extra time now I'm trapped here).

There is, of course my Care Board, which has been specially created for anyone with problems. Or lonely folk who want to talk something over but want a genuine, caring response (sorry Martha).

We have the Homework Help Board sponsored by that talented, hairy nosed marsupial Wombat, teacher extrodinaire, to

assist all our students in study, exams and schooling problems.

There is even Martha's new Psycho Analysis Board for the masochists among you.

These combined with all the other boards we have for your educational and entertainment pleasure, add up to an awfully busy office and an awfully tired me. So I hope you'll appreciate it!

The advertisers do! In addition to Tandy we now have East-West Airlines keeping you up-to-date with their services. A number of other companies are either on line or about to be. I'm sure you'll be able to make good use of them - we love 'em!

More good news for Clubroom fanatics (and aren't we all? - well, aren't we?)

FAST UPDATES!!! Yes! Even as I write Graham is tearing around like a one armed paper hanger, organising the system that will bring your messages to you LIVE! (Awe inspiring stuff aint it?) In fact, with luck, even as you read, it will be operating now!

Well.... don't just carry on reading! Go see if I'm not right! No? Still reading huh? Well, I can hardly blame you as the next topic is (drum roll please):

THE MELBOURNE BASH

First the good news. Its on 13th and 14th March! Most of you should've recovered from the last party at Ratbag's. Though from the look of some of the photos in February's mag, that's still debatable. Anyway I'm sure you are looking forward to being reunited - or something - with your fellow Viatellians.

Now the bad news (for me anyway) - Graham won't let me come! He says he has swallowed the key to the chain binding me to the terminal, which means its probably half way out to sea by now!

I'm supposed to do the updates while he is out having fun! (All

support messages to the free SWAN campaign to be sent to 64231 immediately!)

All in all this sort of atmosphere leads to tempers hotting up, disputes arising and as seen on Jan 24th WAR!

No, NOT the ongoing war between Martha and the general population. The other one....

The Great Com Jok War

Well remembered by the survivors and much appreciated by Viatel who now recognise the truth of the old adage "war is good for the economy".

It was the busiest night Goldlink had ever seen. (As testified by we, still recovering Com Joks, who were still plugging diligently away at our keyboards at 4am Sunday morning.)

It started fairly innocently with an attack on the Terran Federation by Neil's 7.

It progressed rather nastily after the rebels captured Lady Daisy and submitted her to the supreme torture. Neil's socks! Then came germ warfare with Private, Captain, Major, General Sundry releasing an evil virus on the planet. Each individual little germ packed in its own space suit, marching dauntlessly onwards.

Chaos resulted when that attack was turned back, and long, bloody battles ensued, ending horribly with the Blue Whale holding a shot gun wedding between the wicked computer Zen and our own Princess Cygnus. (A divorce is now in process on the grounds of insanity - they forced her to listen to Val Doonacan tapes until she broke.)

Still, after war came truce. Emphasised by Neil himself visiting, H.R.H. SWAN at Goldlink. The hand of peace was extended, and we all romped happily off into the sunset. Promising never to fight again - until next time.

And so, for now, we are all living happily ever after, but then, it is only February....

See you on the BBs SWAN

COM * STATION 642

GOLDLINK 64231451a Oc
Clubroom Goldlink Member

705471270
THU 12 FEB 1987 20:14:29

> Oh! Wow, great Ron's Programme would make this really great, if only I could read the manual, send this message, stop my fingers trying to go to the wrong keys, type faster, and had a colour monitor! Thanks Ron, it looks like the best thing since sliced bread!

JEFF

The only problem being that you need to be some sort of mental genius to read the instructions...right? How's the cyclone? G

*

GOLDLINK 64231454a Oc
Clubroom Goldlink Member

067000760
THU 12 FEB 1987 20:21:56

> HI G' EVERYONE. I'VE FINALLY JOINED TH IS CRAZY VIATEL. WITH A BIT OF LUCK I MI GHT GET KNOW WHAT I'M DOING. (I HAVE BEN KNOWN TO GET THINGS RIGHT). I HOPE

SIMO
(BUNDEBERG)

Simo!! Hi Yall! Say Hi to Jeff...he's one of us...unfortunately, & Eddo is also too also as well I think, sometime s...Welcome to our nightmare! G

*

GOLDLINK 64231468a Oc
Clubroom Goldlink Member

705471270
THU 12 FEB 1987 20:53:10

> Graham, What do you mean, I'm one of you?

I'm not one of anything. I've told you before - I'm JEFF.

Hi Simmo. Who are you? (He said thinking, is this one of G's friends, will have to watch this one)

JEFF

This is a fellow Rainbow reader of dubious but great antiquity....just like you Jeff... Have you put the tape on your windows yet? G

*

GOLDLINK 64231469a Oc
Clubroom Goldlink Member

720326910
THU 12 FEB 1987 20:51:58

> HI, Just a note to say thanks for the mags.I got them today..Great reading... I'm on my way back to them see you all later.

Mike.

WOW, someone who actually got the MAG AND is reading them. Amazing!!..WR

*

GOLDLINK 6423142a Oc
Clubroom Goldlink Member

062003660
THU 12 FEB 1987 22:28:44

> Hello Folks.Are you having Fun?I'm no t.I cant get any copies of Feb.COCO mag. I am really cross.Neither of the local Tandy stores had it...bum....

Fruitbat

Try Mudgee Fruitbat!!

*

GOLDLINK 64231414a Oc
Clubroom Goldlink Member

067000760
THU 12 FEB 1987 23:06:27

> JEFF YOU RECKON THIS IS A NIGHT MARE. WELL YOUR WRONG IT'S WORSE. THE MISSUS I S CRACKING UP ALRBYDY. ALL SUJESTIONS AP PRECREATED.

SIMO

There is nothing like a nasty missus to ruin your day! Bring her on here so we can introduce her to Sundry! Sundry would like to meet her! G

*

GOLDLINK 64231416a Oc
Clubroom Goldlink Member

062003660
THU 12 FEB 1987 22:59:26

> I did try Mudgee,because it IS local, being only 30 miles away.Anyway,the only literature they stock is for (AARGH) a mstred. (yuck).Dubbo Tandy only had Rainb ow.This never happened when Mike Munroe ran the shop... ..Fruitbat

Have you phoned our contact there, the lovely Mr Stone? He has a caish I fink. G

*

GOLDLINK 64231424a Oc
Clubroom Goldlink Member

665286910
THU 12 FEB 1987 23:20:33

> Unfortunately 2chy have been having f inancial hassles but as in the past I'm sure the people of Coffa will help out. (we're a nice bunch really) Bunch get it Bananas!ahem sorry bout that! Anyway Goodnight all! and make it a very intere sting one <ZARD>.

Night ZARD...I wouldn't talk about bunches on this board mate....we have er, a couple of weirdos on tonight! G

*

GOLDLINK 64235315a Oc
Tandy Users' BBS Member

665286910
FRI 16 JAN 1987 20:32:34

Does anyone know where I could obtain a Basic compiler for the 64k Coco 2. If e o please MB me on 665286910.

<ZARD>.

*

GOLDLINK 64231430a Oc
Com Station 642
February's Australian CoCo Magazine

this month features articles, photos & items of interest to Viatel Users.

Spècially featured is our very own Lord Schizoid, caught in the act!

Other articles and programs included in the magazine will appeal to Tandy CoCo users & IBN PC/Tandy 1000 users.

And this month, at great risk to the management, we've included EGGEMON in the outer limits (ie, its not there!)

You can obtain the February issue of CoCo Mag from any Tandy Store. Sorry no more Viatel orders...sell out!!

*

GOLDLINK 64231426a Oc
Clubroom Goldlink Member

709813860
THU 12 FEB 1987 23:30:26

> Simo - get rid of her. Computers are more fun (in some ways!)

dBEST 2

I always figured you had another problem besides Jeff!!

*

GOLDLINK 6423531a Oc
Tandy Users' BBS Member
234491110
TUE 27 JAN 1987 10:07:07

> KGEE: Deskmate actually runs under OS-9, although it runs transparently (meaning you don't have to touch OS-9 to use Deskmate). This means any DOS can run it as long as you can boot OS-9. If youf DOS doesn't have a DOS or OS9 com-mand, there is a little program in the Deskmate manual for booting it.

--Roeko!--

*

GOLDLINK 64231435a Oc
Clubroom Goldlink Member

062003660
THU 12 FEB 1987 23:47:22

> Would that be Mr.Stone of Dubbo Tandy 71 might have to get out my "Despairing Beggar Standing Bare Foot in The Snow" outfit and see him.

...Fruitbat

No...that's Stoney of Mudgee...as in the UG Contact there...Look in last month's mag for number...or in Tandy mag on 6422 G

*

GOLDLINK 6423534a Oc
Tandy Users' BBS Member

262289400
THU 29 JAN 1987 20:39:55

> To find out what D.O.S. you are using just try this short program :-

10 A=PEEK(308):PRINT A

Where 19 = R.S.DOS, 1.0.

" 20 = R.S.DOS, 1.1.

" 29 = Spectro Systems.ADOS 1.01.

*** ART ***

*

<p>GOLDLINK 6423535a 0c Tandy Users' BBS Member 628146660 TUE 03 FEB 1987 18:41:09</p> <p>> Well, I finally saw Viatel in colour last night when demonstrating it to the A.C.T. CoCo group....great how the system stuffs up at the wrong time huh?? Now to the Q's... 1) Does anyone know of Dr Pebbles programmes "Un-Disk" / "Un-Doe"?? 2) OS-9 L2...is it worth the upgrade?</p> <p style="text-align: right;">Any answers?? Thanks. Frazzi</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423536a 0c Tandy Users' BBS Member 234491110 WED 04 FEB 1987 09:22:12</p> <p>> Hi Frazz. Yes, Level II is worth the upgrade, particularly on the COCO3 which doesn't support the extra RAM or graphic modes under Level I. Level II lets you run programs in their own 64K of RAM, while level I pulls out whatever is left of the system's 64K for your program.</p> <p>Now the only problem is "when/if Tandy will let us have it" !! --Rosko!--</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423538a 0c Tandy Users' BBS Member 352924510 THU 22 JAN 1987 20:38:47</p> <p>COCOTEX VERSION 3 9600 BAUD PRINTER BUG. THE TIME DELAY VALUE FOR THIS BAUD RATE IS INCORRECT, THIS WILL BE FIXED IN THE FREE VERSION 3.1 UPGRADE</p> <p>IF ANYONE WANTS TO TRY AND CHANGE THE VALUE HERE IS THE LOCATION. COCO2 TRACK 20 SECTOR 8 BYTES 212,213 COCO3 TRACK 24 SECTOR 1 BYTES 54,55 COCO3V TRACK 27 SECTOR 10 BYTES 89,90 CURRENT VALUE 00 AND 05 TRY CHANGING 05 TO 06. FOR MORE INFO MB MR. COCOTEX KID ..SORRY</p> <p style="text-align: center;">*</p> <p>GOLDLINK 64235317a 0c Tandy Users' BBS Member 705471270 SAT 14 FEB 1987 15:35:40</p> <p>> Ron Wright's Cocotex 3.0 is the greatest! As the manual is a bit obscure on uploading messages, here is a step by step procedure to upload to clubroom. 1. Go to page 642311 and type one letter to mark where to start typing your message. Save this blank page. 2. Go offline, and define an alternate key as:IG4S34. 3. Recall saved page and type in your message, and save it in memory when finished (press break).</p> <p style="text-align: right;">Cont....</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423562a 0c OS9 Users' Board Member 705471270 TUE 06 JAN 1987 22:37:27</p> <p>If you are using SIYLO to write a file that will be used later by Teletwriter (that is transferred to a RS-DOS disk) watch out for the length of your lines. Stylo stores a file without any control codes. The programme S/ASC on the IW64 disk will only accept lines up to 255 characters and discards the rest. The solution: go through your stylo file before transferring it to a radio shack disk and add carriage returns at the end of each line. IW64 will add to or delete these as you format the file.</p> <p style="text-align: center;">*</p>	<p>GOLDLINK 64235614a 0c OS9 Users' Board Member 648232630 FRI 13 FEB 1987 21:50:12</p> <p>> there still seems to be some confusion as to what's available in various versions of OS9. Currently the only versions available are::: LEVEL I ver.1.0, Level I ver.1.1 and LEVEL I ver2.0 Apparently the confusion arises with discussion on LEVEL II Level II is not yet available in Australia. Until it is available, and in our hands... we are just not able to say what the major differences will be. If you are still confused, ring myself or one of the usergroups. (0648) 23263 VB</p> <p style="text-align: center;">*</p> <p>GOLDLINK 64235611a 0c OS9 Users' Board Member 262433530 SAT 24 JAN 1987 20:16:22</p> <p>WILDBEESTIE: The Standard version of Stylo for STANDARD OS-9 has a driver table you can edit. This is the one you should use with the Coco3.</p> <p>Roger: re 80 track disks, are you using the latest version of Sdisk with version 2.0 OS-9? If not, therein lies the answer to your problem.</p> <p style="text-align: center;">--Rosko!--</p> <p style="text-align: center;">*</p> <p>GOLDLINK 642346a 0c The Woodrow's Wonder Computer Board A new computer has been invented! We believe it will be very exciting as already a large number of people have purchased them. The inventor says I have invented my own computer. It is constructed from a dis used Kleenex carton, old clothes wire, 237 paper clips, some old chewing gum I found under a bus seat and 16 used banda ids. It is called the "WOODROW WONDER" a nd will retail at approximately 37c (tax included).</p> <p>We invite you to use this board to ask any questions or show others what you may have found whilst using this Computer. Please note that you may not use this board to pirate software. Some irrelevant messages may appear initially.</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423566a 0c OS9 Users' Board Member 234491110 WED 14 JAN 1987 16:03:17</p> <p>Sorry Jeff, but I'm having too much fun with my Coco 3 to have to go back to a two or one now! An 80 column screen with decent attributes (flashing, underline, highlighting (or colour if you have it!)) are too good to miss!, and free RAMdisk to boot (literally!). And FAST OS-9, now it runs as fast as it SHOULD. Ah well, I guess I will have to put up with such torture a while longer :-)</p> <p style="text-align: center;">--Rosko!--</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423564a 0c OS9 Users' Board Member 234491110 MON 12 JAN 1987 10:47:08</p> <p>Jeff, re OS-9 level II for coco3: "Isn't vapourware lovely!"</p> <p>I believe Tandy Australia already have the 512K upgrades, Michael Harris has already bought his for \$299.95 and I think he is running the 512K version of the Level I RAMdisk off the OS-9 Connect -ion in Sydney.</p> <p style="text-align: center;">--Rosko!--</p> <p style="text-align: center;">*</p>	<p>GOLDLINK 6423569a 0c OS9 Users' Board Member 022967960 THU 22 JAN 1987 19:32:16</p> <p>> I HAVE A PROBLEM, WHEN RUNNING THE SIMPLE CLOCK SIMULATOR (APPENDIX D BASIC 09 MANUAL) THE PROGRAM GENERATES A RR 2 21 WHEN IT ENCOUNTERS THE THIRD CALL TO THE GFX MODULE REGARDLESS OF WHETHER THE MODULE IS LOADED OR NOT. IT ONLY HAPPENS ON OS9 VERSION 2.0 BUT NOT ON VERSION 1 .1. ANY IDEA WHY? KEITH WIERENGA</p> <p style="text-align: center;">*</p> <p>GOLDLINK 64235318a 0c Tandy Users' BBS Member 705471270 SAT 14 FEB 1987 15:38:06</p> <p>> Cont... 4. Go to page 642311, and recall the page you typed in. (Shift-Break) 5. Type Alt-Key. Whichever one you defined as the IG4S34. 6. If you have line noise on the display on your screen type star 00 to redisplay the page, and if it has been trashed, resend it as in 4 and 5 above. 7. Press 1 to send.</p> <p style="text-align: right;">A Rapt JEFF</p> <p style="text-align: center;">*</p> <p>GOLDLINK 64235610a 0c OS9 Users' Board Member 705512170 THU 22 JAN 1987 23:27:26</p> <p>> I AM TRYING TO USE A 80TRACK DISK DRIVE WITH SDISK.WHEN I FORMAT A DISK THE HEAD STEPS ACROSS THE DISK,ASKS FOR A VOLUME NAME AND THEN TRIES TO VERIFY. IT STEPS ACROSS TO TRACK 60,THEN KEEPS HUNTING FROM TRACK0-60.I THEN PRESS BREAK TO STOP IT.CAN ANYBODY HELP ROGER THE DESPERATE</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423662a 0c The IBM & Tandy 1000 Board Member 264912590 WED 28 JAN 1987 05:11:12</p> <p>Hi. I have a Rodime 10 meg hard drive that I purchased a few months back. I am intending to buy a PC within the next few weeks and was wondering where and what sort of controller board I need to get for it.</p> <p style="text-align: right;">Any suggestions, please MB me on 264912590</p> <p style="text-align: center;">*</p> <p>GOLDLINK 64235312a 0c Tandy Users' BBS Member 322136150 WED 11 FEB 1987 21:18:57</p> <p>> Could someone give me a little assistance.</p> <p style="text-align: right;">I am unable to identify the keys for conceal/reveal, and flash/steady.</p> <p style="text-align: right;">I'm using a TRS-80 MOD IV.</p> <p style="text-align: center;">*</p> <p>GOLDLINK 6423467a 0c The VW Computer Users' Board Member 237190790 MON 10 FEB 1987 00:09:18</p> <p>> WOODROW, Can you help us out with clues for "ATTACK OF THE GARDEN GNOME". How do you manage to pick up the toupee on level 46?</p> <p style="text-align: center;">-LCBs</p> <p style="text-align: center;">*</p>
--	--	---

OVER THE EDGE

Right: In deep discussion,
Casey, Manticore and Bubbles

'Twas Saturday Evening
And all through Clubroom
The tension was rising
'Twould be 8.30 soon

The Com Joks were poised
By the keyboards with care
In hope their commanders
Soon would be there

For there had been whispers
And rumour was rife
That war was erupting
Endangering life

At 8.30 sharp
A warship was in sight
And the message was sent
'Prepare for a fight'

The Terran Federation
Was under attack
From the rebels - Neil's 7
There was no turning back

And so it began
The Great Com Jok War
With long bloody battles
Casualties by the score

They captured our Princess
But Cygnus was tough
She endured their torture
No matter how rough

The rebels surrounded
The high palace gate
Where H.R.H SWAN
Lay staunchly in wait

The Supreme Commander
Tried saving the day
But his support MB's
Kept going astray

When they caught Lady Daisy
We thought she was lost
For who could survive
The foul stench of Neil's socks?

But No! Here comes Tassie
And brave little Gonz
With these two on our side
What could go wrong?

They rushed to the aid
With our Sargeant at Arms
They'll win back our Cyggy
Of that I'd no qualms

We tortured White Rabbit
But he had enough
When SWAN scored his tail
For a new powder puff

We were winning YAY US!
When out from the rear
Came Sundry and Zard
And what's this I hear?

Oh no! Not the Blue Whale!
I thought he was dead
But he keeps coming back
To haunt us instead!

And so the war raged
Between the two groups
With Zen and the SWAN
Both summoning troops

Till 4 in the morning
We fought for the cause
When at last exhausted
We took a well needed pause

And decided 'twas time
For the firing to cease
And out went the signal
Retreat! We want peace!

If you're wondering who won
Let's just say war is hell
There weren't any winners
(except Viatel)

Samantha McCormick
(Alias H.R.H. SWAN)

Right: Traxx, Princess Cygnus, Sir
Jonesy, The Supreme Commander,
Wombat, Lady Daisy and Lord
Schizoid - an old Federation photo

Right: From Brizzy,
Sigie Sigie, Bunnies, a
startled TNO and
Matabach.

Right: Sydney on the Roundabout
...who's Sydney.



Right: Manticore and Ratbag.



Right: Goodness knows what is
holding their attention but
Karen and Allison seem tickled
pink.

Left: Frazz looking not the
least bit frazzled



Left: Bubbles again, the time with Yakka 11.



Above: Swan making another glorious entrance with White Rabbit. Lady Daisy is taking the pic.



Above: Black Panther.



Above: The ever popular, eh...eh don't tell me...hi Cheryl!



Above: The Ultra Pirates are ultra violent.

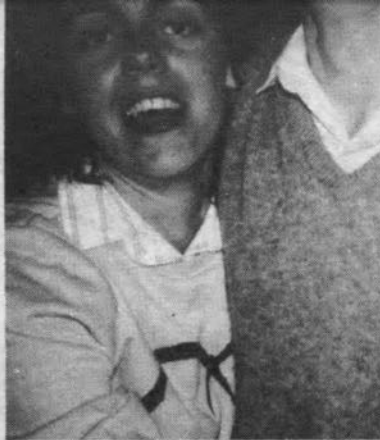


Below: Another gathering of the Federation, from the left, Traxx (nearly), Supreme Commander, Swan, Ratbag, Princess Cygnus, Wombat, Sir Jonesy and Astro.

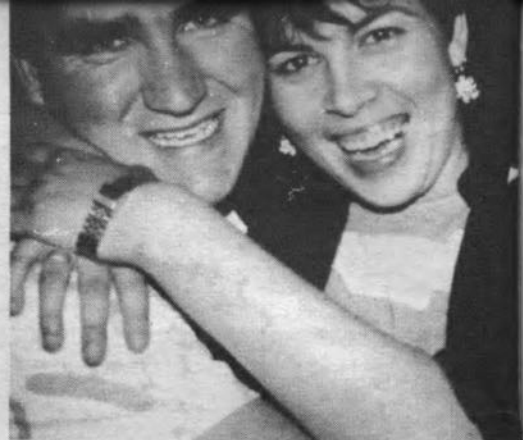




Above Top: The very lovely LB and the really lovely Wombat.



Above: Deb 007.



Above: Here's a couple of happy souls, Sir Jonesy and Deb 007.



Above: Who was that person who said this was Qld's answer to the Three Stooges, wash your mouth, this here is Ghost, Roxanne (Rox where are you?), and UFO.



Above: ...and as the moon shone through the windows, a sudden transformation occurs...hi Wombat.

Below: These three smiling faces belong to Lady Daisy and dBest.



Above: All the way from Adelaide En Passant and Rubber Duck.



Below: Batrag and Leisa enjoying one.



Above: ///ART/// and the missus.

Left: What a beautiful smile...haven't got a clue who it belongs to though.

Country-Wise



COUNTRY WISE is a West Australian firm that caters for the man on the land. They are the service provider for the agricultural section of Viatel (*330#).

Country Wise is an information service giving agricultural information that is available elsewhere but not gathered together into one database.

Just about all the things that the man on the land would want to know are easily accessible. The first index page has items such as Rural perspectives, Management, Soils & climate etc, Livestock, Machinery, Transport, a country magazine, classifieds and an extensive helpdex or help index.

For each of these items, there is another set of choices. By using a maximum of 4 indexes to obtain information you can delve into as much detail as you desire. Colour coded indexes help you to find where you are.


When you send away to Country Wise to obtain information, you are in for a pleasant surprise. The information is sent to you in a folio made to look like a briefcase and though there is a large amount of information, it is all relevant. For example not only major agricultural set ups are catered for. The home gardener can find information on which ground cover etc. is best for their type of soil. A complete section on animal and livestock care has also been included.

The cost assumes that you are already a member of Viatel and costs another \$210 a year which is not a lot to pay for the amount of information you get.

The quantity of information makes Country Wise worth while looking into.

You can obtain information about Country wise by dropping a line to:
13 Howard St.
Perth,
6000
or phone (06) 3226045 or contact them on Viatel.

Country-Wise



agridex
RURAL SERVICES

- 1 Rural Perspectives
- 2 Country-Manager
- 3 Soils, Water & Climate
- 4 Crops & Vegetation
- 5 Livestock & Animals
- 6 Machinery & Plant
- 7 Transport & Trucking
- 8 Country-Magazine
- 9 The Classifieds
- 0 Maindex # Helpdex


At right is an example of the frames that follow from the main index. From a choice on this screen another index is made;

Above is the main index frame and first level choices.

COUNTRY-WISE
3304a
OC


CROPS & VEGETATION
Agri-dex

- 1 CEREAL GRAINS
- 2 LEGUME & OILS
- 3 HORTICULTURAL
- 4 SPECIALITY CROPS
- 5 PASTURE & FORAGE
- 6 FLOWERS & GARDENS
- 7 TREES & VEGETATION
- 8 PEST/WEED/DISEASE?
- 9 BIZ-DEX
- 0 AGRIDEX # HELPDEX






1st papers, then radio, TV, now VIDEOTEX







A reference source covering all aspects of production - on the farm and in the garden. In most of these reference sections there is always an update section with the very latest of news.

CEREAL GRAINS: wheat, oats, barley, maize, rice, rye triticale, grain sorghums and many other cereals are covered in depth.

LEGUME & OILS: specific area covering field peas, lupins, soybeans, oil seeds, peanuts and rape seed. Sunflower and safflower growing is also covered here.

HORTICULTURAL: a variety of areas covered including citrus, nuts, tree and stone fruits, tropical fruits and small fruits. Vegetables are also included in this section. Leaf and stem veges, fruit and fruit veges.

SPECIALITY GROUPS: including cotton, tobacco, sugar cane and others.

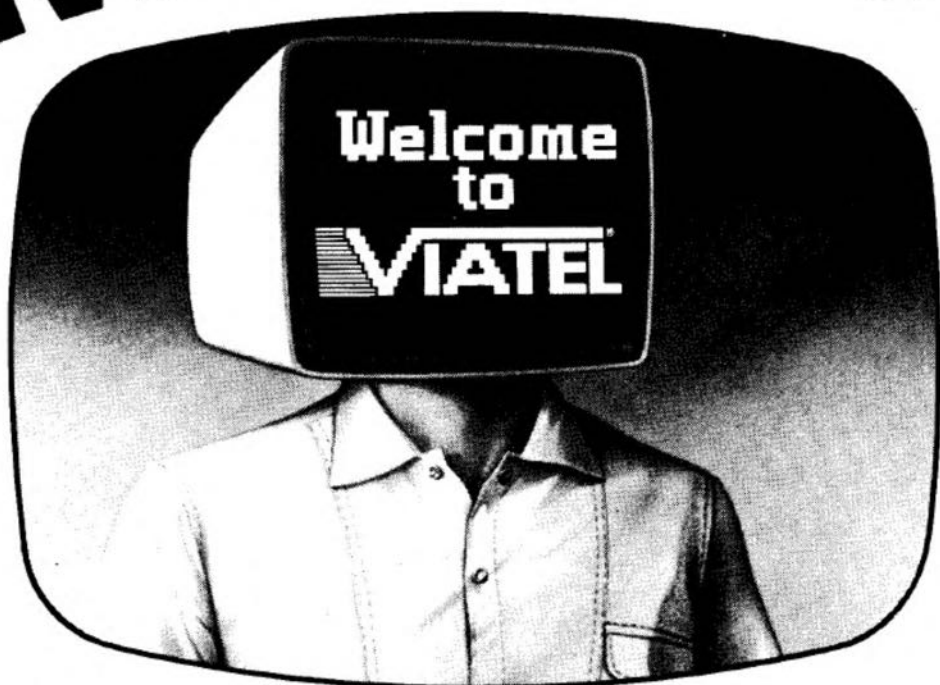
PASTURE & FORAGE: native pastures, legume pastures, irrigated pastures. Different types of forage crops plus cereals and grasses. Its all covered here.

FLOWERS & GARDENS: there is something for everyone from ground covers, lawns and turf to indoor plants and gardens.

TREES & SHRUBS: specific area on types and variety. Important tips about planning, layout, preparations and planting. There is a section on forestry.

PESTS WEEDS & DISEASES: a reference section on all aspects. Laws and regulations also covered.

BETTER FOR MICROS



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

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

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

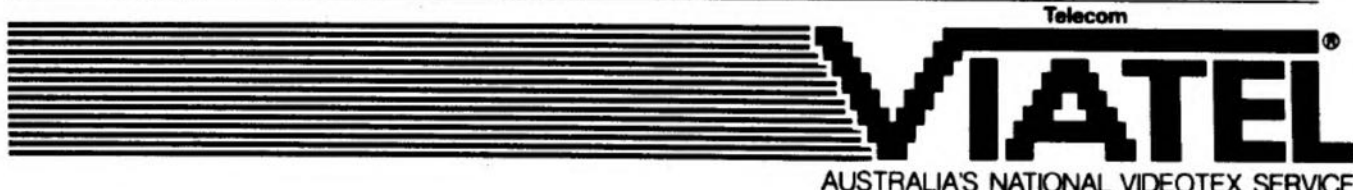
That's just part of what Goldlink 642 offers. And Goldlink 642 is just part of what Telecom Viatel offers. You can also bank with Viatel, place bets, buy and sell shares, book travel, and much more. Instantly, easily, economically. 24 hours a day.

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

* Coming



Telecom Australia
Better for Business



APPLICATION FORM

DATE OF APPLICATION / /

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

section 1

PLEASE TICK APPROPRIATE BOX TO INDICATE SERVICE REQUIRED

BUSINESS SERVICE NON-BUSINESS SERVICE

(CHARGES INCURRED ON BUSINESS SERVICES ARE USUALLY TAX DEDUCTIBLE)

SURNAME (OR BUSINESS NAME IF BUSINESS SERVICE) GIVEN NAMES

POSTAL ADDRESS NUMBER/STREET

SUBURB/CITY STATE POSTCODE

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

section 2

CONTACT NAME (IF BUSINESS SERVICE) GIVEN NAMES

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

SUBURB/CITY STATE POSTCODE

CONTACT TELEPHONE NUMBER (INCLUDING STD CODE)

section 3

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

PLEASE INDICATE TYPE OF EQUIPMENT USED TO ACCESS VIATEL

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

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

telecom use only

DTE PP VN

BG SC CI

REF

REGISTRATION AND SUBSCRIPTIONS

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

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

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

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

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

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

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

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

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

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

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

MICO NEWS

Editor Jim Rogers

A letter has been received from Michael J. Bauer to the effect that he objects to the recent article referring to his work, submitted by Frank Rees. He requests that it be known that he no longer wishes to be associated with Tandy or the CoCo Magazine.

This month sees the start of a new era with the changeover of MICO from the CoCo magazine to our new magazine, Softgold.

The change was made partly because of the large number of MC10 and 16K users who were not being completely catered for in the existing format of the old CoCo due to the lack of available space. The space allowed was becoming even more cramped with the growth of the Softgold content and the ever increasing demands of CoCo.

From now on we can expect to see a greater variety of articles and more programs of special interest.

In these days of high technology, computers, like every other phase of modern development, are being improved and superceded at such a rate that, very often, the latest model that we are able to purchase is out of date or superceded by the time we have become the proud owners.

With this in mind we have to realise that, eventually, our little MC10 is going to be as dated as the wind up phonograph with the large horn speaker. In fact it has almost reached that situation at present, with the advent of the hi-tech equipment now available. So much so that the only place I know of which

still caters for MC10 software is right here at Goldsoft.

It is only the dedication and bulldog tenacity of you, the MC10 users, and the amount of work and interest injected by you which has refused to let it lie down and die and has kept it as alive and healthy as it is.

I often pause to wonder just what it is that keeps you at it. I can quite realise that there are some cases where, having originally purchased the MC10, one can be more or less stuck with it as it is financially difficult to make a change to a different or later model machine. I know this is true in my own case. However I do have access to a 32K ECB but there it sits in all its splendor on my desk, mainly unused, while I make constant use of my MC10 with its 44K upgrade. Don't ask me why I prefer the MC10 because I truly do not know. Maybe it is because I am lazy and like the short cuts of the one-key commands. Then too, it could be that I am fascinated by the continual additions via your programs and the items of hardware you keep coming up with which upgrade again and again the MC10 to a performance probably never expected of it by the makers and certainly never advertised by the retailers.

PEEKs and POKEs

by Gary Furr

MC-10

THIS month we will deal with PEEKs, POKEs and EXECs. For a start, when the computer runs instructions which are contained on a line with a line number, the way to find the LAST line number is to:-

```
PRINT PEEK(163)*256+PEEK(164)
```

I have found these locations very useful on occasions.

One day I was working out how to make the cursor disappear when I came up with the following program, listed first in M.L. and then as the BASIC program.

```
4285 JMP 8600
8600 PULA
8601 PULA
8602 JMP F883
```

```
10 FOR F=34304 TO 34308
20 READH:POKEBF,H:NEXT
30 POKE 17030,134:POKE
```

```
17031,0:POKE 17029,126
40 DATA50,50,126,248,131
```

Another two locations which may be of interest are:-

```
PRINT PEEK(226)*256+PEEK(227)
```

Which give the current GOSUB address.

This small program below determines if the printer is on or off-line. Type it in and then turn the printer on and off a few times and the result will be printed on the screen.

```
4 CLS
5 REM ON-LINE=75:OFF-LINE=79
6 REM PEEK(3)
10 IF PEEK(3)=75 THEN 40
20 PRINT "PRINTER IS OFF-LINE.
TURN IT ON."
30 GOTO 10
40 PRINT "PRINTER IS ON-LINE"
50 GOTO 10
```

Now for the last part, the EXECs.

```
EXEC 58876 = RUN BASIC PROGRAM.
EXEC 58734 = WAIT TILL KEY IS
PRESSED
EXEC 58383 = LIST
EXEC 58379 = LLIST
```

NOTE

Graham Pollock Advises that

With every copy of "MCDOS" sold he will include free one disk file.

