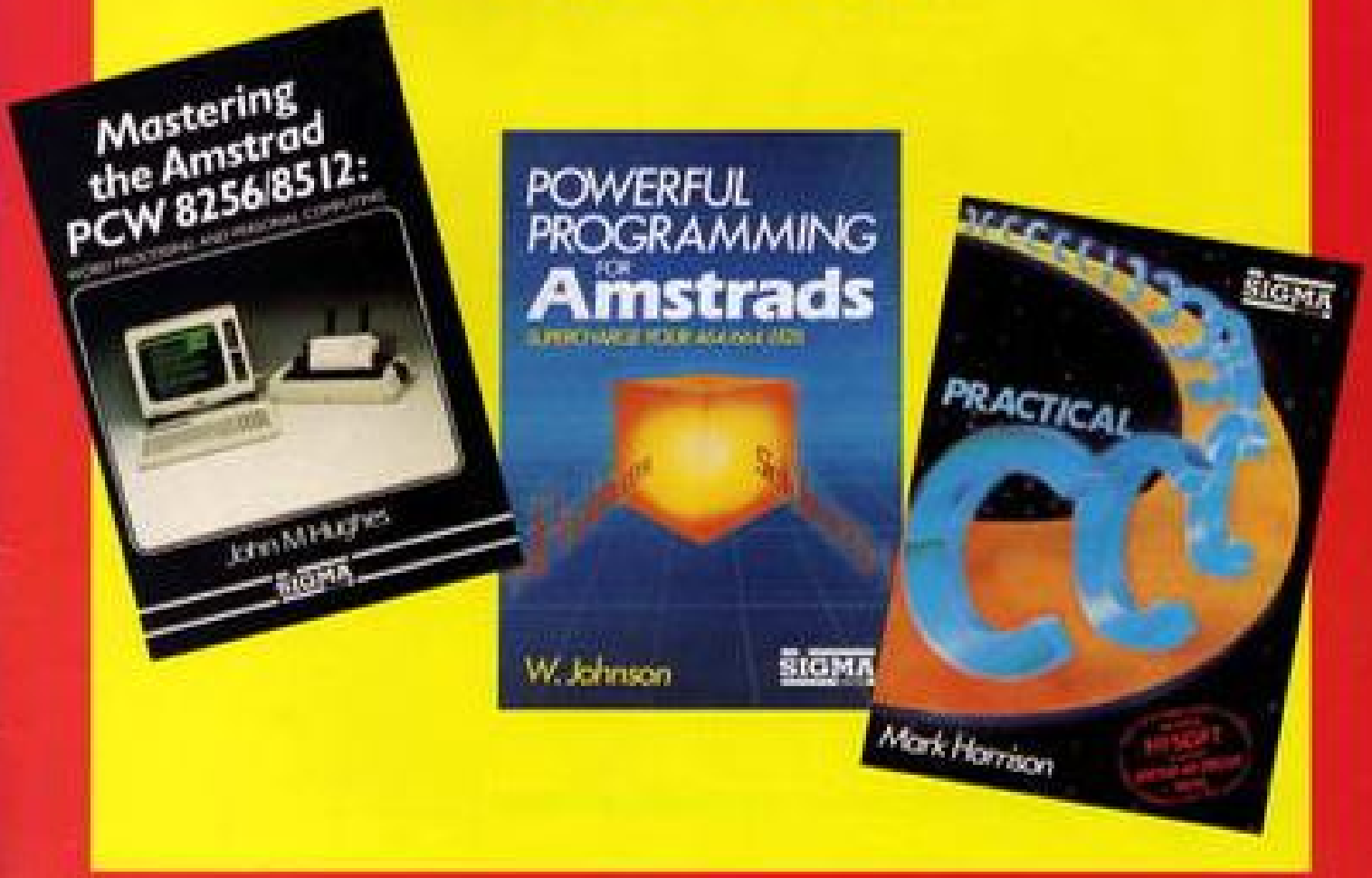
The Aussie Mag for Amstrad owners

THE AMSTRAD USER

Issue No. 23 $3.75 December 1986



- *First part of a major Software Guide for PCW owners plus plenty of tips and advice*
- *Reviews on the Maestro, Andrum and Music Master plus Mr Men software for CPC youngsters*
- *Cheat Mode, 50 User Groups and heaps more !!*

FOR THE NOVICE & EXPERIENCED USER

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THE AMSTRAD USER

Serious Side

Issue No. 23
December 1986

For Tape subscribers, the programs can be found at the following approximate positions:
Side 1: **AMSCUP** - 14, **SCRNECHO** - 51, **CAPTURE** (amended November version for 464 owners) - 75

All enquiries and contacts concerning this Publication should be made in the first instance by writing to The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150, Australia.
Urgent matters can be phoned through on (03) 233 9661.
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Please note that whilst every effort is made to ensure the accuracy of all features and listings herein, we cannot accept any liability whatsoever for any mistakes or misprints.
Contributions are welcome from readers or other interested parties. In most circumstances the following payments will apply to published material: Letters $5.00, Cartoon $5.00 and a rate of $10.00 per page for programs, articles etc. Contributions will not be returned unless specifically requested coupled with a suitable stamped and return addressed padded bag (for tapes or discs).

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THE AMSTRAD USER

G'day,

It may have passed your notice, albeit not many of you judging by the kind comments that keep arriving in the mail, that last month's issue was our biggest, both in terms of pages and print run. This month is no exception with another 64 pages to keep you busily reading in the run-up to the Christmas break.

One of the problems with this issue was finding room for everything we had earmarked. We had to cut down on the listings for hackers, (don't worry hackers, that will be put right next month!), cut some regulars like The Hall of Fame, and postpone an number of articles for a later date. You will also notice that we had to "squeeze" some articles.

So what's taking up the space? For a start there's four pages of hints and pokes in Cheat Mode and five pages of information on the midi and the latest music packages for the CPCs. And for PCW owners, there are seven and a half pages taken up with a software guide (with more to come next month) and three pages of tips. Then there are about eight pages of ads. This last point is comforting - it demonstrates that your software and hardware suppliers now know your magazine is clearly the leader in the field, reaching almost 7000 Amstrad users every month. We thank them for their support and ask you to respond by availing yourself of their services.

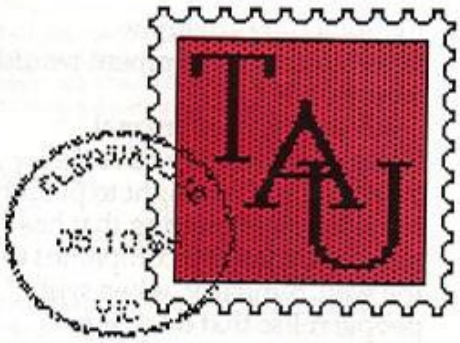
It's a little difficult to get into the Christmas mood at the end of October (when this Editorial is being written), but when it does arrive you can be assured that the staff at The Amstrad User will wish all our readers a most enjoyable and happy Christmas.

See you next month,

Ed.

P.S. We are all taking a well earned break from 16th December 1986 to 12th January 1987. If you need anything, make sure it's not during this period!

Letters



All correspondence published in this section earns a payment of five dollars.
Letters should be addressed to The Editor, The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Victoria 3150.
We regret that we cannot enter into any personal correspondence.

The program PETRCALC by Mike Perry (October - Issue 21) does not cater for those of us with older cars that have mileage meters. So, here is a modification to allow the use of both miles or kilo-metres.

```
41  MODE 1:PRINT:PRINT"
    <PRESS> (M) IF USING
    MILES OR (K) IF USING
    KILOMETRES
42  a$=INKEY$:a$=LOWER$(a$)
43  IF a$="m" THEN GOTO 46
44  IF a$="k" THEN GOTO 47
45  GOTO 42
46  z$="MILE": z=1.609: GOTO
    50
47  z$=" KMS": z=1
50  LOCATE 1,17:PRINT"  Press
    <ENTER> for 100 entries
    or enter number
    required.":LOCATE 5,12:
    INPUT" How many entries
    do you wish to have
    available";e: IF e=0 THEN
    e=100
1090IF y$(a)="Y" AND y$(a-
    1)="Y" THEN Lk(a)=(100*
    (L(a)/k(a)))/z:m9(a)=
    (2.8248929*(k(a)/L(a)))*z
1120IF y$(a)="Y" AND y$(a-
    1)="N" THEN Lk(a)=(100*
    (L(a)+Lb(a-1))/(k(a)+kb
    (a-1)))/z:m9(a)=
    (2.8248928*(k(a)+kb(a-
    1))/(L(a)+Lb(a-1)))*z
1410PRINT#ci,"No   DATE
    PLACE   METER   "z$"
    FULL   C/L   L   $
    l/100km   M/G"
2700PRINT#ci,"No   DATE
    PLACE   METER   "z$"
    FULL   C/L   L   $
    l/100km   M/G"
```

Phill Perry, Arncliffe, NSW

We've not put the correct spaces in the print lines - you'll have to work that out to get a cleaner layout.

I read with great concern in the October issue of TAU a letter from P.J. Schmidt of Loxton, SA, offering to "COPY" protected programs.

The Computer Software Industry is in a relatively "SAFE" position against pirates when compared to the Music Industry. At least software writers have the advantage of being able to key in "LOCKS" to their programs preventing duplication (for a short while at least) of their creative and hard work.

The music industry however is at an all time low. The technology that should have benefited the music industry has done the exact opposite. Consider DUAL CASSETTE decks, combination systems with turntable and CD players linked direct to a cassette deck at the touch of a button. None of us is so naive as to believe that people actually adhere to the copyright laws printed on records, cassettes, videos, CDs and recently, television programs - we do after all have the legally paid for equipment sitting in our loungerooms to "dub" off a copy of this and that for a mate.

Unfortunately, those who cared for the music industry when "RECORD" functions were set into cassette decks and VCRs didn't have the time or resources to insist that "ENCODER" and "DECODER" scramble devices were installed with the "RECORD" function to help protect the income of their performers. I suspect it's too late to implement such devices now, besides, the cost of this exercise would be too great and the

manufacturers of home entertainment equipment wouldn't wear it.

But surely, the Personal Computer Industry have the expertise and foresight to prevent a good deal of pirating that has almost sent record companies to the wall. Similarly, when will people relise that by doing "favours" for mates and copying software is cheating the software house and programmer out of income .... no income .... and they fold ... it's as simple as that.

So, Mr. Schmidt and others like you, keep your fingers OFF the red buttons .. I APPRECIATE my software and want my favourite software houses to keep growing.

Scott Storor, Wanniassa, ACT

And so say all of us!

I have only recently bought a PCW8256 to help in my one man business which is in the process of being renamed. I must admit to some initial scepticism about the utility of the machine, but after only 6 weeks I would not be without it.

Apart from being extremely useful at dreaded tax-time, I found that with a little bit of basic organising all my accounts, reports, genreal correspondence and literature surveys are now all neatly filed away with instant access. All this and I have only used one side of one disc.

I can only say "I'm really impressed!" with what can be done on this little helper.

Now I come to the point of my letter. My work requires a considerable amount of report writing and, as I have yet to type in other than binary, I found that long spells in front of the monitor gave me a pain in the optic fibres. The answer to this problem - wear sunglasses! I have found the most effective colour to be brown/yellow: this pair were free with a carton of Peter Jackson cigarettes. I believe there are special glasses on the market to reduce VDU flicker but the price is high.

Thank you for your informative magazine and keep up the good work.

Dr. S. Baxter, Allambie Ht, NSW

Recently I purchased a copy of Oddjob by Pride Utilities. I find this program to be of excellent value, however, there is one annoying problem.
The tape to disc transfer program will only accept commands in upper case. This problem cam be overcome as follows:

1. Insert disc and RUN"ODDJOB"
2. Select option 7
3. Load "ODDJOB.BAS"
4. Type EDIT 70
5. Modify line 70 by adding POKE 46642,255 to the start of the line
6. Save the program by typing SAVE "DISC",P

The poke added to line 70 will force CAPS LOCK mode when using the TAPEDISC program. The program can now be run by typing RUN"DISC" instead of RUN"ODDJOB".