Rquires a TP10 printer to print out the cards. I am not particularly satisfied with this program and at a later date I will attempt to make a number of improvements on this one. This is easy to use and allows you to check for a mistake after each entry. When you have completed all you want on each side type "END" after the PROGRAM / SONG prompt. (I tried this out and found it quite a good program and very handy J)

TAPECARD

by Daniel Adams
MC-10

The Listing TAPECARD:

```
0 CLEAR500
1 REM*****TAPECARD*****
  *****DANIEL ADAMS*****
  *****9/11/86.*****
2 GOTO10
7 CSAVE "TAPECARD":STOP
10 DIM A$(28),B$(28),X$(28),Y$(28),P$(28),Q$(28)
20 CLS:PRINT@12,"TAPECARD":PRINT@40,"PRINTER UTILITY":
30 FORX=64TO95:PRINT@X,CHR$(140):NEXTX
40 INPUT"DO YOU NEED HELP";I$:
45 PRINT@96,""
46 PRINT@96,""
50 IFLEFT$(I$,1)="Y"THEN1000
60 REM
70 PRINT@109,"SIDE A"
80 FORX=1TO28
90 PRINT"PROGRAM/SONG #":INPUT A$(X):A$(X)=LEFT$(A$(X),8)
95 IFA$(X)="END"THENA$(X)="":GOTO200
100 INPUT"COUNTER (START,END)":X$(X),Y$(X)
110 PRINT@128,"":PRINT:PRINT:PRINT:PRINT
```

```
120 PRINT@128,A$(X),X$(X)"-Y$(X)
130 INPUT"CORRECT";C$:IFLEFT$(C$,1)="N"THEN90
140 NEXTX
200 PRINT@109,"SIDE B"
210 FORX=1TO28
220 PRINT"PROGRAM/SONG #":INPUT B$(X):B$(X)=LEFT$(B$(X),8)
230 IFB$(X)="END"THENB$(X)="":GOTO260
240 INPUT"COUNTER (START,END)":P$(X),Q$(X)
245 PRINT@128,"":PRINT:PRINT:PRINT:PRINT
250 PRINT@128,B$(X),P$(X)"-Q$(X)
252 INPUT"CORRECT";C$:IFLEFT$(C$,1)="N"THEN220
255 NEXTX
260 INPUT"TITLE OF TAPE,MAX 16 CHARACTER:";T$:
270 ILEN(T$)>16THEN?60
280 INPUT"PRESS <ENTER> WHEN PRINTER IS ON":A
290 T1$="
  "T2$=" TAPECARD
  "T3$="
300 REM PRINT IT ALL OUT
310 LPRINT
320 LPRINTCHR$(28)CHR$(32)CHR$(95)
330 LPRINT
340 LPRINT "T1$:LPRINT "
T2$:LPRINT " T3$
350 LPRINT
360 LPRINTCHR$(28)CHR$(32) "-"
```

```
380 A=(32-(LEN(T$)*2))/4
385 A=INT(A)
390 LPRINTCHR$(27)+CHR$(14)
400 LPRINTTAB(A)Y$
410 LPRINTCHR$(27)CHR$(15):LPRINTCHR$(28)CHR$(32) "-
415 LPRINTCHR$(27)CHR$(14);
420 LPRINT"SIDE A :SIDE B"
430 LPRINTCHR$(27)CHR$(15)
440 FORX=1TO14
445 IFA$(X)=" "THEN452
450 LPRINTA$(X):LPRINTTAB(8)X$(X)"-Y$(X);
452 LPRINTTAB(15)";
454 LPRINTB$(X):LPRINTTAB(25)P$(X)"-Q$(X)
460 NEXTX
470 LPRINTCHR$(28)CHR$(32) "-
475 IF(A$(15)=" "AND(B$(15)=" ")THEM600
480 FORX=15TO28
485 IFA$(X)=" "THEN505
490 LPRINTA$(X);
500 LPRINTTAB(8)X$(X)"-Y$(X);
505 PRINTTAB(15)";
507 IFB$(X)=" "THEN530
510 LPRINTB$(X);
520 LPRINTTAB(25)P$(X)"-Q$(X)
530 NEXTX
600 FORX=1TO5:LPRINT:NEXT
610 END
1000 PRINT@128," WHEN PROMPTED TYPE IN THE APPROPRIATE FILENAME & TAPE COUNTER POSITIONS":PRINT
1010 PRINT"EG."
1020 PRINT"PROGRAM/SONG? TAPECARD"
1030 PRINT"COUNTER (START,END)? 006,011":PRINT
1040 PRINT"NOTE.. YOU MUST HAVE 3 DIGITS IN THE COUNTER,WHEN FINISHED EITHER SIDE, TYPE 'END' FOR FILENAME";
1050 INPUTA
1060 PRINT@128,"....."
.....
1070 GOTO60
```

BACKUP

by Gary Furr
MC-10

THIS PROGRAM will allow you to make back-up copies of M/L programs. Key in the program and then save it on tape. If any data has been mistyped you will be told and then this can be rectified. Next, RUN the program and this will poke the data into the locations and set up the CSAVEM command so that you can save the machine language. On the signal "Press Record then Enter" the program is saved on tape as a Binary file and can now be loaded any time by "CLOADM:EXEC". This will then display on the screen, "LOADING", so press PLAY to load your desired program to be backed up. After a successful LOAD, "SAVING" will be displayed. Get your tape set up and press any key to transfer the program back to another tape. I tried out this program and it worked well. I think it is an updated version of Gary's previous "M/L COPY".

The Listing BACKUP:

```
5 REM LISTING BACKUP(G.FURR)
10 N$="BACKUP":F=16999:A=66:B=13
6:CLS
20 POKEF,2:POKEF+3,A:POKEF+4,B:POKEF+5,A:POKEF+6,B:POKEF+8,A:POKEF+9,B:POKEF+10,A+1:POKEF+11,21
30 PRINT"PRESS RECORD THEN ENTER TO SAVE"
40 PRINTTAB(10);N$
50 A$=INKEY$:IFA$=" "THEN50
60 FORD=17082TO17172
70 READE:POKEDE,E:NEXT
80 EXEC64603N$
90 DATA189,251,212,206,67,6,189,231,168,189,254,170,77,38,250
100 DATA182,66,117,38,245,182,66,1,3,129,2,38,238,189,255,78
110 DATA189,254,13,254,66,100,25,5,66,111,254,66,120,255,66,113
120 DATA204,66,87,221,191,206,66,95,198,8,189,247,178,189,251
130 DATA212,206,67,14,189,231,168,189,229,119,189,252,142,126
140 DATA252,93,0,76,79,65,68,73,78,71,0,83,65,86,73,78,71
```



COLOUR GRAPHICS



by Shane Aitken
GRAPHICS

COLOUR GRAPHICS IS my first program on the new CoCo 3 but also the first I've ever sent in. Basically, it just draws some graphics designs.

Here they are, in order:

1. 'Rainbow' draws a rainbow and then using that new miracle command PALETTE changes the colour of the rainbow and the background.

2. 'House' is just that - a house. But what is so special about this house is that it is done with more than 4 colours. Also, the moon and stars are out and, is that a cricket I hear chirping?

3. 'PI' creates a stunning pattern by using pi. Then using a PALETTE command, the drawing changes colour. All round a nice little picture.

4. 'Swirl' draws an intricate geometric design on the 620 x 192 screen.

I hope you enjoy my first leap into the big world of computers.

The Listing:

```

0 PALETTE 0,0:WIDTH 40:ATTR 3,0:
PRINT:PRINT "          COLOR
  GRAFIX":PRINT:PRINT "
  BY SHANE AITKEN":ATTR7,0,B:LOC
ATE7,17:PRINT "Press any key to
continue.":GOTO 9
1 ***** COLOR GRAFIX *****
2 ***** BY SHANE AITKEN *****
3 ***** 1ST-6TH OF JANUARY **
4 ***** CAMPBELLTOWN, NSW ****
5 SAVE"150:3":END
9 AS=INKEY$:IF AS="" THEN GOTO 9
10 POKE 280,PEEK(275):PALETTE 0,
31
20 HSCREEN 2:PALETTE 3,36:PALETT
E 8,0:PALETTE 4,50:HCOLOR 8
25 HCIRCLE(160,96),200,4:HDRAW"B
M5,5R309D181L309U181"
30 HPAINT(3,3),4,8

```

```

40 HCOLOR8:HPRINT(13,3),"COLOR G
RAFIX"
45 HLINE(100,40)-(205,40),FSET
50 HPRINT(2,9),"(1)..... RAINBO
W (2)..... HOUSE"
55 HPRINT(2,14),"(3)..... PI
(4)..... SWIRL"
60 HCOLOR 3:HPRINT (13,19),"Choo
se (1-4)"
65 PALETTE 2,64:HCOLOR 2:HPRINT(
5,22),"Hit any key to return to
menu"
70 AS=INKEY$:IF AS="" THEN GOTO
70
75 IF VAL(AS)<1 OR VAL(AS)>4 THE
N GOTO 210
80 ON VAL(AS) GOTO 100,400,1000,
1200
85 GOTO 70
90 ***** RAINBOW *****
91 ***** SHANE AITKEN ****
92 ***** CHRISTMAS DAY 86**
100 HSCREEN 2
110 PALETTE 0,0:PALETTE 1,53
120 HCLS 1
130 FOR X=1 TO 7:
140 HCIRCLE(160,191),X*16,0
150 NEXT X
160 HCIRCLE(160,191),5,0
170 PALETTE 2,39:PALETTE 3,54:PA
LETTE 4,46:PALETTE 5,23:PALETTE
6,42:PALETTE 7,53:PALETTE 8,11

```

```

180 Y=176
190 GOSUB 210
200 Y=Y-15:RETURN
210 IF Y<1 THEN GOTO 10:HPAINT(1
60,Y),8,0
220 GOSUB 200
230 IF Y<0 THEN GOTO 10:HPAINT(1
60,Y),7,0
240 GOSUB 200
250 HPAINT(160,Y),6,0
260 GOSUB 200
270 HPAINT(160,Y),5,0
280 GOSUB 200
290 HPAINT(160,Y),4,0
300 GOSUB 200
310 HPAINT(160,Y),3,0
320 GOSUB 200
330 HPAINT(160,Y),2,0
340 PALETTE 12,64:HCOLOR 12
350 HPRINT (2,3),"I can sing a r
ainbow"
355 PALETTE 1,RND(64)
360 FOR X=2 TO 8:PALETTE X,RND(6
4)
365 AS=INKEY$:IF AS="" THEN GOTO
370 ELSE GOTO 10
370 FOR L=1 TO 100:NEXT L
390 NEXT X:GOTO 355
391 ***** THE HOUSE *****
392 ***** SHANE AITKEN ****
393 ***** 2ND-5TH/1/1987 **
400 PALETTE 4,7:PALETTE0,0
410 PALETTE 1,51
420 HSCREEN 2
430 HCLS 1
440 HCOLOR 0
450 HDRAW "BM66,172;R187U51L187N
D51E40R107F40"
460 HDRAW "BM75,133R52D24L52U24"
470 HDRAW "BM85,133D24R32U24"
480 HDRAW "BM75,145R52"
490 HDRAW "BM100,133D24"
500 HDRAW "BM142,133R17D35L17U35
"
510 HLINE (142,133)-(159,168),PS
ET
520 HCIRCLE(156,151),2
530 HDRAW "BM170,133R27D24L27U24
"
540 HPAINT(176,140),0,0
550 HDRAW "BM183,133D24U12L13R27
"
560 HDRAW "BM210,133R27D24L27U24

```

```

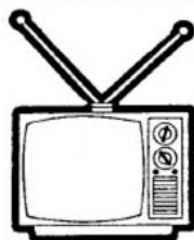
"
570 HDRAW "BM223,133D24U12L13R27
"
580 HDRAW "EM66,143NL66D3NL66"
590 HDRAW "BM66,172NL66L11U26L11
D26L11U26L11D26L11U26"
600 HDRAW "BM253,143NR67D3NR67D2
6NR67R11U26R11D26R11U26R11D26R11
U26R11U3D2?"
610 HPAINT(10,10),0,0
620 PALETTE 3,16
630 HPAINT(160,180),3,0
640 PALETTE 2,32
650 HPAINT(160,104),2,0
660 PALETTE 4,7
670 HPAINT(80,164),4,0
680 PALETTE 5,4
690 HPAINT(148,140),5,0
700 HPAINT(149,150),5,0
710 HDRAW "BM183,133C4D24U12L13R
27"
720 FOR X=0 TO 66 STEP 10
730 PALETTE 6,6
740 HPAINT(X,167),6,0
750 NEXT X
760 FOR X=253 TO 320 STEP 10
770 HPAINT(X,148),6,0
780 NEXT X
790 PALETTE 7,64
800 HCIRCLE(280,40),30,7,1,.13,.
63
810 HCIRCLE(310,10),52,7,1,.29,.
48
820 HPAINT(262,40),7,7
830 HSET (170,32,7):HSET(170,48,
7):HSET(140,68,7):HSET(156,38,7)
840 X=RND(280):Y=RND(80):A=RND(2
80):B=RND(80):G=RND(280):H=RND(8
0):J=RND(280):K=RND(80)
850 HSET (196,21,7):HSET(255,69,
7):HSET(209,40,7):HSET (83,80,7)
860 HSET(40,40,7):HSET(10,90,7):
HSET(310,4,7):HSET (60,21,7)
865 HCOLOR 7:HPRINT (2,2),"THE H
OUSE"
870 FOR X=1 TO 2
880 FOR C=1 TO 5
885 A$=INKEY$:IF A$="" THEN GOTO
890 ELSE GOTO 10
890 PLAY "O5L255B"
900 NEXT C
910 FOR G=1 TO 100:NEXT G
920 NEXT X
930 FOR G=1 TO 400:NEXT G
940 GOTO 870
950 GOTO 950
960 '***** PI GRAPHICS *****
970 '***** SHANE AITKEN *****
980 '***** 3RD/1ST/1987 *****
1000 PALETTE 0,0
1010 PI=3.14159265
1020 HSCREEN 2
1030 HCOLOR 3
1040 FOR L=0 TO 20
1050 X=160+30*SIN(PI/10*L)
1060 Y=96+30*COS(PI/10*L)
1070 HSET(X,Y,7)
1080 HLINE(X,Y)-(0,0),PSET:HLINE
(X,Y)-(320,0),PSET:HLINE(X,Y)-(3
20,192),PSET:HLINE(X,Y)-(0,192),
PSET
1090 HLINE(X,Y)-(320,0),PSET
1100 HLINE(X,Y)-(320,192),PSET
1110 HLINE(X,Y)-(0,96),PSET:HLIN
E(X,Y)-(320,96),PSET
1120 NEXT L

```

```

1130 PALETTE 12,63:HCOLOR 12:HPR
INT (14,2),"Pye Graphics"
1135 A$=INKEY$:IF A$="" THEN GOT
O 1140 ELSE GOTO 10
1140 C=RND(64):PALETTE 3,C
1145 A$=INKEY$:IF A$="" THEN GOT
O 1150 ELSE GOTO 10
1150 FOR G=1 TO 500:NEXT G
1160 GOTO 1140
1190 '***** SWIRL *****
1192 '**** SHANE AITKEN ****
1193 '**** 7IH/1ST/1987 ***
1200 HSCREEN 4:PALETTE 0,0:PALET
TE 2,10
1210 HCOLOR 2
1230 X=0:Y=0
1240 X=X+8:Y=Y+8
1250 IF X>310 THEN GOTO 1300
1260 IF Y>191 THEN Y=0
1270 HLINE(X,0)-(310,Y),PSET
1280 GOTO 1240
1300 X=310:Y=191
1310 X=X-8:Y=Y-8
1320 IF X<0 THEN GOTO 1370
1330 IF Y<0 THEN Y=191
1340 HLINE(X,191)-(0,Y),PSET
1350 GOTO 1310
1370 X=310:Y=0
1380 X=X+8:Y=Y+8
1390 IF X>619 THEN GOTO 1430
1400 IF Y>191 THEN Y=0
1410 HLINE(X,0)-(619,Y),PSET
1420 GOTO 1380
1430 X=619:Y=191
1440 X=X-8:Y=Y-8
1450 IF X<310 THEN GOTO 1510
1460 IF Y<0 THEN Y=191
1470 HLINE(X,191)-(310,Y),PSET
1480 GOTO 1440
1500 A$=INKEY$:IF A$="" THEN GOT
O 1500 ELSE GOTO 10
1510 PALETTE 7,64:HCOLOR 7:HPRIN
T (38,12),"The Swirl"
1520 A$=INKEY$:IF A$="" THEN GOT
O 1520 ELSE GOTO 10

```



TRIVIA

by Barry Sidebottom

32K ECB + 'T.V. Trivia

IF YOU LIKE TV shows "Number 96" and "The Addams Family" and you have a copy of "TV Trivia" (Australian CoCo, October 1986), then this is for you!

Future 'TV Shows' to appear in the next few months are:

- : Beverly (Beverly)
- : Get Smart (Getsmart)
- : Gilligans Island (Gilligan)
- : Happy Days (Happyday)
- : Hogans Heroes (Hogan)
- : Homicide (Homicide)
- : M.A.S.H (Mash)
- : Mr Ed (Mr Ed)
- : The Sullivans (Sullivan).

If you want to use them all, simply change the following lines appropriately: 310, 420, 480, 835, 1140, 1145, 1150, 1390, 1391, 1395, 1396.

As I said originally, I am adding new files all the time (or when I feel like it!)

Ed's note: Due to the nature of the files mentioned here, these files will appear two at a time on the monthly CoCoOz tape.

HINT....

Printer Baud Rates

Want to change the printer baud rate of your computer? Then follow the table below and choose your baud rate.

If you want ...	Type in ...
300 baud	POKE150,180
600 baud	POKE150,87
1200 baud	POKE150,41
1800 baud	POKE150,25
2000 baud	POKE150,23
2400 baud	POKE150,18
3600 baud	POKE150,10
4800 baud	POKE150,7
7200 baud	POKE150,3
9600 baud	POKE150,1

ROVER

ROVER is another version of the old word game 'Hangman'. The sadistic method of the computer hanging the player when he/she fails to guess the hidden word has been replaced by a conveyor belt and a small dog called ROVER.

Rover advances towards the end each time you enter a wrong letter. Stop the conveyor by entering the correct letters to complete the secret word and save Rover from falling off the end.

This version continues playing until you enter the break key, reset button or turn off the computer.

A score of right and wrong answers are displayed at the top of your screen.

The program has a 50 word vocabulary from which the computer can choose and has the capacity to hold 99 words.

If you want to increase the vocabulary above 99 change A\$(100) in line number 250 to the number required and increase the CLEAR statement in line number 240 to cater for the extra strings.

The program reads the data into A\$(#) by changing the variable 'P' by one and checking for the last data entry XXX, then subtracts 'P' by one so the computer can't pick XXX as one of the words. This method of reading data into an array is seldom used in programming.

The reason this method was used is two fold. The first one is that the user can change the data in line numbers 820 to 910 to words that maybe more preferable without changing other parts of the program.

This can be words your children are using at school and by playing Rover will help them with word recognition.

The second reason is most new users typing in lots of data may miss a comma or two and get an error from the READ function.

Unless he/she are in a user group they can become confused by the computer giving an error in the FOR-NEXT and READ loop when in fact the typing error could be in the data lines.

The only thing to remember with this method is to include the last data entry XXX and not to exceed your array A\$(#) less one. In other words if the array is A\$(200) only 199 words can be stored.

by Tom Lehane

16K ECB GAME



The Listing:

```
0 GOTO10
3 SAVE"156:3":END
10 REM ROVER BY TOM LEHANE 1987
20 REM *****
30 GOTO 70
40 FOR SS=1 TO 3
50 SOUND227,1:SOUND232,1:SOUND23
5,1:NEXTSS
60 RETURN
70 CLS
80 PRINTTAB(10)"--ROVER=="
90 PRINT"ROVER IS ANOTHER VERSIO
N OF THE"
100 PRINT"WORD GAME HANGMAN.THE
GALLOWS"
110 PRINT"HAVE BEEN REPLACED BY
A"CONVEYOR";
120 PRINT"BELT AND THE SMALL DOG
CALLED"
130 PRINT"ROVER ADVANCES TOWARDS
THE END"
140 PRINT"EACH TIME YOU ENTER A
WRONG"
150 PRINT"LETTER."
160 PRINT"STOP THE CONVEYOR BY E
NTERING"
170 PRINT"THE CORRECT LETTERS TO
COMPLETE"
180 PRINT"THE SECRET WORD AND SA
VE ROVER."
190 PRINT""
200 PRINT@385,"BY "CHR$(139)+CHR
$(129)"OM"
210 PRINT@422,CHR$(132)"EHANE (C
) 1987"
220 PRINT@480,"ANY KEY TO START"
;
230 IF INKEY$=""THEN T=RND(100):
GOTO230
240 CLEAR500
250 DIM A$(100),B$(20),C$(20)
260 P=P+1
270 READA$(P)
280 IF A$(P)="XXX" THEN P=P-1:GO
TO 300
290 GOTO 260
300 CLSO
310 PRINT@0,"score RIGHT"W:PRINT
@17,CHR$(133)"WRONG"LL
320 FOR AZ=65 TO 90
330 PRINT@AZ,CHR$(AZ+32);
340 SOUND200,RND(2)
350 NEXT
360 H=160
370 BO=191
380 CC$=CHR$(128)
390 AA$=CC$+CC$+CHR$(147)
400 BB$=CC$+CHR$(158)+CHR$(157)
410 T=RND(P)
420 B=LEN(A$(T))
430 FOR X=1 TO B:B$(X)=MID$(A$(T
),X,1):NEXTX
440 PRINT@288,"CORRECT LETTER >"
450 FORA=1TOB:PRINT@307+A,"-":NE
XTA
460 FOR L=224 TO 235:PRINT@L,CHR
$(172);:NEXT
```

continued on page 29

JUMBLE

ULBJEM LMJBEU

by Daniel Adams MC-10

This program really requires no instructions as it simply picks one of the fifty words in DATA, jumbles it up and prints out the jumbled letters for you to decypher. It is harder than it sounds believe me. (Very good graphics and a good brain teaser J.)

The Listing JUMBLE:

```

1 REM ***** WORD JUMBLE *****
2 ***** DONILL ADAMS *****
3 ***** COPYRIGHT(C) *****
4 ***** NOV. 1986 *****
5 GOTO 10
7 CSAVE "JUMBLE":STOP
10 CLEAR100:DIML$(26):GOSUB300
20 DATA LOGIC,CREATE,NUMBER,CHAR
30 DATA MESSAGE,CODES,GRAPHICS,REGULAR,CURSOR,POWER,KEYBOARD,CONNECTOR,RESET,BUTTON,MEMORY,ADAPTER,ROUND,SQUARE,CIRCLE,STRAIGHT
40 DATA INPUT,OUTPUT,CALCULATOR,STRING,NUMBER,EXPRESSION,SINE,COSINE,TANGENT,COMMAND,LISTEN,OPERATORS,POSITIVE,NEGATIVE
50 DATA OPPOSITE,EQUAL,MINUTE,DEBERT
52 C=RND(8)-1:C=C*16
55 GOSUB510
60 C=RND(8)-1:C=C*16
65 J#="" :W#=""
70 RESTORE
80 FORX=1TORND(50):READ#:NEXTX
85 REM##JUMBLE W# HERE*****
90 L=LEN(W#)
100 FORI=1TOL
110 S=RND(L)
120 T=I-1
140 FORJ=1TOT
150 IFS(J)=S THEN 110
160 NEXTJ
170 S(I)=S
180 J#=#W#MID$(W#,S,1)
190 NEXTI
192 IFJ#=#W#THEN195
195 REM ### NOW JUMBLED*****
196 P=176-((L/2)*3)
197 CLS0
198 IFSS=1THENSS=0:PRINT@42,"the word was";
200 FORI=1TOL
210 AS=ASC(MID$(J#,I,1))-64
215 L=L*(AS)
220 FORJ=1TO9:R(J)=VAL(MID$(L$, (J-1)*3+1,3)):NEXTJ
230 PRINT@P,CHR$(R(1)+C)+CHR$(R(2)+C)+CHR$(R(3)+C);
240 PRINT@P+32,CHR$(R(4)+C)+CHR$(R(5)+C)+CHR$(R(6)+C);
250 PRINT@P+64,CHR$(R(7)+C)+CHR$(

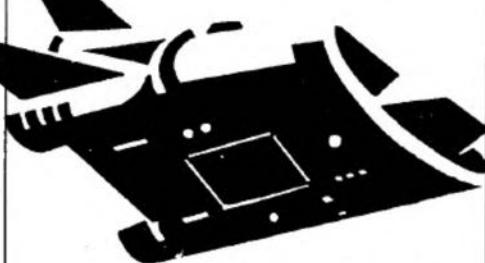
```

```

(R(8)+C)+CHR$(R(9)+C);
260 P=P+3
270 NEXTI
280 IFZZ=2THENZZ=0:RETURN
290 GOTO400
300 L$(1)="128134130133131135132
128132":L$(2)="13314013713314013
7132140136":L$(3)="1331401401331
28128132140140"
310 L$(4)="132142137128138133132
140136":L$(5)="13314014013314012
8132140140":L$(6)="1331401401331
40128132128128"
320 L$(7)="133140140133128141132
140140":L$(8)="13312813313314014
1132128132":L$(9)="1281411361281
33128128140136"
330 L$(10)="12813214212912813812
8140128":L$(11)="133128134133134
130132128132":L$(12)="1331281281
33128128132140140"
340 L$(13)="13313013513313213313
2128132":L$(14)="133130133133132
135132128132":L$(15)="1291401371
33128133128140136"
350 L$(16)="13314014113314014013
2128128":L$(17)="129140137133132
134128140132":L$(18)="1331401411
33140142132128132"
360 L$(19)="12914014012814013713
2140136":L$(20)="132141140128133
128128132128":L$(21)="1331281331
33128133128140136"
370 L$(22)="13312813313213013412
9132128":L$(23)="133128133133134
135132128132":L$(24)="1321301341
28134130132128132"
380 L$(25)="13213013412813312812
8132128":L$(26)="132140142128134
128132140140"
390 RETURN
400 IFZZ=1THENZZ=0:GOTO450
402 POKE17026,134+C
405 PRINT@40,"guess this word";
410 PRINT@390,"well":INPUTG#
420 IFG#=#W#THENJ#="RIGHT":L=5:Z
Z=1:SOUND89,2:SOUND133,2:SOUND15
9,2:SOUND176,4:SOUND159,3:SOUND1
76,6:GOTO195
430 ZZ=1:J#=#W#:SS=1
440 FORI=250T010STEP-10:SOUND1,1
:NEXTI:GOTO195
450 PRINT@36,"do you want anothe
r word";
460 A#=#INKEY#
470 IFA#="Y"THEN 60
480 IFA#="N"THEN500
490 GOTO 460
500 POKE17026,128:CLS:END
510 W#="JUMBLEWORD":ZZ=2:GOSUB85
530 FORI=1T01000:NEXT
540 J#="JUMBLEWORD":ZZ=2:GOSUB1
95
550 SOUND117,4:SOUND140,3:SOUND1
53,2:SOUND165,5:SOUND140,4
560 PRINT@303,"by":PRINT@330,"d
aniel adams";
570 POKE16748,40:PRINT@365,"c";
POKE16750,41:POKE16752,49:POKE16
753,57:POKE16754,56:POKE16755,54
580 IFINKEY#=""THEN580
590 S=0:RETURN

```

SPACE



ASSAULT

by David Hill

MC-10

You are a space voyager on a mission to destroy Mars. On the way all of your functions break down - all except your fire power. The Martians guess your dilemma and so invade your space ship. Can you defend your ship or will the Martians wipe you out?

The Listing SPACEASS:

```

1 REM *****
2 REM ## SPACE ASSAULT ##
3 REM ## COMPOSED BY ##
4 REM ## DAVID..HILL ##
5 REM ## IDEAS FROM ##
6 REM ## DARREN YATES'S- ##
7 REM ## FIRE/NOV/86 ##
8 REM *****
9 CLS0
10 Z=495
20 PRINT@2-1," ";
25 PRINT@1,X;
30 A#=#INKEY#:IFA#=""THEN100
35 IFA#=#CHR$(32)THEN50
50 FORA=2T0Z-510STEP-32
52 PRINT@A," ";SOUND50,3:IFA<48
@THENPRINT@A+32," ";
53 IFA<32THENPRINT@A," ";
54 S=S+1:PRINT@S," ";PRINT@S-1
," ";IFS=478THENPRINT@S," ";S
=0:GOTO200
55 IFA=STHEN120
56 NEXTA:GOTO20
100 S=S+1:PRINT@S," ";PRINT@S-
1," ";SOUND100,1:IFS=478THENPRI
NT@S," ";S=0:GOTO200
110 GOTO20
120 PRINT@S," ";FORO=0T01000:NE
XTO:Y=RND(90000):X=X+Y
125 S=0
130 PRINT@1,X;SOUND200,3:GOTO1
200 PRINT@256," YOU BEEN DESTROY
ED BY THE MARTIANS-YOU HAV
E FAILED "
205 X=0
210 FORO=0T04000:NEXTO:GOTO1

```

by Johanna Vagg

THAT WORD debugging makes me think of the little boy in school who was asked to write a sentence with the words defence, detail and defeat. The sentence he came up with went like this: The cow jumped over the fence, the feet came first and the tail came last.

I have a few debugging hints for de-beginner. First, there's the ?SN ERROR. The mistake is there in that line, just look closely, and you should spot it. It might be a 1 instead of an l or a 0 instead of an O. Then there are 8's and B's.

Sometimes, it just needs an extra space - for example, in the line FOR X=XTOX+M, you need to add a space between the X and 'TO' or the computer reads the X and T as a variable called XT. This will result in a ?SN ERROR.

"PLAYSTRINGS" do not contain zero's, so they must be O'S. They indicate OCTAVES. The O is followed by a number from 1 to 5.

"DRAWSTRINGS" cannot begin with an 8...they can contain lots of B's and 8's, but won't begin with an 8, so at the beginning, it must be a B.

The ?FC ERROR can cause a lot more headaches. My first experience with debugging a long program came in January 1984 when I had typed in a long program called the CoCoComposer.

When I tried to RUN it, it wouldn't go past line 30. ?FC ERROR IN 30! LINE 30 contained a READ, which means it has to READ some DATA statements. Nearly four hundred numbers in DATA statements to be READ and POKEd. I had to find a mistake. Difficult. The numbers seemed right and each line was the same length as in the listing. I couldn't see the mistake. Eventually I PEEKed all the locations. How? Well, if you want to PEEK locations 0 to 32, for example, just type:

```
FOR X=0 TO 32:PEEK(X);:NEXT
```

This way I found that the mistake had to be about halfway through the POKE-ing, because instead of the numbers in the DATA lines, there were O's alternating with 255's. I had put a space instead of a comma!! All that bother, for that!

An ?FC ERROR could be one of a number of things though. You are asking the computer to do something it can't. So if somewhere in the program you have said that C=10 and then you ask CoCo to SET(X,Y,C) or CLSC, it can't.

Did you know CoCo can do a CLS9 or 10 or more? Try it.

Maybe the line in question contains a statement to 'execute a drawstring'. That STRING will have been defined somewhere else (or maybe you left it out). Make sure there are no errors in the STRING, eg does it begin with an 8??

SOUNDS range from 1 to 255, not 0, so don't try to SOUND S where S=0.

Another problem might be that when you RUN a program, some of it seems to disappear:- ie. you know that you typed in, say a scoring routine, but you don't get to see it. Here I suggest you try TRON, to TRACE the program.

Another way of checking whether or not the program reaches a certain line is to insert a STOP somewhere. Try inserting several STOPS if necessary. You can continue by typing in CONT.

Sometimes the program will actually BE where you think it's not going, but you might not see what you expect to see because you are in the graphics screen instead of the text screen, or vice versa. Return from the graphics screen can be upset by various POKEs to 359 (see my POKE collection in September 85 CoCo). Maybe the routine in question was printed up but without a 'delay statement' to keep it on the screen--CoCo is fast.

What do you do when you've CSAVEd a program? I hope that you check that it's on the tape and without IO ERRORS. No, don't CLOAD it, just SKIPF it. What if it seems to have disappeared? Try listening to it with AUDICON -- if it sounds different and doesn't show up at the top of the screen you've



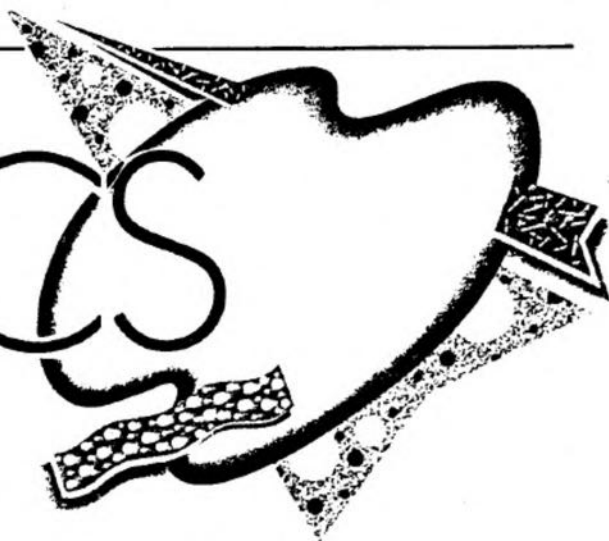
probably CSAVEd it while you were in the HIGH SPEED POKE. If you still have it in memory, press RESET and reCSAVE. RESET will 'get rid of' the HIGH SPEED POKE. If it is not in memory then you can retrieve it by doing 3 POKEs before CLOADing:

```
POKE143,8:POKE144,24:POKE145,5
```

When we first started saving programs on tape we didn't have a recorder with a counter. We saved each program immediately after the previous one on the tape. By the time we had 5 minutes of programs it took five minutes to load the last one. We discovered that if we left a gap -- a silent space -- between programs, we could take a guess with Fast Forward and be able to find the 'silent space' between two of the programs by using MOTORON:AUDIOON. Then we could CLOAD or SKIPF to find out which two programs. With our new recorder and counter, we know WHICH programs, or we WILL know - when I finally get around to putting the counter numbers next to the program names in our book! There are a lot of tapes to go through and number.



GRAPHICS



by Glen Skiller
CoCo3 GRAPHICS

MY NAME IS Glen Skiller and I am 15 years old. I have here a program demonstrating some of advanced graphics capabilities of the CoCo 3. After loading and running you are presented with a menu containing four options.

The first option draws two spheres. The background is made up of 4 levels of green, one sphere is made up of black and 5 levels of red, and the other sphere is made up of black and 5 levels of blue.

The second option demonstrates the fast animation that can be produced by using the palette command. 15 cubes are drawn in different colours and are then displayed one at a time to give the effect of a spinning cube.

The third option draws something that looks like metal bars by placing black, white, and 2 levels of grey close together in HSCREEN 4. This produces several different levels of grey. I don't know if this method works on the CM-8 monitor.

The last option exits the program and returns the CoCo 3 to normal speed.

To return to the menu at any time during the program, press the break key.

This is the first program I have sent into a magazine. I hope you find it interesting.

The Listing:

```

0 *****COCO 3 GRAPHICS***
*****
1 *****BY GLEN SKILLER***
*****
2 *****22/1/87*****
*****
3 GOTO 10
4 SAVE"143:3":END
10 POKE 65497,0
20 ON BRK GOTO 30
30 RESTORE:HSCREEN0:PALETTE RGB:
CLS:PRINT"1) SPHERES":PRINT"2) C
UBE":PRINT"3) BARS":PRINT"4) QUI
T": INPUTA
40 ON A GOTO 70,340,570
50 IF A=4 THEN POKE65496,0:END
60 GOTO 30
70 FORY=0TO15:READA:PALETTEY,A:N
EXT
80 HSCREEN2
90 FORX=0TO319STEP10
100 FORY=0TO191STEP8
110 HCOLOR RND(4)+11
120 HLINE(X,Y)-(X+10,Y+7),PSET,B
F
130 NEXTY,X
140 FORY=24TO72STEP24
150 HCIRCLE(80,96),Y,0,72/Y
160 HCIRCLE(240,96),Y,0,72/Y
170 NEXTY
180 HCOLOR0:HLINE(80,24)-(80,168
),PSET
190 HLINE(240,24)-(240,168),PSET
200 FORY=10TO150STEP24
210 HPAINT(Y,96),(Y-10)/24,0
220 HPAINT(Y+160,96),(Y-10)/24+
,0
230 NEXT
240 FORY=24TO72STEP24
250 HCIRCLE(80,96),Y,(72-Y)/24,7
2/Y,.25,.75
260 HCIRCLE(80,96),Y,Y/24+2,72/Y
,.75,.25
270 HCIRCLE(240,96),Y,(72-Y)/24+
6,72/Y,.25,.75
280 HCIRCLE(240,96),Y,Y/24+8,72/
Y,.75,.25
290 NEXTY
300 HCOLOR3:HLINE(80,24)-(80,168
),PSET
310 HCOLOR 8:HLINE(240,24)-(240,
168),PSET
320 GOTO 320
330 DATA 0,4,32,36,39,60,0,1,8,9
,11,29,2,16,23,58

```

```

340 HSCREEN2
350 PALETTE 0,0
360 FORY=0TO1.47 STEP .105
370 HCOLOR Y/.105 +1
380 X1=160+SIN(Y)*95:X2=160+SIN(
Y+1.575)*95:X3=160+SIN(Y+3.15)*9
5:X4=160+SIN(Y+4.725)*95
390 Y1=40+COS(Y)*40:Y2=40+COS(Y+
1.575)*40:Y3=40+COS(Y+3.15)*40:Y
4=40+COS(Y+4.725)*40
400 HLINE(X1,Y1)-(X2,Y2),PSET
410 HLINE-(X3,Y3),PSET
420 HLINE-(X4,Y4),PSET
430 HLINE-(X1,Y1),PSET
440 HLINE(X1,Y1)-(X1,Y1+100),PSE
T
450 HLINE(X2,Y2)-(X2,Y2+100),PSE
T
460 HLINE(X3,Y3)-(X3,Y3+100),PSE
T
470 HLINE(X4,Y4)-(X4,Y4+100),PSE
T
480 HLINE(X1,Y1+100)-(X2,Y2+100)
,PSET
490 HLINE-(X3,Y3+100),PSET
500 HLINE-(X4,Y4+100),PSET
510 HLINE-(X1,Y1+100),PSET
520 NEXTY
530 FORY=1 TO 15
540 PALETTE Y,63:PALETTE Y,0
550 NEXTY
560 GOTO 530
570 PALETTE 0,0:PALETTE 1,7:PALE
TTE2,56:PALETTE 3,63
580 AS="001011022113223233"
590 P=1
600 HSCREEN4
610 FORY=0TO191STEP19.2
620 X=Y-1
630 X=X+1:IF X=Y+9 THEN 720
640 A=VAL(MIDS(AS,P,1)):B=VAL(MI
DS(AS,P+1,1))
650 P=P+2:IF P>17 THEN P=1
660 IF A=B THEN HCOLORA:HLINE(0,
X)-(639,X),PSET:HLINE(0,Y+17-(X-
Y))-(639,Y+17-(X-Y)),PSET:GOTO63
0
670 FORN=0TO639STEP2
680 HSET(N,X,A):HSET(N+1,X,B)
690 HSET(N,Y+17-(X-Y),A):HSET(N+
1,Y+17-(X-Y),B)
700 NEXTN
710 GOTO 630
720 NEXTY
730 GOTO 730

```



SKEL

QUIZ

by Justin Lipton

16K ECB
EDUCATION



SKELQUIZ WAS WRITTEN to help me learn the names of the various bones of the human body. A skeleton is drawn and you are asked for the medical name of the bone that is coloured red. I hope that you enjoy it.

The Listing:

```
1 GOTO10
2 '***** SKELQUIZ *****
   ***** JUSTIN LIPTON *****
3 SAVE"134:3":END
10 CLS 0:C=1:A$=CHR$(128)
12 PRINT @ 5,"skeletal"+A$+"quiz
";
15 GOTO 300
20 REM CRANIUM - SKULL
30 FOR A=19 TO 23:SET(A,3,C):SET
(A,5,C):NEXT A
40 SET(19,4,C):SET(23,4,C):SET(2
1,4,C)
50 FOR A=20 TO 22:SET(A,6,C):NEX
T A
51 RETURN
55 REM VERTEBRAL COLUMN - NECK
60 SET(21,7,C)
61 RETURN
70 REM CLAVICLE - COLLAR BONE
80 FOR A= 15 TO 20:SET(A,8,C):SE
T(A+7,8,C):NEXT A
81 RETURN
90 REM STERNUM - BREASTBONE
100 FOR A=9 TO 12:SET(21,A,C):NE
XT A
101 RETURN
110 REM RIBS - RIBS
120 FOR A=18 TO 24:SET(A,10,C):S
ET(A,12,C):NEXT A
121 RETURN
125 REM LOWER VERTEBRAL COLUMN
130 FOR A=20 TO 22:SET(A,13,C):S
ET(A,15,C):NEXT A:SET(21,14,C):S
ET(21,16,C)
131 RETURN
140 REM PELVIS - HIP
150 FOR A=19 TO 23:FOR B=17 TO 1
8:SET(A,B,C):NEXT B,A
151 RETURN
160 REM HUMERUS - UPPER ARM
170 FOR A= 9 TO 15:SET(14,A,C):
SET(28,A,C):NEXT A
171 RETURN
180 REM ULNA - FOREARM
190 FOR A=16 TO 19:SET(15,A,C):S
ET(27,A,C):NEXT A
191 RETURN
200 REM CARPALS - HANDS
210 SET(14,20,C):SET(15,20,C):SE
T(16,20,C):SET(15,21,C)
220 SET(26,20,C):SET(27,20,C):SE
T(28,20,C):SET(27,21,C)
221 RETURN
230 REM FEMUR - THIGH BONE
240 FOR A= 19 TO 27:SET(18,A,C):
SET(24,A,C):NEXT A
241 RETURN
250 REM FIBULA - LOWER LEG
260 FOR A=28 TO 31:SET(19,A,C):S
ET(23,A,C):NEXT A
261 RETURN
270 REM METATARSALS - FEET
280 SET(18,31,C):SET(17,31,C):SE
T(24,31,C):SET(25,31,C)
281 RETURN
300 GOSUB 20:GOSUB 55:GOSUB 70:G
OSUB 90:GOSUB 110:GOSUB 125:GOSU
B 140:GOSUB 160:GOSUB 180:GOSUB
200:GOSUB 230:GOSUB 250:GOSUB 27
0
305 IF C=5 AND D=2 THEN 330
310 C=C+1
320 IF C=9 THEN C=5:D=2:GOTO 300
:ELSE GOTO 300
330 PRINT @ 82,"what"+A$+"bone"+
A$+"of";
340 PRINT @ 116,"the"+A$+"body";
350 PRINT @ 147,"is"+A$+"colored
";
360 C=4:E=RND(12):ON E GOSUB 20,
55,70,90,110,140,160,180,200,230
,250,270
365 POKE 282,0
370 PRINT @ 271,"":LINE INPUT B
$
372 PRINT @ 272+LEN(B$)-1,STRING
$(17,128);
375 RESTORE
380 DATA cranium,vertebral colum
n,clavicle,sternum,ribs,pelvis,h
umerus,ulna,carpals,femur,fibula
r,metatarsals
390 FOR X=1 TO E
400 READ S$
410 NEXT X
420 IF B$= S$ THEN PRINT @ 341,
"correct":PLAY"T2P4V15L16O4CEGL
8O5CL16O4AL4O5C": ELSE PRINT @ 3
41,"wrong":PRINT @ 415-LEN(S$)-
(15-LEN(S$))/2,S$;PLAY"L2001V31
BV28AV24GV20FV16DV10C#V5C"
425 FORK=1TO 600:NEXT K
430 CLS 0:C=5:D=2:GOTO 12
```

BANDIT

HEREWITH MY ENTRY to the
CoCo III competition.
As you will see, it is a
simulation of a poker machine.
Full instructions are in the
program.
Hope you like it!



by Don Berri
GAME

The Listing:

```

0 GOTO 50
1 '***** BANDIT *****
   ***** DON BERRIE *****
3 SAVE"155:3":END
5 SAVE"BANDIT3":END
10 REM BANDIT3 - A SIMULATION PR
   OGRAM FOR THE COCO III
20 REM BY DON BERRIE
30 REM BASED ON AN ORIGINAL CONC
   EPT DEVELOPED BY RICHARD RAMELLA
40 REM AND PUBLISHED IN "HOT COC
   O"
50 PALETTE 8,53:PALETTE 0,0:WIDT
   H80:CLS1
60 PALETTE 6,32:PALETTE7,54
70 PALETTE1,0:PALETTE15,54
80 FOR I=10 TO 12:PALETTE I,RND(
   62)+1:NEXT I
90 DATA 15,10,15,30,15,50,25,30,
   35,10,55,30,75,30,75,50,85,10,95
   ,10,95,30,115,50,125,10,135,30,1
   45,10,175,10,175,30,175,50,185,1
   0
100 DATA 5,10,35,50,45,30,55,10,
   105,50,115,10,115,30,145,50,155,
   10,155,30,165,10,185,50
110 POKE&HFFD9,0:CLS:HCOLOR1,0:D
   IM BN(1,30),B(62),N$(19)
120 HBUFF1,341:HBUFF2,341:HBUFF3
   ,341:HBUFF4,2000
130 FOR X=1 TO 62:READ B(X):NEXT
   140 P$="T255V3105C":S=100:E$="01
   23456789 ":SP$=CHR$(32)
150 N$(1)="1":N$(2)="2":N$(3)="3
   ":N$(4)="4":N$(5)="5"
160 N$(6)="6":N$(7)="7":N$(8)="8
   ":N$(9)="9":N$(0)="0"
170 L=RND(0)
180 HSCREEN2
190 ON BRK GOTO 900
200 FOR X=1 TO 61 STEP 2:HCIRCLE
   (B(X+1),B(X)),7,.5:IF X>37 THEN
   HPAINT(B(X+1),B(X)),1:NEXT ELSE
   NEXT
210 HDRAW"BM62,90;C5E9R108F9D51G
   9L108H9U51"
220 FOR N=78 TO 148 STEP 34:HLI
   NE(N,98)-(N+25,133),PSET,B:NEXT
230 HCOLOR 5,1:HLINE(73,93)-(177
   ,139),PSET,B
240 HCOLOR5,1:HPRINT(16,23),"CRE
  
```

```

DIT METER"
250 HLINE(62,100)-(72,100),PSET:
   HLINE(62,131)-(72,131),PSET
260 HLINE(178,100)-(188,100),PSE
   T:HLINE(178,131)-(188,131),PSET
270 HLINE(80,81)-(170,93),PSET,B
280 HLINE(80,139)-(170,150),PSET
   ,B
290 FOR I=1 TO 3
300 HLINE(80+I*30,81)-(80+I*30,9
   3),PSET
310 HLINE(80+I*30,139)-(80+I*30,
   150),PSET
320 HPAINT(79+I*30,140),13-1,5:H
   PAINT(79+I*30,83),1+9,5
330 HPAINT(68,55+I*30),13-1,5:HP
   AINT(179,55+I*30),1+9,5
340 NEXT I
350 HPAINT(83,138),6,5
360 HCOLOR 3,1:HPRINT(12,0),"PLA
   Y 1, 2, OR 3 PAY LINES"
370 HCOLOR 7,1:HPRINT(8,2),"PRES
   S":HCOLOR 4,1:HPRINT(14,2),"SPAC
   EBAR":HCOLOR 7,1:HPRINT(23,2),"F
   OR EACH PAY LINE"
380 HCOLOR 5,1:HPRINT(8,4),"AUTO
   SPINS IF ALL PAYLINES PLAYED"
390 PALETTE8,22
400 HCOLOR 8,1:HPRINT(8,6),"PRES
   S":HCOLOR 4,1:HPRINT(14,6),"ANY
   OTHER":HCOLOR 8,1:HPRINT(24,6),
   "KEY TO"
410 HPRINT(12,8),"SPIN FOR ONE O
   R TWO LINES"
420 HCOLOR 7,1:HPRINT(29,10),"PA
   YOUTS"
430 HLINE(200,95)-(320,154),PSET
   ,BF
440 HCOLOR 0,1
450 FOR I=1 TO 3:HCIRCLE (195+I*
   20,100),7,0,.5:HPAINT(195+I*20,1
   00),0,0:NEXT
460 HPRINT(35,12),"= 20"
470 FOR I=1 TO 3:HCIRCLE (195+I*
   20,116),7,0,.5:NEXT
480 HPRINT(35,14),"= 10"
490 FOR I=1 TO 2:HCIRCLE(195+I*2
   0,132),7,0,.5:HPAINT(195+I*20,13
   2),0,0:NEXT
500 HPRINT(35,16),"= 5"
510 FOR I=1 TO 2:HCIRCLE(195+I*2
   0,148),7,0,.5:NEXT
520 HPRINT(35,18),"= 1"
  
```

```

530 HCOLOR 0,1:GOSUB 800:X1=165:
   Y1=X1:Z1=X1
540 JH=0
550 V$=INKEY$:FORI=10 TO 12:PALE
   TTEI,RND(63)+1:NEXT:IF JH>0 AND
   S=0 THEN 570 ELSE IF S=0 THEN 55
   0 ELSE IF JH=3 THEN 560 ELSE IF
   V$="" THEN 550 ELSE IF V$=CHR$(3
   2) THEN JH=JH+1:S=S-1:PLAY"T2540
   2V31D":GOSUB 800:GOSUB 860:GOTO5
   50
560 IF JH=0 THEN 550
570 X2=10+INT(RND(30)/10):Y2=X2+
   10+INT(RND(120)/10):Z2=Y2+10+INT
   (RND(220)/10)
580 FOR H=1 TO Z2 STEP 10
590 FOR L=1 TO 10
600 IF H<X2 THEN HGET(0,X1)-(20,
   X1+30),1:X1=X1-5:IF X1=0 THEN X1
   =160
610 IF H<Y2 THEN HGET(20,Y1)-(40
   ,Y1+30),2:Y1=Y1-5:IF Y1=0 THEN Y
   1=160
620 IF H<Z2 THEN HGET(40,Z1)-(60
   ,Z1+30),3:Z1=Z1-5:IF Z1=0 THEN
   Z1=160
630 IF H>X2 THEN 640 ELSE HPUT(
   80,101)-(100,131),1,PRESET
640 IF H>Y2 THEN 650 ELSE HPUT (
   115,101)-(135,131),2,PRESET
650 HPUT(149,101)-(169,131),3,PR
   ESET
660 PLAY P$
670 NEXT L,H
680 FOR H=104 TO 96+JH*12 STEP 1
   0:F1=F1+1:P1=HPOINT(86,H):P2=HPO
   INT(120,H):P3=HPOINT(154,H)
690 V1=HPOINT(88,H):V2=HPOINT(12
   2,H):V3=HPOINT(156,H)
700 IF P1+P2=28 AND V1+V2>29 THE
   N Q=1
710 IF P1+P2=28 AND V1+V2=28 THE
   N Q=5
  
```

SONGS'S SONGS'S SONGS'S

by Richard Vagg
16K ECB

HERE IS ANOTHER entry in our music competition! "Songs", a Richard Vagg program, plays "Merrily We Rolled Along", "Lightly Row", "Long Long Ago", "Jingle Bells", "Folk Song", "Barcarolle" and "Pop Goes the Weasel".

The Listing:

```
0 REM MUSIC COMPETITION ENTRY
1 GOTO10
3 SAVE"67A:3":END
10 CLSRND(8)
20 PRINT@230,"SONGS BY RICHARD V
AGG";:REM MUM CHANGED IT SO THAT
THE NOTES WEREN'T ALL THE SAME
LENGTH!
30 FGRA=1TO1000:NEXT
40 CLSRND(8)
50 PRINT@230,"MERRILY WE ROLL AL
ONG";
60 PLAY"T4L4EDCDEEL2EL4DDL2DL4EG
L2GL4EDCDEEL2EL4DDEDL1C"
70 FORA=1TO2000:NEXT
80 CLSRND(8)
90 PRINT@234,"LIGHTLY ROW";
100 PLAY"T4L4GEL2EL4FDL2DL4CDEFG
GL2GL4GEL2EL4FDL2DL4CEGGL1EL4DD
DDEL2FL4EEEEEFLL2GL4GEL2EL4FDL2DL
4CEGGL1CL4"
110 FORA=1TO2000:NEXT
120 CLSRND(8)
130 PRINT@232,"LONG, LONG AGO";
140 PLAY"T4L2CL4CDL2EL4EFL2GL4FG
L1EL2GL4FEL1DL2FL4EDL1CL2CL4CDL2
EL4EFL2GL4FGL1EL2GL4FEL2DL4EDL1C
"
150 PLAY"T4L2GL4FEL2DL4GGL2FL4ED
L1CL2GL4FEL2DL4GGL2FL4EDL1CL2CL4
CDL2EL4EFL2GL4FGL1EL2GL4FEL2DL4E
DL1C"
160 FORA=1 TO2000:NEXT:CLSRND(8)
```

```
170 PRINT@233,"JINGLE BELLS";
180 PLAY"T4L4O4EEL2EL4EEL2EL4EGC
DL1EL4FFFFFEEDDEL2DGL4EEL2EL4E
EL2EL4EGCDL1EL4FFFFFEEDGFDL1C"
190 FORA=1TO2000:NEXT
200 CLSRND(8)
210 PRINT@235,"FOLK SONG";
220 PLAY"T4O3L2EL4DDL2.CL4EGGFFL
2.EL4EFFDDGGL2EEL4DDL1CL2EL4DDL2
.CL4EGGFFL2.EL4EFFDDGGL2EEL4DDL1
C"
230 FORA=1TO2000:NEXT
240 CLSRND(8)
250 PRINT@231,"POP GOES THE WEAS
EL";
260 PLAY"T6L2CL4CL2DL4DEGEL2.CL2
CL4CL2DL4DL2.ECL2CL4CL2DL4DEGEL2
.CGL2DL4FL2.EC"
270 FORA=1TO2000:NEXT
280 CLSRND(8)
290 PRINT@235,"BARCAROLLE";
300 PLAY"T3L2EL4FL2FL4EEDFL2FL4E
EDFL2FL4EL2.EL2EL4FL2FL4EEDFL2FL
4EEDFL2FL4EL2.C"
310 FOR A=1 TO 500:NEXT
320 CLSRND(8)
330 PRINT@236,"THE END";
340 GOTO340
```

BANDIT continued

```
720 IF P1+P2+P3=42 AND V1+V2+V3=
45 THEN Q=10
730 IF V1+V2+V3=42 THEN Q=20
740 IF Q>0 THEN GOSUB 780:GOSUB
870:Q=0
750 IF F1=JH THEN GOSUB 780 ELSE
NEXT H
760 GOSUB 780
770 GOTO 540
780 F1=0:F=0:FOR V=107 TO 141 ST
EP 34:FOR Q1=104 TO 124 STEP 10:
HCIRCLE(V,Q1),2,6:NEXT Q1,V
790 RETURN
800 HCOLOR 0,1:HLINE(240,184)-(2
80,192),PSET,BF
810 S$=STR$(S):S$=MID$(S$,2):F=L
EN(S$):IF F<4 THEN S$=STRING$(4-
F,32)+S$
820 Y=1:FOR V=30 TO 33
830 K$=MID$(S$,Y,1):C=INSTR(E$,K
$):IF C=11 THEN 850
840 HCOLOR5,5:HPRINT(V,24),N$(C-
1)
850 Y=Y+1:NEXT V:RETURN
860 T=94+(JH*10):HCIRCLE(107,T),
2,9:HCIRCLE(141,T),2,9:RETURN
870 FOR S=S+1 TO S+Q-1:GOSUB800
880 HCIRCLE(107,H),2,4:HCIRCLE(1
41,H),2,4:PLAY "I25403CEG":HCIRC
LE(107,H),2,6:HCIRCLE(141,H),2,6
:NEXT S:S=S-1
890 RETURN
900 PALETTE 8,53:POKE&HFFD8,0
```

ROVER

continued from page 23

```
470 H=H+1
480 BO=BO+1
490 PRINT@H,AAS;
500 PRINT@BO,BB$;
510 IF H=172 THEN 690
520 FORQ=1 TO B:A$=A$+C$(Q):IF A
$=A$(T) THEN V=W+1:PRINT@H+4,"WO
OF WOOF";:GOSUB 40:GOTO780
530 NEXT Q
540 A$=""
550 B$=INKEY$:IFB$="" THEN 550
560 IF B$<CHR$(65)OR B$>CHR$(122
) THEN 550
570 S=ASC(B$)
580 IF PEEK(1024+S)=S THENSOUND2
00,10:GOTO550
590 PRINT@S,CHR$(S);
600 FOR Q=1 TO B
610 IF B$=B$(Q)THEN C$(Q)=B$:PRI
NT@Q+307,B$;:GOSUB 40:GOTO630
620 GOTO 640
630 M=1
640 NEXT Q
650 IF M=0 THEN SOUND 5,1:GOTO47
0
660 '
670 M=0
680 GOTO 520
690 PRINT@204,CC$+CC$;:FOR F=174
```

```
TO 429 STEP 32
700 PRINT@F,CC$;:PRINT@F,CC$+CC$
+CC$+CC$;:PRINT@F+33,AAS;
710 PRINT@F+64,BB$;
720 SOUND 200,2
730 NEXT
740 PRINT@433,CC$;:FOR X=1 TO 30
750 PRINT@462,CHR$(RND(128)+127)
+CHR$(RND(128)+127)+CHR$(RND(128
)+127);
760 NEXT
770 PRINT@352," THE WORD IS..."A
$(T):LL=LL+1
780 PRINT@448," PRESS ANY KEY F
OR A REPLAY"
790 T$=INKEY$:IF T$="" THEN 790
800 FOR Q=1 TO B:C$(Q)="" :NEXT
810 A$="" :CLSO:GOTO 310
820 DATA POSTURE,AMOUNT,GALAXY,B
ANANA,TERROR,BATTLE,ZOMBIE
830 DATA MEMORY,MESSAGE,ISLAND
840 DATA NOTEBOOK,SWIMMING,CRAFT
SMAN,FLOWER,FOOTBALL
850 DATA WATCH,TOWEL,NUMBER,DOLL
AR,SHAMPOO
860 DATA ELECTRICITY,DANCE,LOCKE
R,MACHINE,FRIEND,SAILBOAT
870 DATA PAINT,NEWSPAPER,MAGAZIN
E,BOOK,DENTIST
880 DATA TIGER,MOUSE,RIVER,DISTA
NCE,MOUNTAIN
890 DATA FLOWER,COMPASS,BEETROOT,
CHEESE,TOMATO
900 DATA CARROT,PEPPER,COFFEE,MI
LLION,COMMANDO,DRAGON
910 DATA BUDGET,BARREL,FLAG
920 DATA XXX
```

FOOTY FEVER

by Joy Wallace

GRAFIX



HERE IS my entry for the CoCo 3 competition. It is a program depicting the badges of the V.F.L which I have been thinking about for a while, but the old CoCo did not have the colour range.

I have used the palette command to poke the colours I wanted. Also the ON BRK command to go from one picture to the next. I think this is very handy. Also the HPRINT for writing on the screen. I also used the HPRINT for the eye of the magpie.

I have had a lot of fun doing this, it has kept me occupied for quite a while.

I have found if you poke other colours into the first eight palette slots before loading a game you will get some different colours for the games, just for a change.

The Listing:

```
1 '*** V.F.L. FOOTY. BADGES ***
   **** BY JOY WALLACE ****
   *** FOR THE COCO 3 ***
   ***** DEC 1986 *****
2 GOTO5
3 SAVE"164:3":END
5 CLEAR500
6 PALETTE2,11:PALETTE0,63:PALETTE9,29:PALETTE14,7:PALETTE10,34:PALETTE12,8:PALETTE6,32:PALETTE5,29
15 K$="D20R2U10F10R2H10E10L2G10U10L2":N$="D20R2U12F12U20L2D12H12":G$="G2D16F2R10U4R2L6R2D2L6U16R6D2R2U4L8":R$="D20R2U10F10R2H10R10U10L14BF2R10D6L10U6
20 O$="G2D16F2R6E2U16H2L6BD2D16R6U16L6":S$="R10D2L8D6R8D12L10U2R8U6L8U12":A$="R2D20L2U10L10D10L2U10E10R2G8R8U8":M$="D20R2U18F8E8D18R2U20L2G8H8L2":P$="D20R2U10R8E2U6H2L10BF2D6R6U6L6":I$="D20R2U20L2":E$="D20R10U2L8U7R6U2L6U7R8U2L10"
21 D$="D20R8E2U16H2L8BF2D16R6U16L6"
25 B$="D20R8E2U6H2L8BR8E2U6H2L8BF2D6R6U6L6BD10D6R6U6L6":L$="D20R10U2L8U18L2":U$="D18F2R6E2U18L2D18L6U18L2":H$="D20R2U9R8D9R2U20L2D9L8U9L2":V$="D18F2R4E2F2R4E2U18L2D18L4U18L4D18L4U18"
27 C$="G2D16F2R8E2L8U16R8H2L8":T$="D2R6D18R2U18R6U2L14":D$="D20R10E2U16H2L10BF2D16R8U16L8":Y$="F8D12R2U12E8L2G6H6L2"
30 AAs="F2R5E2F2R5E2D18G2L5M-2,+4M-2,-4L5H2U16"
35 HSCREEN2:HCLS12:HCOLOR11
40 HDRAW"BM126,50R14M+20,+40M+20
```

```
,-40R14M-34,+64M-34,-64":HCIRCLE(160,40),16,,2:HPAINT(160,20),11,11:HPCOLOR(160,100),11,11:HPCOLOR12:HLINE(160,10)-(160,70),PSET45 HPCOLOR11:HPRINT(4,3),"V.F.L. BADGES":HPRINT(23,3),"by JOY WALLACE":HPRINT(2,16),"Here are the fourteen Victorian":HPRINT(2,18),"Football League Badges, including the ":HPRINT(2,20),"two new teams from Queensland and V.A."50 HPRINT(4,22),"PRESS BREAK AFTER EACH SCREEN."90 ON BRK GOTO10595 GOTO 95100 '*****KANGAROOS"105 HSCREEN2:HCLS11:HCOLOR2112 GOSUB1505115 HPAINT(87,12),2,2:HPAINT(83,148),2,2:HPAINT(241,148),2,2:HPAINT(156,179),2,2:HPAINT(170,179),2,2118 HLINE(84,66)-(240,70),PSET,BF120 HDRAW"S2BM192,115"+AA$130 HLINE(99,72)-(120,125),PSET,BF:HLINE(134,72)-(155,125),PSET,BF:HLINE(169,72)-(190,125),PSET,BF:HLINE(204,72)-(225,125),PSET,BF145 HDRAW"S4BM89,28"+K$+"BR30"+A$+"BR7"+N$+"BR21"+G$+"BR24"+A$+"BR8"+R$150 HDRAW"BM200,28"+O$+"BR14BU2"+O$+"BR12BU2"+S$155 HCOLOR9157 HDRAW"S2BM192,115"+AA$160 HCIRCLE(170,112),22,,.5,.62,.0:HCIRCLE(122,118),20,,.5,.1,.5:HCIRCLE(123,104),32,,1,.2,.4165 HDRAW"S4BM132,134M+10,-4R6M+12,+10M-6,+6M+16,+30M-10,-30M+12,-7M+9,-8D6M-10,+10R4M+8,-4M+10,-8M+6,-4M+5,-10R3M+9,-3M+10,-5U2M-17,-2H3M-15,+4BM152,106M-8,+10M-8,+10166 HCIRCLE(196,119),2,2:HDRAW"C2BM193,120F3E3170 HLINE(98,117)-(102,117),PSET:HLINE(99,118)-(99,123),PSET175 HPAINT(160,106),2,9:HDRAW"C2BM167,166M+2,+7M-4,-7180 HPRINT(11,7),"NORTH MELBOURN E.F.C."185 ON BRK GOTO 205190 GOTO 190200 '*****MAGPIES****205 HSCREEN2:HCLS11:HCOLOR8208 GOSUB1505210 HPAINT(87,12),8,8:HPAINT(83,148),8,8:HPAINT(241,148),8,8:HPAINT(156,179),8,8:HPAINT(170,179),8,8215 HLINE(84,66)-(240,70),PSET,BF230 HLINE(127,70)-(127,175),PSET:HLINE(197,70)-(197,175),PSET:HPAINT(125,72),8,8:HPAINT(199,72),8,8235 HDRAW"S4BM96,28"+M$+"BR41"+A$+"BR15"+G$+"BR19"+P$+"BR16BU2"+I$+"BR10"+E$+"BR18"+S$240 HPRINT(13,7),"COLLINGWOOD.F.C.242 HCOLOR14245 HDRAW"BM168,92R6G2M-4,-2BM172,94F2M+2,+8DM-14,+10M-13,+7M-7,
```


+6M-9,+6M+11,-1M+12,-2M+6,+3M+4,
+15BM164,135M+4,-4M+6,0M+4,14BM1
76,138U2M+3,-4E6M+4,-8U2M+1,-6U2
M-2,-3U2M-4,-2M-3,-6H3L4G4
250 HDRAW"BM145,134M-12,+8R16M+1
0,-8":HDRAW"BM163,149M+6,+2BM+12
,0BU6M-6,-1BM178,110D4M-2,6M-4,4
M-16,8
252 HDRAW"S2BM181,104"+AA\$
253 HCIRCLE(185,109),2,8:HDRAW"S
4C8BM182,110F3E3":HDRAW"C14BM168
,112R6M-6,+6L6M+6,-6
255 HPAINT(176,92),8,14:HPAINT(1
42,138),8,14
260 HCOLOR11:HDRAW"BM136,142E4BD
4BL1E4BD4BL1E4BD4BL1E4BD4BL1E4BD
4BL1E4
265 HPRINT(22,11),".
285 ON BRK GOTO 305
290 GOTO 290
300 '****CARLTON****
305 HSCREEN2:HCLS11:HCOLOR12
308 GOSUB 1505
310 HPAINT(87,12),12,12:HPAINT(8
3,148),12,12:HPAINT(241,148),12,
12:HPAINT(156,179),12,12:HPAINT(
170,179),12,12
315 HLINE(84,66)-(240,70),PSET,B
F
320 HDRAW"BM116,28"+B\$+"BR20BU12
"+L\$+"BR20"+U\$+"BR20"+E\$+"BR20"+
S\$
325 HPRINT(14,7),"CARLTON.F.C.
330 HCIRCLE(162,122),40:HCIRCLE(
162,112),20,,1,.32,.85:HCIRCLE(1
62,112),16,,1,.34,.89:HCIRCLE(16
2,112),20,,1,.15,.27:HCIRCLE(162
,112),16,,1,.15,.27:HCIRCLE(158,
112),10,,1,.32,.69:HCIRCLE(158,1
12),7,,1,.32,.68
335 HDRAW"BM174,96D6BL4BU7U5L14D
4BD4D38R4U38BD12R8D4L8BM172,124F
3BM160,104M+6,+1G2M-4,-1BM160,11
8R2E2D4M-4,+1
340 HDRAW"S3BM157,141"+AA\$
345 HCIRCLE(162,146),2:HDRAW"S4B
M159,150F3E3
350 HPAINT(140,122),12,12:HPAINT
(153,112),12,12:HPAINT(153,122),
12,12:HPAINT(153,102),12,12
355 HDRAW"BM152,160M+10,+7M+10,-
7":HPAINT(160,163),12,12
360 HCIRCLE(161,134),20,11,1,.4,
.6:HCIRCLE(161,134),20,11,1,.92,
.12
365 HDRAW"C11BM147,146R3M+6,+2BM
174,146L3M-6,+3
385 ON BRK GOTO 405
390 GOTO 390
400 '****ESSENDON****
405 HSCREEN2:HCLS11:HCOLOR8
408 GOSUB 1505
410 HPAINT(87,12),8,8:HPAINT(83,
148),8,8:HPAINT(241,148),8,8:HPA
INT(156,179),8,8:HPAINT(170,179)
,8,8
415 HLINE(84,66)-(240,70),PSET,B
F
425 HLINE(86,160)-(110,138),PSET
:HLINE(140,112)-(186,70),PSET:HL
INE(144,178)-(174,150),PSET:HLIN
E(186,140)-(240,92),PSET
435 HCOLOR3
440 HPRINT(14,7),"ESSENDON.F.C.
450 HDRAW"S4BM96,28"+B\$+"BR18BU1
2"+O\$+"BR16BU2"+M\$+"BR28"+B\$+"BR
17BU12"+E\$