R. Rayner, Cambridge Park, NSW

In my article regarding ASCII files in the October issue, I must confess that there are two error which have recently come to light. First, I incorrectly stated that LocoScript saves blocks as a standard ASCII file. This is not correct. Also, the facility to convert LocoScript documents to ASCII files is only available in Version 1.2 and greater. My PCW is a fairly early one and was provided with Version 1.2. I have since found out that machines ordered well after mine were only provided the earlier version. Perhaps the fact that mine was a dealer's demonstration model may have some bearing on this!
I apologise profusely to everyone who has tried my tips and failed miserably due to these errors, but it has been a hard slog for me coming to grips with my computer in a country town away from the help of eastablished user groups. If you have the earlier version, it may be worth your while contacting your state AWA branch to see if you can arrange an update. Alternatively, you may wish to wait a while, as Locomotive Software in the UK has just announced that it will soon have available a new version of LocoScript with your choice of either a spelling checker or mail merge facility for £39.95.
Hopefully this upgrade will find its way to Australia.
For those of you who would like to feed continuous A4 paper through your printer, but have difficulty in finding a supplier, write to: Swiftforms Print and Compter Supplies, GPO Box 811, Brisbane, QLD 4001.
They can provide white 70gsm bond paper (order code 12505) at the following prices: 500 sheets - $14.50 plus $4.00 postage; 1000 sheets - $25.00 plus $5.00 postage or 2000 sheet - $48.00 plus $5.00 postage.
I received my order just a week after posting off the order form, which is nothing short of amazing for a mail order request.

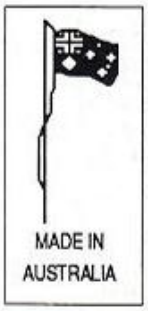
R. Webster, Fig Tree Pocket, QLD

TYPNIG ERRORS

Most unusual we know, but it was a case of more haste, less speed.
The first relates to the October GILTRONIC advertisement on Page 34 . The price quoted for the 5.25", 40 track, double sided drive was incorrectly printed as $249.00. The correct price is $399.00. We apologise to Giltronic and readers for any inconvenience this error may have caused.
The second relates to the game CAPTURE in November, in particular lines 2515, 2411, 2490 and 2640 on the CPC464 only. If you are keying in the program ignore "GRAPHICS PEN 1". Otherwise LOAD "CAPTURE" from the tape (don't RUN), type 2490 and enter. Type 2640 and enter. Then SAVE "CAPTURE". This version should now run correctly. Sorry!

Aussie Made

Where we do our bit to support Australian made products



You could call this our "cover" story, but it's no joke when someone tips a coffee or beer over Arnold or Joyce (or whatever you call your Amstrad). A cover would help guard against that sort of accident, as well as general grime and abrasive dust which in some circumstances can cause electrical problems and mechanical wear.

Of course, there wouldn't have been this sort of problem in 1947, the year David Everdell was born. This was the same year that his late father established a family business manufacturing and selling as its main products an item called a beach head rest, (that looked like a small collapsible chair) and a matching mirror based draw string purse for the beach called a "dilly bag". They ended up being sold world-wide.

Somewhere along the line, David's uncle, the manager, picked up on manufacturing bags, shower caps and every now and then - typewriter dust covers.

The company, 30 years later and by then called "Tremaynes" after an old family middle name, overstepped itself by failing to handle the huge wage increases of the Whitlam era and the flood of Taiwanese imports. It collapsed just before David's father died.

He had the choice of closing the company altogether and getting a 9 to 5 job, or trying to salvage the company's good name. Having not long before completed a three and a half year solo hitch-hike from the South Polar region to the North Polar region and back, the idea of a "9 - 5, yes sir, no sir" job was not appealing.

He wasn't much in love with the pink, blue, yellow and red matching this and that, of the shower-cap and bag side of the business either, but had always liked the idea of expanding the more straight forward typewriter-cover manufacture.

With the micro-computer explosion some six or so years ago, the time seemed right, but there wasn't quite enough instant business and so while studying Accountancy at night college, David used a trade he had learnt in younger days at his father's factory. He started making awnings and covers for yachts and power boats, which expanded into covers for everything from trailers to aeroplanes, and from industrial machine covers to horse rugs. (He also ended up photographing Polo horses in action, for magazines all over the world.) David still rides and trains endurance and pleasure horses now, rather than cover them!

During this time he continued building up the number of patterns for computer and typewriter dust covers, as he believed that covers should be individually styled. It's been some three or four years since he has stopped making the larger, more cumbersome covers for boats and planes and the company has doubled in size.

Currently, The Everdell Cover Company manufactures the largest range (over 1000 would you believe) of individually tailored to suit, throw-over style computer and typewriter dust covers in Australia, including, of course, one each for most of the computers in the Amstrad range. The covers are made of durable PVC plastic with cotton bound edging. They are available in Beige, Black, Grey or frosted Clear. The prices are around $22 retail, and quantity discounts are available (on 10 or more) which may interest User Groups.

What you can cover

CPC464 Keyboard Unit only
CTM644 Colour monitor
CPC464 Keyboard + 644 monitor
CPC464 + 644 monitor + 2 DDI-1's
GT865 Green screen monitor
CPC6128 Screen and keyboard
DMP2000 Printer
PCW8512/8256 - screen and keyboard
PCW8512/8256 - as above with glare visor
PCW8512/8256 Printer with paper support uprights
PCW8512/8256 Printer with paper supports no uprights

Further details can be obtained by writing to The Everdell Cover Company, 2 William Street, Brookvale, NSW 2100 or phoning (02) 93 5720.

Screen Graphics Package 6

Bunyip Software is new to the scene as a commercial software developer, and has no doubt been burning much midnight oil in Murray Bridge, SA to complete its first offering "Screen Graphics Package 6" for the 464/664 and 6128 Amstrads.

The package consists of a Screen Drawing (designer) program, a character editor and utility, a utility to load redefined character sets, a disc editing utility, a program to dump screens to an Epson compatible printer, a demonstration and a library of pictures and character sets. With the disc comes twentyone pages of instructions including a dire warning on the front that certain routines have been included to prevent copying. There is also a couple of "Public Domain" programs at the end of the instructions to reload saved copy areas or character sets. Although suitable for all CPC machines (better if they have colour monitors), 6128 owners will appreciate having the extra 64k the program uses for storing pictures.

Screen Drawing program

This operates in Mode 0 or 1, and shapes are achieved by moving a non-destructive cursor pixel with the aid of a joystick or through the numeric keypad. As the cursor moves a bleep is issued, and to get from one side of the screen to the other a little faster, the fire button (or shift) can be held down. Simply pressing "L" will start the continuous line drawing and if the fire button (or shift) is pressed at the same time, a dotted line is drawn. The style of line can be varied from standard to heavy, small rectangles or textured (in Mode 1). A useful feature is a "flash" in the border of the screen to indicate that the instruction you have just issued has been carried out.

Colours can be changed quite easily, even to the point of alternating between two colours if desired. You'll also find a "zoom" style facility to accurately locate the cursor and an adjustable width air-brush. With the latter, 6128 owners have the advantage of being able to spray with 2 colours.

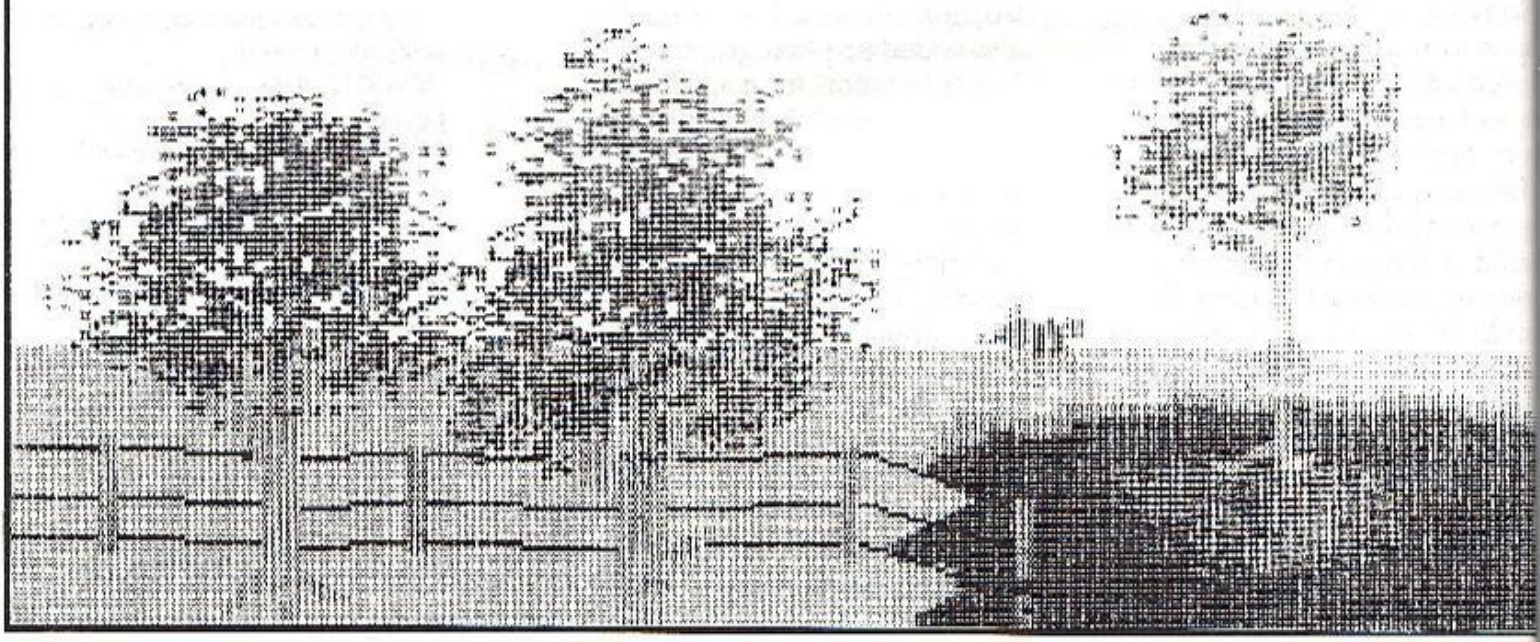
Naturally all the standard squares, circles, ovals and so on can be drawn and filled using a variety of key press commands which become easier to use (and remember) as the program is used more.

One of the main features is a "cut and paste" facility. This is achieved by moving a rectangle to a position on the screen and adjusting the size if necessary. Pressing "X" copies that area, and pressing "Z" sets up the target area (where you want to put the copy) which can be moved to the desired position. Press CLR and whammo - the copy is transferred. Again, various keys provide the facility to double the copy area or shrink it including horizontally or vertically. It is also possible to save the selected copy area onto disc or tape as a separate file to include in another picture at a later date. This is actually saved in two files - an ASCII file with the size and description and another file with the data.

If that's not enough, there is a mirror option that copies the area to the right or below (upside down) and with the choice of making it "rippled" - as though it were a reflection.

Loading and saving pictures is simple, and in most cases is carried out with a minimum of key depressions. You have the choice of either saving just the screen (in

A sample section of a screen dump on a DMP-2000



which case no record is made of the colours) or the whole work of art using the "auto-run" facility. For 6128 owners, pressing a particular key will save the main screen to the 2nd RAM bank.

Character Designer

There are many versions around, all achieving almost the same results. The presentation in this version is clear with some helpful features. At the time the module is loaded, you are requested to enter the symbol character from which you will start. This activates a display of that number plus the next 19, with the ability to "scroll" further down the range if required. The obligatory large matrix is also displayed to enable the new character to be defined. Once defined and saved, the new character is placed in the display line in a different colour for easy identification.

A facility is also provided to create small pictures with a number of selected characters, a string variable filled with CHR$(xx) values to be precise. The output can be saved in Basic format to be merged with another program. Control codes 1 to 31 may be included in the string.

Other facilities include the option to run a mini version of the main Drawing program which provides the "cut and paste" facility and the ability to copy then rotate or invert any of the characters from 32 to 255.

Load Character Sets

This utility allows character sets previously produced and saved by the Character Designer program to be reloaded as data files. You are able to load them in their normal position or specify a start position within the character range of 48 to 254.

Disc Editing Utility

This is a fairly standard utility, but with so many files containing pictures and redefined characters which are bound to occur after using the package for a while, it's useful to have this utility handy. It provides three simple functions - CATalogues, |ERAse and |RENname.

Screen Dump to Printer

After slaving over a hot keyboard for hours, this utility will produce the hard copy on your printer, assuming it's has 960 dots per line bit image mode like the DMP2000 which is Epson compatible. Naturally you won't get the colours, but the dump utilises 16 shades of grey. You have a choice to print a full screen with the added advantage of being able to crop the picture and select a particular section, enlarge or shrink it, then print. In addition, if you find that the density of the printed dots it not to your liking, you can use the "find and replace ink" option to change the colour and in consequence the dot pattern.

Demonstration

With the picture files on Side 2 of the disc, a demonstration of what can be achieved with the Drawing program is presented. 6128 owners who have not experimented with the extra 64k will be pleasantly surprised to see how fast three pictures can be loaded, one after the other.

Summary

Clearly a great deal of work has gone into producing this package (although the documentation needs tidying up - I believe this is happening before the official release) , and after an initial slow start caused only by my inability to remember all the key depression necessary, within just a few hours I had created a pretty colourful representation of my own house. Regrettably, I had just 48 hours to look at the package so I look forward to having a more comprehensive look at a later stage.

Available on disc only at $42.50 plus $2.50 for post and packing.
Enquiries: Bunyip Software, PO Box 591, Murray Bridge, SA 5253

Taking a Gamble

A Sydney journalist and Amstrad user has launched an Australian first - an electronic magazine for gamblers.

Take a good idea for a magazine, add frustration over soaring costs and the hassles of dealing with financiers, advertisers, printers and distributors and what do you get? Hopefully, a breakthrough.

For Barry Tucker, a journalist with a background in magazines and newspaper production, the breakthrough came when he invested in an Amstrad PCW 8256.

He had been collecting information about various gambling systems and games, casinos, stories about new legislation and laws, the people involved in gambling, therapies for compulsive gamblers and so on, with a view to producing a monthly magazine on the subject.

"There's no doubt that gambling is a giant industry in Australia," Tucker says, "In N.S.W. alone it's expected that punters will invest or re-invest some $10 billion (repeat: billion) in gambling this financial year, apart from what they will gamble on the stock market. That's more than the NSW Government will spend on education".

"People gamble because they like to win, or they like the idea of winning. They don't like to lose, yet most of them lose most of the time. But the magazine is designed to make the gambler better prepared to play the game - whatever the game is. It gives them a better chance of coming out winners by developing skills rather than relying on luck."

The magazine is called, quite simply, *The Gambler*. It has been in production as a newsletter, with limited circulation, pending development into the original concept of a monthly magazine. That plan was being held up by the difficulty of finding suitable financial backing.

"The problem there is that printing a monthly magazine is an expensive business," Tucker says,

"Finding a suitable backer means finding someone who will pay the bills but keep out of the editorial side. I've hesitated over taking that path because I will not compromise editorial control".

"I first had the idea for a digital magazine several years ago. That was to be a news-oriented product, virtually a Cardbox or some other brand of filing system. The reader, or operator-viewer, could call up the index, pick the news story that interested them, and delve into it by picking out one filing card after another, each card dealing with a different aspect of the story. A good idea, but the software didn't even exist then, to my knowledge".

"In a way, it was a videotex product, except that videotex didn't exist either. The project was shelved because I felt the technology wasn't ready for it".

"The thing that appeals to me about such a magazine is that it's a quick, clean and inexpensive operation with low overheads and it doesn't consume valuable resources, unlike the print media. Its medium, the cassette or floppy disc, is reusable. Because its overheads are low, it doesn't need to be financed by advertising, which irritates a lot of readers".

"Of course, you need the hardware to generate it, but the hardware is multi-functional, unlike a printing press. For a one-man operation, the personal computer is the receptionist, the secretary/typist, the accounts department, the mailing department the creative department the public relations department, the managerial/planning department and so on. One micro and a handful of programs can do it all."

Tucker bought this Amstrad only a few months ago, and since then a lot of projects that would have required laborious work on a typewriter have been initiated and completed, including the manuscript for a book, *THE GAMBLER* was the first project to emerge. It came out as a newsletter which he sold to people he knew, but expanding its circulation presented problems.

The people who will handle magazine circulation for you will also take the bulk of your sale price, and the newsagent or whatever usually wants a third of what's left," Tucker says, "If I handled distribution myself, that would hardly leave time to churn out copies on the dot matrix printer and hold down a full-time job at the same time".

"I was wondering how I could justify the cost of a laser printer and a graphics program when it suddenly occurred to me that I was just trying to make my task even more complicated. I would be adding to costs and production time and I would still have to pay a traditional printer to get multiple copies".

"Then I thought: the magazine looks great on screen and it's easy to produce multiple copies on disc with what I already have. That's really the moment in which the video magazine was born".

For now the magazine is virtually an electronic newsletter, but if the idea takes off it will not stay that way for long.

"I don't see why it shouldn't take off," Tucker says, "The information I have about NSW Lotto, for example, is unique. One system I have developed regularly pulls in strings of prizes, It's described in the first issue of *THE GAMBLER*".

"For the moment the subscriber will get a text-only magazine, along with tables, codes, formulas or other information that will help the viewer understand the game or the system being discussed".

"I'm providing hard information, not pretty pictures on glossy pages. Pretty pictures might look impressive as they are being drawn on screen but they won't help the gambler do what he wants to do most".

"In the near future there will be graphic displays like windows, tables and forms that the viewer can interact with by punching in their own data, or selections, or by updating information, for example, the first of these - and it's an exciting and original concept - is ready to go now".

THE GAMBLER will also buy stories about gambling, providing they have been thoroughly researched and can be verified, at the market rate of $300 for 1,000 words. It will also do something that is unusual - it will pay for story ideas, providing they have merit.

Tucker is also planning to licence individuals or companies who have the facilities to copy *THE GAMBLER* and any other titles he produces for use on other systems. Agreements will be drawn up so that the licensee is left with a healthy operating margin, most of which will be profit.

While all this is going on, Tucker is also working on plans to produce the news feature magazine which he conceived originally.

Subscribers can either send their address and payment to *THE GAMBLER* and receive the magazine on a brand new disc by return mail or they can send a blank disc, with payment, and the magazine will be copied to it and the disc returned. Subsequent issues will be copied to these discs, leaving the first issue intact, and the viewer will get back their own disc. There will be no open exchange system because of the risk of someone sending in a damaged disc. Magazine discs will not be write protected so they can be used for other purposes.

For further details write to:
The Gambler Magazine,
410/3 Greenknowe Avenue,
Potts Point, NSW 2011

If you have an all Australian product, or are aware of one, please drop a line to the Editor with a view to featuring in the "Aussie Made" Column.

CHEAT MODE

Some more Tips, Pokes and Game busting ploys to improve your scores. Don't be shy - send yours in to share with all of us.

POKE METHODS

This is the section where we explain how to input the majority of *Cheat Mode* pokes. There are two different methods - the instructions for each poke tell you which one to use. If you have a 664 or 6128, you'll have to type |tape before using either.

Method 1: Make sure that you've rewound the game tape to the beginning. Now type in the poke listing then type RUN and press the 'Enter' key. (Don't use the key marked 'CTRL' or 'CONTROL', that will stop the poke from working.) Press the PLAY key on the cassette deck, and hit any key on the main keyboard - the space bar will do nicely. The tape should now start to play through in the normal way.

Method 2: For this method, you have to skip the first bit of the game program. To do that, start by rewinding the game tape to the beginning. Now type in the listing. Then type CAT, and press the 'Enter' key. Start the tape by pressing PLAY and hitting a key, and then watch the screen.

After a little while you'll get the message "Found SOMETHING block 1". It doesn't matter what the SOMETHING actually is - this will vary from one game to another. If the instructions with the poke just tell you to skip the first block you should stop the tape here. If the instructions tell you to skip several things, stop the tape when the "Found' message comes up for the last thing you're trying to skip.

Once you've stopped the tape press the ESC key, type RUN, and press the 'Enter' key. Now press PLAY on the tape deck, and hit a key on the keyboard to start the tape running.

CAULDRON II

Everything you want to know about this bewitching game.

The best place to start is in the throne room. This is because it is in the middle of the castle and gives easy access to three of the collectable items, which you should get in this order:

Shield - Go into the roof above the shield and drop through the hole onto it, bouncing straight back into the room so that the gargoyle doesn't tip you off into thin air. Be careful not to land on the gargoyle's head when you come through or you're in big trouble.

Crown - Bounce onto the second step then bounce again and you will get the crown. Go left two screens and bounce at full onto the gargoyle and back gain. Then bounce back onto the gargoyle and hold the joy-stick left until the bounce has calmed down, then bounce right.

Goblet - Bounce into the roof and go down and down again. Bounce left, dropping from a window and then bounce right. Go through the skeleton and bounce high and right until you can get the goblet. Bounce back immediately and retrace backwards off the ledge to the left.

Axe - Keep going left and pick up the axe. Keep going left until you drop and then jump out of the window onto the roof.

Scissors - Bounce left and out of the far left roof hole (avoiding gargoyle's head), collecting the magic and falling to pick up the scissors.

Now the hard bit. Go through the castle to the roof above where the shield was and go right. Go up the platforms to the top of the roof. Go right to where the spider is and with one big jump get onto the platform above him, and out of the top right. Up the next screen to enter the witch's bedroom.

The witch's magic won't move, allowing you to get a lock of her hair, but it still kills if touched. Now just get to the top of the building to get the spellbook and then down to the cauldron.

ELITE

A great tip for all owners of the Firebird game on disc. It does some very weird things. Here's what you do:

1. Start game and go to the load/save game screen.
2. Select the option 'load new commander'.
3. Input commander's name as "Elite" and press Enter.
4. The message 'disc loading error' will appear.
5. Press '4' to exit the screen.
6. Press Space to begin game and you are in for a big surprise.

Apart from giving you all sorts of things you don't normally have, this also seems to introduce some interesting bugs into the game. So play around with it and see what happens.

TURBO ESPRIT

Some quickie tips on drug-ring busting.

1. Avoid chasing the red cars (armoured cars) near the end of the game, because they lead you on a little mystery tour through all the back streets and barge you into signs, people and lampposts.
2. Never shoot anything. You get many more points for ramming into the back of a car - up to 2,000 sometimes.
3. Never choose different towns when you start playing. After using the same town a few times you become used to it and eventually know it by heart.

ZOIDS

THE BATTLE BEGINS

Tips for the mechanical dinosaurs.

1. Every red Zoid you destroy has spare power cells if you scan where it was before you destroyed it - not just Slitherzoids.
2. City domes, mines and beacons all leave power cells when destroyed.
3. If having difficulty destroying domes, move your sights to the very edge of a dome and the mountains will be less difficult to get past.
4. Nearly all parts of Zoidzilla are found in domes near or next to the power station.
5. If a city network has only a couple of Zoids in it then the chances are there is no piece of Zoidzilla. All pieces are heavily guarded generally with Spinebacks.
6. In one network there are two Hellrunners going around together. Try to avoid these because if you destroy one the other will become a Spineback.

COMMANDO

Here's help for frustrated owners of the disc version of the game. The poke for the tape game has been altered to work with the disc version. Just type in the listing, save it onto the game disc and run it to load the game with 255 lives.

```
10 MEMORY &5BFF:LOAD"coml",
   &5C00
20 FOR a=&9000 TO &9012:READ
   b:POKE a,b:NEXT
30 POKE &5C33,&C3:POKE &5C34,
   &0:POKE &5C35,&90
40 CALL &5C00
50 DATA 205,122,188,175,50,
   15,78,6,6,33,59,7,119,35,
   16,252,195,54,92
```

BIGGLES

Tips for the Helicopter simulation.

The secret code for the helicopter section is WREN. At the start of the game you are flying forward at 45 degrees. Pull down on the joystick so you fly backwards at 45 degrees. Move the stick to the right till it gets to bearing 000 degrees. Fly to the map number 11. Look along the white line on the detailed map and you should see a red square. Land here and get the machine gun.

Take off and go to any other red squares on the map, getting all the equipment. There are two people on this map; get Bertie.

Fly at bearing 180 until you get to map 10. Collect equipment from the red squares. Fly at bearing 270 to the allied camp on map 10. Land on the red rectangle and you'll be told the location of the convent.

Pick up Mary and fly to any red squares on this sector, stocking up on fuel found around the camp.

Now fly to the convent. You'll probably be attacked by two planes. Shoot one down and you'll probably be left with one on your tail. Slow down and fly backwards and you should find it in your sights. On the same map as the convent is Smithy; pick him up and drop Mary. Once at the convent you'll be told the location of the sound weapon.

Fuel - is shown as red dots and when picked up will go either straight into the fuel tank or into the equipment list. You need to land to top up the tank with fuel you're carrying.