455 HDRAW"BM197,28"+R\$+"BR18BU2"
+S\$
457 HCOLOR8
460 HLINE(142,114)-(194,98),PSET
:HLINE(201,106)-(186,140),PSET:H
LINE(132,116)-(92,128),PSET:HLIN
E(100,136)-(174,150),PSET:HLINE-
(206,166),PSET:HLINE(136,110)-(1
92,144),PSET
465 HDRAW"BM192,144F4M+10,+14D3B
M126,118U26RFM+8,14D4BM92,128D2M
+1,+2M+3,+2M+4,2BM194,98R4M+3,+2
D5BM144,126M+12,+9M+18,+13BM160,
120M+22,+14M+4,+3BM191,144G3M+11
,+11E3
470 HCIRCLE(185,139),3:HCIRCLE(1
73,146),3:HPAINT(185,139),8,8:HP
AINT(173,146),8,8
475 HPAINT(88,74),8,8:HPAINT(210
125),8,8:HPAINT(192,75),3,8:HPA
INT(110,145),3,8
480 HDRAW"S2BM122,124"+AA\$:HPAIN
T(126,128),3,8:HCIRCLE(126,128),
2,11:HDRAW"C11BM124,131F4E4
485 ON BRK GOTO 505
490 GOTO 490
500 '*****FITZROY*****
505 HSCREEN2:HCLS11:HCOLOR6
508 GOSUB1505
510 HPAINT(87,12),6,6:HPAINT(83,
148),6,6:HPAINT(241,148),6,6:HPA
INT(156,179),6,6:HPAINT(170,179)
,6,6
520 HCOLOR6:HLINE(81,74)-(243,74
) ,PSET
525 HDRAW"S4BM114,28"+L\$+"BR24"+
1\$+"BR18"+O\$+"BR22BU2"+N\$+"BR27"
+S\$
530 HPRINT(15,7),"FITZROY.F.C.
535 HDRAW"S4BM150,104R17M+8,-2R2
M+8,-2R5M+9,+2M+6,+1R4M+6,-2U4H4
M-14,-6L10M-6,+3M-6,+4M-2,+1L10M
-4,-2M-2,-4E3F4D1M+2,+1R6M+8,-4M
+4,-2M+4,-2R14M+10,+3M+7,+5N+1,+
4
536 HDRAW"BM190,123M-5,+2M-1,+2G
2M-4,+2M-8,+3M-2,+1L4M-11,+2BM18
7,124D6M+1,+4M+3,+7D5M-2,-1M-4,+
1G2R12E2U4M-1,-4U7
538 HDRAW"BM145,125E2M+2,-4M+1,-
4M+1,-8M-1,-2U2M-2,-8M-2,-4M-8,-
6M-4,-2L6M-4,+1M-4,+2M-2,+3D3M+3
,+2M+4,+2R6M+4,-1M+4,+9M+3,+4M-4
,+10M-1,+2D4G2
540 HDRAW"BM220,96D2M-4,+7M-7,+4
D2M+4,+13M+2,+4M+1,+4M+4,+6D23L6
H2E2U9M-4,-1M-4,-3H6M-6,-8H2M-1,
-4U6
545 HDRAW"BM123,95G3M-3,+6E3R2L2
G3M-1,+2G3M-4,+2M-1,+2D2M+3,+4E3
F2M-3,+4F4E8M-1,-7M+2,-5M+3,-3M+
6,-4BM123,119D6M+1,+2F6D2G2M-2,+
3M-6,+4M-4,+5G2D2M+6,-1M+8,-5M+5
,+4M+4,-2M+2,-4U5
555 HDRAW"BM136,132R8D2M-4,+8M-1
,+4M-2,+3M-2,+11L2G2R10M+4,-8M+3
,+8M+2,-4M+3,-5
557 HLINE(80,128)-(124,128),PSET
:HLINE(216,128)-(243,128),PSET
560 HCIRCLE(115,160),10,,.5:HLIN
E(105,160)-(125,160),PSET:HPAINT
(160,160),2,6:HPAINT(160,75),6,6
:HPAINT(102,125),6,6:HPAINT(180,
110),1,6:HPAINT(130,100),1,6:HPA
INT(190,127),1,6
565 HDRAW"S2C6BM166,117"+AA\$:HCI
RCLE(170,121),2,2:HDRAW"S4BM167,

123F3E3
585 ON BRK GOTO 605
590 GOTO 590
600 '*****FOOTSCRAY*****
605 HSCREEN2:HCLS11:HCOLOR3
608 GOSUB 1505
610 HPAINT(87,12),3,3:HPAINT(83,
148),3,3:HPAINT(241,148),3,3:HPA
INT(156,179),3,3:HPAINT(170,179)
,3,3
615 HLINE(84,66)-(240,70),PSET,B
F
620 HDRAW"C2BM98,28"+B\$+"BR16BU1
2"+U\$+"BR16"+L\$+"BR16"+L\$+"BR16"
+D\$+"BR16BU2"+O\$
625 HDRAW"BR16BU2"+G\$+"BR15"+S\$
630 HPRINT(14,7),"FOOTSCRAY.F.C.
632 HCOLOR3:HLINE(80,106)-(240,1
06),PSET:HPAINT(90,90),2,3:HLIN
(80,140)-(240,140),PSET:HPAINT(9
0,145),3,3
635 HCOLOR8:HDRAW"BM168,94R4M+6,
-1M+4,+1M+5,+3M+5,+1M+3,+2M+3,+4
M+1,+4D5M+4,+7D8M-1,+2M-2,+4F8D2
M-2,+1M-6,+1H2U2M-4,-8H4M-1,-4M-
6,-8M-6,+2D6M+2,+6D2M+1,+6D4M-1,
+2M-2,+4D6M+1,+4G2L8H2M+2,-2U16M
+2,-6H2U4H7M-4,+2L12M-4,-1M-2,-1
L8U3
640 HDRAW"BM158,124M+4,+12M-2,+4
D2G2F2R7H2U2M+1,-4M-1,-9BM130,10
4M-4,+8D4M-4,+6M-1,+2D2M+1,+8D6M
+1,+4M-1,+4M+2,+6G3F2M+4,+2R4M+3
,+2U2M-1,-4U4M-2,-4U1D1M+1,-4U4M
-1,-4G2E4U2H2E3
645 HDRAW"BM130,104D2M+2,+4F2M+4
,+2M+1,+4R18M+3,-2E2BM+5,-6M+2,-
4U8M-6,-12E3F1D4G2E2U4H3M-4,+2L2
M-4,-2M-10,+2L4M-6,-2L4G4D6R3L3U
6E4M+3,+2M-5,+6D6M+2,+6M-2,+6
650 HLINE(148,94)-(150,101),PSET
,BF:FORR=2T05STEP3:HCIRCLE(141,9
2),R,,.5:HCIRCLE(157,92),R,,.5:N
EXTR
655 HCIRCLE(148,111),12,,1,.5,0:
HCIRCLE(148,112),12,,1,.5,0:HCIR
CLE(148,113),12,,1,.5,0
657 HDRAW"S3BM178,101"+AA\$
660 HPAINT(180,108),3,8:HPAINT(1
80,104),3,8:HCIRCLE(183,106),2:H
DRAW"S4BM180,110F3E3
665 HPAINT(130,155),11,8:HPAINT(
172,160),11,8:HPAINT(200,145),11
,8:HPAINT(164,140),11,8:HPAINT(1
65,95),11,8:HPAINT(180,95),11,8:
HPAINT(148,103),11,8:HPAINT(130,
83),8,8
685 ON BRK GOTO 705
690 GOTO 690
700 '*****GEELONG*****
705 HSCREEN2:HCLS11:HCOLOR12
710 GOSUB1505
712 HPAINT(87,12),12,12:HPAINT(8
3,148),12,12:HPAINT(241,148),12,
12:HPAINT(156,179),12,12:HPAINT(
170,179),12,12
715 HLINE(84,66)-(240,70),PSET,B
F
720 HPRINT(15,7),"GEELONG.F.C.
725 HDRAW"S4BM120,28"+C\$+"BR36"+
A\$+"BR16"+T\$+"BR26"+S\$
728 FORR=26T030STEP1
730 HCIRCLE(154,108),14,,.6,1,.8
8:HCIRCLE(184,108),14,,.6,.62,.5
:HCIRCLE(170,104),24,,.5,.63,.85
:HCIRCLE(168,169),R,,.5,.7,.8:HC
IRCLE(168,161),R,,.5,.7,.79

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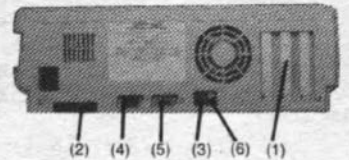
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735 HDRAW"BM167,108E2F2BM164,103
R10BM184,96M+4,-2M+4,-1RD4M-1,+5
BL6BU2E6BM154,95H3M-7,-2G2D2M+4,
+8BR6BU2H8BM154,116D2M+2,+6M+3,+
6E2R2F2EM+2,+1M+1,+4D2M-2,+4M-4,
+2RM-5,-4U5M+1,-4
740 HPAINT(170,100),12,12
745 HDRAW"C11BM160,100E1BM175,10
OH1
750 HDRAW"C12BM168,140F2R2M+2,-1
M+1,-2U11M+1,-2M+1,-3M+4,-6U2BM1
47,112M+2,+4M+4,+8M+6,+9BM166,14
1F2M+2,+1R2M+4,-1E2U12M+8,-14BM1
65,130M-2,+4BM143,112D3M+3,+5M+2
,+4M+3,+4F8
752 HDRAW"BM146,112M+2,+4M+4,+8M
+6,+9BM145,112M+2,+4M+4,+8M+6,+9
BM156,134D25M-4,-1L4M-2,+1M+1,-1
0M+2,-10M+3,-8BM174,145M+2,+8D4M
+6,-1R3M+2,+2U6M-9,-16
755 HDRAW"BM143,112M-3,+6M-1,+2D
8M+5,+18M+2,+4M+1,+4BM138,120L3M
-4,+6M-1,+4D8M+2,+4M+4,+6F3R6BM1
84,120M+6,+10M+1,+4D10M-1,+2M-2,
+3G2760 HDRAW"BM140,118M-2,-4M-2
,-6U6M+1,-4M+4,-10E6U3M-2,-1L2M-
5,+6M-5,+9M-2,+7D10M+1,+4M+1,+3M
+5,+7BM146,158M-3,+2D2FE2G2D2R3E
3G2F2R2M+2,-4R2U2BM176,158G2D2M+
1,+2R2U2D2F2R4U3H2F2D3M+3,-1U2H2
F2R2U2M-2,-3BM138,152GDR8
765 HLINE(138,84)-(144,86),PSET,
BF:HLINE(133,94)-(138,96),PSET,B
F:HLINE(132,108)-(137,110),PSET,
BF:HLINE(150,140)-(156,142),PSET
BF:HLINE(148,146)-(156,148),PSE
T,BF:HLINE(145,152)-(155,154),PS
ET,BF
770 HLINE(176,152)-(186,154),PSE
T,BF:HLINE(174,146)-(184,148),PS
ET,BF:HLINE(138,115)-(149,137),P
SET:HLINE(138,114)-(149,136),PSE
T:HLINE(138,113)-(149,135),PSET:
HLINE(138,116)-(149,138),PSET
775 HLINE(148,146)-(140,128),PSE
T:HLINE(148,147)-(140,129),PSET:
HLINE(148,145)-(140,127),PSET
780 HPAINT(170,120),12,12:HPAINT
(185,130),12,12:HPAINT(135,135),
12,12
785 HDRAW"S2BM110,85"+AA\$
786 HPAINT(113,90),12,12
788 HCIRCLE(114,89),2,11
789 HDRAW"S4C11BM111,91F3E3
790 ON BRK GOTO 805
795 GOTO 795
800 *****HAWTHORN*****
805 HSCREEN2:HCLS11:HCOLOR10
810 GOSUB1505
812 HPAINT(87,12),10,10:HPAINT(8
3,148),10,10:HPAINT(241,148),10,
10:HPAINT(156,179),10,10:HPAINT(
170,179),10,10
815 HLINE(84,66)-(240,70),PSET,B
F
816 HPAINT(90,80),1,10:HPAINT(90
,25),1,10
820 HPRINT(14,7),"HAWTHORN.F.C.
825 HDRAW"S4BM105,28"+H\$+"BR36"+
A\$+"BR18"+W\$+"BR28"+K\$+"BR25"+S\$
830 HLINE(132,102)-(232,102),PSE
T:HLINE(163,160),PSET:HLINE(10
4,122),PSET:HLINE(104,128),PSET
:HLINE(94,114),PSET:HLINE(96,10
8)-(126,108),PSET:HLINE(121,128)
-(139,109),PSET:HLINE(220,109),



PSET:HLINE(222,106),PSET:HLINE-
(132,106),PSET
835 HLINE(132,113),PSET:HLINE-(
120,108),PSET
840 HDRAW"BM121,128M-12,-8M-4,-1
L2G2BM94,114U2M+2,-4R4BM126,108E
6
850 HPAINT(160,150),10,10
855 FORR=6TO8STEP1:HCIRCLE(136,1
12),R,1,1,.8,.4:HCIRCLE(136,112)
,3,1
860 HCOLOR1:HDRAW"S2BM159,141"+A
A\$:HCIRCLE(163,145),2:HDRAW"S4BM
160,147F3E3
885 ON BRK GOTO 905
890 GOTO 890
900 *****MELBOURNE*****
905 HSCREEN2:HCLS11:HCOLOR8
908 GOSUB1505
910 HPAINT(87,12),8,8:HPAINT(83,
148),8,8:HPAINT(241,148),8,8:HPA
INT(156,179),8,8:HPAINT(170,179)
,8,8
915 HLINE(84,66)-(240,70),PSET,B
F
920 HDRAW"C3S4BM100,28"+D\$+"BR20
BU2"+E\$+"BR20"+M\$+"BR32"+O\$+"BR1
8BU2"+N\$+"BR24"+S\$
925 HPRINT(14,7),"MELBOURNE.F.C.
930 HCOLOR8:HLINE(115,138)-(133,
150),PSET:HLINE(209,138)-(193,15
0),PSET:HLINE(107,174)-(133,150)
,PSET:HLINE(217,174)-(193,150),P
SET:HLINE(115,138)-(141,126),PSE
T:HLINE(209,138)-(185,126),PSET:
HLINE(83,70)-(140,120),PSET:HLIN
E(243,70)-(187,120),PSET
932 FORR=4TO8STEP4:FORV=1TO4STEP
3
935 HCIRCLE(171,114),10,,1,.62,.
18:HCIRCLE(157,114),10,,1,.33,.8
7:HCIRCLE(163,145),8,,1,.87,.67:
HCIRCLE(163,132),18,,.8,.875,.65
:HCIRCLE(158,124),V:HCIRCLE(168,
124),V
937 NEXTRV:NEXTR
940 HDRAW"BM153,120E2M+8,+1M+8,-
1F2BM163,138F2R4M+4,-2M+1,-4G3L4
H2BM163,138G2L4M-4,-2M-1,-4F3R4E
2BM159,132D2F3E3U2BM151,100E4M-8
,-6D2M+4,+7BM177,100H4M+8,-6D2M-
4,+7BM141,110U4M+3,-7M+3,-2M+2,-
2BE3RURUR2UR16DR2DRDRBF3M+2,+2M+
3,+2M+3,+7D4
945 HDRAW"BM181,124R2M+2,-9G2U3E
4R2D2M-3,+8D6M-4,+2L2U4BM146,123
L2M-2,-9F2U3H4L2D2M+3,+8D6M+4,+2
R2U4
950 HDRAW"BM192,174M+10,-20M-6,
-1M+4,-14E2F2M-4,+12M+3,+1M+6,-1
3E2F2M-7,+15M+3,+1M+4,-14R2D2M-6
,+13M-2,-1M-10,+20
960 HPAINT(193,160),3,8:HPAINT(1
63,141),8,8:HPAINT(166,139),8,8:
HPAINT(160,139),8,8:HPAINT(161,1
49),8,8:HPAINT(90,85),2,8:HPAINT
(235,85),2,8:HPAINT(163,95),8,8:
HPAINT(163,75),3,8
963 HDRAW"S3BM139,144"+AA\$:HPAIN
T(141,146),2,8
965 HCOLOR11:HLINE(193,174)-(202
,154),PSET:HLINE(195,174)-(204,1
54),PSET:HLINE(194,174)-(203,154
,PSET:HLINE(198,152)-(210,156),
PSET:HLINE(199,151)-(211,155),PS
ET:HLINE(199,151)-(203,139),PSET
:HLINE(211,155)-(215,142),PSET:H

LINE(205,154)-(209,142),PSET
970 HCIRCLE(144,148),2:HDRAW"S4C
11BM142,152F2E2
985 ON BRK GOTO 1005
990 GOTO 990
1000 *****RICHMOND*****
1005 HSCREEN2:HCLS11:HCOLOR8
1008 GOSUB1505
1010 HPAINT(87,12),8,8:HPAINT(83
,148),8,8:HPAINT(241,148),8,8:HP
AINT(156,179),8,8:HPAINT(170,179
,8,8
1015 HLINE(84,66)-(240,70),PSET,
BF
1020 HDRAW"S4BM105,28"+T\$+"BR20"
+I\$+"BR16"+G\$+"BR20"+E\$+"BR20"+R
\$+"BR20BU2"+S\$
1025 HPRINT(14,7),"RICHMOND.F.C.
1030 HDRAW"BM138,130M+12,+4M+10,
+6M+2,+4M+14,+16BM138,130M-1,+3M
-6,+1D2G2L4H2U2E6M+4,-6M+3,-6M+1
,-6M-12,-10H6M-6,-8U4E2M+6,+8M+6
,+4M+10,+6F8M+6,-2R12M+4,+1
1035 HDRAW"BM178,160M+4,-2R4F4M+
1,+4G2L2D2L2U4D4L4U4D4L4H2M+2,-8
BM188,159M-4,-14M-6,-8M-4,-3M-4,
-1BM186,149E4M+5,-2M+2,-4M+2,-6E
2BM196,144F6R2E4M+2,-4M+2,-8U3M-
2,-14M-2,-6H5BM202,150D2G5H2E4G4
H2E4G4H2E4G4H2M+5,-6
1040 HDRAW"BM169,105M+2,-5M-2,-1
H2E2R4M+4,-2M+4,+1M+7,-2M+6,+2M+
3,-2R3M+5,+2D2G2M-2,+1D4M+1,+2D2
M-2,+4M-1,+6G4M-1,+6M-1,+2G2M-2,
+1L6M-6,-4M-1,-4M-5,-6M-2,-5U4M-
2,-5
1045 HDRAW"BM180,115R4E2U3D3F2R4
G2D6M-2,+3H2G2M-2,-3U6H2
1050 HPAINT(184,120),8,8:HPAINT(
186,100),1,8:HPAINT(146,110),1,8
:HPAINT(182,160),1,8:HPAINT(196,
145),1,8
1052 HDRAW"S3BM150,115"+AA\$:HCIR
CLE(155,120),2:HDRAW"S4BM152,124
F3E3C1BM183,115FD2BR4U2HBM185,12
6U2BR2D2
1053 HCOLOR8
1055 HLINE(92,170)-(130,136),PSE
T:HLINE(179,92)-(204,70),PSET:HL
INE(146,174)-(170,154),PSET:HLIN
E(210,120)-(240,94),PSET
1057 HDRAW"S4BM183,106D3RF2E2RU3
BM182,103HL3M-3,+1R2F2RE2BM190,1
03ER3M+3,+1L2G2LH2BR3D2BL14U2BM1
85,100M-4,-6BR6M+2,+6BR4BU2E4BL2
0BD2F3BM174,107D2F4BD4M-4,-3H5BM
200,105M-3,+6BD3G3M-2,+4
1058 HDRAW"BM118,84M-2,+6BR5M-2,
+4BM+8,-2M-3,+4BR9M-4,+5BR9M-3,+
4BM194,128M+7,+3BM208,115M-2,+4G
4L2BM+6,+2M+5,-3BM203,132E2RF3BG
6R2F2M+1,+4BM168,144E4R1BD8UM+4,
-2R2FBM-4,+9UM+4,-2R2FBM165,140H
4M-3,-2BU6BR2M+7,+6BE6H7M-4,-2BU
10M+5,+3
1059 HDRAW"BM132,132U3H2BM+8,+2U
3M-3,-5BM+3,-4R3M+5,+4M+2,+8D4BM
137,112ER4F4BU4M+3,-4R6BG6E4R4BM
182,136M+3,+5BR3U4M+3,-2R3
1060 HPAINT(90,80),8,8:HPAINT(23
0,160),8,8:HPAINT(230,80),1,8:HP
AINT(120,160),1,8
1085 ON BRK GOTO 1105
1090 GOTO 1090
1100 *****ST.KILDA*****
1105 HSCREEN2:HCLS11:HCOLOR8
1108 GOSUB 1505

1110 HPAINT(87,12),8,8:HPAINT(83,148),8,8:HPAINT(241,148),8,8:HPAINT(156,179),8,8:HPAINT(170,179),8,8
1115 HLINE(84,66)-(240,70),PSET, BF
1120 HDRAW"S4BM102,28"+S\$+"BR34"+A\$+"BR16"+I\$+"BR13"+N\$+"BR24"+T\$+"BR24"+S\$
1125 HPRINT(14,7),"ST.KILDA.F.C.
1128 HLINE(132,70)-(132,174),PSET:HLINE(187,70)-(187,174),PSET:HPAINT(90,80),3,8:HPAINT(200,80),8,8
1130 HDRAW"BM158,108M+1,+3G10L3BM159,111R5M+6,+2F2G8F2BM159,111M+4,+8M+2,+10D10M-1,+10M-1,+12D7F3BM164,124M-12,+16M+5,+8M+3,+8D4M-1,+2M-2,+4L2
1135 HCIRCLE(145,165),6,,.5:HPAINT(145,165),8,8
1140 HCIRCLE(156,103),5:HCIRCLE(156,93),5,3,.5
1145 HDRAW"S2BM138,111"+AA\$:HPAINT(140,113),3,8:HCIRCLE(142,115),2,11:HDRAW"S4C11BM140,118F2E2
1185 ON BRK GOTO 1205
1190 GOTO 1190
1200 *****SYDNEY*****
*
1205 HSCREEN2:HCLS11:HCOLOR3
1208 GOSUB 1505
1210 HPAINT(87,12),3,3:HPAINT(83,148),3,3:HPAINT(241,148),3,3:HPAINT(156,179),3,3:HPAINT(170,179),3,3
1215 HLINE(84,66)-(240,70),PSET, BF
1223 HDRAW"S4BM102,28"+S\$+"BR24"+W\$+"BR40"+A\$+"BR18"+N\$+"BR28"+S\$
1225 HPRINT(15,7),"SYDNEY.F.C.
1230 HDRAW"BM88,104U14R12D24BU4R12U22BD22R10U27BD27R10BU10U20BD30BR10BU5U27BD32BR4R6U33BD33R10U34BD34R10U33BD33R5BR5BU10U23BD33BR6R4U30BD30R10U27BD27R10U22BD22R12D4U24R12D14
1235 HCIRCLE(162,110),70,,.5,.58,.93:HCIRCLE(162,135),70,,.75,.58,.93
1240 HDRAW"BM174,150E4M+6,-4M+7,-4D2M+5,-4D3G5M+7,-2M-6,+6M-10,+8M-9,+10M-3,+1L6M-2,-1M-4,-2H4M-2,-4M-1,-4U4M+2,-8E4M+4,-6M+2,-3U4M-1,-2L4G2M-6,+8M-1,+2M-1,+8G2M-4,+2BM148,141M-1,-2L2G2M-1,+4M-1,+2M-3,+5L1M+1,-3U4HU3M+2,-4M+6,-2
1250 HDRAW"BM142,136M+5,-8M+4,-6E2M+3,-1M+4,-1M+4,-1M+3,+1F2M+1,+3BM161,143RE2M+2,-4U2M+1,-2U7M+6,-7E2M+1,-2M+2,-8M+1,-6E2RF2L2M+3,+4M+3,+6D2M-4,+6M+4,-6D7M-4,+6M+4,-6D4M-2,+4G5E3D4M-4,+8D2
1255 HDRAW"BM141,137M-3,-10M-2,-8U6H2M-1,-6U5R2M+6,+5F11M+2,+4BM146,143F5BM140,141U1
1260 HLINE(84,100)-(138,144),PSET:HLINE(141,147)-(151,154),PSET:HLINE(192,140)-(240,100),PSET
1265 HPAINT(90,110),3,3
1270 HDRAW"S2BM160,150"+AA\$:HCIRCLE(164,154),2:HDRAW"S4BM162,156F2E2
1285 ON BRK GOTO 1305
1290 GOTO 1290

1300 *****PERTH*****
1305 HSCREEN2:HCLS11:HCOLOR2
1308 GOSUB1505
1310 HPAINT(87,12),2,2:HPAINT(241,148),2,2:HPAINT(156,179),2,2:HPAINT(170,179),2,2:HPAINT(83,148),2,2
1320 HDRAW"S4BM88,28"+W\$+"BR18"+E\$+"BR14"+S\$+"BR14"+T\$
1325 HDRAW"BM162,28"+C\$+"BR15"+O\$+"BR26BU2"+A\$+"BR8"+S\$+"BR14"+T\$
1327 HDRAW"BM110,50"+E\$+"BR27"+A\$+"BR13"+G\$+"BR15"+L\$+"BR15"+E\$+"BR18"+S\$
1330 HLINE(84,76)-(240,80),PSET, BF
1335 HDRAW"BM87,166U3M+1,-4M+2,-6M+2,-5M+6,-12M+3,-8M+5,-6M+4,-5M+5,-4E3M+6,-4M+4,-2M+4,-1R8M+4,+1M+4,+2M+4,+2M+4,+3F6M+2,+4BM137,100R6M+4,+1M+4,+1M+6,+2M+4,+2F4M+3,+4D4M+22,-11M+12,-3R4M-6,-4M-4,-2M-8,-2M-10,-2M-6,-1L6M-11,+1M-11,+2M-8,+4
1340 HDRAW"BM118,176U3M+1,-3M+1,-4M+2,-4M+2,-8M+4,-6M+5,-6M+3,-4E6M+6,-4M+15,-8C1BM121,176U3M+1,-3M+1,-4M+2,-4M+2,-8M+4,-6M+5,-6M+3,-4E4M+6,-4M+15,-7M+16,-9M+14,-6M+6,-2M+8,-1R6M+8,+2M+1,+2M+4,+2M+2,+3D8M-1,+3M-5,+10M-18,+26
1345 HDRAW"U10H2M-2,-3M-2,-1L14M-8,+1M-8,+2M-6,+2M-10,+4M-8,+4M-8,+6M-16,+8C2BM187,148L2M-8,+1M-8,+2M-6,+2M-10,+4M-8,+4M-8,+6M-16,+10
1350 HCIRCLE(202,160),20,2,1,.32,.62
1360 HPAINT(120,110),2,2:HPAINT(210,120),1,1:HPAINT(160,100),2,2:HPAINT(160,160),2,2
1365 HDRAW"S2BM200,120"+AA\$:HCIRCLE(204,124),2,2:HDRAW"S4BM201,126F3E3
1385 ON BRK GOTO 1405
1390 GOTO 1390
1400 *****BRISBANE*****
1405 HSCREEN2:HCLS11:HCOLOR6
1407 GOSUB1505
1410 HPAINT(87,12),6,6:HPAINT(83,148),6,6:HPAINT(241,148),6,6:HPAINT(156,179),6,6:HPAINT(170,179),6,6
1415 HLINE(84,56)-(240,60),PSET, BF:HLINE(84,140)-(240,140),PSET
1420 HPAINT(160,20),1,6:HPAINT(90,145),6,6
1425 HDRAW"S4BM100,26"+B\$+"BR14BU12"+R\$+"BR18BU2"+I\$+"BR8"+S\$+"BR16"+B\$
1426 HDRAW"BR26BU12"+A\$+"BR8"+N\$+"BR20"+E\$
1430 HPRINT(14,6),"FOOTBALL CLUB"
1435 HDRAW"C1BM114,148"+B\$+"BR19BU12"+E\$+"BR33"+A\$+"BR14"+R\$+"BR22BU2"+S\$
1450 HDRAW"C6BM82,136R132M+2,-1E M+1,-2U4M-1,-4M-4,-2E4U3M-1,-3H2M-4,-2L3M-3,+5R4F3DG2L8M-2,+6R8F2G2L124BM220,136R10M+2,-1EM+1,-2U5M-4,-6L2M+2,-3M-4,-10L5G3R4F32G2L2M-2,+4R6F2D2G2L3M-2,+6
1455 HDRAW"BM210,106R12M-6,-12M-6,+12
1457 HPAINT(90,134),6,6:HPAINT(2

25,134),6,6:HPAINT(215,104),8,8
1460 HCIRCLE(224,127),6,3:HPAINT(224,127),1,3:HDRAW"BM223,127RBE2RBL5RBD4R3
1465 HDRAW"C3BM160,144M+5,-1M+3,-1E2M+4,-3M+1,-5BD7BL6M+3,-1M+7,-5M+2,-5BD4BL1M+9,-6E6M+4,-6M+1,-4U6M-4,-6M-4,-2BM200,105E3M+1,-2M+1,-3M+2,+4M+2,-3M+2,-4U3R2M+2,+4E4M+1,-5U8M-2,-6H6M-5,-2M-6,-1L8M-4,+2M-6,+4M-1,+2M-1,+4M+1,+6
1470 HDRAW"BM182,72M-10,-6M-4,-2M-12,-2M-6,+2M-6,+4M-2,+4BM144,70M-4,-6M-8,-4M-8,-2M-4,+1M-6,+2M-4,+2M-7,+8M-1,+2D6M+1,+4M+2,+6M+2,+4M+2,+3R2M+3,-4D4M+1,+2M+3,+6U6F6BM136,90G2D8L6M-3,+2M-3,+4M-1,+4D4M+5,+10F4M+6,+4
1475 HDRAW"BM127,115M+4,+10M+3,+4M+4,+5M+6,+3R4BL4F6M+6,+2R4E3
1480 HPAINT(160,70),1,3
1485 HDRAW"C6BM116,74E2R8M+4,+2M+6,+4BM124,78R2M+4,+2F4D2BM189,78M+1,-3M+4,-2R8F4BM192,82D5BM206,70R2M+2,+1F4M+1,+4M+1,+5D2BM152,106M+3,-1R5F1BM154,122FR5E2M+5,+8BM154,120G3F2R8EM+6,+7D3L2M-4,-1M-13,-3GD3
1487 HCIRCLE(162,114),12,,.1,.375,.625:HCIRCLE(170,114),12,,.1,.375,.625
1490 HDRAW"BM149,130U2M+18,+4BM153,131U6BM162,106E2M+4,-1M+6,-1R2M+4,+1BM148,108M-6,-4L4BM152,106M-4,-10M-2,3H3M-2,-1R2M+4,+1F2M+5,+10F2E2F2R2M+2,-1M+2,-7M+3,-6M+4,-2R4FBL10BD2M+2,-6E6R2F2BM-6,+8G2M-4,+6M-2,+6
1493 HDRAW"BM158,102M-1,-4M-1,-4U4M+1,-4M+1,-5BM150,90M-4,-7M-4,-3L2D2BM149,96R3BM164,96R2BM150,102R3S2BM99,112"+AA\$:HPAINT(101,115),6,6:HCIRCLE(103,116),2,1:HDRAW"S4C1BM100,118F3E3
1495 HPAINT(155,110),6,6:HPAINT(160,128),6,6:HPAINT(151,98),6,6:HPAINT(165,98),6,6
1496 ON BRK GOTO 1600
1499 GOTO1499
1500 *****FRAME****
1505 HLINE(81,10)-(85,145),PSET, BF:HLINE(239,10)-(243,147),PSET, BF
1510 FORR=36TO45STEP9:HCIRCLE(124,6),R,,.4,.07,.45:HCIRCLE(202,6),R,,.4,.07,.45:NEXTR
1515 HLINE(85,10)-(90,10),PSET:HLINE(234,10)-(239,10),PSET:HLINE(157,10)-(169,10),PSET
1520 FORR=30TO34STEP4:HCIRCLE(114,145),R,,.1,.25,.5:HCIRCLE(210,146),R,,.1,0,.25:NEXTR
1525 FORR=6TO10STEP4:HCIRCLE(155,185),R,,.1,.75,0:HCIRCLE(171,185),R,,.1,.5,.75:NEXTR
1530 HLINE(114,175)-(154,179),PSET, BF:HLINE(172,175)-(212,179),PSET, BF
1535 RETURN
1600 HSCREEN2:HCLS11:HCOLOR RND(16)
1605 HPRINT(16,12),"THE END"
1610 ON BRK GOTO 1700
1620 GOTO 1620
1700 END
○



MUSIC COMPETITION WINNER

Basic section

HERE IS THE prize winning entry in the basic section of our Music Competition. Once again, Johanna Vagg comes up with the goods.

Congratulations go to all who entered the competition, the entries were of the usual high standard.

Johanna's 'Laura' is quite an interesting music program. It plays the same song in four different ways. Being all in BASIC, Johanna manages to play the same song with a banjo, a piano, a computer and in an 'echo-chamber'.

The second listing is Johanna Vagg's version of "Silent Night".