Machine gun - to use the gun you need ammo and Bertie.

Repairs - you need Smithy aboard to repair damage. He can do this only on the ground at the main locations.

TAU CETI

This is a comprehensive playing guide to the CRL space game. It will be of most use to somebody just starting out with the game but even experienced players may pick up a hint or two.

STARTING UP: The first thing to do is define the keys you want. Remember that the controls are not saved when you save a game, so every time you load up you must redefine the keys. It's a good idea to fly around for a bit getting used to the controls and to familiarize yourself with the display panel. The one thing to ignore here is height, which is of no importance.

The first thing to do at Reema, your starting point, is to find the library and reactor substation. You start near the town but the automatic direction finder will guide you back to the centre if you stray. The substation will contain one or more control rods and the library a timevault.

DOCKING: This is very simple and nowhere near as hard as in *Elite*. There are six kinds of building you can dock with: two types of reactor, two types of supply station, libraries and the lander. Head towards the building, gradually slowing. A blue rectangle should appear and start to fill the viewscreen. Continue to slow to just faster than minimum speed and you'll soon dock. It's important to remember that if you hit a building with lasers or a missile you won't be allowed to dock with it unless you reload a saved game or start again.

SUPPLY CENTRES: There are two types, military and civilian. All towns have one of each and once docked with you can access the Equip function to use them. A menu with six options will appear. The refuel, repair and install-flares options can be used at either centre, while the missiles and anti-missile missiles can be installed only at the military centre. The repair system will recharge the shields and repair any systems damaged in combat.

LIBRARIES: You'll find one of these in every town, usually near both the centre and a reactor substation. They look like a civilian supply centre with a diamond on top. Once docked the command 'LI.' will take you to a menu screen. The data banks allow you access to information under many headings (experiment to see which ones), but much of it isn't very relevant.

The city map allows you to examine detailed maps of the city you are in, its outpost and the neighbouring cities. These show the positions of buildings and enemies but is not updated when they are destroyed. The main map gives information about the defence levels of different towns and their jump pads to other towns. The identification chart shows what the buildings and ships look like on screen and gives information on their defences and weapons.

TIMEVAULTS: These are found in libraries and provide useful equipment. You're told on docking whether there is one present and can access it by typing 'timevault'. Eight rectangles in a circle will appear with another rectangle in the middle. Put the cursor over the centre one and press fire. A pattern will form in the outer rectangles. Put the cursor over one rectangle, remembering where it is, and press fire. If you've chosen correctly a rectangle at the top of the screen will light up; if not the pattern will disappear and you'll have to start all over again. If you get the right rectangle the pattern will reappear and you must hit the same one as before in relation to the others.

There are six objects to be found in the vaults, each one serving a purpose. A radiation suit slows the rate at which the radiation affects you in the main reactor. Reserve shields come into operation when normal shield strength reaches zero. Experimental missiles destroy everything in a city except jump pads and buildings you can dock with. A single jump unit allows you to jump to a city's outpost. All of these have substations but not supply centres, and they're often heavily guarded. The energy recharge unit speeds up the recharging of the shield. Durium crystals can explode when launching, destroying or damaging the ship.

REACTORS: You must dock with all of these to see if they contain control rods. These come in two halves which have to be fitted together on a screen accessed by using the 'rod' command. This section is very similar to the puzzle-solving in *Impossible Mission* and you should have no problem with the controls.

In the main reactor you have to take the whole rods you have formed and drop them into the circles in the reactor core, which will light up. This has to be done quickly because of the dangerous radiation and heat levels.

COMBAT: This is fairly straightforward but there are some general tips. Use missiles when possible since your lasers overheat easily. Change views rather than turning the ship to get at enemies who attack you when not in sight. Destroy radar towers to stop them sending more ships after you. When fighting at night don't use infra-red while shooting a moving object but put up a flare so you can target on it more easily.

S.T.O.R.M

These two pokes provides joystick control on the Mastertronic dual-player game. The first allows you directional joystick control in a one-player game and activates the armour that didn't work in the original game. The second allows single- or dual-joystick control, although the second joystick may not work exactly as planned with all dual-joystick connectors. If the second player would prefer the original keys or you don't have a second joystick then just delete lines 110-140 before using the poke. Both pokes are entered using Method 1.

First Poke:

```
10 DATA C0,3a,a5,57,fe,05,20,84,cd,03,Cc
20 DATA c9,3a,50,00,b7,c4,5a,0d,af,32,50
30 DATA 00,21,1e,0d,e5,36,c9,cd,Cc,0d,e1
40 DATA 36,3a,cd,24,bb,E0,cb,67,c4,e6,0d
50 DATA f1,17,3e,0C,cb,40,20,10,cb,58,20
60 DATA 0b,cb,48,28,86,cb,50,20,C1,c9,3e
70 DATA 3c,3c,eb,03,32,41,57,3c,32,50,00
80 DATA c9,06,00,11,90,01,cd,77,bc,21,70
90 DATA 01,cd,83,bc,cd,7a,bc,21,51,00,22
100 DATA dc,0c,21,be,0C,22,aa,1c,c3,70,01
110 Data cd,C4,2C,cd,05,22,cd,60,ic,c9
120 y=0:MEMORY &3000
130 FOR x=&50 TO &C7:READ a$
140 a=VAL("&"+a$):POKE x,a
150 y=y+a:NEXT
160 IF y()&2C53 THEN PRINT "Data error!":END
170 LOAD"des",&35C0
180 LOAD"!",&7c74:LOAD"!",&5500
190 CALL &9E
```

Second Poke:

```
10 DATA 21,Bc,b8,1,,40,00,3e,2c
20 DATA cd,,a1,bc,2a,6f,aa,ed,5b
30 DATA 9f,b8,3e,16,cd,a7,bc,2a
40 DATA 6f,aa,C1,00,08,89,22,6f
50 DATA aa,3a,8d,B8,fe,,f,20,d8
60 DATA 21,fe,0f,3e,27,77,C1,04
70 DATA C8,09,3e,4c,77,01,C4,0C
80 DATA C9,3e,48,77,01,84,C0,09
90 DATA 3e,4a,77,01,04,00,09,3e
100 DATA 4b,77,01,04,00,09,3e,15,77
110 DATA 21,57,10,3c,34,77,01
120 DATA 04,00,09,3e,30,77,01,04
130 DATA 08,09,3e,32,77,01,04,00
140 DATA 09,3e,33,77
150 DATA c3,7C,01,end
160 MEMORY &14FF
170 FOR a%=&AA00 to &AA6a:READ b$
    IF b$="end"THEN190
180 POKE a%,VAL("&"+b$) :NEXT
190 POKE &AA6F,&70:POKE &AA70,1
200 LOAD "! des",&35C0
210 LOAD "!",&7D74
220 LOAD "!"&5500
230 CALL &AA00
```

BEACH HEAD

Here's another poke for the ageing US Gold game that gives infinite skips on the air and sea stages of the game. It means that as long as you don't take the secret passage you'll always have a full complement of tanks. It's entered using Method 1.

Note: 664 and 6128 tape users should change **07,b8** in line 40 to **1f,b1**; in line 50, **ea,b1** to **e5,b7**, and again in line 50 **d9,b1** to **d4,b7**.

```
10 DATA 3e,c9,32,b2,99,
   c3,80,b2,21,81,22
20 DATA 36,09,23,36,b7,
   21,40,20,11,40,00
30 DATA 01,44,82,ed,b0,
   21,40,00,e5,21,00
40 DATA bb,e5,21,44,02,
   e5,21,07,b8,e5,21
50 DATA bb,02,e5,f1,21,
   ea,b1,11,d9,b1,f3
60 DATA c9
70 MEMORY &2000
80 LOAD""
90 CALL &3A6A
100 LOAD"!",&2040
110 FOR x=&BE00 TO &BE37
120 READ a$
130 POKE x,VL("&"+a$)
140 NEXT
150 MODE 0
160 CALL &BE08
```

Send your "cheats" and tips to Cheat Mode, The Amstrad User, Suite 1, 245 Springvale Road, Glen Waverley, Vic 3150.

Remember, we pay $5 for every one published.

The Amstrad Cup

Skipper your own Yacht to victory over the Americans

by Roy Lundquest

In this two player game, navigational skills and judgement of distance is important. It was originally written for the 6128 and contains a FILL command in line 500 which will have to be removed if you have a 464 and want to start playing straight away.

```
1 '*********************************
2 '*                               *
3 '*       THE AMSTRAD CUP         *
4 '*                               *
5 '*********************************
6 '
10 MODE 1:ENV 1,15,-1,10
20 DEG:bearing$="n///nne/ne//ene/e///ese
/se//sse/s///ssw/sw//wsw/w///wnw/nw//nnw
/"
30 yacht1=20:yacht2=18
40 yacht$=CHR$(144):yt$(1)="AMSTRALIA":y
t$(2)="AMSMERICA"
50 sand=15:water=1
70 CLS:CLG:INK 0,sand:INK 1,water:INK 2,
yacht1:INK 3,yacht2
80 BORDER 1:PAPER 0:PEN 1
90 LOCATE 8,2:PRINT"***  THE AMSTRAD CUP
 ***":LOCATE 8,4:PRINT"(By Roy Lundquest
 02/86)"
100 LOCATE 8,12:PRINT"<G>ame or <I>nstru
ctions"
110 choice$=INKEY$:IF choice$="" THEN 11
0
120 x=INSTR("gi",LOWER$(choice$))
130 ON x GOTO 140,1180:GOTO 100
140 CLS'********  outer boundary *******
*
150 DATA 60,100,100,180,70,230,70,300,80
,330,110,350,180,330,250,380,310,380,420
,350,500,390,580,320,580,240,550,170,570
,80
160 DATA 560,50,530,40,500,30,450,40,390
,70,330,60,280,30,200,20,130,50,60,100
170 DATA 999,0
180 READ x,y:MOVE x,y,1
190 READ x,y:IF x=999 THEN 220
200 DRAW x,y:GOTO 190
210 '*********  inner boundary *********
*
220 DATA 130,110,160,160,160,190,150,230
,120,260,130,290,180,280,270,340,300,350
,420,300,490,340
230 DATA 540,290,530,250,500,200,530,130
,530,90,510,80,370,120,240,80,200,80,130
,110
240 DATA 999,0
250 READ x,y:MOVE x,y
260 READ x,y:IF x=999 THEN 290
270 DRAW x,y:GOTO 260
280 '******** eastern sandbar ******
290 DATA 550,240,550,220,540,200,530,180
,530,220,550,240,999,0
300 READ x,y:MOVE x,y
310 READ x,y:IF x=999 THEN 340
320 DRAW x,y:GOTO 310
330 '******** southern sandbar *****
340 DATA 330,80,350,90,360,90,390,80,370
,70,330,80,999,0
350 READ x,y:MOVE x,y
360 READ x,y:IF x=999 THEN 390
370 DRAW x,y:GOTO 360
380 '******** western sandbar ******
390 DATA 120,210,140,200,140,180,120,160
,120,210,999,0
400 READ x,y:MOVE x,y
410 READ x,y:IF x=999 THEN 440
420 DRAW x,y:GOTO 410
430 '********* north arrow *********
440 MOVE 30,180,1:DRAW 30,270:DRAW 20,26
0:MOVE 30,270:DRAW 40,260
450 MOVE 25,300:TAG:GRAPHICS PAPER 0:PRI
NT"N";
460 '********* scale line km ******
470 MOVE 20,30:DRAW 100,30:DRAW 100,35:M
OVE 20,30:DRAW 20,35:MOVE 15,50:PRINT"0"
;:MOVE 95,50:PRINT"1";
480 MOVE 50,20:PRINT"km";
490 '********** blue water ******
500 MOVE 300,360:FILL 1
510 MOVE 340,320:DRAW 340,380,0
520 '********** window **********
530 WINDOW#1,15,30,8,16:PAPER#1,1:CLS#1
540 LOCATE#1,4,2:PEN#1,2:PRINT#1,"*WELCO
ME*"
550 LOCATE#1,7,4:PRINT#1,"-to-"
560 LOCATE#1,1,6:PEN#1,3:PRINT#1,"THE AM
STRAD CUP"
570 PEN #1,2:GOSUB 1160
579 '********* input routine ********
580 CLS#1
```

```
590 turn=1:FOR start=1 TO 2
600 x2=345:y2=340+(start-1)*10:GRAPHICS
PEN start+1:GOSUB 1140
610 x(start)=x2:y(start)=y2:NEXT
620 CLS#1:PEN#1,turn+1:PRINT#1,yt$(turn)
:GRAPHICS PEN turn+1
630 htrav=0:vtrav=0
640 LOCATE#1,1,3:INPUT#1,"Direction";dir
$:dir$=LOWER$(dir$)
650 IF dir$="0" THEN degrees=0:GOTO 730
660 degrees=VAL(dir$)
670 IF degrees=0 THEN 690
680 IF degrees>0 AND degrees<=360 THEN 7
30 ELSE 640
690 IF LEN(dir$)<4 THEN dir$=dir$+"/":GO
TO 690
700 place=INSTR(bearing$,dir$)
710 IF place=0 THEN 640 ELSE place=(plac
e+3)/4
720 degrees=(place-1)*22.5
730 LOCATE#1,1,5:INPUT#1,"Distance";dist
$
740 dist=80*VAL(dist$):IF dist=0 THEN 90
0
750 IF COS(degrees)=0 THEN hdist=dist*SI
N(degrees):vdist=0:GOTO 780
760 IF SIN(degrees)=0 THEN hdist=0:vdist
=dist*COS(degrees):GOTO 780
770 hdist=dist*SIN(degrees):vdist=dist*C
OS(degrees)
780 IF ABS(hdist)>=ABS(vdist) THEN hstep
=SGN(hdist):vstep=ABS(vdist/hdist)*SGN(v
dist) ELSE vstep=SGN(vdist):hstep=ABS(hd
ist/vdist)*SGN(hdist)
790 xx=x(turn):yy=y(turn):oldx=xx:oldy=y
y
800 xx=xx+hstep:yy=yy+vstep
810 htrav=htrav+hstep:vtrav=vtrav+vstep
820 IF ABS(htrav)>ABS(hdist) OR ABS(vtra
v)>ABS(vdist) THEN GOSUB 1090:GOTO 900
830 t=TEST(xx+hstep,yy+vstep):IF t<>1 AN
D t<>turn+1 THEN 860
840 PLOT ROUND(xx),ROUND(yy):x(turn)=xx:
y(turn)=yy
850 GOTO 800
860 r= ROUND(xx+hstep):IF (r=340 OR r=34
1) AND yy<370 AND yy>330 THEN 950
870 xx=x(turn):yy=y(turn)
880 CLS#1:SOUND 1,200,150,15,1,,10:LOCAT
E#1,3,1:PRINT#1,yt$(turn):LOCATE#1,1,3:P
RINT#1,"Miss a turn":LOCATE#1,1,5:PRINT#
1,"for repair work"
890 GOSUB 1090:GOSUB 1160:miss=1:GOTO 93
0
900 IF miss=0 THEN 930'** miss a turn **
910 miss=miss+1:IF miss>2 THEN miss=0:GO
TO 930
920 GOTO 620
930 turn=turn+1:IF turn>2 THEN turn=1
940 GOTO 620
950 IF degrees>0 AND degrees<180 THEN 99
0
960 xx=x(turn):yy=y(turn)
970 CLS#1:LOCATE#1,3,4:PRINT#1,"WRONG WA
Y !!"
980 GOSUB 1090:miss=1:GOSUB 1160:GOTO 93
0
989 '******** we have a winner *******
990 GOSUB 1090:SOUND 1,1000,100,15:SOUND
 1,1,30,1:SOUND 1,1000,100,15:MOVE 340,3
30,turn+1:DRAW 340,370 '****** sound fog
horn  and redraw finish line ****
1000 CLS#1:PEN#1,turn+1:LOCATE#1,3,2:PRI
NT#1,yt$(turn):LOCATE#1,5,4:PRINT#1,"-wi
ns-"
1010 LOCATE#1,1,6:PRINT#1,"THE AMSTRAD C
UP";
1020 GOSUB 1160
1030 CLS#1:LOCATE#1,3,3:PRINT#1,"Another
"
1040 LOCATE#1,5,5:PRINT#1,"Race (y/n)"
1050 k$=LOWER$(INKEY$):IF k$="" THEN 105
0
1060 IF k$="y" THEN 580
1070 CLS:END
1080 '**** erase old boat and track ***
1090 x1=oldx:y1=oldy:x2=x(turn):y2=y(tur
n)
1100 GRAPHICS PEN 1
1110 FOR x=x1-1 TO x1+1:FOR y=y1-1 TO y1
+1:PLOT x,y:NEXT y,x
1120 FOR w=-1 TO 1:FOR z=-1 TO 1:MOVE x1
+w,y1+z:DRAW x2+w,y2+z:NEXT z,w
1130 GRAPHICS PEN turn+1
1139 '**** draw new boat position ***
1140 FOR x=x2-1 TO x2+1:FOR y=y2-1 TO y2
+1:PLOT x,y:NEXT y,x
1150 RETURN
1159 '******* key press routine ******
1160 LOCATE#1,1,9:PRINT#1,"Press any key
...";
1170 IF INKEY$="" THEN 1160 ELSE RETURN
1179 '******** instructions page *******
1180 CLS:LOCATE 10,2:PRINT"INSTRUCTIONS"
1190 LOCATE 10,3:PRINT"------------"
1200 PRINT:PRINT"THE AMSTRAD CUP is a ga
me for 2 people."
1210 PRINT"Each player sails a yacht aro
und a very"
1220 PRINT"treacherous course using eith
er map"
1230 PRINT"directions such as SSE or com
pass"
1240 PRINT"bearings such as 130 (degrees
)."
1250 PRINT:PRINT"Remember that North is
0 or 360, East is"
1260 PRINT"90, South is 180 and so on."
1270 PRINT:PRINT"Distance may be estimat
ed fairly "
1280 PRINT"accurately from the scale lin
e on the"
1290 PRINT"course map. You must travel a
round the"
1300 PRINT"course clockwise and any mish
aps will"
1310 PRINT"lose you a turn.":PRINT
1320 PRINT"GOOD LUCK TO BOTH OF YOU!!!"
1330 PRINT:PRINT"Press any key to play"
1340 IF INKEY$="" THEN 1340 ELSE 140
```

ORIGINALITY	4
SPEED	4
DOCUMENTATION	3
GRAPHICS	2
ENTERTAINMENT VALUE	2
ABILITY TO HOLD INTEREST	4
EASE OF USE	4
TAU INDEX	41%

JOHNNY REB

The Union and Confederate forces are at it again! Set during the American Civil War, Johnny Reb revolves around a skirmish between 2 armies based on either side of a river. The objective for each army is to capture the enemy flag, although if you choose to set a limit on the number of moves, the player with the better positioning is declared the victor.

After loading you are asked a series of simple questions. These determine the length of the game and composition of your army. There is also an option for one or two players and a demonstration mode.

During each player's turn, the individual units are highlighted and instructions are requested. Your infantry and cavalry are mainly used for close combat and reaching the opposite flag, whereas the artillery is good for pounding the enemy from a distance. Any unit may swim across the river provided they aren't wounded.

The documentation is a shambles. Although it is lengthy and detailed there are a string of amendments at the end for the Amstrad. Then when loading the program still more are announced. Not to worry though, Johnny Reb is very user friendly and I was quickly blasting away at those damn Yankees!

SUMMARY: The pace may be too slow for some but if you enjoy pure strategy games like Chess and Othello then you should like this.

GRAPHICS	2
DOCUMENTATION	2
SPEED	2
ENTERTAINMENT VALUE	4
ABILITY TO HOLD INTEREST	6
EASE OF USE	6
ORIGINALITY	6
TAU INDEX	50%

SURVIVOR

Probably the best known title on the tape, this is a fast moving 2D maze game in which Angus the Survivor searches for bombs and money scattered throughout Deadstone Abbey. To assist in his quest, he is armed with a gun and porcupine bombs. These are used to destroy evil spirits and robots which will drain his energy level upon contact.

Surviving the game depends on keeping up this energy. To do this you must pick up bottles of elixir lying around here and there. Lots of treasures are also there for the taking as well as extra ammunition for the gun (slowest bullets I've ever seen!)

There are seven levels to complete and a number of bombs must be found on each before programming to the next, which will contain more bombs. Reading sign posts will help you find them, but it's easy to start going around in circles.

Graphics are adequate for this type of game, and a merry tune accompanies Angus' exploits. There is also a humorous hi-score table and joystick/keyboard option.

Unfortunately, Survivor has an inconsistent bug that sometimes prevents the user from having a second game, i.e. the intro screen will freeze up totally, requiring a complete reset. This does not occur often, but of course shouldn't be there at all.

SUMMARY: Constant action and ease of use makes this a good arcade game for younger players, if you're prepared to risk the bug. Originally released as budget game.

ENTERTAINMENT VALUE	3
ABILITY TO HOLD INTEREST	4
ORIGINALITY	4
DOCUMENTATION	4
SPEED	3
GRAPHICS	3
EASE OF USE	7
TAU INDEX	50%

CP/M Revisited

A Primer for beginners - Part 2

by Fred Robertson-Mudie

In the first part of this series the program SETUP.COM was being discussed in relation to altering some of the initial CP/M boot parameters, and dealt with the Initial Command Buffer and Sign-on String. At this point in time, the only other parameter which might need changing is that dealing with the RS232 interface.

All the other questions asked by the program can, therefore, be answered by Y <enter>.

An RS232 Interface is the method by which your computer can be used to contact the outside world. They are sold as separate items for the Amstrad (presumably as a lot more money can be made that way than by supplying a built-in interface), and are usually used with a Modem to connect with a telephone and gain access to Bulletin Boards, other computers etc. All the Interface does is to pass TTL data to the Modem which in turn converts the TTL data to audio tones and passes it over the phone line. However, to ensure that your computer can "talk" with another machine the data needs to be sent using the same data standards and transmission speed as the other machine. Moreover, there are various international standards for Modems such that your Modem will need to send the same audio tone frequencies as the machine you are connected to.

As this is intended to be a CP/M Primer and as Modems and RS232 Interfaces and their uses and "standards" are a subject unto themselves, the subject will not be pursued here. However, further details are contained in various texts including:

The RS232 Solution, by Campbell
published by Sybex
ISBN 0-89588-140-3

With CP/M 2.2, the data standards and transmission speeds used by the RS232 Interface are set-up on the disc by using the SETUP.COM program. The setting-up comes under the question relating to the SIO (Serial In/Out) Channel A part, and the standard message appears as follows:

Z80 SIO Channel A: 9600 tx baudrate, 9600 rx baudrate, 8 data bits, NO parity, 1 stop bit
is this correct (Y/N):-

Answer N <enter> to this question and, when asked for the correct data, enter the following:-

300,300,8,NO,1 <enter>

The machine will then show the new data and ask you if it is correct. Answer Y <enter> to this.

You are now set up to use a Modem at 300 baud transmit and receive rate, the most common standard used. The other common standard is 75 baud transmit and 1200 Baud receive with, in the case of Viatel, 7 data bits. This can be easily substituted for the above mentioned 300 baud data. The wealthier among us may be able to afford a Modem which can operate at 1200 Baud transmit and receive, full duplex, and, again, this information can be substituted for the above. It should be pointed out that if you are using the Amstrad RS232 Interface, it can be used to access Viatel from Basic, so there is no need to change the data on the disc.

Again, answer Y <enter> to the remainder of the questions, including whether you wish to update your system disc and whether you wish to restart CP/M. That concludes the alterations to the SETUP.COM program, other than to mention that the booting information now on your disc can be transferred to other discs by the use of the program BOOTGEN.COM. In addition, the use of the program FORMAT.COM. will automatically transfer the booting information on the disc containing the FORMAT program when that program is used to format new discs.

The next item relates to the built-in programs in CP/M 2.2. The built in programs are REN, to rename a file or program; ERA, to erase a file or program; DIR, which gives a directory of files or programs; SAVE, which saves files or programs to disc; TYPE, which lists out text or document files; and USER which changes the User

area of a disc. The uses of these built-in programs is fairly well covered in the manual, other than SAVE which will be dealt with at a later date, and USER which will be dealt with in the context of a User manipulation program. However, it is worth mentioning that TYPE can be used to look at the document or text files which accompany many of the CP/M programs and which contain instructions for use of these programs. It can also be used to look at Assembly listings, i.e. ASM files. Using the TYPE command to look at non-ASCII files will result in some strange effects which may "lock-up" the machine. This will not do any harm to anything and can be fixed by switching the computer off and starting again.