The Listing:

```
0 GOTO10
3 SAVE"67C:3":END
10 ' TITLE SCREEN WITH THE HELP
  OF FRED SCERBO'S TITLEMAKER
  ANYONE TRYING TITLEMAKER WITH
  A TAPE BASED SYSTEM AND HAVING
  TROUBLE, LET ME KNOW
15 ' LARA'S THEME
20 ' JOHANNA VAGG
   9 BELAH STREET FORBES 2871
25 CLEAR1000
30 CLS0:FORI=1TO480:READA:PRINTC
  HRS(A+128);:NEXT
40 DATA .....16,.....
.....
50 DATA ,,,111,108,107,,103,108
  ,107,,111,107,96,111,,108,109,11
  0,,111,108,111,.....
60 DATA ,,,111,108,107,,111,108
  ,111,,111,100,107,111,,96,101,10
  6,,111,96,111,.....
70 DATA ,,,108,108,104,,108,96,
  108,,108,96,100,108,,108,108,104
  ,,108,108,108,.....
80 DATA ,,,47,44,44,,47,44,44
  ,,47,32,47,,47,44,47,.....
90 DATA ,,,47,44,44,,47,32,32
  ,,47,44,47,,47,32,47,.....
100 DATA ,,,44,44,44,,44,44,4
  4,,44,32,44,,44,44,44,.....
110 DATA 31,28,28,,31,28,31,,31,
  18,17,31,,31,28,31,,31,16,31,,28
  ,31,28,,31,28,28,,31,28,31
120 DATA 31,16,16,,31,16,31,,31,
  20,24,31,,31,28,28,,31,16,31,,16
  ,31,16,,31,28,28,,31,29,18
130 DATA 28,28,28,,28,28,28,,28,
  16,16,28,,28,16,16,,28,28,28,,16
  ,28,16,,28,28,28,,28,16,28
140 DATA ,,,79,76,79,,68,79,72,
  ,71,76,75,,79,75,64,79,,79,76,79
  .....
150 DATA ,,,79,76,76,,64,79,64,
  ,79,76,79,,79,68,75,79,,79,64,79
  .....
160 DATA ,,,76,64,64,,68,76,72,
  ,76,64,76,,76,64,68,76,,76,76,76
  .....
170 DATA 16,.....,112,26,16,,2
```

```
1,,18,.....
180 DATA 16,16,16,.....,26,20,28
  ,24,20,28,30,.....
190 PRINT@481,"RESTART BY HOLDIN
  G DOWN A KEY";:REM THIS MAY TAKE
  A WHILE
200 I$=INKEY$:IF I$=""THEN200
210 I=VAL(I$)
220 IF I>4 OR I<1 THEN 200
230 ON I GOTO250,1210,570,890
240 REM BANJO
250 C$="CCCCC"
260 C3$=C$+C$+C$
270 C4$=C3$+C$
280 C6$=C3$+C3$
290 D$="DDDDD"
300 D3$=D$+D$+D$
310 E$="EEEEEE"
320 E2$=E$+E$
330 E3$=E$+E$+E$
340 E5$=E3$+E2$
350 E6$=E3$+E3$
360 EF$="E-E-E-E-E-E-"
370 EE$=EF$+EF$+EF$
380 F$="FFFFFF"
390 F2$=F$+F$
400 F3$=F$+F$+F$
410 F5$=F$+F$+F3$
420 F6$=F3$+F3$
430 FS$="F#F#F#F#F#F#"
440 G$="GGGGGG"
450 G2$=G$+G$
460 G3$=G2$+G$
470 G6$=G3$+G3$
480 A$="AAAAAA"
490 A3$=A$+A$+A$
500 B$="BBBBBB"
510 E6$=B$+B$+B$+B$+B$+B$
520 BF$="B-B-B-B-B-B-"
530 BB$=BF$+BF$+BF$+BF$+BF$+BF$
540 PLAY"V25T203L60"
550 GOTO 1510
560 REM COMPUTER
570 C$="L6C"
580 C3$="L2C"
590 C4$="L2.C"
600 C6$="L1C"
610 D$="L6D"
620 D3$="L2D"
630 E$="L6E"
640 E2$="L3E"
650 E3$="L2E"
660 E5$="L2.E"
670 E6$="L1E"
680 EF$="L6E-"
690 EE$="L2E-"
700 F$="L6F"
710 F2$="L3F"
720 F3$="L2F"
730 F5$="L2.F"
740 F6$="L1F"
750 FS$="L6F#"
760 G$="L6G"
770 G2$="L3G"
780 G3$="L2G"
790 G6$="L1G"
800 A$="L6A"
810 A3$="L2A"
820 B$="L6B"
830 B6$="L1B"
840 BF$="L6B-"
850 BB$="L1B-"
860 PLAY"V20T3"
870 GOTO1510
880 REM PIANO
890 C$="L6CP8"
900 C3$="L2CP8"
910 C4$="L2.CP8"
920 C6$="L1CP8"
930 D$="L6DP8"
940 D3$="L2DP8"
950 E$="L6EP8"
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```

1210 C$="V30L3CV15L6C"
1220 C3$="V30L1CV15L2C"
1230 C4$="V30L1CL3CV15L2CL6C"
1240 C6$="V30L1CCV15C"
1250 D$="V30L3DV15L6D"
1260 D3$="V30L1DV15L2D"
1270 E$="V30L3EV15L6E"
1280 E2$="V30L2EV15L4E"
1290 E3$="V30L1EV15L2E"
1300 E5$="V30L1EL2EV15L2EL4E"
1310 E6$="V30L1EEV15E"
1320 EF$="V30L3E-V15L6E-"
1330 EE$="V30L1E-V15L2E-"
1340 F$="V30L3FV15L6F"
1350 F2$="V30L2FV15L4F"
1360 F3$="V30L1FV15L2F"
1370 F5$="V30L1FL2FV15L2FL4F"
1380 F6$="V30L1FFV15F"
1390 FS$="V30L3F#V15L6F#"
1400 G$="V30L3GV15L6G"
1410 G2$="V30L2GV15L4G"
1420 G3$="V30L1GV15L2G"
1430 G6$="V30L1GGV15G"
1440 A$="V30L3AV15L6A"
1450 A3$="V30L1AV15L2A"
1460 B$="V30L3BV15L6B"
1470 B6$="V30L1BBV15B"
1480 BF$="V30L3B-V15L6B-"
1490 BB$="V30L1B-L2B-V15L2B-L4B-"
"
1500 PLAY"T8"
1510 FORX=1 TO 2
1520 IF INKEY$<>" THEN200
1530 PLAY "O3"+E3$+G2$+"O4"+EF$+
E6$
1540 PLAY "O3"+B$+"O4"+D$+C$+"O3
"+G2$+FS$+F6$
1550 PLAY "P32"+F3$+G2$+A$+B6$
1560 PLAY A$+G$+FS$+G2$+"O4"+F$+
E5$+"P8"
1570 NEXT X
1580 IF INKEY$<>" THEN200
1590 PLAY "O3"+A3$+"O4"+C6$+D$+C
$+"O3"+B$+"O4"+C3$+"O3"+A3$+G6$
1600 PLAY G3$+BB$+"P64"+BF$+"O4"
+C$
1610 IF INKEY$<>" THEN200
1620 PLAY "O3"+BF$+"O4"+C$+D3$+E
E$+F5$
1630 PLAY"O3P8"+E3$+G2$+"O4"+EF$
+E6$
1640 IF INKEY$<>" THEN200
1650 PLAY "O3"+B$+"O4"+D$+C$+"O3
"+G2$+FS$+F6$
1660 PLAY F3$+G2$+A$+B6$+A$+G$+F
S$+G2$
1670 PLAY "O4"+F$+E5$+"P8"
1680 IF INKEY$<>" THEN200
1690 PLAY "O3"+E3$+G2$+"O4"+EF$+
E6$
1700 PLAY "O3"+B$+"O4"+D$+C$+"O3
"+G2$+FS$+F6$
1710 PLAY F3$+G2$+A$+B6$+A$+G$+F
S$+F2$
1720 PLAY "O4"+D$+C4$
1730 GOTO200

```

```

960 E2$="L3EP8"
970 E3$="L2EP8"
980 E5$="L2.EP8"
990 E6$="L1EP8"
1000 EF$="L6E-P8"
1010 EE$="L2E-P8"
1020 F$="L6FP8"
1030 F2$="L3FP8"
1040 F3$="L2FP8"
1050 F5$="L2.FP8"
1060 F6$="L1FP8"
1070 FS$="L6F#P8"
1080 G$="L6GP8"
1090 G2$="L3GP8"
1100 G3$="L2GP8"
1110 G6$="L1GP8"
1120 A$="L6AP8"
1130 A3$="L2AP8"
1140 B$="L6BP8"
1150 B6$="L1BP8"
1160 BF$="L6B-P8"
1170 BB$="L1B-P8"
1180 PLAY"V25T4"
1190 GOTO1510
1200 REM ECHO

```

The Listing:

```

0 REM ENTRY IN MUSIC COMPETITION
1 'USES A ROUTINE BY BOB HORNE
  TO PRINT TO THE HI-RES SCREEN
2 GOTO10
3 SAVE'69/MUS:3":END
10 CLEAR500
20 DIMCH$(51):FORZ=1TO51:READCH$
(Z):NEXTZ
30 PMODE1:SCREEN1,0:PCLS2
40 DRAW"BM20,30;S12":M$="SILENT
NIGHT":GOSUB850
50 DRAW"BM47,70":M$="BY MONICA":
GOSUB850
60 DRAW"BM 35,100S8":M$="AND JOH
ANNA VAGG":GOSUB850
70 DRAW"BM60,180S8":M$="2 FOR NO
TES":GOSUB850
80 DRAW"BM60,150":M$="1 FOR WORD
S":GOSUB850
90 I$=INKEY$:IF I$=""THEN90
100 IF I$="2" THEN 130
110 IF I$="1" THEN1300
120 GOTO90
130 FORX=1TO2
140 PCLS2:DRAW"BM100,150;S62":M$
="G":GOSUB850
150 PLAY"T4"
160 PLAY"L4G"
170 PCLS2:DRAW"BM100,150":M$="A"
:GOSUB850
180 PLAY"L6A"
190 PCLS2:DRAW"BM100,150":M$="G"
:GOSUB850
200 PLAY"L3G"
210 PCLS2:DRAW"BM100,150":M$="E"
:GOSUB850
220 PLAY"L1E"
230 NEXTX
240 PCLS2:DRAW"BM100,150":M$="D"
:GOSUB850
250 PLAY"O4L2D"
260 PCLS2:DRAW"BM100,150":M$="D"
:GOSUB850
270 PLAY"L4D"
280 PCLS2:DRAW"BM100,150":M$="B"
:GOSUB850
290 PLAY"O3L1B"
300 PCLS2:DRAW"BM100,150":M$="C"
:GOSUB850
310 PLAY"O4L2C"
320 PCLS2:DRAW"BM100,150":M$="C"
:GOSUB850
330 PLAY"L4C"
340 PCLS2:DRAW"BM100,150":M$="G"
:GOSUB850
350 PLAY"O3L1G"
360 FORX=1TO2
370 PCLS2:DRAW"BM100,150":M$="A"
:GOSUB850

```

```

380 PLAY"L2A"
390 PCLS2: DRAW"BM100, 150": Ms="A"
: GOSUB850
400 PLAY"L4A"
410 PCLS2: DRAW"BM100, 150": Ms="C"
: GOSUB850
420 PLAY"O4L3C"
430 PCLS2: DRAW"BM100, 150": Ms="B"
: GOSUB850
440 PLAY"O3L6B"
450 PCLS2: DRAW"BM100, 150": Ms="A"
: GOSUB850
460 PLAY"L4A"
470 PCLS2: DRAW"BM100, 150": Ms="G"
: GOSUB850
480 PLAY"L3G"
490 PCLS2: DRAW"BM100, 150": Ms="A"
: GOSUB850
500 PLAY"L6A"
510 PCLS2: DRAW"BM100, 150": Ms="G"
: GOSUB850
520 PLAY"L4G"
530 PCLS2: DRAW"BM 100, 150": Ms="E"
: GOSUB850
540 PLAY"L1E"
550 NEXTX
560 PCLS2: DRAW"BM100, 150": Ms="D"
: GOSUB850
570 PLAY"O4L2D"
580 PCLS2: DRAW"BM100, 150": Ms="D"
: GOSUB850
590 PLAY"L4D"
600 PCLS2: DRAW"BM100, 150": Ms="F"
: GOSUB850
610 PLAY"L3F"
620 PCLS2: DRAW"BM100, 150": Ms="D"
: GOSUB850
630 PLAY"L6D"
640 PCLS2: DRAW"BM100, 150": Ms="B"
: GOSUB850
650 PLAY"O3L4B"
660 PCLS2: DRAW"BM100, 150": Ms="C"
: GOSUB850
670 PLAY"O4L1C"
680 PCLS2: DRAW"BM100, 150": Ms="E"
: GOSUB850
690 PLAY"L1E"
700 PCLS2: DRAW"BM100, 150": Ms="C"
: GOSUB850
710 PLAY"L3C"
720 PCLS2: DRAW"BM100, 150": Ms="G"
: GOSUB850
730 PLAY"O3L6G"
740 PCLS2: DRAW"BM100, 150": Ms="E"
: GOSUB850
750 PLAY"L4E"
760 PCLS2: DRAW"BM100, 150": Ms="G"
: GOSUB850
770 PLAY"L3G"
780 PCLS2: DRAW"BM100, 150": Ms="F"
: GOSUB850
790 PLAY"L6F"
800 PCLS2: DRAW"BM100, 150": Ms="D"
: GOSUB850
810 PLAY"L4D"
820 PCLS2: DRAW"BM100, 150": Ms="C"
: GOSUB850
830 PLAY"L1CC"
840 PCLS2: GOTO70

```



```

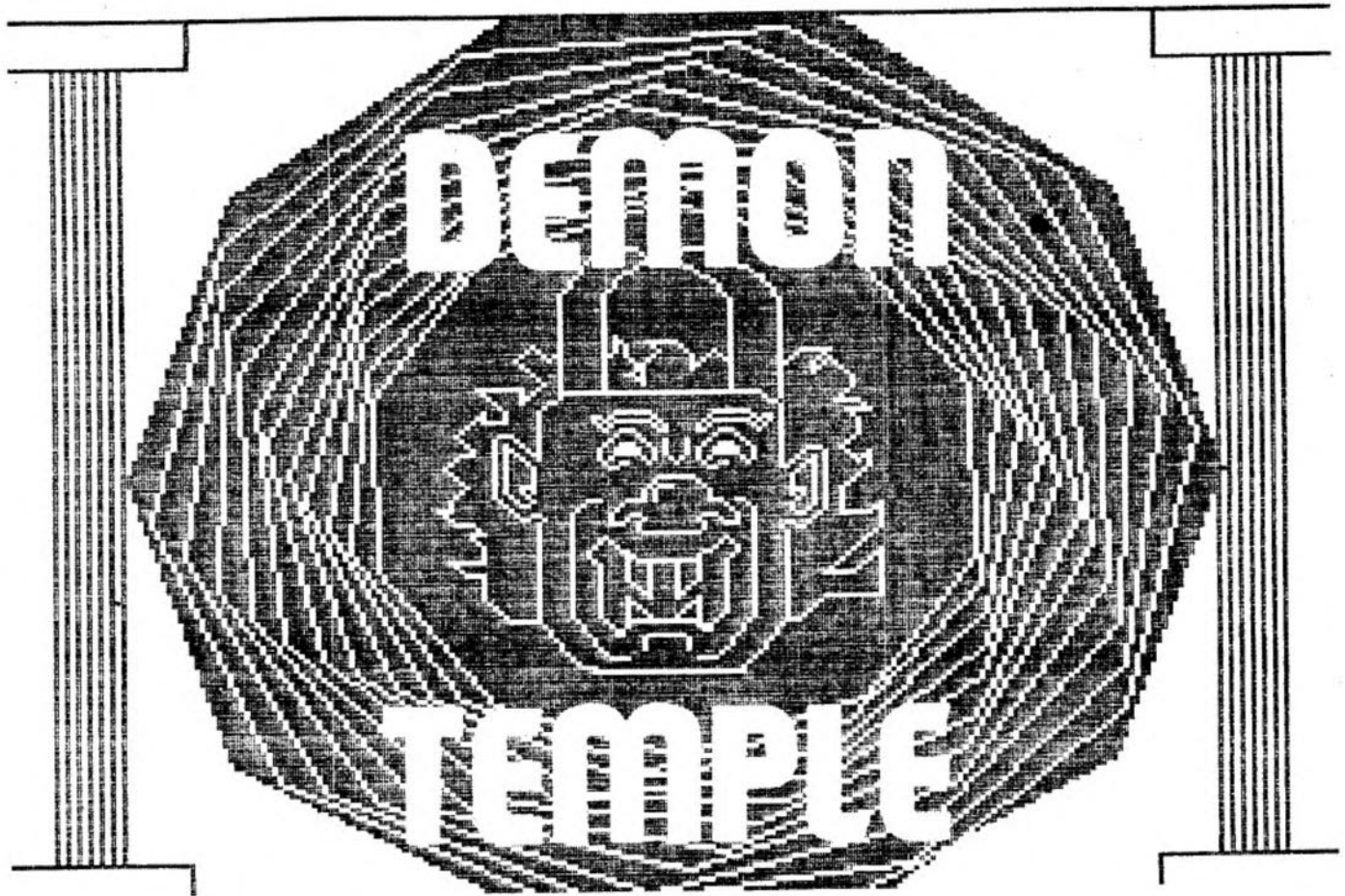
850 L=LEN(M$):FORZ=1TOL:C1=RND(2
)+2:M=ASC(MID$(M$,Z,1))-39:IFM=-
7THENDRAW"BR4"ELSEDRAW"C"+STR$(C
1)+CHR$(M)
860 DRAW"BR2":NEXT:RETURN
870 REM**DATA FOR DRAW STRINGS*
**
880 DATABR2H2U2E2BD6BR4
890 DATAPR4E2U2H2BD6BR4
900 DATABR4U6BD3NE3NF3NG3NH3BD3B
R4
910 DATABR2BUU4D2L2R4BD3BR4
920 DATABR2RDG1BU2BR4, BR2BU3R3BD
3BR2, BR3UBDBR3, BR6BU6DG4DBR7
930 DATABRHU4ERFD4GNLBR2
940 DATAR2UGNGD6R2
950 DATABU5ER2FDGL2GD2R4
960 DATABU5ER2FDGNLFDGL2NHBR3
970 DATAPR3U6G3R4BD3
980 DATABUFR2EU2HL3U2R4BD5
990 DATAU3R3FDGL2HU4ER2BD6BR
1000 DATABU6R4DG3D2BR3
1010 DATABRHUER2EUHL2GDFR2FDGNL2
BR
1020 DATABRR2EU4HL2GDFR3BD3
1030 DATABR4, BR4, BR4, BR3BU2R3BU2
L3BD4BR6, BR4, BRAUBUUEU1HL1GBD6BR
6, PR4
1040 DATAU5ER2FD2NL4D3
1050 DATARUGNLR2FDGNL2FDGNL2BR
1060 DATABR4BU5HL2GD4FR2EBD
1070 DATABU6NLR2FD4GNL2BR
1080 DATAU6NR4D3NR3D3R4
1090 DATAU3NR3U3R4BD6
1100 DATABUU4ER3BD4NLD2L3NHR3
1110 DATAU3NU3R4NU3D3
1120 DATAR2U6NL2NR2D6R2
1130 DATABUNUFR2ENU5BD
1140 DATAU3NU3RNE3F3
1150 DATANU6R4
1160 DATAU6F2DUE2D6
1170 DATAU6F4NU4D2
1180 DATABRHU4ER2FD4GNL2BR
1190 DATAU6R3FDGL3D3BR4
1200 DATABRHU4ER2FD4GNL2BUHF2
1210 DATAU6R3FDGL3RF3
1220 DATABUFR2EUHL2HUER2FBD5
1230 DATABU6R4L2D6BR2

```

```

1240 DATABUNU5FR2ENU5BD
1250 DATABU6D4F2E2U4BD6
1260 DATANU6E2UDF2NU6
1270 DATAU64NUG2H2NUF4D
1280 DATABU6DF2E2NUG2D3BR2
1290 DATABU6R4DG4DR4
1300 PCLS2: DRAW"BM10, 20S8": Ms="S
ILENT NIGHT," :GOSUB850
1310 S$="T4L3O3GL6AL4GLIE"
1320 PLAYS$
1330 DRAW"BM30, 50": Ms="HOLY NIGH
T." :GOSUB850
1340 PLAYS$
1350 DRAW"BM10, 80": Ms="ALL IS CA
LM," :GOSUB850
1360 R$="L2AL4AO4L3CO3L6BL4A"
1370 DRAW"BM 80, 110": Ms="ALL IS
BRIGHT" :GOSUB850
1380 PLAY"L2O4DL4DL1O3BO4L2CL4CL
1O3G"
1390 DRAW"BM10, 140": Ms="ROUND YO
N VIRGIN" :GOSUB850
1400 DRAW"BM50, 170": Ms="MOTHER A
ND CHILD," :GOSUB850
1410 PLAY R$+S$
1420 PCLS2
1430 DRAW"BM10, 30": Ms="HOLY INFA
NT SO" :GOSUB850
1440 DRAW"BM50, 60": Ms="TENDER AN
D MILD," :GOSUB850
1450 PLAY R$+S$
1460 DRAW"BM10, 90": Ms="SLEEP IN
HEAVENLY" :GOSUB850
1470 DRAW"BM100, 120": Ms="PEACE,"
:GOSUB850
1480 PLAY"O4L2DL4DL3FL6DL4O3BO4L
1CE"
1490 DRAW"BM10, 150": Ms="SLEEP IN
HEAVENLY" :GOSUB850
1500 DRAW"BM100, 180": Ms="PEACE."
:GOSUB850
1510 PLAY"L3CL6O3GL4EL3GL6FL4DL1
CC"
1520 PCLS2: GOTO70

```

The Listing:

by Michael Bell

16K ECB
GRAFIX

AFTER WATCHING A horror movie a short while ago I became very excited about the idea of drawing a monster.

After successfully drawing some sort of evil picture I decided to draw one on the computer. Here is the program I came up with.

'Demon Temple' incorporates the use of pye to draw a spiral 'frame' around the head of the monster, as well as using DRAW, LINE, PAINT and PLAY statements.

The music is from Andrew Whites' picture of Martha from the Quick on the Draw Competition.

So without further ado, here is Demon Temple.

Ps, see what YOU can come up with.

```

0 '*** DEMON TEMPLE ***
1 '*** BY MICHAEL BELL ***
2 GOTO 10
3 SAVE"178:3":END
4 STOP
10 POKE65495,0
20 PY=3.14159265
30 PMODE4,1:SCREEN1,1:PCLS
40 GOSUB110
50 DRAW"BM133,96;E2R4F2E1U2H4L2G
4D2F1BU3BR2R4BU1BL1L2BU1BR1BD5L1
G1L1BL4BU3U3BL4D3F2E1BL6BD1H2L4G
2H1U2E4R2F4D2BU1BL3BU1L4BU1BR1R2
BU1BL1BD5L1G1L1BR9BU8H2L6G2H2U1R
1F1E2R6F3D1BR6R1E2R6F2E2U1L1G1H2
L6G3BD11BL4L3G3D2L3G3D2R2E2R1F1G
1D1F1R10E1U1H1E1R2F2R2U2
60 DRAW"H3L2U2H3NL5L2BD2BL2L2G1D
2BL9BD8F3R1F2R10E2R1E3F2D1G2D11G
4R1H2L12G3R1H4U11H2U1E3BR4BD4D5F
4U8BR5D8E4U5BD15U6G4D1BL5U1H4D6B
U27BL5L2G3D20BR30BU23R1F2D20BD8B
L12ND2H1L6G1D2BL3BD2L3H3U1H2U1H2
U2BD11BR23R3E3U1E2U1E2U2
70 DRAW"BU40BR5D10R1E4R2F1D12G4L
1H1L1G1F1ND10BU5BR1F1R1E2U10G4D4
E1R1D1G2BD15BL1D10G2D1G2D1G4D1L2
7U1L2H4U1H2U1H2U1U20E1H1L1G1L1H5
U12E1R2F4R1BL1BD3H5D10F3R1E1H2U1
R1F1U4BR1BU3U10E2R1E2R35F2R1F1D2
BU5BL9U20H2U1H2L1H2L1H2L1E1R1E1R
5F2R1F2R1F2R1D1F2D1F1D21"
80 DRAW"BU1BL40U21E2U1E2U1E2R1E2
R5F2D1L1G2L1G2D1G2D1D20V7E2U3F2D
2F3D3H2E5H2R5F3D3E4F3BR10E3R5G3D
2E3F4D2G3R4F2L4F2D3G3F3E2D3G5D5R
5E2D5G10R5E5D10L10G5L1BL46L5H5U5
L3H3R6U3H2U1R2H2L3H3R2U2E3H4E3R2

```

```

U1H3E5D2R4U2H5R8D3E4H5E3F3E2
90 PLAY"T201L8G02CE-DCE-CD01A-B
-L2GL8G02CE-CDE-CD01GL8GL2FL8FA
-BO2L2D01L8FA-BL202C01L8CE-B-A-G
B-A-A-GGCL2C
100 IF INKEY$="Q"THEN END ELSE I
F INKEY$=""THEN 100 ELSE 90
110 SC=5/12:X=250:Y=0:CX=320:CY=
100
120 SF=.95
130 C=COS(PY/5):S=SIN(PY/5)
140 C1=COS(PY/36):S1=SIN(PY/36)
150 FORJ=1TO12
160 FORI=0TO10
170 SX=X+CX:SY=CY-Y*SC
180 IF I=0 THEN AX=SX:AY=SY
190 LINE(SX/2.5,SY)-(AX/2.5,AY),
PSET:AX=SX:AY=SY
200 XN=X+C-Y*S:Y=X*S+Y*C:X=XN
210 NEXTI
220 XN=SF*(X*C1-Y*S1):Y=SF*(X*S1
+Y*C1):X=XN
230 NEXTJ
240 PAINT(10,10),,3:PAINT(255,19
2),,3
250 ' COLUMNS
260 COLOR0,1
270 LINE(0,0)-(255,192),PSET,B
280 LINE(215,0)-(250,10),PSET,B:
LINE(215,182)-(250,192),PSET,B
290 FORT=226 TO239STEP2:LINE(T,1
0)-(T,182),PSET:NEXTT
300 LINE(5,0)-(40,10),PSET,B:LIN
E(5,182)-(40,192),PSET,B
310 FORT=16 TO 29STEP2 :LINE(T,1
0)-(T,182),PSET:NEXT
320 POKE65494,0:COLOR1,0
330 RETURN

```

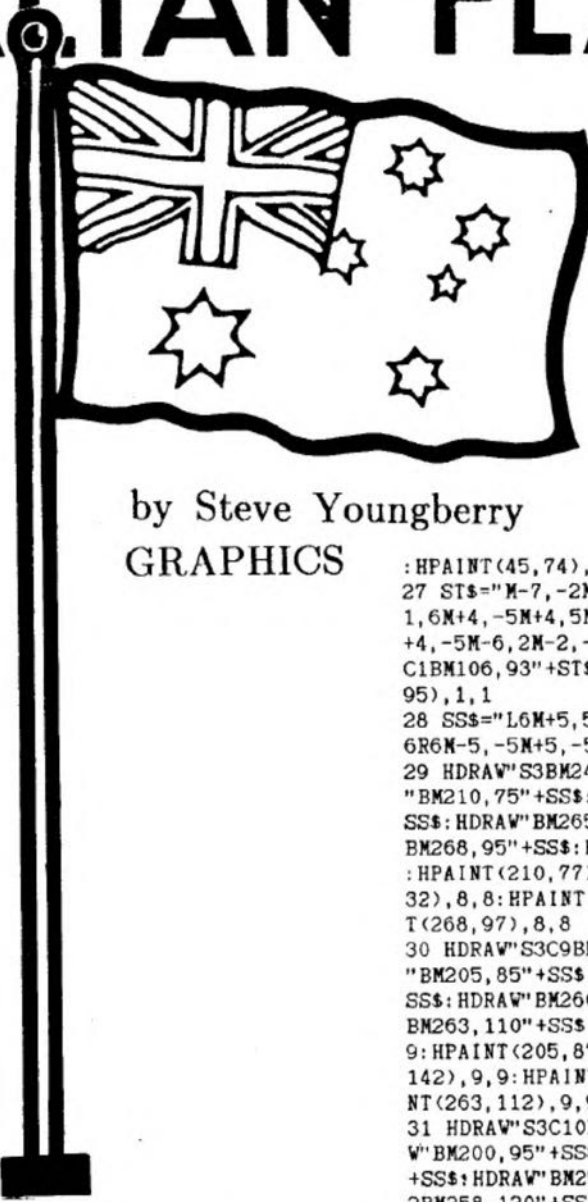
AUSTRALIAN FLAG

WE'VE ALL SEEN the Australian flag. A program showing the Australian flag has been done over and over again.

But not quite as different as this one.

This Australian Flag actually 'flaps' in the wind.

Have fun!



by Steve Youngberry
GRAPHICS

The Listing:

```

0 *****
  ***** FOR THE COCO3 *****
  ***** AUSTRALIAN FLAG *****
1 ***** by *****
2 ***** Steve Youngberry *****
3 ***** January 1987 *****
4 ***** KEEP THIS OUT FLAG *****
5 ***** FOREVER *****
6 * was used with permission **
7 ***** from the *****
  **** AUSTRALIAN NATIONAL ****
  **** FLAG ASSOCIATION ****
  *****
8 GOTO10
9 SAVE"177:3":END
10 ONERRGOTO35
11 ONBRKGOTO36
12 POKE65497,0:POKE44014,87:POKE
44015,66
13 PALETTEGB:PALETTE0,0:PALETTE
1,63:PALETTE2,1:PALETTE3,1:PALETTE
4,1:PALETTE5,0:PALETTE6,0:PALETTE
7,0:PALETTE8,63:PALETTE9,1:PALETTE
10,1:PALETTE15,4
14 HSCREEN2:HCOLOR1:HPRINT(33,0)
,"WHYBILT"
15 HDRAW"C1BM30,191M-10,-185BR5M
+10,185":HCIRCLE(22,5),8,1,.5,.3
,.2:HPAINT(32,191),1,1
16 HCIRCLE(22,85),20,2,4,.77,.18
:HCIRCLE(102,17),80,2,.2,.55,1:H
CIRCLE(112,145),80,2,.2,.55,1
17 HCIRCLE(243,18),60,2,.3,1,.5:
HCIRCLE(253,145),60,2,.3,1,.5:HC
IRCLE(319,63),19,2,4,5,.31,.6
18 HCIRCLE(242,17),60,2,.5,.1,.5
:HCIRCLE(252,146),60,2,.5,.1,.5:
HCIRCLE(307,82),21,2,4,.3,.62
19 HCIRCLE(241,17),60,2,.7,.15,.
5:HCIRCLE(253,146),60,2,.7,.15,.
5:HCIRCLE(303,99),31,2,3,.33,.61
20 HPAINT(90,100),2,2:HPAINT(280
,90),3,2:HPAINT(290,165),5,2:HPA
INT(270,165),6,2:HPAINT(270,180)
,7,2:HPAINT(310,140),4,2
21 HCIRCLE(243,18),60,4,.3,1,.5:
HCIRCLE(253,145),60,6,.3,1,.5:HC
IRCLE(319,63),19,4,4,5,.31,.6:HC
IRCLE(242,17),60,3,.5,.1,.5:HCIR
CLE(252,146),60,6,.5,.1,.5:HCIRC

```

```

LE(307,82),21,3,4,.3,.62
22 HCIRCLE(253,146),60,7,.7,.15,
.5:HCIRCLE(253,145),60,3,.3,1,.1
8:HCIRCLE(253,145),60,4,.3,1,.1:
HCIRCLE(303,99),31,7,3,.33,.38:H
CIRCLE(307,82),21,5,4,.3,.33:HCI
RCLE(252,146),60,5,.5,.1,.16:
23 HDRAW"C1BM41,77M+20,-4M+20,-1
0M+20,-9D15R25U15M+27,13M+13,8M+
17,6U10M-14,-11M-19,-9M+16,4M+16
,8U18M-16,-7M-23,-3M+24,-10M+11,
-2U10M-14,-5M-10,2M-30,15M-3,-21
L25M+3,20M-32,-15M-17,-2M-22,4M+
4,10M+28,5M+22,8M-25,1
24 HDRAW"M-20,6M+3,16M+20,-6M+19
,-2M-27,12M-10,6M41,77":HPAINT(4
5,75),1,1
25 HDRAW"C15BM41,77M+10,-3M+17,-
10M+38,-18D23R15U23M+37,19M+16,1
1M+10,5U5M-18,-14M-35,-17M+33,5M
+18,8U8M-18,-6M-33,-5M+33,-17M+1
4,-2U5M-5,-2M-16,3M-36,18M-5,-30
L15M+5,30M-40,-18M-30,-5M-10,3M+
1,3M+35,6M+35,15M-39,3M-20,6M+1,
8M+20,-6M+39,-3
26 HDRAW"M-38,+18M-18,+10M41,77"
:HPAINT(45,74),15,15
27 ST$="M-7,-2M+4,5M-5,4M+6,-1M-
1,6M+4,-5M+4,5M-1,-6M+6,1M-5,-4M
+4,-5M-6,2M-2,-6M-2,6":HDRAW"S10
C1BM106,93"+ST$+"S4":HPAINT(108,
95),1,1
28 SS$="L6M+5,5M-5,5R6M+3,6M+3,-
6R6M-5,-5M+5,-5L6M-3,-6M-3,6"
29 HDRAW"S3BM240,60C8"+SS$:HDRAW
"BM210,75"+SS$:HDRAW"BM240,130"+
SS$:HDRAW"BM265,75"+SS$:HDRAW"S2
BM268,95"+SS$:HPAINT(240,62),8,8
:HPAINT(210,77),8,8:HPAINT(240,1
32),8,8:HPAINT(265,77),8,8:HPAIN
T(268,97),8,8
30 HDRAW"S3C9BM235,70"+SS$:HDRAW
"BM205,85"+SS$:HDRAW"BM235,140"+
SS$:HDRAW"BM260,85"+SS$:HDRAW"S2
BM263,110"+SS$:HPAINT(235,72),9,
9:HPAINT(205,87),9,9:HPAINT(235,
142),9,9:HPAINT(260,87),9,9:HPAI
NT(263,112),9,9
31 HDRAW"S3C10BM230,80"+SS$:HDA
W"BM200,95"+SS$:HDRAW"BM230,150"
+SS$:HDRAW"BM255,95"+SS$:HDRAW"S
2BM258,120"+SS$:HPAINT(230,82),1
0,10:HPAINT(200,97),10,10:HPAINT
(230,152),10,10:HPAINT(255,97),1
0,10:HPAINT(258,122),10,10
32 HCOLOR1:HPRINT(5,21),"KEEP":H
PRINT(10,21),CHR$(34):HPRINT(11,
21),"THIS":HPRINT(15,21),CHR$(34
):HPRINT(17,21),"OUR FLAG":HPRIN
T(11,24),"FOREVER":HCOLOR0:HPRIN
T(33,0),"WHYBILT"
33 READA,B:PALETTEA,B:GOTO33
34 DATA9,1,3,1,4,1,4,0,5,1,6,1,9
,63,8,1,3,0,5,0,7,1,9,1,10,63,7,
0,3,1,5,1,10,1,9,63,6,0,5,0,4,1,
8,63
35 RESTORE:GOTO33
36 CLS:POKE359,57:POKE65314,52:P
RINT@134,"KEEP "+CHR$(34)+"THIS"
+CHR$(34)+" OUR FLAG":PRINT@204,
"FOREVER":PRINT@257,"used with p
ermission from the":PRINT@326,"A
USTRALIAN NATIONAL":PRINT@391,"F
LAG ASSOCIATION
37 PRINT@460,"Program by WHYBILT
":POKE65496,0

```

TESTMAKER

by Harry W. Ellis

MS DOS T1000 Program

For some time I have used extensively a program which I found in the Australian Rainbow Magazine (September '85), called Testmaker, written by W. Baldassard and L.C. Sherman.

In the form in which it appeared there were some minor problems, or rather aspects that I did not like or that I did not need, so when I moved the program into my T1000, I customised it to suit myself.

The program will allow you to select a type of question ie. TRUE or FALSE, FILL IN THE BLANK etc, and when you type in the question the program will then will set up a test paper for you.

I teach part time at the local Tech College and used the old program for class tests and mid term examinations.

The format saves much time and has proved very easy to use, so with thanks and acknowledgements to the original programmers, I offer my version to teachers and hope it will be of use.

The Listing:

```

10 ***TESTMAKER***
20 *MODIFIED BY H.W.ELLIS FOR THE T1000.
30 *FROM A PROGRAM BY W.BALDASSARO & L.C
  . SHERMAN
40 *FOR THE (COCO)
50 *LISTED IN AUSTRALIAN RAINBOW SEPT'85
60 ****INITIALIZE COUNT****
70 QC=0
80 *****ESTABLISH STRING TO SEPARATE QUE
STIONS****
90 SP$=""
  --oOo--
100 CLS
110 PRINT"          *****"
*****"
120 PRINT"          T E S T
  M A K E R"
130 PRINT"          *****"
*****"
140 PRINT:PRINT
150 PRINT"THIS PROGRAM ENABLES YOU TO 'M
AKE' TEST PAPERS"
160 PRINT"THESE ARE A NUMBER OF TYPES OF
QUESTIONS AVAILAELE"
170 PRINT"THESE ARE SELECTED FROM THE ME
NU"
180 PRINT"YOU CAN CHANGE TYPE IN MID TES
T"
190 PRINT"          *****"
*****"
200 PRINT"SET UP THE PRINTER AND (RUN) T
HE PROGRAM"
210 PRINT"          *****"
*****"
220 PRINT TAB(20);"POINTS TO NOTE:-"
230 PRINT"  a) program set to accept S
TRING input (words)
          and numerical input e.g. 2+2

```

```

-----NAME
-----DATE
-----SUBJECT

circle the best and most correct answer for each statement

1 )- CARBON IS A ...
      A) METAL
      B) NON-METAL
      C) COMPOUND
      D) BASE
      E) NONE OF THESE
      --oOo--

circle the best and most correct answer for each statement

2 )- AN ACID TURNS RED LITHMUS.
      A) BLUE
      B) RED
      C) COLOURLESS
      D) ---
      E) ---
      --oOo--

fill in the space in each statement indicated by ---

3 )- LIMESTONE FLUS ----- FORMS THE BASIS OF CEMENT
      --oOo--

fill in the space in each statement indicated by ---

4 )- THE GRAVITATIONAL CONSTANT ----- IS USED FOR CALCULATIONS IN AUST
RALIA
      --oOo--

write answer to question in the space provided

5 )- HOW DOES PAINT DRY

-----
-----
-----
      --oOo--

circle TRUE or FALSE to answer the following question

6 )- <TRUE OR FALSE> WATER CAN BE USED ON TYPE 'A' FIRES
      --oOo--

circle TRUE or FALSE to answer the following question

7 )- <TRUE OR FALSE> PERMANENT HARDNESS CAN BE REMOVED BY USING DE
TERGENT

-----
-----
-----
      --oOo--

350 LPRINT TAB(40);"-----"
-----SUBJECT":LPRINT
360 CLS
370 PRINT " 1) MULTIPLE CHOICE
      2) FILL IN BLANK
      3) ANSWER QUESTION
      4) TRUE OR FALSE TEST
      5) COMPLETE"
380 INPUT "TYPE SELECTION NUMBER AND PRE
SS (ENTER)";N
390 IF N<1 OR N>5 THEN 380
400 ON N GOSUB 410,570,730,920,1060
410 ***** MULTIPLE CHOICE****
420 PRINT:PRINT"***MULTIPLE CHOICE -SELE
CTED**":PRINT

```

SHARE MARKET

THIS PROGRAM WAS for the CoCo 3 based on the stock market. The program has its own instructions, so it does not need much explaining. To start the program you type RUN"BOOT".

A picture will come up. After that, the program is automatic and there is only one question: do you want instructions?

By the way, has any CoCo 3 user noticed that the CoCo 3 will sometimes put extra characters in the listings and if you are



attempting to list any line after this, you will get an UL error? Also, this is my first attempt at writing a large program like this and submitting it.

I got my first computer (a CoCo 2) and less than a week later (after Dubbo received their first shipment), I received my CoCo 3.

If anyone has any improvements to the program, please send them in to ...

NIGEL BARLING
'CARISBROOK'
NARROMINE 2821

The Listing:

```

1 '*****SHARES*****
*****
2 '* BY NIGEL BARLING
*
3 '*****
*****
4 '* CARISBROOK NARROMINE 2821
*
5 '* 068 890530
*
6 '*****
*****
7 '* (C) 1987
*
8 '*****
*****
9 KJ=0:POKE65497,0:WIDTH 40:CLS:
A=0:GOTO12
10 CLS:VERIFY ON:POKE65496,0:PRI
NT"SAVING....3SHARES/BAS":SAVE"
154:3":VERIFYOFF:END
11 CLSO:
12 ON BRK GOTO 644
13 CLSO:CLEAR1000
14 DIMCA(9),BH(9),EL(9),CO(9),WP
(9),PF(9),CX(9),A(9),PS(9),G(9),
F(9)
15 Z=RND(-TIMER):Y=RND(-TIMER):X
=RND(-TIMER)
16 PB=RND(-TIMER):PE=RND(-TIMER)
:PC=RND(-TIMER):PW=RND(-TIMER):P
P=RND(-TIMER):PX=RND(-TIMER)
17 CLS1:LOCATE13,4:ATTR3,2,B:PRI
NT" $$$$$$$$$$";
18 LOCATE13,5:PRINT" STOCK MARKE
T";

```

```

19 LOCATE13,6:PRINT" $$$$$$$$$$
$";
20 LOCATE7,8:ATTR0,0:PRINT"A GAM
E FOR 1 TO 9 PLAYERS"
21 PRINT:PRINT:LOCATE10,10:ATTR0
,7:PRINT"IS THIS A NEW GAME?";
22 AS=INKEY$:IF AS="" THEN 22
23 IF AS<>"Y" AND AS<>"N" THEN 2
1
24 IF AS="Y" THEN 27
25 LOCATE 8,10:INPUT"WHAT IS THE
FILE NAME";AS
26 GOTO609
27 LOCATE7,10:PRINT"DO YOU WANT
INSTRUCTIONS?";
28 IS=INKEY$:IFIS=""THEN28
29 IFIS="Y"THENGOSUB530
30 PRINT";:LOCATE7,10:PRINT"
HOW MANY PLAYERS ?";
31 NS=INKEY$:IFNS="" THEN 31 ELS
E N=VAL(NS):IF N>9 OR N<1 THEN31
32 PRINT:LOCATE0,10:INPUT" WHAT
ASSET LEVEL WILL WIN THE GAME?
WE RECOMMEND 50000 DOLLARS
FOR AN AFTERNOON'
S GAME!";Q:LOCATE0,10:PRINT""
33 LOCATE0,8:PRINT"AND THE NAME
OF- (3-8 LETTERS)":LO
CATE0,9:FORA=1TO720:PRINTCHR$(32
);:NEX1A
34 FOR P=1TON
35 LOCATE0,4+P:PRINT"PLAYER NO.
"P;:INPUT$(P)
36 NEXT
37 FOR P=1TON
38 CA(P)=0
39 BH(P)=50
40 EL(P)=50
41 CO(P)=50

```

```

42 WP(P)=50
43 PF(P)=50
44 CX(P)=50
45 NEXT
46 BH$="BHP":BH=RND(21)+4:PB=BH
47 EL$="ELDERS-IXL":EL=RND(21)+4
:PE=EL
48 CO$="COLES":CO=RND(21)+4:PC=C
O
49 WP$="WESTPAC":WP=RND(21)+4:PW
=WP
50 PF$="PENFOLDS":PF=RND(21)+4:P
P=PF
51 CX$="CALTEX":CX=RND(21)+4:PX=
CX
52 LOCATE0,4:PRINT" par v
alues FOR THIS GAME:";PRINT
53 PRINT" BHP-----
"PB
54 PRINT" ELDERS-IXL-
"PE
55 PRINT" COLES-----
"PC
56 PRINT" WESTPAC----
"PW
57 PRINT" PENFOLDS---
"PP
58 PRINT" CALTEX-----
"PX
59 LOCATE0,12:PRINT" THE COMP
UTER WILL KEEP TRACK OF
EVERYTHING,SO LET'S PLAY!
<PRESS ANY KEY>
"
60 IF INKEY$=""THEN60:ELSE :LOCA
TE0,4:ATTR0,7:FORA=1TO479:PRINTC
HR$(32);:NEXT:
61 GOSUB620:FOR H=1 TO 8
62 CLSRND(8):X=INT(RND(59)/20+1)

```

```

:X=X+RND(0):Y=INT(RND(179)/20+1)
:Z=INT(RND(120)/20+1)
63 GOSUB64:GOTO66
64 IF Z=1 THEN Z$=BH$ ELSE IF Z=
2 THEN Z$=EL$ ELSE IF Z=3 THEN Z
$=CO$ ELSE IF Z=4 THEN Z$=WP$ EL
SE IF Z=5 THEN Z$=PF$ ELSE IF Z=
6 THEN Z$=CX$
65 RETURN
66 IF Y=1 OR Y=2 OR Y=3 OR Y=4 O
R Y=5 THEN Y$="UP"
67 IF Y=6 OR Y=7 OR Y=8 OR Y=9 T
HEN Y$="DOWN":X=-X
68 GOTO578
69 ON Z GOTO 70,88,106,124,142,1
60
70 BH=BH+X
71 IF BH>39THEN72ELSE82
72 FOR P=1 TO N: BH(P)=INT(BH(P)*
40/PB):NEXT
73 PB=RND(21)+4: BH=PB
74 GOSUB570
75 PRINT"BHP'S NEW par value IS
$"PB
76 PRINT:PRINT"PLAYERS NOW OWN:-
77 FOR P=1 TO N
78 PRINT:PRINT$(P)" OWNS "BH(P)
" SHARE(S)
79 NEXT P
80 GOSUB617
81 GOTO177
82 IF BH<1THEN83ELSE177
83 PB=RND(21)+4: BH=PB
84 FORP=1TON: BH(P)=0:NEXT:GOSUB
573
85 PRINT"BHP'S NEW par value IS
$"PB
86 GOSUB616
87 GOTO177
88 EL=EL+X
89 IFEL>39THEN90ELSE100
90 FOR P=1 TO N: EL(P)=INT(EL(P)*
40/PE):NEXT
91 PE=RND(21)+4: EL=PE
92 GOSUB570
93 PRINT"ELDER'S-IXL'S NEW par v
alue IS $"PE
94 PRINT:PRINT"PLAYERS NOW OWN:-
95 FOR P=1 TO N
96 PRINT:PRINT$(P)" OWNS "EL(P)
" SHARE(S)
97 NEXT P
98 GOSUB617
99 GOTO177
100 IFEL<1THEN101ELSE177
101 PE=RND(21)+4: EL=PE
102 FORP=1TON: EL(P)=0:NEXT:GOSUB
573
103 PRINT"ELDER'S NEW par value
IS $"PE
104 GOSUB616
105 GOTO177
106 CO=CO+X
107 IFCO>39THEN108ELSE118
108 FOR P=1 TO N: CO(P)=INT(CO(P)
*40/PC):NEXT
109 PC=RND(21)+4: CO=PC
110 GOSUB570
111 PRINT"COLES' NEW par value I
S $"PC
112 PRINT:PRINT"PLAYERS NOW OWN:
-
113 FOR P=1 TO N
114 PRINT:PRINT$(P)" OWNS "CO(P)
)" SHARE(S)
115 NEXT P
116 GOSUB617

```

```

117 GOTO177
118 IFCO<1THEN119ELSE177
119 PC=RND(21)+4: CO=PC
120 FORP=1TON: CO(P)=0:NEXT:GOSUB
573
121 PRINT"COLES' NEW par value I
S $"PC
122 GOSUB616
123 GOTO177
124 WP=WP+X
125 IFWP>39THEN126ELSE136
126 FOR F=1 TO N: WP(P)=INT(WP(P)
*40/PW):NEXT
127 PW=RND(21)+4: WP=PW
128 GOSUB570
129 PRINT"WESTPAC'S NEW par valu
e IS $"PW
130 PRINT:PRINT"PLAYERS NOW OWN:
-
131 FOR P=1 TO N
132 PRINT:PRINT$(P)" OWNS "WP(P)
)" SHARE(S)
133 NEXT P
134 GOSUB617
135 GOTO177
136 IFWP<1THEN137ELSE177
137 PW=RND(21)+4: WP=PW
138 FORP=1TON: WP(P)=0:NEXT:GOSUB
573
139 PRINT"WESTPAC'S NEW par valu
e IS $"PW
140 GOSUB616
141 GOTO177
142 PF=PF+X
143 IFFP>39THEN144ELSE154
144 FOR P=1 TO N: PF(P)=INT(PF(P)
*40/PP):NEXT
145 PP=RND(21)+4: PF=PP
146 GOSUB570
147 PRINT"PENFOLDS' NEW par valu
e IS $"PF
148 PRINT:PRINT"PLAYERS NOW OWN:
-
149 FOR P=1 TO N
150 PRINT:PRINT$(P)" OWNS "PF(P)
)" SHARE(S)
151 NEXT P
152 GOSUB617
153 NEXT H:GOTO395
154 IFFP<1THEN155ELSE177
155 PP=RND(21)+4: PF=PP
156 FORP=1TON: PF(P)=0:NEXT:GOSUB
573
157 PRINT"PENFOLDS' NEW par valu
e IS $"PF
158 GOSUB616
159 GOTO177
160 CX=CX+X
161 IFCX>39THEN162ELSE172
162 FOR P=1 TO N: CX(P)=INT(CX(P)
*40/PX):NEXT
163 PX=RND(21)+4: CX=PX
164 GOSUB570
165 PRINT"CALTEX' NEW par value
IS $"PX
166 PRINT:PRINT"PLAYERS NOW OWN:
-
167 FOR P=1 TO N
168 PRINT:PRINT$(P)" OWNS "CX(P)
)" SHARE(S)
169 NEXT P
170 GOSUB617
171 GOTO177
172 IFCX<1THEN173ELSE177
173 PX=RND(21)+4: CX=PX
174 FORP=1TON: CX(P)=0:NEXT:GOSUB
573

```

```

175 PRINT"CALTEX' NEW par value
IS $"PX
176 GOSUB616
177 NEXT H:GOTO395
178 CLS
179 ATTRO,0:CLS:ATTRO,0:PRINT$(
P)",HERE IS YOUR PORTFOLIO:
180 LOCATE25,1:PRINT"market":LOC
ATE36,1:PRINT"par
181 LOCATE0,3:PRINT"1."BH$:LOCAT
E12,3:PRINTBH(P):LOCATE25,3:PRIN
T"$"BH:LOCATE32,3:PRINT" $"PB
182 LOCATE0,4:PRINT"2."EL$:LOCAT
E12,4:PRINTEL(P):LOCATE25,4:PRIN
T"$"EL:LOCATE32,4:PRINT" $"PE
183 LOCATE0,5:PRINT"3."CO$:LOCAT
E12,5:PRINTCO(P):LOCATE25,5:PRIN
T"$"CO:LOCATE32,5:PRINT" $"PC
184 LOCATE0,6:PRINT"4."WP$:LOCAT
E12,6:PRINTWP(P):LOCATE25,6:PRIN
T"$"WP:LOCATE32,6:PRINT" $"PW
185 LOCATE0,7:PRINT"5."PF$:LOCAT
E12,7:PRINTPF(P):LOCATE25,7:PRIN
T"$"PF:LOCATE32,7:PRINT" $"PP
186 LOCATE0,8:PRINT"6."CX$:LOCAT
E12,8:PRINTCX(P):LOCATE25,8:PRIN
T"$"CX:LOCATE32,8:PRINT" $"PX
187 IF C=1 THEN 188 ELSE RETURN
188 C=0:PRINT" cash-----$"CA
(P)
189 PRINT:A(P)=INT(CA(P)+(BH(P)*
BH)+(EL(P)*EL)+(CO(P)*CO)+(WP(P)
*WP)+(PF(P)*PF)+(CX(P)*CX))
190 PRINT"TOTAL assets--$"A(P)
191 IFA(P)<1THEN528
192 IF LB(P)>0THENPRINT"DO YOU V
ISH TO REPAY YOUR LOAN
THIS IS #";LP(P);:GOTO 193:ELSE
PRINT:PRINT"DO YOU WANT A LOAN?
":GOTO 195
193 G$=INKEY$: IFG$=""THEN193
194 IF LP(P)>10THENGOSUB630 ELSE
IFG$="Y"THENGOSUB631:GOTO198:EL
SEIFG$="N"THEN198ELSEGOTO193
195 G$=INKEY$: IF G$="" THEN 195
196 IFG$="Y"THENGOTO557
197 IF G$<>"N" THEN CLS:GOTO192
198 PRINT:PRINT$(P)",DO YOU WAN
T TO <BUY,<S>ELL, <P
>ASS OR <D>ISK IT?
199 O$=INKEY$: IF O$="" THEN199
200 IFO$="B"THEN210
201 IFO$="S"THEN310
202 IFO$="P"THENCLS
203 IF O$="D" THEN 600
204 IF O$<>"B" AND O$<>"S" AND O
$<>"P" AND O$<>"D" THEN 198
205 NEXTP:GOSUB646:REM***FOR IS
IN LINE3010
206 FOR P=1 TO N
207 IF A(P)-LB(P)>Q THEN 519
208 NEXT P
209 GOTO61
210 CLS:PRINT" WHICH COMMODI
TY DO YOU WISH TO
buy?
211 LOCATE0,3:PRINT" 1.BHP "I
NT(BH):LOCATE20,3:PRINT" 4.WEST
PAC "WP:LOCATE0,4:PRINT" 2.ELD
ERS"INT(EL):LOCATE20,4:PRINT" 5
.PENFOLDS "PF:LOCATE0,5:PRINT"
3.COLES "INT(CO):LOCATE20,5:PRIN
T" 6.CALTEX "CX:LOCATE0,6:PRI
NT" 7.sell OR pass"
212 LOCATE 9,7:PRINT"8.SEE portf
olio
213 LOCATE9,8:PRINT"9.SEE ALL as

```



```

sets
214 PRINT:PRINT:PRINT" YOU H
AVE $"CA(P)" CASH.
215 PRINT:PRINT" LOAN BALANC
E $"LB(P)
216 W$=INKEY$: IF W$="" THEN216
217 IFW$="1"THEN226
218 IFW$="2"THEN240
219 IFW$="3"THEN254
220 IFW$="4"THEN268
221 IFW$="5"THEN282
222 IFW$="6"THEN296
223 IFW$="7"THEN198
224 IF W$="8" THEN GOSUB179:GOSU
B617:GOTO210
225 IFW$="9" THEN GOSUB586:GOTO2
10
226 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
227 PRINT
228 PRINTBH$: YOU OWN- "BH(P)
229 PRINT" MARKET VALUE - $"B
H
230 PRINT:PRINT"YOU CAN AFFORD "
INT(CA(P)/BH)
231 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO BUY";B
232 IF B<1 AND B>0 THEN GOSUB594
233 IF CA(P)-(B*BH)<0 THEN PRINT
"YOU HAVEN'T ENOUGH MONEY!!":GOT
O231
234 BH(P)=BH(P)+B
235 CA(P)=CA(P)-(B*BH)
236 IFB>0THENPRINT"TRANSACTION C
OMPLETED!"
237 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE"
238 IF INKEY$=""THEN238
239 GOTO210
240 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
241 PRINT
242 PRINTEL$: YOU OWN - "EL(P)
243 PRINT" MARKET VALUE - $"
EL
244 PRINT:PRINT"YOU CAN AFFORD "
INT(CA(P)/EL)
245 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO BUY";B
246 IF B<1 AND B>0THEN GOSUB594
247 IF CA(P)-(B*EL)<0 THEN PRINT
"YOU HAVEN'T ENOUGH MONEY!!":GOT
O245
248 EL(P)=EL(P)+B
249 CA(P)=CA(P)-(B*EL)
250 PRINT"TRANSACTION COMPLETED!
"
251 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE"
252 IF INKEY$=""THEN252
253 GOTO210
254 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
255 PRINT
256 PRINTCO$: YOU OWN - "CO(P)
257 PRINT" MARKET VALUE - $"
CO
258 PRINT:PRINT"YOU CAN AFFORD "
INT(CA(P)/CO)
259 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO BUY";B
260 IF B<1 AND B>0 THEN GOSUB 59
4
261 IF CA(P)-(B*CO)<0 THEN PRINT
"YOU HAVEN'T ENOUGH MONEY!!":GOT
O259
262 CO(P)=CO(P)+B

```



```

263 CA(P)=CA(P)-(B*CO)
264 PRINT"TRANSACTION COMPLETED!
"
265 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
266 IFINKEY$=""THEN266
267 GOTO210
268 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
269 PRINT
270 PRINTWP$: YOU OWN - "WP(P)
271 PRINT" MARKET VALUE - $"
WP
272 PRINT:PRINT"YOU CAN AFFORD "
INT(CA(P)/WP)
273 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO BUY";B
274 IF B<1 AND B>0 THEN GOSUB 59
4
275 IF CA(P)-(B*WP)<0 THEN PRINT
"YOU HAVEN'T ENOUGH MONEY!!":GOT
O273
276 WP(P)=WP(P)+B
277 CA(P)=CA(P)-(B*WP)
278 IFB>0THENPRINT"TRANSACTION C
OMPLETED!"
279 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
280 IFINKEY$=""THEN280
281 GOTO210
282 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
283 PRINT
284 PRINTPF$: YOU OWN - "PF(P)
285 PRINT" MARKET VALUE - $"
PF
286 PRINT:PRINT"YOU CAN AFFORD "
INT(CA(P)/PF)
287 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO BUY";B
288 IF B<1 AND B>0 THEN GOSUB 59
4
289 IF CA(P)-(B*PF)<0 THEN PRINT
"YOU HAVEN'T ENOUGH MONEY!!":GOT
O287
290 PF(P)=PF(P)+B
291 CA(P)=CA(P)-(B*PF)
292 IFB>0THENPRINT"TRANSACTION C
OMPLETED!"
293 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
294 IFINKEY$=""THEN294
295 GOTO210
296 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
297 PRINT
298 PRINTCX$: YOU OWN - "CX(P)
299 PRINT" MARKET VALUE - $"
CX
300 PRINT:PRINT"YOU CAN AFFORD "
INT(CA(P)/CX)
301 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO BUY";B
302 IF B<1 AND B>0 THEN GOSUB 59
4
303 IF CA(P)-(B*CX)<0 THEN PRINT
"YOU HAVEN'T ENOUGH MONEY !!":GO
TO301
304 CX(P)=CX(P)+B
305 CA(P)=CA(P)-(B*CX)
306 IFB>0THENPRINT"TRANSACTION C
OMPLETED!"
307 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
308 IFINKEY$=""THEN308
309 GOTO210
310 CLS:PRINT"WHICH COMMODITY DO

```

```

YOU WISH TO sell?
311 LOCATE0,3:PRINT" 1.BHP "
BH:LOCATE20,3:PRINT" 4.WESTPAC
"WP:LOCATE0,4:PRINT" 2.ELDERS
"EL:LOCATE20,4:PRINT" 5.PENFO
LDS "PF:LOCATE0,5:PRINT" 3.COLE
S "CO:LOCATE20,5:PRINT" 6.CAL
TEX "CX:PRINT" 7.buy O
R pass"
312 LOCATE9,7:PRINT"8.SEE portfo
lio"
313 LOCATE9,8:PRINT"9.SEE ALL as
sets
314 PRINT:PRINT:PRINT" YOU H
AVE $"CA(P)" CASH"
315 W$=INKEY$: IF W$=""THEN315
316 IFW$="1"THEN325
317 IFW$="2"THEN336
318 IFW$="3"THEN347
319 IFW$="4"THEN358
320 IFW$="5"THEN369
321 IFW$="6"THEN380
322 IFW$="7"THEN198
323 IF W$="8" THEN GOSUB179:GOSU
B617:GOTO310
324 IF W$="9" THEN GOSUB 586:GOT
O 310
325 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
326 PRINT:PRINTBH$: YOU OWN - "
BH(P)
327 PRINT" MARKET VALUE - $"
BH
328 GOSUB392
329 IF S>BH(P) THEN PRINT" YOU D
ON'T OWN THAT MANY!!":GOTO328
330 BH(P)=BH(P)-S
331 CA(P)=CA(P)+(S*BH)
332 IFS>0THEN
333 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
334 IFINKEY$=""THEN334
335 GOTO310
336 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
337 PRINT:PRINTEL$: YOU OWN - "
EL(P)
338 PRINT" MARKET VALUE - $"
EL
339 GOSUB392
340 IF S>EL(P) THEN PRINT"YOU DO
N'T OWN THAT MANY!!":GOTO339
341 EL(P)=EL(P)-S
342 CA(P)=CA(P)+(S*EL)
343 IFS>0THENPRINT"TRANSACTION C
OMPLETED!"
344 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
345 IFINKEY$=""THEN345
346 GOTO310
347 CLS:PRINTP$(P)": CASH AVAILA
BLE: $"CA(P)
348 PRINT:PRINTCO$: YOU OWN - "
CO(P)
349 PRINT" MARKET VALUE - $"
CO
350 GOSUB392
351 IF S>CO(P) THEN PRINT"YOU DO
N'T OWN THAT MANY!!":GOTO350
352 CO(P)=CO(P)-S
353 CA(P)=CA(P)+(S*CO)
354 IFS>0THENPRINT"TRANSACTION C
OMPLETE
355 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
356 IFINKEY$=""THEN356
357 GOTO310

```

```

358 CLS:PRINTP$(P)": CASH AVAILA
BLE:$"CA(P)
359 PRINTWFS": YOU OWN - "WP(P)
360 PRINT" MARKET VALUE - $"
WP
361 GOSUB392
362 IF S>WP(P) THEN PRINT"YOU DO
N'T OWN THAT MANY!":GOTO 361
363 WP(P)=WP(P)-S
364 CA(P)=CA(P)+(S*WP)
365 IFS>0THENPRINT"TRANSACTION C
OMPLETED
366 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
367 IFINKEYS=""THEN367
368 GOTO310
369 CLS:PRINTP$(P)": CASH AVAILAB
LE:$"CA(P)
370 PRINTPF$(P)": YOU OWN - "PF(P)
371 PRINT" MARKET VALUE - $"
PF
372 GOSUB392
373 IF S>PF(P) THEN PRINT"YOU DO
N'T OWN THAT MANY!":GOTO372
374 PF(P)=PF(P)-S
375 CA(P)=CA(P)+(S*PF)
376 IFS>0THENPRINT"TRANSACTION C
OMPLETED!"
377 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
378 IFINKEYS=""THEN378
379 GOTO310
380 CLS:PRINTP$(P)": CASH AVAILA
BLE:$"CA(P)
381 PRINTCX$(P)": YOU OWN - "CX(P)
382 PRINT" MARKET VALUE - $"
CX
383 GOSUB392
384 IF S>CX(P) THEN PRINT"YOU DO
N'T OWN THAT MANY!":GOTO383
385 CX(P)=CX(P)-S
386 CA(P)=CA(P)+(S*CX)
387 IFS>0THENPRINT"TRANSACTION C
OMPLETED
388 PRINT:PRINT:PRINT"PRESS ANY
KEY TO CONTINUE
389 IFINKEYS=""THEN389
390 GOTO310
391 PRINTP$(P)": CASH AVAILABLE:
$"CA(P): RETURN
392 PRINT:INPUT"HOW MANY WOULD Y
OU LIKE TO SELL";S
393 IF S<1 AND S>0 THEN GOSUB597
394 RETURN
395 X=RND(3)+4:Z=RND(6)
396 GOSUB64
397 CLS0:LOCATE5,7:PRINT" DIVI
DEND":LOCATE17,7:PRINTZ$;" ";:P
RINTX"%";:LOCATE32,7:PRINT""
398 GOSUB617
399 IFZ$=BH$THEN405
400 IFZ$=EL$THEN423
401 IFZ$=CO$THEN442
402 IFZ$=WP$THEN461
403 IFZ$=PF$THEN481
404 IFZ$=CX$THEN500
405 FORP=1TON:IF B(P)=1 THEN 624
406 CLS:PRINTP$(P)'"S TURN":PRIN
T
407 IF BH<PB THEN408ELSE412
408 CLS:LOCATE10,5:PRINT"SORRY,"
P$(P)!"!":PRINT" "BH$" IS
BELOW PAR":PRINT" NO DI
VIDENDS
409 PRINT:PRINT:PRINT:PRINT"PRES
S ANY KEY TO CONTINUE
410 IFINKEYS=""THEN410
411 GOSUB179:GOTO188
412 CLS:LOCATE0,3:PRINT"DIVIDEND
IS ON "BH$
413 PRINT:PRINT" "P$(P)": YOU
own "BH(P)" SHARE(S)
414 D=BH-PB
415 DV=INT(X/100*(D+1)*BH(P))+1
416 IF DV=1 AND BH(P)=0 THEN DV=
0
417 PRINT:PRINT" YOUR dividen
d IS $"DV:PRINT
418 CA(P)=CA(P)+DV
419 PRINT:PRINT" YOUR cash IS
NOW $"CA(P)
420 PRINT:PRINT:PRINT:PRINT"<PRE
SS ANY KEY TO CONTINUE>
421 IFINKEYS=""THEN421
422 GOSUB179:GOTO188
423 FORP=1TON:IF B(P)=1 THEN 624
424 CLS:PRINTP$(P)'"S TURN":PRIN
T
425 GOSUB626
426 IF EL<PE THEN 427 ELSE 431
427 CLS:LOCATE5,10:PRINT"SORRY,"
P$(P)!"!":PRINT" "EL$" IS
BELOW PAR":PRINT" NO D
IVIDENDS
428 PRINT:PRINT:PRINT:PRINT"PRES
S ANY KEY TO CONTINUE
429 IFINKEYS=""THEN429
430 GOSUB179:GOTO188
431 CLS:LOCATE0,3:PRINT"DIVIDEND
IS ON "EL$
432 PRINT:PRINT" "P$(P)" YOU ow
n "EL(P)" SHARE(S)
433 D=EL-PE
434 DV=INT(X/100*(D+1)*EL(P))+1
435 IF DV=1 AND EL(P)=0 THEN DV=
0
436 PRINT:PRINT" YOUR dividen
d IS $"DV:PRINT
437 CA(P)=CA(P)+DV
438 PRINT:PRINT" YOUR cash IS
NOW $"CA(P)
439 PRINT:PRINT:PRINT:PRINT"<PRE
SS ANY KEY TO CONTINUE>
440 IFINKEYS=""THEN440
441 GOSUB179:GOTO188
442 FORP=1TON:IF B(P)=1 THEN 624
443 CLS:PRINTP$(P)'"S TURN":PRIN
T
444 'GOSUB2093
445 IF CO<PC THEN 446 ELSE 450
446 CLS:LOCATE5,10:PRINT"SORRY"
P$(P)!"!":PRINT" "CO$" IS B
ELOW PAR":PRINT" NO DIV
IDENDS
447 PRINT:PRINT:PRINT:PRINT"PRES
S ANY KEY TO CONTINUE
448 IFINKEYS=""THEN448
449 GOSUB179:GOTO188
450 CLS:LOCATE0,3:PRINT"DIVIDEND
IS ON "CO$
451 PRINT:PRINT" "P$(P)" YOU ow
n "CO(P)" SHARE(S)
452 D=CO-PC
453 DV=INT(X/100*(D+1)*CO(P))+1
454 IF DV=1 AND CO(P)=0 THEN DV=
0
455 PRINT:PRINT" YOUR dividen
d IS $"DV:PRINT
456 CA(P)=CA(P)+DV
457 PRINT:PRINT" YOUR cash IS
NOW $"CA(P)
458 PRINT:PRINT:PRINT:PRINT"<PRE
SS ANY KEY TO CONTINUE>
459 IFINKEYS=""THEN459
460 GOSUB179:GOTO188
461 FORP=1TON:IF B(P)=1 THEN 624
462 CLS:PRINTP$(P)'"S TURN":PRIN
T
463 GOSUB626
464 IF WP<PV THEN 465 ELSE 469
465 CLS:LOCATE10,5:PRINT"SORRY,"
P$(P)!"!":PRINT" "WP$" IS
BELOW PAR":PRINT" NO DI
VIDENDS
466 PRINT:PRINT:PRINT:PRINT"
PRESS ANY KEY TO CONTINUE
467 IFINKEYS=""THEN467
468 GOSUB179:GOTO188
469 CLS:LOCATE0,3:PRINT"DIVIDEND
IS ON "WP$
470 PRINT:PRINT" "P$(P)" YOU ow
n "WP(P)" SHARE(S)
471 D=WP-PV
472 DV=INT(X/100*(D+1)*WP(P))+1
473 IF DV=1 AND WP(P)=0 THEN DV=
0
474 PRINT:PRINT" YOUR dividen
d IS $"DV:PRINT
475 CA(P)=CA(P)+DV
476 PRINT:PRINT" YOUR cash IS
NOW $"CA(P)
477 PRINT:PRINT:PRINT:PRINT"<PRE
SS ANY KEY TO CONTINUE>
478 DV=INT(X/100*(D+1)*PF(P))
479 IFINKEYS=""THEN479
480 GOSUB179:GOTO188
481 FORP=1TON:IF B(P)=1 THEN 624
482 CLS:PRINTP$(P)'"S TURN":PRIN
T
483 GOSUB626
484 IF PF<PP THEN485ELSE489
485 CLS:LOCATE10,5:PRINT"SORRY,"
P$(P)!"!":PRINT" "PF$" IS
BELOW PAR":PRINT" NO DIVID
ENDS
486 PRINT:PRINT:PRINT:PRINT"PRES
S ANY KEY TO CONTINUE
487 IFINKEYS=""THEN487
488 GOSUB179:GOTO188
489 CLS:LOCATE0,3:PRINT"DIVIDEND
IS ON "PF$
490 PRINT:PRINT" "P$(P)" YOU ow
n "PF(P)" SHARE(S)
491 D=PF-PP
492 DV=INT(X/100*(D+1)*PF(P))+1
493 IF DV=1 AND PF(P)=0 THEN DV=
0
494 PRINT:PRINT" YOUR";:ATTR0
,7,B:PRINT" dividend ";:ATTR0,0:
PRINT" IS $"DV:PRINT
495 CA(P)=CA(P)+DV
496 PRINT:PRINT" YOUR";:ATTR0
,7,B:PRINT" cash ";:ATTR0,0:PRIN
T" IS NOW $"CA(P)
497 PRINT:PRINT:PRINT:PRINT"<PRE
SS ANY KEY TO CONTINUE>
498 IFINKEYS=""THEN498
499 GOSUB179:GOTO188
500 FORP=1TON:IF B(P)=1 THEN 624
501 CLS:PRINTP$(P)'"S TURN":PRIN
T
502 GOSUB626
503 IF CX<PX THEN504ELSE508
504 CLS:LOCATE5,10:PRINT"SORRY,"
P$(P)!"!":PRINT" "CX$" IS
BELOW PAR":PRINT" NO DI
VIDENDS
505 PRINT:PRINT:PRINT:PRINT"PRES
S ANY KEY TO CONTINUE
506 IFINKEYS=""THEN506
507 GOSUB179:GOTO188

```

A. INTRODUCTION

This article is an adaptation of the talk given at CoCo Conf 86. When I was asked to talk about the future of personal computers I felt a bit like the weather forecaster who gave the legendary forecast of "mostly fine in some parts". When I looked at the literature (Byte etc), I found there were one or two "definites" and quite a lot of "maybes". The definite forecasts were based on what was actually currently being developed, what was in the early stages of testing, or what was at the leading edge. The maybes were based on past trends a bit of wishful thinking and extrapolation - to carry the weather forecasting analogy a bit further, persistency forecasting. Quoting the magazine writers predictions is a bit like quoting the Bible "There will be wars and rumors of wars..." and I know which one I place my money on.