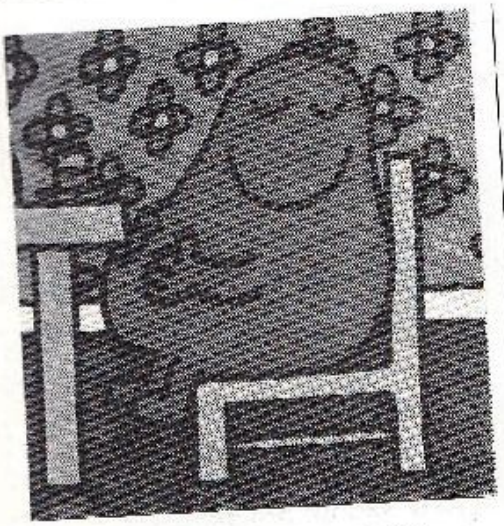
In CP/M, pressing the Control key along with certain other keys gives an additional function to that other key. For example, pressing P whilst holding down the Control key will cause all data coming out on the screen to also be sent to the printer. This function is usually denoted as ^P. So, ^P will engage the printer, and using ^P again will disengage it. This on-off switching is usually known as "toggling". Use of this function without a printer, or with the printer switched off, will cause the computer to sit and wait till it can contact a printer. The remainder of the Control functions and their associated keys are shownabove.

Various other keys when used with the Control key are used for different functions in other versions of CP/M, as is also the case in various programs, e.g. Wordstar, Dbase etc.

Command	Action
^C	Terminate CP/M program; reset discs
^E	Move cursor to next line
^H	Delete character to left of cursor
^I	Move cursor to next TAB position
^J	Execute command (line feed)
^M	Execute command (carriage return)
^P	Engage or disengage printer
^Q	Resume scrolling after ^S command
^R	Redisplay line
^S	Freeze Screen
^U	Delete All characters in line
^X	Delete all characters to left of cursor
^Z	Mark end of string in PIP and ED (close file)

Software Reviews

Some recent releases for CPC's



First Steps with the Mr Men

Mirrorsoft, CPC464 cassette

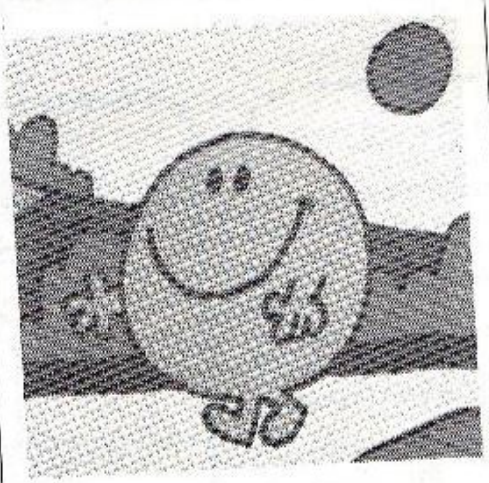
Richard Boulton's charming story booklet sets up four games with the Mr Men. Even a very young child can play, since no reading or writing is involved. It's good practice with the ideas of left and right, which even many adults find troublesome.

In the first, Mr Greedy has to be directed to a luscious ice-cream hiding in a corner of the room. Only the cursor keys are needed, and colour-coded stickers of Mr Clever pointing various ways are provided (though I don't know how long they would last - presumably you'd be taking them off to use the computer for other jobs). Mr. Clever's colours match the colours of the walls on screen (not much help on a monochrome monitor, but not essential.)

Mr. Greedy does not stop with one icecream, but they become harder to get: more and more walls appear in the room and he has to be navigated round them.

The booklet doesn't tell you to reset the computer (Control-Shift-Escape all together) before you can load the following program without a 'memory full' error.

Mr. Silly is being sensible in the second program and has gone shopping for a hat. He says (pictorially) the style and colour he wants to try on. Cursor keys move a marker along the shelves and the Copy key - with a Mr Clever sticker - selects. What silly thing does he do when he tries on the next hat?



The third program was my favourite - I especially identified with Mr. Forgetful who tidies things up into good places and then can't remember where.

Mr. Forgetful has installed a dozen wardrobes in his room: six along one wall, six facing. He puts a left shoe in a left-hand wardrobe and the right shoe in a wardrobe on the other side. How organized! He does the same with socks, boots, mittens, skates and slippers. But oh, no, what is where?

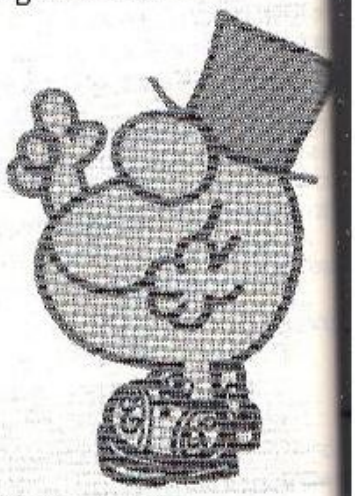
He must go back and forth across the room (by means of the cursor keys), looking inside wardrobes. The trouble is that they stay open only if he finds two things to match. He somehow has to remember where he saw the first sock when he finds a second.

Everything has muddled itself into new wardrobes if you play the game again.

A variation on the game puts alphabet letters instead of clothing in the wardrobes. An adult can specify a subset of letters and make it fun for a child to learn a few at a time.

In all these Mr Men games, various keys allow restarting the game, turning sound on and off (th tunes are hardly symphonic) or changing the background colour.

A nuisance in the packaging is that the booklet does not fit inside with the cassette. It has to be removed from the outer plastic sleeve - rather awkward. Loading and playing instructions seem to b missing until you think of removing the outer jacket and



reading the back of it.

The cassette is labelled 'CPC464' although the outer package says 'For use on Amstrad' without specifying. It would not load it on our 6128; we did not have a tape-decked 664 to try it on.

Here & There with the Mr Men

Mirrorsoft, CPC464 cassette
Joystick or keys

This time Mr Tickle and Mr Grumpy practice left and right - thinking ahead for simple route planning is the theme.

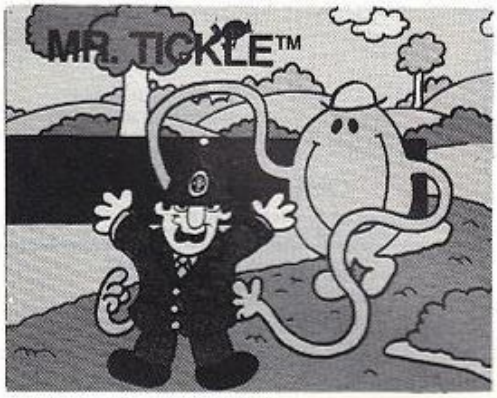
The object of the first game, Mr Tickle's *Jigsaw Puzzle*, is to line up doorways and move pieces to build up a complete picture of Mr Tickle.

In the second game, Mr Tickle tries to cheer up Mr Grumpy, who doesn't want to be cheered up. Mr Tickle's arm can stretch longer and longer to reach through doorways to where Mr. Grumpy is hiding. Sometimes he tries to block up the doorways with chairs. Mr Tickle's arm can be made to bounce of walls, chairs, Mr Grumpy or even itself.

Instructions can be given a step at a time, using the cursor and Return keys, or planned out a whole list at a time.

Mr Lazy, in the third game, is snoozing under an apple tree. He tries to instruct a friendly worm to crawl along the correct branches and drop a juicy apple for him to eat.

A gang of four Mr Men in the last game tries to stop Mr Tickle from moving in a checkerboard-like game.



PAXMAN PROMOTIONS GIFT PACK

Comprising:
3D Time Trek (Anirog)
House of Usher (Anirog)
Jonny Reb (Lothlorien)
Survivor (Anirog)

3D TIME TREK

After a devastating raid on your planet by space pirates, you have sworn to kill every alien fleet in the galaxy singlehandedly. This particular galaxy consists of an 8 x 8 grid of sectors which must be explored relying on information from several sources. These are your long-range sensors: galaxy map, battle computer and navigation computer.

Upon finding a sector with aliens (condition red, condition red!), you must blast them all quickly with a cursor to avoid gaining shield damage. This is not difficult, but the graphics aren't crash hot.

If energy and shield levels become too low locate and warp to the plant - there, a landing must be negotiated, down onto a rather big platform. This is ridiculously easy and therefore rather pointless.

The program has several other deficiencies. The first is when you are flying through space. The upper half of stars zooms past but the others just flicker, ruining the effect. No score is kept, nor are you prevented from warping to a sector you are already in. Not a major flaw, just an example of slack programming.

This could be best described as a jazzed up version of the old Star Trek type of game, although with a little practice it only takes about 20 minutes to complete - it's simply a matter of interpreting given information and keeping the shield rating up.

SUMMARY - Compared to other space games, 3D Time Trek is very colourful, highly repetitive and has little long term appeal - joystick is required.

SPEED	4
ORIGINALITY	3
DOCUMENTATION	4
GRAPHICS	3
ENTERTAINMENT VALUE	3
ABILITY TO HOLD INTEREST	3
EASE OF USE	5
TAU INDEX	45%

HOUSE OF USHER

Dressed in a top hat and cloak, a traveller arrives at the legendary House of Usher. This simple scenario is the background for a fast-paced platforms and ladders game, in which 9 rooms must be negotiated before the final 2 rooms may be entered.

The traveller begins in reception and may choose to enter any of nine doorways. Once inside, the idea is to jump over gaps, climb up ladders and avoid the nasties in order to reach the exit door. In some rooms objects must be collected and there is an overall time limit.

As for game presentation, sound effects are minimal although there is a gloomy tune between games. Compared to most games of this type, the graphics are positively primitive. Generally speaking most rooms are difficult to complete as your man is hard to precisely line up. There is also little margin for error.

Notwithstanding the difficulty, the reason House Of Usher cannot be recommended is the fact that the game crashes, necessitating a reload, after about 11 games. This occurred several times so it was no fluke. Dying is very easy, so this is more serious than it sounds.

SUMMARY: Even if the bug, which doesn't affect the actual game, is overlooked, House of Usher is difficult and dated although initially addictive. Joystick required.

ECHO - a Printer Utility

from Ian Jardine

Many times I have had use for the screen echoing command available from the CP/M using the [CTRL]+[P] key sequence to provide a log of screen activity on the printer. Some computers also provide this facility from Basic, although the Amstrad does not. This program will provide a similar facility via a Resident System Extension (R.S.X.) which will allow the echoing of all screen output to the printer.

Two new commands are provided:
|ECHO.ON - Will turn on the printer intercept and all the following screen output will be echoed to the printer.
|ECHO.OFF - Will turn the intercept off and return things to normal.

The Basic program provided is simply a loader to poke the machine code into reserved memory above himem. The code is relocated as required by the basic loader and will work comfortably provided that any other machine code already present does not result in the loader lowering himem below 16384 (&4000). This is because the R.S.X. needs to be in RAM that is not overlaying ROM. The loader will detect this if it occurs and abort with a memory full error. Once the loading of the code is complete the loader will erase itself from memory, leaving the R.S.X. Commands |ECHO.ON & |ECHO.OFF ready for use.

The Basic loader should be SAVED before it is RUN as it erases itself when complete. The loader is heavily REMarked and should be easily understood. It first checks to see if it has already been loaded by setting up an error trap for the external command |ECHO.OFF. If the R.S.X. is already in memory, then this will not cause an error and the program will abort. If the command causes an error, then this is detected by the error trap, and the program will then lower HIMEM to a suitable level and poke in the machine code above HIMEM. Any addresses requiring relocation are signalled by a ## in the data statements. The byte following the ## is an offset from the start of the program, which is added to the start address to give an absolute address. Which is then converted into a low and high byte pair, and poked into place at the current address. The program will attempt to leave the symbol table in the same state as power up, ie. Symbol after 240, provided that there is sufficient memory to do so and the table has not been previously divided by lowering himem without first issuing a Symbol after 256 Command. It does this by using an error trap for the SYMBOL AFTER command.

It should be kept in mind that only characters in the range of ASCII 32-127 will be echoed to the printer, and any characters outside that range will be converted to a space. If the printer is not connected, or off line, and a |ECHO.ON command is issued, then the program will lock up until the printer is connected. The intercept will remain active until turned off by using the command |ECHO.OFF.

The assembler listing is provided for those who are interested in delving into the method used to obtain the screen echo facility. The |ECHO.ON command simply directs the normal screen output to our intercept routine, where the current screen column is compared with the previous column, and a line feed sent if the current column is less than the previous one. If not then the current column is stored and the outgoing character checked to be sure it can be printed. If it can then it is sent to the printer unchanged. If not then it is converted to a space and sent to the printer. Finally, the original character is restored and a jump to the normal screen handling routine in the ROM is performed. The |ECHO.OFF command simply restore the normal screen handling routine.

Some abnormalities will be observed if the editing keys, including [CLR] & [DEL], and the copy cursor ar used to correct anything on screen. A line feed will be sent each time the column count is less than before, so

the printout may be a bit strange.

If screen format commands like LOCATE are used then what appears on the printer will be different to what appears on the screen, due to the action of these commands sometimes causing a line feed due to the column being less than before. As is usual, experimentation will show just what can and cannot be done.

The |ECHO.ON, |ECHO.OFF commands will work just as well either in direct mode or in a running program so it is possible to have a routine to print to the screen, and by simply inserting a |ECHO.ON in the program just before the routine, have it display on the printer as well. After the routine is completed, a |ECHO.OFF will put things back to normal. I am sure that with a little thought, you will be able to come up with lots of other uses.

```
10 REM  ***  SCREEN ECHO TO PRINTER  ***
20 REM ***  ECHO.ON - ECHO.OFF R.S.X. **
*
30 REM Allows the Echoing of
40 REM Screen Output to the Printer
50 REM Basic Machine Code Loader (Reloca
tes code as req'd)
60 REM Version 1.3 - By Ian Jardine, Aug
ust 1986.
70 REM
80 REM **WARNING** SAVE before RUNning a
s line 440 will erase program
90 REM
100 CALL &BC02:MODE 1:PEN 1:PAPER 0' Ini
tialize Screen
110 LOCATE 1,2:PRINT" ** MACHINE CODE SC
REEN ECHO UTILITY **"
120 PRINT" "STRING$(38,"*"):LOCATE 10,9
130 REM ** Set Error Trap to Check if Al
ready Loaded
140 loaded=(1=1):ON ERROR GOTO 150:|ECHO
.OFF:GOTO 160
150 IF ERR=28 AND ERL=140 THEN loaded=0:
RESUME NEXT
160 ON ERROR GOTO 0
170 IF loaded THEN PRINT"..is already Lo
aded..":PRINT:END
180 REM ** Set Error Trap to Handle SYMB
OL AFTER Command
190 ON ERROR GOTO 200:SYMBOL AFTER 256:G
OTO 210
200 IF ERR=5 AND ERL=190 THEN symfl=(1=1
):RESUME NEXT
210 ON ERROR GOTO 0' Disable Error Trap
220 proglen%=&8B' Length of Code to be L
oaded
230 MEMORY HIMEM-proglen%' Set New Memsi
ze
240 IF HIMEM<16384 THEN ERROR 7' HIMEM t
oo low so abort
250 start=HIMEM+1:addr=start' Set Pointe
rs
260 IF HIMEM>16511 AND NOT symfl THEN SY
MBOL AFTER 240' Restore Symbol Table
270 INK 2,0,20:PEN 2:PRINT"Loading ... "
;
280 chk=0' Set checksum count
290 READ byte$' Read First Byte
300 WHILE byte$<>"END"
310  IF byte$="##"THEN GOSUB 450 ELSE by
te%=VAL("&"+byte$):chk=chk+byte%
320  POKE addr,byte%' Load Byte into Mem
ory
330  addr=addr+1:READ byte$' Increment A
ddress & Read next Byte
340 WEND' Loop Here Until All Done
350 READ chsum:IF chk=chsum THEN 370' Ch
eck Data Statement Checksum
360 MODE 2:INK 2,20:PEN 1:PRINT:PRINT"**
ERROR** in Data"CHR$(7):LIST 520-
370 CALL start' Initialize Screen Echo R
.S.X. Routine
380 INK 2,20:PRINT"Completed":PRINT
390 PEN 1:PRINT TAB(13)"Memory  Cleared"
:PRINT:PRINT
400 PRINT"Use the External Command ";:PE
N 3:PRINT"|ECHO.ON";:PEN 1
410 PRINT"to Echo Screen Output to the P
rinter."
420 PRINT:PRINT"Use ";:PEN 3:PRINT"|ECHO
.OFF";:PEN 1
430 PRINT" to Turn it off Again.":PRINT:
PRINT
440 NEW' That's All Folks
450 REM ** Calculate Absolute Address fo
r Relocation
460 READ byte$:offset%=VAL("&"+byte$)' G
et Offset from Start of Program
470 chk=chk+offset%' Update checksum
480 POKE addr,UNT(start+offset%)AND &FF'
 Calc & Poke L.S.B
490 byte%=INT((start+offset%)/256)' Calc
ulate M.S.B
500 addr=addr+1' Increment Address
510 RETURN' Go Back & Poke it
520 REM ** Data Statements for Machine C
ode Program **
530 DATA 01,##,09,21,##,21,C3,D1,BC,##,1
1,C3,##,25,C3,##
540 DATA 44,45,43,48,4F,2E,4F,CE,45,43,4
8,4F,2E,4F,46,C6
550 DATA 00,00,00,00,00,3A,##,5D,FE,FF,C
8,3E,FF,32,##,5D
560 DATA 2A,D4,BD,22,##,88,21,##,5E,22,D
4,BD,3E,0A,CD,2B
570 DATA BD,30,F9,C9,3A,##,5D,FE,00,C8,3
E,00,32,##,5D,2A
580 DATA ##,88,22,D4,BD,3E,0A,CD,2B,BD,3
0,F9,C9,00,F5,3A
590 DATA ##,8A,BC,38,07,3E,0A,CD,2B,BD,3
0,F9,7C,32,##,8A
600 DATA F1,F5,FE,20,38,04,FE,80,38,02,3
E,20,F5,CD,2B,BD
610 DATA 38,03,F1,18,F7,F1,F1,C3,00,00,0
0,END
620 REM ** Checksum for Data Statements
630 DATA &34CC
```

The assembler listing appears on the next two pages.

```
1                ;!ECHO.ON - !ECHO OFF
2                ;ECHO SCREEN OUTPUT TO PRINTER
3                ;
4                ORG 8000H
5                LOAD 8000H
6                ;
7                PRTCHR: EQU 0BD2BH          ;MC_PRINT_CHAR
8                LOGRSX: EQU 0BCD1H          ;KL_LOG_EXTERNAL
9                TXTOUT: EQU 0BDD4H          ;IND TXT_WRITE_CHAR
10               ;
11 INIT:         LD   BC,RSXTBL              ;RSX TABLE
12               LD   HL,RSXBUF              ;O/S BUFFER
13               JP   LOGRSX                 ;SET UP R.S.X.
14 RSXTBL:       DEFW WDTBLE                 ;POINT TO TABLE
15               JP   SET                    ;!ECHO.ON JUMP
16               JP   RESET                  ;!ECHO.OFF JUMP
17 WDTBLE:       DEFB "ECHO.O"               ;WORD TABLE
18               DEFB "N"+128                ;END OF WORD 1
19               DEFB "ECHO.OF"              ;2ND WORD
20               DEFB "F"+128                ;END OF WORD 2
21               DEFB 0                      ;END OF TABLE MARKER
22 RSXBUF:       DEFS 4                      ;BUFFER FOR O/S
23 SET:          LD   A,(FLAG)               ;!ECHO.ON
24               CP   0FFH                   ;ALREADY ON?
25               RET  Z                      ;RETURN IF ON
26               LD   A,0FFH                 ;CODE FOR ON
27               LD   (FLAG),A               ;SET FLAG=ON
28               LD   HL,(TXTOUT)            ;GET JUMPBLOCK ENTRY
29               LD   (JPBKST),HL            ;SAVE IT
30               LD   HL,SEND                ;POINT TO NEW ROUTINE
31               LD   (TXTOUT),HL            ;REPACE JUMPBLOCK ENTRY
32 FIRST:        LD   A,10                   ;CODE FOR LINE FEED
33               CALL PRTCHR                 ;TRY THE PRINTER
34               JR   NC,FIRST               ;RETRY TILL SENT
35               RET                         ;BACK TO BASIC
36 RESET:        LD   A,(FLAG)               ;!ECHO.OFF
37               CP   0                      ;CHECK IF ALREADY OFF
38               RET  Z                      ;RETURN IF OFF
39               LD   A,0                    ;CODE FOR OFF
40               LD   (FLAG),A               ;SET FLAG=OFF
41               LD   HL,(JPBKST)            ;GET ORIGINAL ENTRY
42               LD   (TXTOUT),HL            ;RESTORE JUMPBLOCK
43 FINAL:        LD   A,10                   ;CODE FOR LINE FEED
44               CALL PRTCHR                 ;TRY THE PRINTER
45               JR   NC,FINAL               ;RETRY TILL SENT
46               RET                         ;BACK TO BASIC
47 FLAG:         DEFB 0                      ;2^5=ON, 0=OFF
48 SEND:         PUSH AF                     ;SAVE O/G CHARACTER
49               LD   A,(COLPOS)             ;GET LAST COLUMN SENT
50               CP   1                      ;LESS THAN BEFORE?
```

```
51              JR    C,SAVCOL        ;JUMP IF NOT LESS
52 LFEED:       LD    A,10            ;CODE FOR LINE FEED
53              CALL  PRTCHR          ;TRY THE PRINTER
54              JR    NC,LFEED        ;RETRY TILL SENT
55 SAVCOL:      LD    A,H             ;COLUMN COUNT TO A
56              LD    (COLPOS),A      ;SAVE CURRENT COLUMN
57              POP   AF              ;RESTORE CHARACTER
58              PUSH  AF              ;SAVE IT AGAIN
59 CHECK:       CP    32              ;IS IT < ASCII 32
60              JR    C,ADDSP         ;GO IF IT IS
61              CP    128             ;CHECK IF < ASCII 128
62              JR    C,PRINT         ;GO IF IT IS
63 ADDSP:       LD    A,32            ;SUBSTITUTE A SPACE
64 PRINT:       PUSH  AF              ;SAVE IT
65              CALL  PRTCHR          ;TRY THE PRINTER
66              JR    C,DONE          ;GO IF SENT OK
67              POP   AF              ;RESTORE CHARACTER
68              JR    PRINT           ;RETRY UNTIL SENT
69 DONE:        POP   AF              ;CLEAR STACK
70              POP   AF              ;RESTORE ORIGINAL CHAR
71              DEFB  0C3H            ;CODE FOR JUMP
72 JPBKST:      DEFW  0               ;TXTOUT JUMMBLOCK ENTRY
73 COLPOS:      DEFB  0               ;HOLDS PREVIOUS COLUMN
74              END                   ;THAT'S IT!!
```

Wired for Sound

Computer musician Mark Jenkins investigates the musical possibilities of Arnold, and introduces Part One of this Music Special.

Ardent game players will already have some idea of the musical possibilities of Arnold. Games such as *Monty on the Run*, *Knight Games* *Ghost'n'Goblins* and many others make good use of Arnold's sound chips and indicate that, with the right software, Arnold could be a musician in his own right.

Later on we will look at how the Midi system allows you to control professional synthesisers with your micro, but don't forget that Arnold's sound chip is a small synthesiser in its own right, and many of the music-oriented packages available need nothing more than software and an ear for a tune to let you make music.

Upto to now there has been a number of products available for music enthusiasts - most of them pretty weak, *Minstrel* from Kuma Computers and *Music Box* from The Electric Studioto name two. When compared with Rainbird's *Music System* , *Music Box* is well laid out but 'looks puny and overpriced. Later in this two part Music Special we look at the disk-only *Advanced Music System*,. This can be upgraded from the basic *Music System* , at least in the UK, and we will let you know if the same applies here in Australia.

Much more basic is *Music Master* from Vanguard Leisure, licensed from Datasync. Vanguard are the people who launched the *Maestro*: a hardware package offering a small stereo amplifier, headphones, two 3-inch speakers and a music demo cassette which takes full advantage of the Amstrad's stereo sound output. Both packages are covered in depth later.

Another package which will provide endless hours of fun is *Amdrum*, manufactured by Cheetah Marketing. *Amdrum* is the only one of these packages to go beyond the comparatively limited potential of the Amstrad's own sound chips. Again, see the full review in this two part article.