In this article I will be dealing with generalities; largely drawing together what is already know and making a few inferences based on these facts. (A later speaker Ken Allen from Tandy dealt with Tandy-specifics).

Initially I will deal with short term trends. Then I will look at four well-defined categories of PCs, the business, home, middle market and special-purpose machines. After this I will look at some of the trends in hardware and software development. Finally I will mention two fairly successful computer prophets whose predictions are worth taking note of.

B. CONSUMERISM

What is made available, at what price it is offered and what we buy is largely determined by the producers and their marketing / advertising people. Just consider for a moment how this effects you, your pocket, your leisure, your work and your family. We are "Consumers". Personal

Continued overleaf.

THE FUTURE OF THE PC

In this article Michael Turk takes a long, personal look at some of the more popular PC's and how they might effect us all.

...what we buy is largely determined by the producers and their marketing/ advertising people."

computers are consumer items just like the family car. More on this later...

C. SHORT TERM TRENDS

In the short term there will be a contraction of the business market. Prices will rise again before they fall, not only in Australia (because of the poor exchange rate and reduced purchasing power of Australians), but also worldwide. This may in some part be due to the agreements made between the large American manufacturers and their overseas competitors - the chip manufacturers and suppliers of IBM PC clones.

Like the games-machine's apparent market saturation by the Commodore 64, (Ken Allen mentioned that there were more Color Computers sold in Australia than Commodore 64's), the PC-XT and its clones are having a similar effect in the business community. Just as rumors of upgrades and price drops slow purchasing, the impact of the AT and other newer machines will have a similar effect.

D. FOUR TYPES OF PERSONAL COMPUTER

The market has already settled into four distinct classes of "personal" computers: the business sector, the home market, the middle market (a group typified by the Amiga and Atari machines) and finally the special purpose group.

1. Business - IBM / Intel Domination

a) The IBM AT and XT

The IBM style microcomputer will continue to dominate the business market. The AT, running MS DOS or PC DOS versions 3.1 and higher will become more popular as prices fall. The XT clone with various add-ons will dominate the low end of the business market. As the power required by some small businesses increases, multi-user systems will become more popular as will networked PCs. I expect that some offices that need more power will install local area networks (LANs), networking more powerful machines with their less powerful existing equipment. In addition, the IBM RISC machine has recently been announced. It is expected to be targeted at the business multi-user market.

b) IBM Clones

To some extent IBM will be caught by the popularity of its own creation. The clones already have a large influence on what IBM can do. How compatible are IBM's products? Some businesses will choose a clone with extra speed and add-ons for extra memory and functionality. Others will choose IBM. Tandy or some other well-known brand because of its name and to ensure continued support and backup. Even if the initial equipment cost is higher, the long-term reliability of the equipment is much more important in the business market than in the home marketplace.

c) Apple Macintosh

Some small businesses will opt for the Apple Macintosh because of previous experience with the product and because it currently does some things better than the IBM (as some of you have already remarked - that is not difficult!). Applications such as desktop publishing and some forms of project planning etc are easier when done visually and the Mac lends itself well to these. It is interesting to note that all the major software suppliers are now releasing software for both styles of machines.

2. Home

Home computers will tend to become cheaper. There will be a split between the cheap and the expensive machines. There will continue to be disappointed purchasers of dead-end orphan machines. Several well-known suppliers have done

continued from page 45

```
508 CLS:LOCATE0,3:PRINT"DIVIDEND
IS ON "CX$
509 PRINT:PRINT" "P$(P)" YOU ow
n "CX(P)" SHARE(S)
510 D=CX-PX
511 DV=INT(X/100*(D+1)*CX(P))+1
512 IF DV=1 AND CX(P)=0 THEN DV=
0
513 PRINT:PRINT" YOUR dividen
d IS $"DV:PRINT
514 CA(P)=CA(P)+DV
515 PRINT:PRINT" YOUR cash IS
NOW $"CA(P)
516 PRINT:PRINT:PRINT:PRINT"<PRE
SS ANY KEY TO CONTINUE>
517 IFINKEY$=""THEN517
518 GOSUB179:GOTO188
519 SOUND150,5:SOUND150,15
520 CLS:LOCATE10,12:PRINT"<<<< A
WINNER >>>>"
521 FOR X=1 TO2000:NEXTX
522 CLS:PRINT"REQUIRED ASSETS WE
RE $"Q
523 PRINT:LOCATE0,10:PRINT"final
financial worth:-":PRINT
524 FORP=1TON
525 PRINT" "P$(P)" - $"A
(P)-LE(P):NEXT
526 PRESS"BREAK TO END GAME OR S
PACE TO CONTINUE"
527 IFINKEY$<>"THENGOTO527ELSE
GOTO61
528 CLS:LOCATE10,5:PRINTP$(F)",Y
OU'RE BANKRUPT!!":B(P)=1:BA=BA+1
:GOSUB617:IFBA=N-1 THEN 519
529 GOTO205
530 CLS:PRINT"STOCK MARKET IS A
GAME OF BUYING AND SELLING
STOCKS AS THE MARKET RISES AND F
ALLS.
531 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE
532 IF INKEY$="" THEN 532
533 CLS:PRINT"par value
534 PRINT"EACH STOCK IS ASSIGNED
A PAR VALUE AT THE BEGINNING
OF THE GAME.
535 PRINT"THE VALUE OF EACH STOC
K GOES UP OR DOWN IN ONE CENT OR
MORE JUMPS UNTIL IT REACHES THE
TOP ($VALUE OF $40) OR BOTTO
MS OUT.
536 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE
537 IF INKEY$="" THEN 537
538 CLS:PRINT"splitting
539 PRINT"WHEN THE VALUE OF A ST
OCK REACHES $40 IT SPLITS.
EACH PLAYER THEN OWNSTHE NU
MBER OF SHARES OF THAT STOCK TH
AT EQUALSTHEIR VALUE AT $40. THE
STOCK RE-ENTERS THE MARKET A
T A NEW PAR VALUE.
540 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE
541 IF INKEY$=""THEN541
542 CLS:PRINT"out of trading
543 PRINT"WHEN A STOCK REACHES T
HE BOTTOM IT IS DECLARED OUT O
F TRADING AND ALL PLAYERS LOSE W
HATEVER SHARES THEY HAD IT
RE-ENTERS THE MARKET AT A NEW
PAR VALUE.
544 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE
545 IF INKEY$=""THEN 545
```

continued overpage

this. My first home computer was my beloved MC-10 and support for that was dropped one week after I bought it. However there will be many happy purchasers of games machines and general home machines, especially those who stick with well known reliable suppliers of machines that have or have the potential to have a large software base.

a) Games Machines

The games machines will continue. If Commodore can keep going and Atari lowers its prices then anything goes. Machines with a large software base will tend to dominate the market until a quantum leap in technology attracts users to more up-to-date machines. These machines do best when playing games. Other home and business applications also run, but not as well as on the more specialised machines. The early Color Computers and the Commodore 64 are examples of this.

b) General Purpose Machines

General purpose home machines will also sell well. An example of this type of machine are the Amstrads, the Commodore 128 and the CoCo 3. These machines can be used not only to play games but also for more serious applications such as word processing. This is because they not only support medium resolution colour graphics, but they also can handle 80 x 24 text screens. I expect that the home machines of the future will handle higher resolution colour screens, have more sophisticated sound, collision detection and animation facilities, and be much more sophisticated not only internally but also in their packaging and user interface. They will have more memory and feature a windowing operating system. (Both the Commodore 64C and the CoCo 3 now support windows). It is also more likely that communications will play a larger role in the home market, but more about that later. I wonder what Tandy has to offer us in the home market in the near future?

3. The Middle Market

The Yuppie market has always been around. The machines currently beginning to occupy this slot are the leading-edge consumer items like the Commodore Amiga and the Atari 520, 1040 etc. People buy these expensive toys for a variety of reasons (I suspect that the first purchasers of the Color Computer all those years ago were in the same bracket. Do you remember importing those early versions and their cost?). Early in their lifetime there are teething problems and precious little software. Still, when they settle down they occupy the top end of the home marketplace. The stratified marketing strategies of the hardware vendors will, in time, push the leading edge home computers down into the middle market range. These machines will blur the distinction between games and general purpose machines as more appear in peoples homes, the difference mainly being one of cost.

4. Special-Purpose Machines

There will continue to be a proliferation of expensive special-purpose machines. These machines are often very good at one particular function such as CAD, animation, music (like the Fairlite), or number-crunching.

E. HARDWARE

The CD-ROM and communications hardware will be the interesting hardware in the short term. The advances in the hardware area are quite diverse. The increased size, speed and complexity of the ICs together with consumer demand (or manufacturer demand??) has lead to some exciting developments. I will deal with them one at a time. I would welcome contributions from those of you who have more intimate knowledge of these devices In this part of the talk.

continued

```
546 CLS:PRINT"dividends
547 PRINT"A DIVIDEND IS PERIODIC
ALLY PAID ON A STOCK. THIS IS
BASED ON THE DIFFERENCE BETWE
EN THE CURRENT VALUE OF THE STO
CK AND ITS PAR VALUE. IT IS AUT
OMATICALLY ADDED TO EACH PLAYERS
CASH AND IS PAID PER SHARE OWN
ED.
548 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE
549 IF INKEY$="" THEN 549
550 CLS:PRINT"saving the game
551 PRINT:PRINT"THE VARIABLES OF
THE CURRENT GAME CAN BE SAVED TO
DISK AND RETRIEVED LATER TO
FINISH THE GAME. SIMPLY ANSWER T
HE COMPUTER'S QUESTIONS.
552 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE
553 IF INKEY$="" THEN 553
554 CLS:PRINT"end of trading day
AT THE END
OF THE DAY A SUMMARY WILL BE PR
INTED UP SO PLAYERS CAN COMPARE
THERE RESULTS A DOW JONES INDEX
WHICH RISES AND FALLS IS ALSO
PRESENT THE HIGHER THENUMBER THE
BETTER THE TIME TO BUY"
555 PRINT"PRESS ANY KEY TO CONTI
NUE"
556 IF INKEY$="" THEN 556 ELSE RETUR
N
557 IF LB(P)>0 THEN 558 ELSE 559
558 CLS:PRINT"SORRY,"P$(P):PRINT
"YOU ALREADY HAVE A LOAN.":GOSUB
617:GOTO198
559 CLS:INPUT"HOW MUCH WOULD YOU
LIKE";L
560 IF L>A(P) THEN PRINT"SORRY,"
P$(P):PRINT"THAT'S TOO MUCH.
THINK IT OUT AGAIN."
:GOSUB617;C=1:GOTO179
561 LB(P)=INT(L+L/5)
562 CA(P)=CA(P)+L
563 PRINT:PRINTP$(P)
564 PRINT"YOUR loan balance IS N
OW $"LB(P)
565 PRINT"(DID YOU FORGET THE 20
%?)
566 PRINT:PRINT"YOUR cash IS NOW
$"CA(P)
567 PRINT:PRINT"YOU MUST REPAY I
T IN 10 TURNS.
568 PRINT"YOU MAY REPAY IT IN LE
SS.":GOSUB617
569 CLS:GOTO198
570 CLS:FOR X= 150 TO 190:SOUND
X,1:NEXT X:PRINT Z$" HAS SPLIT.
571 GOSUB617
572 RETURN
573 CLS:FOR X=190 TO 150 STEP-1:
SOUND X,1:NEXT X:PRINT Z$
574 PRINT"HAS BOTTOMED OUT. EAC
H PLAYER HAS LOST ALL THEIR SHA
RES WITH NO COMPENSATION.
575 PRINT:PRINT"PRESS ANY KEY TO
CONTINUE.
576 IF INKEY$="" THEN 576
577 RETURN
578 LOCATE8,7:PRINTY$:LOCATE17,7
:PRINTZ$:LOCATE28,7:PRINTX$:LOCA
TE32,7:PRINT""
579 :LOCATE6,10:PRINT" PRESS ANY
KEY TO CONTINUE";:ATTRO,7
580 IF INKEY$="" THEN 580
```

continued next page

1. CD ROMs

Compact disc players have been with us for quite some time now. The amount of digitised information these devices can hold is staggering. Philips and others are working on an international standard interface and data format to permit the use of compact discs for permanent storage of large amounts of data. These devices are called CD ROMs. Grollier's American Encyclopaedia, dictionaries and thesauruses are already available. It will not be long until much more read-only software and data is available.

This may also stem the tide of software piracy - a topic close to the heart of many suppliers. If the programs and data are very large and very complex, can be heavily overlaid and can be paged into memory quickly, then although these could be copied onto discs, the speed of access and bulk will probably make copying futile. (Does anyone know how much data one of these discs can hold? More than 500 Megabytes!)

Work is also under way to develop "write once, read many times" and reusable surfaces using similar optical/laser technology. By the way, what happened to bubble memory and credit-card memory?

2. Communications

a) Viatel

The communications revolution is already here. Viatel, Midas and other commercial communications based user services are growing in popularity. Cheap modems have been around for quite some time. The Avtek Mini-modem is an example of this. Modems which are capable of faster and more sophisticated operation are also becoming much cheaper. You can now get information, buy, sell and get and receive messages on these services.

b) Modems

Modems are used to allow computers to exchange information over long distances, usually by telephone lines or special computer-grade lines. Modem stands for modulator "demodulator". The computer signals are changed to allow transmission along lines that cannot handle the signals that the computer puts out. Recently the price of modems has dropped markedly. You can get a simple modem that handles the two most common transmission rates (300 baud full duplex and 1200/75), for less than \$200 (the Avtek Minimodem). More sophisticated devices that cope with faster speeds, auto-dial and Hayes compatibility etc are available for under \$700. These devices can be used to connect you to bulletin boards, Viatel like services, packet switching networks, your bank, your local grocers (eventually) etc.

3. Local Area Networks (LANs)

Local area networks are becoming more prevalent in medium size businesses now. They can be purely software driven or hybrid software/hardware systems. LANs give you access to programs, data and peripherals such as hard discs or printers attached to other machines in the network.

In its crudest form, Easy-LAN allows file transfer between networked PC's and their peripherals. In a recent test done at Prime in Canberra we tried this out by connecting two fast PC-AT clones. The best transfer rate we could achieve using this software-driven system

was about 500 characters per second. Still, what do you expect for about \$300 for the first two and \$150 each for subsequent connections.

Hardware and software systems usually require a networking card to be installed in each PC. Novell LANs are example of

continued

```
581 GOTO69
582 GOSUB179
583 PRINT:PRINT:PRINT"PRESS ANY
KEY TO RETURN"
584 IF INKEY$="" THEN 584
585 RETURN
586 K=P:CLS:PRINT"assets:-","NEE
DED TO WIN
$"Q
587 PRINT:PRINT
588 FOR P=1 TO N
589 PRINTP$(P):","$"A(P)-LB(P)
590 NEXT P:P=K
591 PRINT:PRINT:PRINT"PRESS ANY
KEY TO RETURN"
592 IF INKEY$="" THEN 592
593 RETURN
594 CLS:PRINT:PRINT:PRINT"NO ONE
IN THEIR RIGHT MIND WOULD TRY T
O BUY A FRACTION OF A SHARE ding
bat!!!
595 FOR H=1 TO 2000:NEXT H
596 RETURN
597 CLS:PRINT:PRINT:PRINT"GETTIN
G HARD UP, ARE WE???"
598 FOR H=1 TO 1500:NEXT H
599 RETURN
600 CLS:INPUT"UNDER WHAT NAME DO
YOU WANT TO FILE IT":A$
601 OPEN"O",#1,A$
602 WRITE #1,N,Q,P,BH,EL,CO,WP,P
F,CX,BH$,EL$,COS$,WP$,PF$,CX$,PB,
PE,PC,PW,PP,PX,KG
603 FOR P=1 TO N
604 WRITE #1,P$(P),CA(P),BH(P),E
L(P),CO(P),WP(P),PF(P),CX(P),LB(
P),LP(P)
605 NEXT P
606 CLOSE #1
607 CLS:PRINT"THE GAME HAS BEEN
SAVED. SEE YOU LATER...."
608 END
609 OPEN"1",#1,A$
610 INPUT #1,N,Q,P,BH,EL,CO,WP,P
F,CX,BH$,EL$,COS$,WP$,PF$,CX$,PB,
PE,PC,PW,PP,PX,KG
611 FOR P=1 TO N
612 INPUT #1,P$(P),CA(P),BH(P),E
L(P),CO(P),WP(P),PF(P),CX(P),LB(
P),LP(P)
613 NEXT P
614 CLOSE #1
615 CLS:GOTO59
616 PRINT:PRINT"ALL PLAYERS OWN
0 SHARES.
617 LOCATE7,10:PRINT"PRESS ANY K
EY TO CONTINUE
618 IF INKEY$=""THEN618
619 RETURN
620 LOCATE7,4:PRINT"PRESS ANY KE
Y TO CONTINUE";:AITRO,7
621 SOUND80,5
622 IF INKEY$=""THEN622
623 RETURN
624 CLS:PRINT@193,P$(P),I SAID
YOU WERE out!!!
625 PRINT@264,"get lost!!!":GOSU
B617:GOTO205
626 RETURN
627 CLS:PRINTP$(P):PRINT"YOUR LO
AN BALANCE IS $"LB(P)
628 LP(P)=LP(P)+1:IF LP(P)>10 TH
EN PRINT"WE WARNED YOU ABOUT REP
AYING ON TIME!":GOSUB617:GOS
UB638:GOTO637
```

continued overpage

this. In some systems both plug-in cards and a dedicated server are required. High data transfer rates can be achieved using these techniques. The beauty of these networks is that you can have one machine with a hard disc, a letter-quality daisywheel or laser printer and a draft quality dot matrix printer, perhaps a remote terminal connected via a modem etc and several basic cheaper PCs connected together sharing resources as required. These systems are much more expensive than the pure software systems: About \$400 per unit plus more for the software (and dedicated processor if required), plus either a twisted pair or high quality cable for a faster transfer rate.

4. Graphics Boards and Processors

More is being demanded of microcomputers in the way of graphics and screen presentation. I think that the Macintosh popularised what had been coming for quite some time. Standards for these are currently being developed, not only for screens, but also for language and user interfaces. Graphics coprocessors and support circuitry are becoming more common. The circuitry on the Amiga is an example.

5. Improved IC Chips

Both the Intel and Motorola already produce 32-bit chips that are much more sophisticated than the (8088 and 68000), 16/8 bit chips that are commonly used now. (This is not to decry the sophistication of these chips, it is just that things have advanced). These chips support multi-tasking, multiple-users, virtual memory and paging from within the hardware. That together with the increases gained by a fourfold increase in data transfer rate gained by doing things in 32 bit chunks rather than 8 bit chunks, and increased clock speeds (18MHz plus) portends enormous intercesses in computing power.

a) Further Integration

Dedicated co-processors are already available. These handle graphics, sound, maths and communications to mention only a few. These will get faster and more sophisticated too.

b) Denser Memory

Larger memory sizes are also already with us. I think that 2Meg (of 8 bits - what about 2M of 32 bit words!) (W, is very near. 1M by 1 bit chips are already available and 1M much larger memory chips are in prototype form.

6. Laser Printers

Laser printers are still quite expensive, but the print quality of these devices is already having an impact. The desktop publishing boom is one of the results of these. With appropriate software you can combine text and graphics to produce quality documents.

F. SOFTWARE

Do not expect to see much in the way of software to come on the market in the near future that is not effectively an improvement on already existing types of software. A car is still a car, but a car made in 1986 is quite an improvement on a car made in 1906.

1. Operating Systems

Operating systems will probably be seen at two levels - the user level and the software level. The user level operating systems are typified by the windowing, mouse/icon interfaces that have become popular. The software level will become much more powerful and will be used by applications and software programmers, but not by the general users. OS 9, Unix and MS-DOS Version 5 etc typify these. The Amiga's operating system has elements of both levels. As a

continued

```

629 PRINT:PRINT"THIS IS PAYMENT
#"LP(P)
630 IF LP(P)=10 THEN PRINT"YOUR
LAST ONE.
631 PRINT:INPUT"HOW MUCH WOULD Y
OU LIKE TO PAY";R
632 LB(P)=LB(P)-R:PRINT:PRINT"TH
ANK YOU!!
633 CA(P)=CA(P)-R
634 IF CA(P)<0 THEN PRINT:PRINT"
BUT YOU DON'T HAVE THAT MUCH.
TRY AGAIN!":GOSUB617:LB(P)=LB(P
)+R:CA(P)=CA(P)+R:CLS:GOTO631
635 GOSUB617
636 IF LB(P)=0 THEN LP(P)=0
637 RETURN
638 IF A(P)>LB(P) THENG39ELSE528
639 CLS:PRINT"YOUR ASSETS ($"A(P
)") ARE GREATER THAN YOUR
LOAN BALANCE ($"LB(P)")."
640 PRINT:PRINT"THE COMPUTER WIL
L NOW SELL OFF YOUR STOCKS AND
PAY YOUR DEBTS.
641 PRINT:PRINT"YOU MAY THEN REP
URCHASE STOCKS AT THEIR CURRENT
VALUE WITH ANY REMAINING CASH."
:GOSUB617
642 CA(P)=CA(P)+(BH(P)*BH)+(EL(P
)*EL)+(CO(P)*CO)+(WP(P)*WP)+(PF(
P)*PF)+(CX(P)*CX)-LB(P)
643 BH(P)=0:EL(P)=0:CO(P)=0:WP(P
)=0:PF(P)=0:CX(P)=0:LB(P)=0:LP(P
)=0:RETURN
644 PRINT"PLEASE DON'T END THE P
ROGRAM LIKE THIS PLEASE SAVE AN
D BE A GOOD SPORT PLEASE
PLAY AGAIN
PLEASE ALLOW ME TO GO STRAIGHT
TO THE SAVING PROCEDURE"
645 EXEC44539:GOTO 600
646 KG=KG+1:WIDTH 80:PRINT"
END OF TRAD
ING DAY";KG;"
647 PRINT" HERE
IS A SUMMARY OF THE GAME SO FAR
"
648 PRINT" BHP ELDERS COL
ES PENFOLDS WESPACT CLATEX
CASH ASSETS"
649 F=-3:FORG=1TO9:F=F+1
650 IFA(G)=0THENGOTO653
651 LOCATE1,5+F:PRINTP$(G):LOCAT
E4,5+F:PRINTBH(G):LOCATE9,5+F:PR
INTEL(G):LOCATE18,5+F:PRINTCO(G)
:LOCATE26,5+F:PRINTPF(G):LOCATE3
7,5+F:PRINTWP(G):LOCATE47,5+F:PR
INTCX(G):LOCATE57,5+F:PRINTCA(G)
:LOCATE67,5+F:PRINTA(G)
652 NEXTG
653 IFGH<INT((A(1)+A(2)+A(3)+A(4
)+A(5)+A(6)+A(7)+A(8)+A(9))/100)
THENWAS="UP ":ELSE IF GH>INT((A(
1)+A(2)+A(3)+A(4)+A(5)+A(6)+A(7
)+A(8)+A(9))/100)THENWAS="DOWN"EL
SEWAS="STEADY"
654 GH=INT((A(1)+A(2)+A(3)+A(4)
+A(5)+A(6)+A(7)+A(8)+A(9))/100)
655 LOCATE28,15:PRINT"THE DOW JO
NES INDEX"
656 LOCATE28,16:PRINT" "GH
:PRINTTAB(32)" "WAS
657 PRINT"
PRESS ANY KEY TO CONTINUE
"
658 EXEC 44539
659 WIDTH 40:RETURN

```

continued next page

programmer I want to use the power of the operating system and its utilities, tools and calls. As a user I don't want to know about it. Just give me a self loading program or an icon or pop-down menu. Multi-user and multi-tasking virtual memory systems are already here.

2. Applications

Applications will become friendlier. Both visually and with their intelligence. Hopefully function keys and the ways in which windowing applications work will become standardised. It is very frustrating learning different function keys and commands for different applications that have at the atomic level similar functions. The intelligence aspect is also important. There is a database called Q&A that has an "Intelligent Assistant" that attempts to understand plain English in querying and updating the database. It is still early days for software of this type, but I expect a lot more like it to come on the market soon. Some of the more sophisticated adventure games also do this such as a recently released game called "The Pawn". Expert systems are coming as are more powerful programming languages like Prolog etc.

3. Pricing and Public Domain Software

Hopefully software will stay reasonably priced. I am astounded that a not-so-good program for my PC can cost 5 to 20 times the price of a better program that runs on the Color Computer. Still, maybe Borland and the Public Domain, Freeware and User-Supported Software will bring prices down. With the exception of business users high prices are an incentive to pirate whether you like it or not. I think that low prices and regular upgrades are a much friendlier approach. (Remember the Eon Products board game "Cosmic Encounter", it sold initially at about one third of the price of other board games. But there were at least nine "expansion kits", each selling for a reasonable price. The overall price was considerable but because the expansion took place over a period of time it was not noticeable. There was also the added pleasure and good-will created by the excitement and interest generated when the upgrade came out).

G. PEOPLE

Around the traps the word is that the people to listen to are Microsoft's Bill Gates and Apple's Steve Jobs.

At a recent talk in the Microsoft Roadshow Bill covered such diverse topics as: The history and evolution of PCs, The development of current standards, the Intel 80386 and 80486 chips, innovation and standardisation in the microcomputing environment, networking, single- and multi-user operating systems, graphics, user interfaces, laser printers and typesetting and finally before questions, electronic mail.

H. Conclusions

The future is always exciting and although you can be sure that whatever you buy will already be obsolete by the time you unpack it, the trick is to take the plunge and commit yourself to the product that best matches your needs and your budget, realising the strengths, weaknesses, "features" and limitations of what you have bought. Stop knocking other brand names and other computers, their owners chose them because at the time they bought them, they thought that their purchase best met their needs. Make the best of what you have got and enjoy it!

So, my forecast for the future of personal computers is "mostly fine in some parts."

I. Acknowledgments

I would like to acknowledge the help of Lee Shipley.

continued

```
430 QC=QC+1
440 PRINT"TYPE STATEMENT OR QUESTION MAX
TWO LINES"
450 LINE INPUT MC$
460 LPRINT "circle the best and most cor
rect answer for each statement"
470 LPRINT:LPRINT QC)- "+MC$:LPRINT:
480 S1$="A";S2$="B";S3$="C";S4$="D
";S5$="E"."
490 INPUT"A1";A$:INPUT"B";B$:INPUT"C
";C$:INPUT"D";D$:INPUT"E";E$
500 LPRINT TAB(10);S1$+A$:LPRINT TAB(10)
;S2$+B$:LPRINT TAB(10);S3$+C$:LPRINT TAB
(10);S4$+D$:LPRINT TAB(10);S5$+E$
510 INPUT"CHANGE FORMAT (Y) OR (N)";A$
520 LPRINT:LPRINT SP$
530 LPRINT
540 IF A$="Y" THEN 360
550 IF A$="N" THEN 420
560 GOTO 510
570 '***FILL IN BLANKS***
580 PRINT:PRINT"***FILL IN BLANK-SELECTE
D**":PRINT
590 QC=QC+1
600 PRINT"TYPE IN STATEMENT INDICATE BLA
NKS WITH<--->"
610 PRINT"LIMIT TWO LINES OF TYPE"
620 PRINT"DO NOT MAKE BLANKS EQUAL NUMBE
R OF LETTERS IN WORD REQUIRED"
630 LINE INPUT:F$
640 LPRINT" fill in the space in each st
atement indicated by ---"
650 LPRINT:LPRINT QC)- "+F$
660 PRINT
670 LPRINT:LPRINT SP$
680 LPRINT
690 INPUT "CHANGE FORMAT (Y) OR (N)";A$
700 IF A$="Y" THEN 360
710 IF A$="N" THEN 580
720 GOTO 690
730 '***ANSWER QUESTIONS***
740 PRINT:PRINT"***ANSWER QUESTION - SELE
CTED**":PRINT
750 QC=QC+1
760 PRINT"TYPE IN QUESTION TO BE ANSWERE
D MAXIMUM TWO LINES"
770 LINE INPUT Q$
780 LPRINT "write answer to question in
the space provided"
790 LPRINT:LPRINT QC)- "+Q$
800 INPUT "HOW MANY LINES FOR ANSWER ";N
810 LPRINT
820 FOR LP = 1 TO N
830 LPRINT
840 LPRINT"-----"
850 NEXT LP
860 INPUT"CHANGE FORMAT (Y) OR (N)";A$
870 LPRINT:LPRINT SP$
880 LPRINT
890 IF A$="Y" THEN 360
900 IF A$="N" THEN 740
910 GOTO 860
920 '***TRUE OR FALSE***
930 PRINT:PRINT"***TRUE OR FALSE-SELECTE
D**":PRINT
940 QC=QC+1
950 PRINT"TYPE QUESTION TO BE ANSWERED <
TRUE> OR <FALSE>"
960 LINE INPUT IF$
970 SE$="<TRUE OR FALSE> "
980 LPRINT:LPRINT "circle TRUE or FALSE
to answer the following question"
990 LPRINT:LPRINT QC)- "+ SE$;" ";IF$
1000 INPUT "CHANGE FORMAT (Y) OR (N) ";A
$
1010 LPRINT:LPRINT SP$
1020 LPRINT
1030 IF A$="Y" THEN 360
1040 IF A$="N" THEN 930
1050 GOTO 1000
1060 '***END***
1070 END
```

"This article
is for
future
reference"

Well here I am again and this time I wish to talk about the 6803, the brain of the MC10!

First of all let us define, for beginners, what the processor actually does.

A processor for the MC10, and any computer for that matter, makes sure that everything happens in the right order at the right time. It is in charge of where bits of data go, and when I say bits I really mean bits. The average home computer has an 8 bit processor, a business one a 16 bit, the biggies a 32 bit and so on. The number of bits simply means the amount of information the CPU can handle at one instance.

It would be worth getting hold of a book on processors if you wish to delve deeply into the subject.

Now on to Mnemonics (the 'M' being silent).

Depending on the processor, and we will use the 6803, the number of Mn (abbreviation) will be different. To explain what the Mns actually do, each processor will do a set number of tasks and these tasks are all mathematically based. For example the AND, OR, NOT are all included in the 6803 Mns. The main reason that all the Mns are based on numbers is because the processor can only deal with numbers and we know this from understanding how bytes and bits are used. Mns simply abbreviates the larger phrases used in Machine Code.

Just think of this example. when one wishes to Jump to a

specific memory location while in a Machine Code program the JMP Mn would be used. Of course the computer would not find JMP but it would find a numerical value which it recognised as being JMP.

A list of these values is given in a table with this article.

This particular article is for future reference and for those who wanted a list of the capabilities of the 6803. If you don't quite understand at this stage then don't panic as the attached list is so that I can make reference back to it in future articles. The main thing to realise just at this time is that this list is the entire list of what the 6803 can do and from these we can do almost anything programming wise.

You must also understand that different processors have different Mns. Many may be the same but they will differ in some ways. Mainly it is not the Mns that vary but the value that stands for a particular Mn. The 6809 is slightly different but knowledge of their table would certainly give you a great head start into the 6803. Programming the 6803 is a step down from the 6809.

Remember different values for different Mns and different values between processors.

Now here is the list of Mns that the 6803 is capable of carrying out. As I said if you don't understand it as yet then don't panic as it is only here for future reference on the few articles I intend to do on Machine Code in the future.

THE 6803 MNEMONICS

by Scott Ferrero

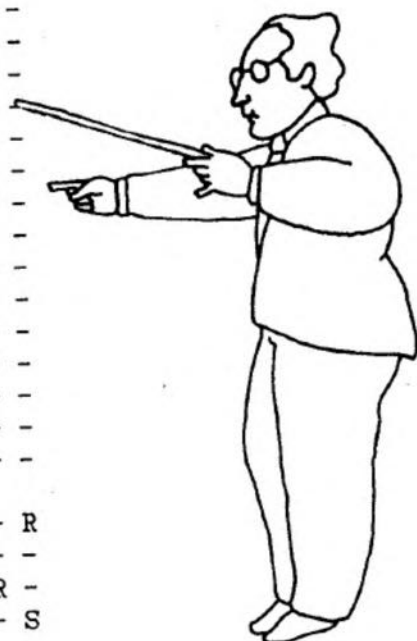
MC-10

6803
MNEMONIC TABLE

MNE	IMMEDIATE	DIRECT	INDEX	EXTENDED	INHER	CONDITION C. H I N Z V C
ABA	-	-	-	-	1B 2,1	* - * * * *
ABX	-	-	-	-	3A 3,1	- - - - -
ADCA	89 2,2	99 3,2	A9 4,2	B9 4,3	-	* - * * * *
ADCB	C9 2,2	D9 3,2	E9 4,2	F9 4,3	-	* - * * * *
ADDA	8B 2,2	9B 3,2	AB 4,2	BB 4,3	-	* - * * * *
ADDB	CB 2,2	DB 3,2	EB 4,2	FB 4,3	-	* - * * * *
ADDD	C3 4,3	D3 5,2	E3 6,2	F3 6,3	-	- - * * * *
ANDA	84 2,2	94 3,2	A4 4,2	B4 4,3	-	- - * * R -
ANDB	C4 2,2	D4 3,2	E4 4,2	F4 4,3	-	- - * * R -
ASL	-	-	68 6,2	78 6,3	-	- - * * * *
ASLA	-	-	-	-	48 2,1	- - * * * *
ASLB	-	-	-	-	58 2,1	- - * * * *
ASLD	-	-	-	-	05 3,1	- - * * * *
ASR	-	-	67 6,2	77 6,3	-	- - * * * *
ASRA	-	-	-	-	47 2,1	- - * * * *
ASRB	-	-	-	-	57 2,1	- - * * * *
BITA	85 2,2	95 3,2	A5 4,2	B5 4,3	-	- - * * R -
BITB	C5 2,2	D5 3,2	E5 4,2	F5 4,3	-	- - * * R -
CBA	-	-	-	-	11 2,1	- - * * * *
CLR	-	-	6F 6,2	7F 6,3	-	- - R S R R
CLRA	-	-	-	-	4F 2,1	- - R S R R
CLRB	-	-	-	-	5F 2,1	- - R S R R
CMPA	81 2,2	91 3,2	A1 4,2	B1 4,3	-	- - * * * *
CMPB	C1 2,2	D1 3,2	H1 4,2	F1 4,3	-	- - * * * *
COM	-	-	63 6,2	73 6,3	-	- - * * R S
COMA	-	-	-	-	43 2,1	- - * * R S
COMB	-	-	-	-	53 2,1	- - * * R S
DAA	-	-	-	-	19 2,1	- - * * * *
DEC	-	-	6A 6,2	7A 6,3	-	- - * * * -
DECA	-	-	-	-	4A 2,1	- - * * * -
DECB	-	-	-	-	5A 2,1	- - * * * -
EORA	88 2,2	98 3,2	A8 4,2	B8 4,3	-	- - * * R -
EORB	C8 2,2	D8 3,2	E8 4,2	F8 4,3	-	- - * * R -
INC	-	-	6C 3,2	7C 3,3	-	- - * * * -
INCA	-	-	-	-	4C 2,1	- - * * * -
INCB	-	-	-	-	5C 2,1	- - * * * -
LDAA	86 2,2	96 3,2	A6 4,2	B6 4,3	-	- - * * R -
LDAB	C6 2,2	D6 3,2	E6 4,2	F6 4,3	-	- - * * R -
LDD	CC 3,3	DC 4,2	EC 5,2	FC 5,3	-	- - * * R -
LSL	-	-	68 6,2	78 6,3	-	- - * * * *
LSLA	-	-	-	-	48 2,1	- - * * * *
LSLB	-	-	-	-	58 2,1	- - * * * *
LSLD	-	-	-	-	05 3,1	- - * * * *
LSR	-	-	64 6,2	74 6,3	-	- - R * * *
LSRA	-	-	-	-	44 2,1	- - R * * *
LSRB	-	-	-	-	54 2,1	- - R * * *
LSRD	-	-	-	-	04 3,1	- - R * * *

MUL	-	-	-	-	3D 10,1	-	-	-	-	*
NEG	-	-	60 6,2	70 6,3	-	-	-	*	*	*
NEGA	-	-	-	-	40 2,1	-	-	*	*	*
NEGB	-	-	-	-	50 2,1	-	-	*	*	*
NOP	-	-	-	-	01 2,1	-	-	-	-	-
ORAA	8A 2,2	9A 3,2	AA 4,2	BA 4,3	-	-	-	*	*	R
ORAB	CA 2,2	DA 3,2	EA 4,2	FA 4,3	-	-	-	*	*	R
PSHA	-	-	-	-	36 3,1	-	-	-	-	-
PSHB	-	-	-	-	37 3,1	-	-	-	-	-
PULA	-	-	-	-	32 4,1	-	-	-	-	-
PULB	-	-	-	-	33 4,1	-	-	-	-	-
ROL	-	-	69 6,2	79 6,3	-	-	-	*	*	*
ROLA	-	-	-	-	49 2,1	-	-	*	*	*
ROLB	-	-	-	-	59 2,1	-	-	*	*	*
ROR	-	-	66 6,2	76 6,3	-	-	-	*	*	*
RORA	-	-	-	-	46 2,1	-	-	*	*	*
RORB	-	-	-	-	56 2,1	-	-	*	*	*
SBA	-	-	-	-	10 2,1	-	-	*	*	*
SBCA	82 2,2	92 3,2	A2 4,2	B2 4,3	-	-	-	*	*	*
SBCB	C2 2,2	D2 3,2	E2 4,2	F2 4,3	-	-	-	*	*	*
STAA	-	97 3,2	A7 4,2	B7 4,3	-	-	-	*	*	R
STAB	-	D7 3,2	E7 4,2	F7 4,3	-	-	-	*	*	R
STD	-	DD 4,2	ED 5,2	FD 6,3	-	-	-	*	*	R
SUBA	80 2,3	90 3,2	A0 4,2	B0 4,3	-	-	-	*	*	*
SUBB	C0 2,2	D0 3,2	E0 4,2	F0 4,3	-	-	-	*	*	*
SUBD	83 4,3	93 6,2	A3 5,2	B3 6,3	-	-	-	*	*	*
TAB	-	-	-	-	16 2,1	-	-	*	*	R
TBA	-	-	-	-	17 2,1	-	-	*	*	R
TST	-	-	6D 6,2	7D 6,3	-	-	-	*	*	R
TSTA	-	-	-	-	4D 2,1	-	-	*	*	R
TSTB	-	-	-	-	5D 2,1	-	-	*	*	R
JMP	-	-	6E 3,2	7E 3,2	-	-	-	-	-	-
JSR	-	9D 5,2	AD 6,2	BD 6,3	-	-	-	-	-	-
RTI	-	-	-	-	3B 10,1	*	*	*	*	*
RTS	-	-	-	-	39 5,1	-	-	-	-	-
SWI	-	-	-	-	3F 12, 1	-	S	-	-	-
WAI	-	-	-	-	3E 9,1	-	-	-	-	-
CPX	8C 4,3	9C 5,2	AC 6,2	BC 6,3	-	-	-	*	*	*
DEX	-	-	-	-	09 3,1	-	-	*	-	-
INX	-	-	-	-	08 3,1	-	-	*	-	-
LDX	CE 3,3	DE 4,2	EE 5,2	FE 5,3	-	-	-	*	*	R
STX	-	DE 4,2	EE 5,2	FE 5,3	-	-	-	*	*	R
ABX	-	-	-	-	3A 3,1	-	-	-	-	-
PSHX	-	-	-	-	3C 4,1	-	-	-	-	-
PULX	-	-	-	-	38 5,1	-	-	-	-	-
TXS	-	-	-	-	35 3,1	-	-	-	-	-
TSX	-	-	-	-	30 3,1	-	-	-	-	-
DES	-	-	-	-	34 3,1	-	-	-	-	-
INS	-	-	-	-	31 3,1	-	-	-	-	-
LDS	8E 3,3	9E 4,2	AE 5,2	BE 5,3	-	-	-	*	*	R
STS	-	9F 4,2	AF 5,2	BF 5,3	-	-	-	*	*	R

MNE	RELATIVE	INHER	CONDITION CODES
BRA	20 3,2	-	- - - - -
BCC	24 3,2	-	- - - - -
BCS	25 3,2	-	- - - - -
BEQ	27 3,2	-	- - - - -
BGE	2C 3,2	-	- - - - -
BGT	2E 3,2	-	- - - - -
BHI	22 3,2	-	- - - - -
BLE	2F 3,2	-	- - - - -
BLS	23 3,2	-	- - - - -
BLT	2D 3,2	-	- - - - -
BMI	2B 3,2	-	- - - - -
BNE	26 3,2	-	- - - - -
BVC	28 3,2	-	- - - - -
BVS	29 3,2	-	- - - - -
BPL	2A 3,2	-	- - - - -
BRN	21 3,2	-	- - - - -
BHS	24 3,2	-	- - - - -
BLO	25 3,2	-	- - - - -
BSR	8D 6,2	-	- - - - -
CLC	-	0C 2,1	- - - - - R
CLI	-	0E 2,1	- R - - - -
CLV	-	0A 2,1	- - - - - R -
SEC	-	0D 2,1	- - - - - S
SEI	-	0F 2,1	- S - - - -
SEV	-	0B 2,1	- - - - - S -
TAP	-	06 2,1	* * * * * *
TPA	-	07 2,1	- - - - - -



LEGEND:-

- H. Half carry from bit 3
- I Interrupt Mask
- Z Zero (Byte)
- V Overflow (2's Compliment)
- C Carry from bit 7
- R Reset (clear) Always
- S Set always
- * Affects particular condition code bit
- Not affected

All values quoted are HEX

The table has been checked and to the best of my knowledge has no errors in it.

The values given after the MNE value are in the following format eg. 20 3,2
 The 20 being the MNE value the 3 being the number of MPU cycles and the 2 being the numbers of bytes required.

Just remember the following format:-

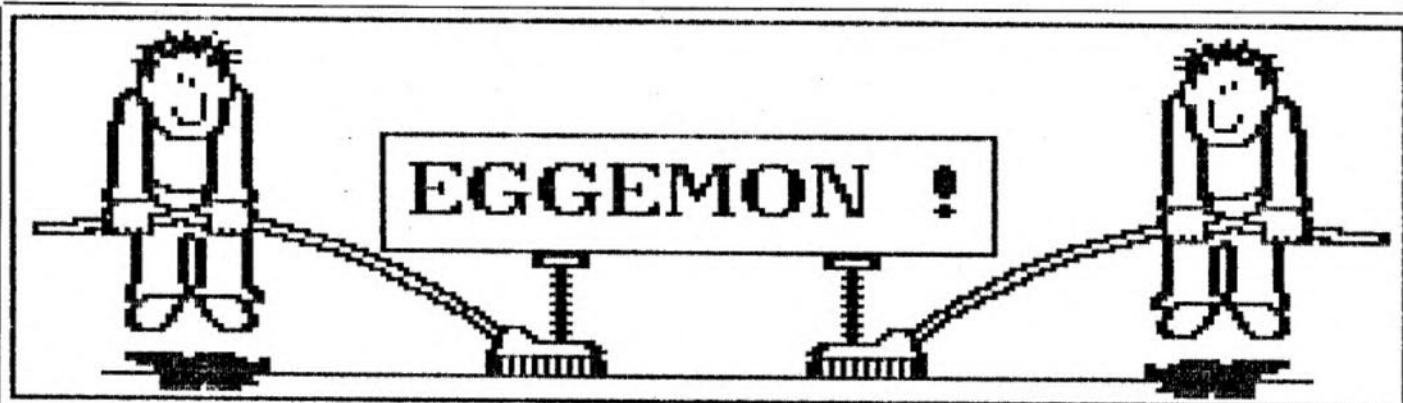
MNE value number of cycles, number of bytes required.

It's AMAZING

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The Editorial



Well hello there, you finally made time to visit our humble abode, have you?

Obviously you didn't miss much or you would have let our Hate

mailbag know by you. Yes, he is looking rather peeped lately. Right now dear mailbow is being treated for Malrendition. The Doc tells me it is something about not reading enough letters.

The Oxford Children's tourist guide says nothing about it, and I'm rather worried. The only cure, says the post master, is a jolly good dose of hate mail. Straighten the old nerves out, that sort of thing. (Somehow I think he meant Brandy).

This month, to straighten OUR nerves out, another touch of nostalgia has been added to the ranks. This month, we introduce THE SCRAPBOOK. The place to see and be seen reading all about Viatel.

Meet some of the names that make up the confusion most call home.

In the months ahead, find out what being a Viatellian really means as we bring to you the unofficial guide to the goings on in 'the system'.

You're not going to poop out on me are you? I don't care if your grandmother spent the morning telling dirty tales to the cat. I think she's been reading one of THOSE magazines.

You know, like this one. Only with more graphic pictures.

Last week, I saw an absolutely delightful film, THE RETURN OF THE LIVING DEAD. I don't know why I even watched it really: Zombies chasing paramedics screaming - BRAINS, BRAINS! (I never did see how it finished.)

While my nerves are settling down, why don't you take a breeze through these pages, write a cute smelly letter about what your Puddy Tat had for lunch this morning. (As long as it wasn't Brains.)

Me? I'll just take a little nappy poos, sip a little glass of moose juice (yawn) ... MMMM ... luvlyly ...

YOUR EDITOR

THE Super Simple Easy Quiz

This quiz is so super easy, I'm sure you won't need instructions. Simply answer the questions and check your answer with ours. See? Very, very easy! (Even the Editor can do this one!)

- In what year was Price Edward born?
A. 1958 B. 1964 C. 1967 D. 1970
- What was the new name given to Saigon in 1975?
A. Macau B. Ho Chi Minh City
C. Viet City D. Bangkok
- Which is Scotlands largest lake?
A. Loch Ness B. Loch Lomond
C. Loch Awe D. Loch Morar
- When did the first Mickey Mouse cartoon appear?
A. 1928 B. 1934 C. 1939 D. 1951
- In the film, "The Never Ending Story", what was the name given to the Child-like empress?
A. Starchild B. Atreyu
C. Rosebud D. Moonchild
- Which river passes through Rome?
A. Seine B. Tiber C. Po D. Danube
- What are classified according to the Dewey decimal system?
A. Money B. Books C. Telephone Directories
D. Credit Cards
- How many lines in a Sonnet?
A. 14 B. 8 C. 5 D. 10
- From which animal is Catgut obtained?
.....
- If the Alphabet were divided into two equal parts, how many vowels would be in the first half?
A. 5 B. 4 C. 3 D. 2

ANSWERS : 1.a 2.b 3.b 4.a 5.d
6.b 7.b 8.a 9.sheep 10.3

DEFT DEFINITIONS

Motorists : People who keep pedestrians in running order.

DID YOU KNOW—

- That one medium sized Ostrich egg makes an omelette big enough for 12 people?

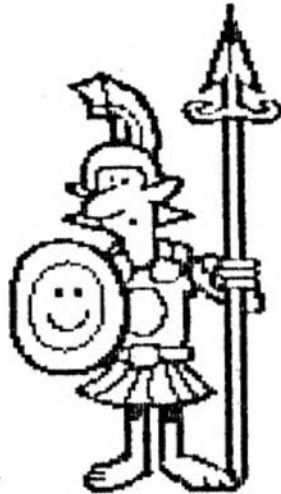
- Only one gram of venom from a King Cobra is enough to kill 150 people?

- the painting 'Mona Lisa' was first owned by a French King who kept it in his lavatory?

- The cure for epilepsy one time in Rome, was fresh Gladiator blood?

- Hungary exports more Hippopotami than any other country?

- Eskimos use their refrigerators to prevent their food from freezing?



Keep Laughing—

How did the fire fly feel when he flew into a fan?
HE WAS DE-LIGHTED!

What did Cinderella say when the chemist mislaid her photographs? SOME DAY MY PRINTS WILL COME.

What do you call a cat which swallowed a duck? A DUCK FILLED FLATTY PUSS.

FEATURE ARTICLE

Howdy folks! My name is the "Frazz", and I'm a new guy around here. As such, it will take me a little while to become infected by the insanity of this place.

Well, I was going to call this column 'Confessions of a Hacker', but I'm not Catholic and I never confess anything. So I'm now looking for a new name. Any suggestions? (We have one, try this. ED):

THE DOOMSDAY REPORT

This column will be about anything I feel in the mood to write about, but it'll mainly focus on that highly sensationalized sport of 'Hacking'. I'm defining hacking as the exploration of a database - whether it be the Westpac Bank or a local bulletin board (BBS).

Now let's get this straight. I'm a 'social hacker', and don't forget it! I'm not exactly sure what a social hacker is, but it sure doesn't sound illegal, so that's enough for me.

In future, articles I'll be looking at the legality/morality of hacking compared to, for example, X-Rated video movies, but for now I'll just say ... "HI THERE", and hope to catch you later.

BYE FOR NOW

COMING SOON!

THE EGGEMON
CHEAPSKATE QUIZ !!!

THE

Here. In the far corners of the electronic world, you are about to find out what living a Viatel lifestyle is really like.

Each month Scrapbook tries to reveal just what the locals are cooking up behind the scenes.

Scrapbook is the unofficial guide to the world of Viatel.

As most Viatellians should well know, chats with well known pseudonyms are quite hard to come by. We tried all manner of things to bring these nocturnal creatures out.

Short of paying their annual Telecom bill, nobody could be forced to talk.

By some small miracle however, Carry, Goldlink's gourmet chef consented to being humiliated just for you.

Carry's Favorite Recipe - Chilly Con Carne

2 medium onions, chopped
6 cloves garlic, crushed

- Saute' in 1 TBS of Olive Oil till gold

Add:
2 cans peeled tomatoes
2 bay leaves
2 diced green peppers (capsicum)
5 TBS tomato Paste
Oregano
1 TSP hot, hot, hot chilli



Simmer for two hours then add one tin of 'red K beans'.

Continue to simmer for one more hour.

SERVE WHEN HOT.

Top with long grated tasty cheese.

Carry tells me he eats this all the time (but after four days it gets better).

What the Critics Thought.

Black Duck: 'After cooking, throw out and eat the pot. Better still, smoke the pot.'

AK2: 'What recipe?'

Finally . . .

'ANY SIMILARITY TO ACTUAL PERSONS OR EVENTS IS UNINTENTIONAL'.

Disclaimer, hastily removed from 1936 film credits of "Marie Antoinette".

END

IN BRIEF

Here's What's Happening

InterTAN News

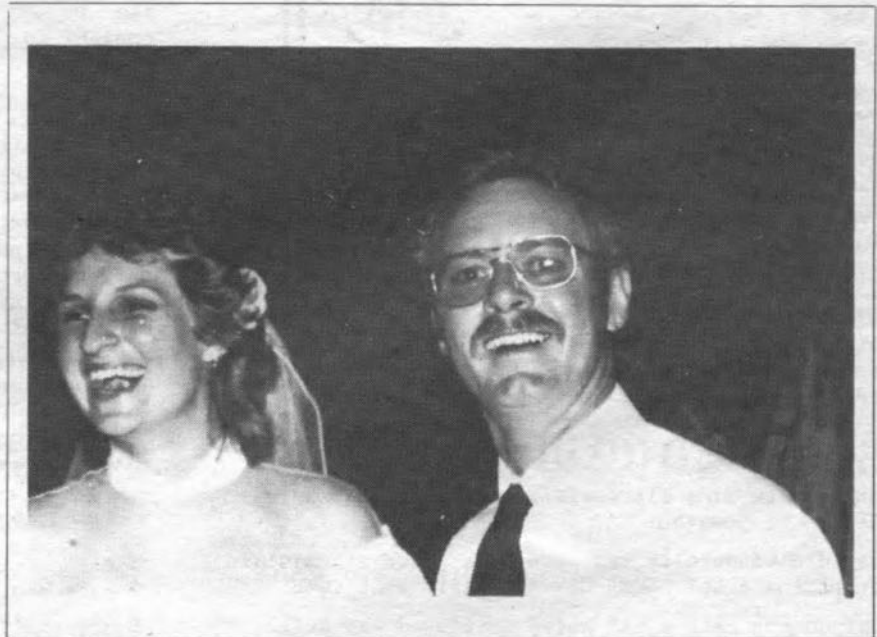
Ken Allen

This month, due to staff holidays, there really isn't a lot of news! Great way to start a regular column I realise, but there it is, even those who work for InterTAN must have a break on occasion!

One thing that did happen this month was that my secretary semi extraordinaire, the lovely Terese, (known in the office as "Mother Terese" because of her charitable work with the dying on Monday mornings), was married.

We don't know who it was she married, but there is a rumour that it might have been to the photo which occasionally sits on her desk if Graham didn't steal it last time he was here!

In any case, as the photo shows, I was the only one to turn up. So I gave her away,



something I've been trying to do for sometime.

She made a lovely bride, and for those interested, yes, most of the rest of the dress was

white too, except for the lower 4 feet which was a kind of faded denim. It's a shame really, if we paid her more, she might have been able to afford a real wedding dress.

SUPER MODEM

THE COMPLETE RANGE of black dial-up modems to suit all data communications networks with a host of built-in features.

Check out some of these features:

- * Auto dial
- * Auto answer
- * Hayes compatible
- * Auto configurable
- * Speed sensing
- * Fully Telecom approved
- * Australian designed and made
- * Easy installation and operation

- * Sturdy alloy case
- * Test and diagnostic features
- * Comes complete with Communications software for IBM PC users

Super Modem 1234SA

This one has it all! Operates at 2400, 1200, 1200/75 Viatel (with built in 1200 full duplex speed converter) and 300 bps to enable you to talk to any CCITT standard modem (Supports Bell 212A and Bell 103 too!)

The 1234SA operates sync and async and has automotive adaptive equalization for virtually error-free data transmission. Super Modem 1234SA also available for speeds up to 1200 bps FDX.

Prices: 1234SA - \$1309.00
123SA - \$1095.00

Super Modem 2400A

Supports speeds of 2400 bps (V.22 bis) and 1200 bps (V.22) asynchronously. Lower cost unit where single speeds only are required.

Prices: 2400A - \$959.00
1200A - \$685.00

Super Modem 21/23

Suitable for use on the Viatel service. Has a built in speed converter to change 1200/75 bps to 1200/1200 bps for terminals and PC's which don't operate at split speeds. Also communicates at 300 bps for file transfer with other PC's or users. Comes complete with standard communications software.

Price: 21/23A - \$677.00

PC Modems

3 Models - 1234, 123, Viatel

Fits in a standard slot in your PC. (The Viatel modem fits in a short slot.) Saves the inconvenience of an external modem yet with all of an external modem's features and benefits. The 1234 supports 2400, 1200 and 300 bps, full duplex and Viatel.

Price: PC1234 - \$1175.00
PC123A - \$ 884.00
PC21/23 - \$ 576.00

More T1000 News

This month due to the changes to the magazines, and also due to a last minute hitch in getting information from Barry, we have a reduced number of programs for readers with Tandy 1000's.

But never fear, T1000's are getting more and more popular and we are getting some nice work for inclusion in this magazine for them!!

So next month expect to see lots of interesting programs for your T1000!

With the release of the EX this month, we'll be looking for more programs of use to educators, such as Harry Ellis' program this month.

The EX is very definitely the shape of schools computing in the future, if sales in the US are any guide, and we want to be in a position to help new users of this computer.

DACOS SMART PRINTER BUFFER

The new Dacos Smart Printer Buffer was released in February.

It is a microprocessor controlled printer/plotter interface which takes data from a host computer or terminal and feeds it to a printer or plotter at that device's acceptance rate.

The computer is then free to be used by the operator while the buffer feeds the data or diagram to the printer.

It accepts data from, or outputs to, modems, scanners, multiplexers, terminals and other appropriate computer devices.

The buffer is available as a 64K, 128K or 256K model.

Utilising a Centronics connector as the parallel interface and a DB 25 connector as the serial interface, four configurations are available - parallel to parallel, parallel to serial, serial to parallel and serial to serial.

All models come with a three digit numeric display that indicates the amount of data to be stored and the number of copies to be printed.

The Buffer is distributed through Dacos distributors (naturally! G.) and is priced from \$159.50 retail.

LATE NEWS!

Welcome

Scotty

James!

Many readers have been asking after Sonya Young, who has worked here almost since we started.

Sonya left recently to have a baby.

Scott James Young entered the world on 16th February, at 10.15pm and weighs in at 6lb 9oz.

We will have photos to prove our story next month!

I know in the meantime that you will all want me to pass on our congratulations to Sonya and Rod, and a very big welcome to Scott James!

OPTICAL FIBRE

The next breakthrough

Melbourne's Central Business District telecommunications system will be able to transmit more information at greater speed because of the replacement of existing copper cable network with fibre optics.

Olex has won a bid to supply Telecom with 44 Kilometres of optical fibre cable needed for the new system which is currently being installed.

It is expected that the new system will not only allow for high speed high quality information transmission, but also improve security.

The multi mode optical fibre network consists mainly of 30 fibre cable with some sections of 12 and 60 fibre cable. The cable sheath is constructed of polyethylene and is filled with jelly (!). Each fibre used inside a building will also have a flame resistant coating for safety purposes.

QUEENSLAND GOVERNMENT

DOUBLE TALKS AGAIN

The Queensland University is just one instance of a government instrumentality which does not practice what the government seems to preach.

The Prentice Computer Centre in the Queensland University, according to Trevor Croll, has been monopolizing computing activities within the University by signing distributor agreements with large multi-nationals and providing their own maintenance facilities to university members.

The participation of local companies such as Tandy or Trevor Croll's Digital Products,

in servicing the needs of the university has therefore been considerably limited. The loss of interaction has resulted in a considerable loss in the number of local industry jobs and in technology transfer to our industry.

The Prentice Computer Centre advertises that it will sell IBM, Sperry, Apple or DEC computers at very low margins because the staff is paid by the university.

Such deals are backed up by Uncredit who will offer special low interest loans for people who purchase computers through the Prentice Computer Centre.

It may seem to be a great thing to be able to purchase a computer at a cheaper rate than that offered anywhere else, but in this case, such purchases have a very negative effect on local employment and reduce our nation's ability to remain independent.

If the Queensland Government really believes in its "We make it great in the Sunshine State" promotion, it should demand that local companies be involved in the supply of its computer requirements.

PRODESIGN

PRODESIGN II IS A powerful computer aided design system. While its features and capabilities compare to CAD systems costing thousands of dollars, ProDesign II is extremely easy-to-use and virtually anybody can make detailed drawings of professional quality.

With ProDesign II, you can make drawings of all sorts from engineering to artwork. ProDesign II has been called "The Word Processor of Graphics". You can make a drawing, modify it, move parts around and even merge drawings.

Once you have the final product, you can get it on paper using any of the host of printer and plotters supported by ProDesign II.

These printers and plotters include:

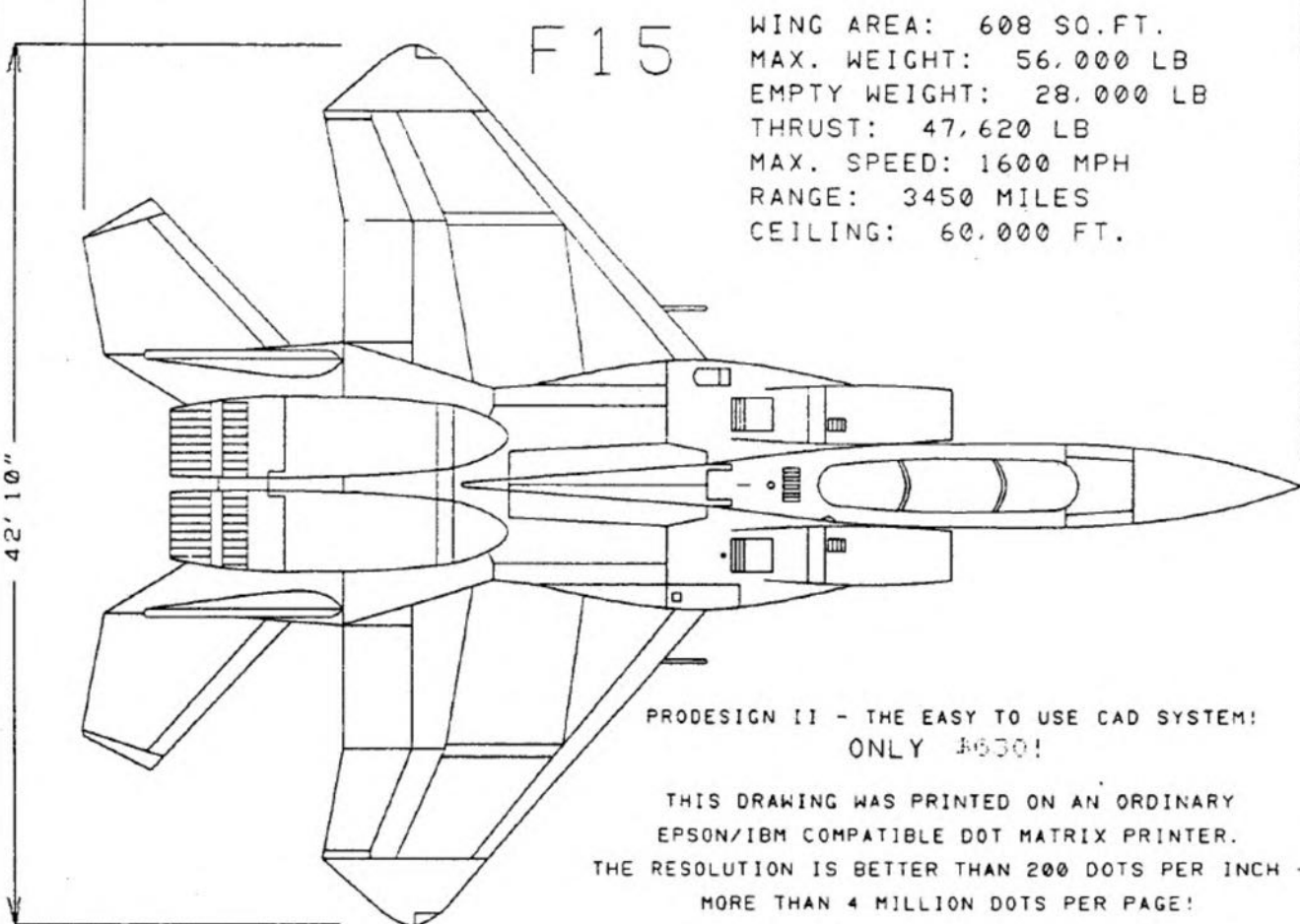
- Brother series
- C. Itoh series
- Epson series
- NEC series
- Okidata series
- Radio Shack printer series
- Star Gemini Series
- Star series
- and many more!

Some of the features and benefits of ProDesign II:

- Provides an on-screen zoom command to change sizes of drawings.
- Has full on-screen rotate facilities
- Allows full editing of drawings on the screen.
- Draws curves, circles, ovals and arcs easily.
- Has exceptional text display features.
- Allows lines of varying thickness to be used.

- Supports colour graphics.
- Provides "area fill" capability.
- Allows figures and symbols to be created, stored and retrieved at any location, size or angle.
- Produces high quality output on most plotters and dot matrix printers.
- Has many more outstanding features.

Prodesign II has disproved a common misconception about computer software - you don't always have to spend a lot of money to get quality software. ProDesign II has the features of many Computer Aided Design (CAD) systems costing thousands of dollars! At \$630.00, it is priced 70% to 80% below the popular CAD packages available for microcomputers and ProDesign II is BETTER!



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Complete with controller & cables
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14" with 90 degree deflection,
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MARTHA's Trading Post

Some of you computer derros have accumulated so much junk in the past few years, you are becoming a menace to society and a health hazard to your cat.

This is your chance to get rid of those unwanted bits of equipment.

Place your ad here and I'll leave it on till your steam operated modem or whatever gets sold, or I get sick of the sight of your ad.

Martha

FOR SALE 64K Long White case CoCo \$99
CCR 82 Tape Deck \$25
256K upgrade \$99

Plus Miscellaneous Books & Software ... Phone!
Mike Turk 062 51 4074 0

C30 Audio Telex Mastering Tapes. Slightly used.
80c each or \$5 for a box of 10.
Workshop Manual for DMP 110. \$5.00
Super Screen Machine. Tape Version. \$30.00
John Poxon 07 208 7820

FOR SALE Rainbow Bits Modem 300 Baud \$50
Milton Rowe 071 93 2471

One Rainbow Bits 4 slot expansion pack, mark II
model. With original instructions and recent
instructions for modifying addresses. \$50.00 ONO
S. Tatham, 15 High St., Bombala 2632 0648 83544

FOR SALE a) 64K Color Computer grey case with
manuals, books, built-in inverse switch, deluxe
joysticks and 25 games. \$200.00

b) CoCo disk drive 0 with manuals and
cover \$300. Sell both for \$495 lowest.

P Cordingley, 194 Metella Road, Toongabbie 2146.
(02) 631 6325

FOR SALE: One Tandy disk controller v1.0 and
manual. To suit grey case. All for \$80.00.

Please write to: Darren Windsor
4/26 Kellerman Drive, Moranbah, 4744.

For Sale. Color Computer 2 64K ECB, Color
Computer disk drive and controller,
DMP 110 Printer plus Scripsit, Colour Dictionary
DynaCalc, Business Utilities, Full disk of 64K
games. \$1100.00

Stephen Fildes 075 38 7050

FOR SALE Tandy 2000 with Monitor, DMP 430 and
Attache. 3 Months old. \$3000 ONO

Mike Adams 07 281 2330

WHAT'S ON THE BEST OF CoCoOz

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

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

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

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

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

Best of CoCoOz #3. UTILITIES

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

Best of CoCoOz #4. BUSINESS.

HI ALEX. HARTMANN
 (Disk Directory manager)
 BANKSTAT BARRY HATTAM
 (Statement annal & store)
 INSURE ROY VANDERSTEEN
 (Analyse home contents)
 SPOOL64K WARREN WARNE
 (Printer spooler req 64K)
 2BC WARREN WARNE
 (Hold 2 sep progs in mem)
 DATABASE PAUL HUMPHREYS
 (THE tape database)
 RESTACC DUNG LY
 (Tape restaurant accounts)
 PRSPDSHT GRAHAM MORPHETT
 (Disk print out SPDSHEET)
 PERSMAN PAUL HUMPHREYS
 (Personal finance management)
 CC5 GRAHAM MORPHETT
 (Sales Invoicing-tape sys)
 COCOFILE BRIAN DOUGAN
 (Tape data base)
 DPMS PAUL HUMPHREYS
 (Disk Program Management Sys)
 40KGREY RAY GAUVREAU
 (40K Basic for grey 64K CoCo)
 TAXATION ?
 (Calc tax payable)
 SPDSHEET GRAHAM MORPHETT
 (Disk 22 column spreadsheet)
 ACS3 GREG WILSON
 (Multi disk data base)

Best of CoCoOz #5. ADVENTURES.

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

Best of CoCoOz #6. PRESCHOOL.

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

Best of CoCoOz #7. GRAFIX.

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

Best of CoCoOz #8 GAMES — 16K

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

Best of CoCoOz #9 GAMES — 32K

TRIOMINO BOB DELBOURGO
 MATCHEM C. BARTLETT
 GO BOB DELBOURGO
 NARZOD MAX BETTRIDGE
 CHOMPER MAX BETTRIDGE
 POPBALL MAX BETTRIDGE
 LUDO WHY/BILT
 SABRE ANDREW SIMPSON
 MOVEABOUT KEVIN GOWAN
 JIGSAW C. BARTLETT
 LABYRINT JAMES REDMOND
 TANK C. STEWART

Best of CoCoOz #10. EDUCATION2.

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

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TAPE \$16 each

DISK \$16 each

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Goldsoft Price list as at March, 1987

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

GOLDLINK

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

SOFTWARE

Magazines, Tapes & Disks

Australian CoCo (Advanced Programs for your CoCo):

Magazines:	Tape () or Disk ()
12 Months \$39.95 ()	12 Months \$123.75 ()
6 Months \$24.95 ()	6 Months \$ 74.25 ()
1 Month \$ 4.50 ()	1 Month \$ 16.50 ()

Softgold (Programs for your CoCo):

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

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MicoOz Tape (MC-10 Programs for your Mico):

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6 Months \$42.00 ()
1 Month \$10.00 ()

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Two Curriculum based speller programs for
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# 2 - Games 16K:	()	()
# 2 - Games 32K:	()	()
# 3 - Utilities:	()	()
# 4 - Business:	()	()
# 5 - Adventure:	()	()
# 6 - Preschool:	()	()
# 7 - Graphics:	()	()
# 8 - Games 16K:	()	()
# 9 - Games 32K:	()	()
#10 - Education:	()	()
#11 - Education:	-	()

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Blank Tapes: 12 @ \$18.00 ()
 (C-30) 1 @ \$ 2.00 ()
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Disks DSDD: 10 @ \$20.00 ()
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BOOKS

Help (for your CoCo): \$9.95 ()
Mico Help (for your MC-10): \$9.95 ()

BACK ISSUES

Australian CoCo: Sep 84 - Dec 85: \$2.00 ()
Australian CoCo: Jan 86 - Feb 87: \$3.75 ()
Australian Mico: Aug 84 - Dec 85: \$2.00 ()

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 MAITLAND BILL SNOW 049 66 2557
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(Stop between numbers = b.h. else
 a.h.; but, hyphen between = both)

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