THE DEVELOPMENT OF MIDI

Why have microcomputers become so popular among professional musicians? Simply because in the last few years musical instruments have become more and more like computers anyway - so using a micro such as an Amstrad is no longer an intimidating prospect for musicians as diverse as The Human League, Blancmange, Marillion and Dire Straits. It was inevitable that professional synthesisers eventually would be linked up to micros.

We're talking about the latest stage of the synthesiser revolution, which started around 1968 when Robert Moog developed the voltage-controlled oscillator, and which took a massive leap in the late 1970s with the addition of microprocessor control.

The early synthesisers - played by pioneers such as Walter Carlos and Keith Emerson - had two main problems: only one note could be played at a time, and each new sound involved setting scores of knobs in positions which could not easily be reproduced. Later microprocessor-controlled synthesisers such as the Sequential Circuits Prophet 5 and the Roland Jupiter 8 were fully polyphonic (capable of remembering large numbers of sounds defined by the user), so only a few problems remained.

Even in the '70s, synthesisers from different manufacturers were still incompatible with each other. So if you wanted to experiment a little - controlling many instruments from remote keyboard note recorders (otherwise known as 'sequencers') or other instruments - you were out of luck. But when Dave Scott of Sequential Circuits experienced problems in getting his Polysequencer design to conf the Prophet 5 synth, he came up with a proposal for a Universal Synthesiser Interface (USI).

Taking the USI proposals to Japanese manufacturer such as Roland and Yamaha resulted in a much expanded format known as MIDI, the Musical Instrument Digital Interface, which is now almost universally used on home computer interfaces, synthesisers, drum machines, sequencers and even guitars

Midi is a binary language similar to RS232 and other computer standards. It uses a serial interface which manifests itself as a five-pin DIN plug of which three pins are used for earth, live and return loop. Midi In or Out sockets (or both) will be found the input signal) is an option. Although some micro now have built-in Midi, most need a small interface

convert their cartridge or user-port transmissions to the Midi hardware standard.

The 128 note values available through Midi are made to correspond to a range of ten and a half octaves on a piano keyboard, which is more than enough for conventional composition. You can also send vibrato, wow, pitch-bend and other modulation levels through Midi. Codes are transmitted at regular intervals to synchronise drum machines, sequencers and other units which play notes at a set tempo, so your micro can easily lock on to drum sounds or to other music computers.

WHAT MIDI CAN DO

The most obvious thing Midi can do is store and replay notes entered from a synthesiser. This makes it possible to compose very lengthy pieces and play them back on several instruments simultaneously using suitable compositional software, such as EMR's *Miditrack Performer*, reviewed later. With many keyboards now capable of 'sampling' or recording real sounds as well as synthesising new ones, the days of the conventional studio using multi-track tape machines could be numbered.

Micros can also store sounds defined on synths but transferred via Midi to the micro's disk drive. And they can help to create new sounds by giving a colourful graphic display of all a synth's functions. Some software packages, such as *DX-Droid* for the Yamaha DX7 synth (not available on Arnold, I'm afraid!), will even create new sounds for you at random!

Back at a more reasonable level, experimenting with Midi requires an Arnold, a Midi interface and suitable software - and of course a Midi-standard music keyboard. One of the best to start off with is Casio's CZ-101 (imported by Mobex), which for around $799 offers eight-note chords or four different single notes played simultaneously. It comes with miniature keys but is an ideal beginners' instrument.

Nowadays you can pay quite a lot for a Midi sequencer such as Roland's MC500, but a micro such as the Amstrad can perform all the same functions with a much more informative display for just the cost of a Midi interface and software. The only difference is... we have yet to see an Amstrad being used on stage!

MIDITRACK PERFORMER

EMR: cassette & disc

If you wish to use the Midi system on your CPC machine, EMR's *Miditrack Performer* is really the only option at the moment. This is a software package that comes with a Midi interface which lets you control synths such as the Casio CZ-101. The Casio is a very powerful compositional tool, and *Performer* takes full advantage of all the expression available via the Midi interface.

The one package contains both cassette and disk-based versions, so running on any CPC model. It also comes with the interface itself, which plugs into Arnold's expansion port. This box contains the Midi sockets, and can also control the cheaper Korg or Roland non-Midi drum machines, which you may be able to pick up second-hand. You will be able to use *Performer* only to synchronise these, but they could function as a cheap second instrument to your main Midi keyboard.

There's only one main display from which the whole package is controlled. This screen is fairly packed, but having it all there in front of you would certainly help in a live performance. On the right of the screen are the Save, Load, Delete Filename, Clear, Text, Arrange and Time Correct functions. The last of these refers to *Performer's* ability to clean up a sloppy performance on the synth keyboard to a variable degree.

In the centre of the display are Metronome, Count-In (so you know when recording is about to start), Clock, Tempo, Number of Plays, Time Signature and Start Bar (so you can begin recording at any bar of a composition). Record, Play and other important functions are selected using a command window at the bottom of the screen, and you can adjust the tempo using the cursor keys or a joystick.

The functions are first selected with the cursor keys, activated with the spacebar and then altered in value using the cursor keys again. This slows you up a little - it would have been nice to have used the keyboard to enter Tempo value, for example. Some of the icons are a little obscure too: a little man on a podium standing for Tempo, a picture of a metronome for Clock. A little confusing, but on the whole *Performer* is pretty easy to use.

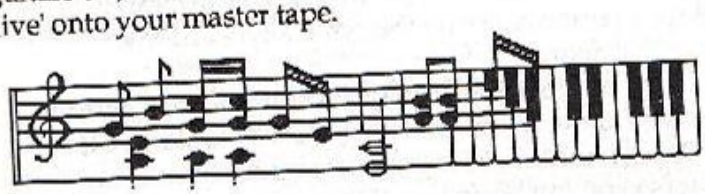
On the left of the display are the compositional functions to select which of the eight available tracks you're dealing with to play or mute each track; to assign a Midi channel; to loop tracks or allow them to play just once; to filter out velocity recording (which can waste a lot of memory); to transpose the pitch of a track; and to arrange a chain of up to 64 patterns for compositions around 20 minutes long.

Total capacity of the package is around 8,000 notes, though the actual capacity depends on the amount of information you require with each note. It will deal with eight or more polyphonic synthesisers and drum machines. Performer is limited to eight tracks in

theory, instead of the full 16 channels catered for by the Midi standard. This is presumably because of the limitations imposed by the speed of the Amstrad's processor and memory, but the package does allow you to merge two or more tracks into one, so your composition can contain up to 29 separate tracks, though you would not be able to edit all of them separately.

A more serious problem was that the review package would hang up if you tried to load a file that didn't exist. This could be frustrating if, for example, you had created a file called SONG1, and tried to call up SONG 1 by mistake. It simply means that you have to be careful when calling up files!

But will it ever replace a real recording studio? That depends on whether you're willing to buy a mixer and effects units to deal with all the synthesisers, and whether you're prepared to go without vocals, guitar and other conventional instruments. The best solution is probably to buy a cheap four-track cassette machine and use one track for a click to synchronise *Performer*, three for vocals, guitars etc, and have all the drums and synths running 'live' onto your master tape.



MAESTRO

Vanguard Leisure: all CPCs

The Maestro is designed to improve the sound quality of your 464,664 or 6128, by taking the stereo output from Arnold and amplifying it into two good-quality speakers or a pair of personal headphones.

Maestro comes well-packed in an expanded polystyrene pack, with a full-colour sleeve giving installation details. It consists of a small grey amplifier box, two metal-grilled speakers, a pair of headphones, connecting leads and a demonstration software cassette.

The amplifier has independent volume controls for each channel and a push switch to control speaker or headphone output. Leads are attached to the back of the box for power input and output, and signal input from the micro. There are also two DIN-type speaker sockets which take the plugs from the speakers. The amplifier is well-made, only being let down by the rather flimsy mounting of the volume controls - the knobs wobble when you turn them.

The speakers themselves are solidly mounted in plastic cases, each provided with a metal bracket which acts as a stand. The speakers can be tilted in these cradles to provide a degree of directional adjustment. The drive units are dual-cone, which means that the bass and treble frequencies are reported by different parts of the same speaker. Not quite as good as having separate speakers for each range, but better than the single-cone type. Overall they are very similar to the type of speaker provided with in-car stereo systems.

The headphones, which are like those supplied with personal stereo cassette players, are comfortable and very light to wear. They plug into the front of the amplifier box with a short lead. The length of this lead and the input lead from the Amstrad restricts where you can put the amplifier so that it's only really possible to put it close to the micro's case.

Positioning of the speakers is quite important, as they shouldn't be too far apart if you want a good stereo 'image'. Don't put them too close to the monitor or TV, though, as the strong magnets can distort the screen image. For the same reason, it's not a good idea to put them too close to a disk or disk drive. The speakers are supplied with screws to attach their brackets to the wall, and this is probably a good way to mount them.

The quality of sound that Amstrad micros can produce is very good, and this is well reflected in the standard of output from the *Maestro*. The sound is clear and clean, with little distortion. While not up to hi-fi standards it is subjectively very good, and makes the old CPC sound like a different machine. The demo cassette provides a couple of good examples, in stereo. The Amstrad's stereo output is divided into three channels, one for left, one for right and the third split halfway between the two, so appearing in the centre.

I tried several cassettes, including *Winter Games* which came out well, and the library of tunes provided with Rainbird's *Music System*. The *Music System* puts the background rhythms on one side, rather than in the centre, which gives a strange effect, but it's still heaps better than the mono output of Arnold on his own.

When you're not playing anything through the *Maestro*, there is a fair amount of background hum. This is more noticeable through the headphones, but under normal circumstances it's not enough to be annoying.

EXCELLENT VALUE

The *Maestro* represents excellent value for money. It's a very attractive peripheral for any Amstrad CPC micro, and as the advertising blurb says, it 'works with ALL add ons'.

All, that is, except the *Amdrum*. This is rather a special case though, as the *Amdrum* expects to be connected into your hi-fi and is fitted with an RCA phono plug which isn't directly compatible with the

stereo jack on the *Maestro's* input lead. But it shouldn't be hard to cobble together a connecting lead if you want to use this setup. The *Amdrum's* output is only in mono.

In all other respects, I can thoroughly recommend the *Maestro*.

CONNECTING THE MAESTRO

This is fairly straightforward, although you end up with quite a few extra leads sprawling across your desk.

Switch off all power to your micro, and disconnect the power line from the monitor to the keyboard. On the 664 or 6128 this is the five volt lead going to the micro, rather than the 12-volt coming from it - something not made clear in the instructions. This lead connects to a flying socket from the Maestro, and a similar lead from the amplifier plugs into the back of the micro. You are effectively breaking the Amstrad lead in the middle, so the Maestro can take its power from it. The Maestro doesn't draw much current, so this extra load will not effect your Amstrad.

You next plug each of the speakers into the sockets on the back of the amplifier, and the headphones into the socket on the front. A small stereo jack plug connects into the 'stereo' output from the CPC and you're away. No permanent changes have been made to the micro, and you can disconnect the amplifier again whenever you like. The Maestro is switched on and off with the power switch on the Amstrad monitor.

AMDRUM
Cheetah

If you've listened to many modern rock bands you'll know the rhythms generated using electronic drum kits. Until recently these boxes of tricks started at several hundred pounds - only small change for a promising band, but a lot for someone starting out. Stand-alone drum boxes come with digitally recorded drum sounds which you can program in many varied rhythm patterns, most micro-based drum machines have been hampered by the quality of their sound chips. These aren't capable of reproducing acoustic instruments accurately enough for serious use.

Amdrum gets around this restriction by ignoring the Amstrad's sound chip and using its own circuitry to produce the drum effects. This is accomplished with a small plug-in unit which connects to the expansion bus on the back of a CPC. The mono sound output is taken from a flying lead attached to the side of this unit, and fitted with a phono plug intended for connection to the auxiliary input of a hi-fi amplifier.

This means the *Amdrum* can't be used on its own, since you can't hear its output without a separate amplifier. The *Amdrum* is intended for use with other electronic instruments though, so it's reasonable to expect this kind of equipment to be on hand. But it's a shame that no through connector is provided on the *Amdrum* for connecting other peripherals which use Arnold's expansion bus.

Once linked up, you have to load the *Amdrum* software and a set of drum sound data before you can use the unit. The software and drum sounds are provided on cassette, and instructions are provided for transferring these to disk.

A set of predefined rhythms are also provided, but these are not so easily shifted to disk. Since they're meant to demonstrate the *Amdrum's* capabilities, it's odd Cheetah should expect you to use them from cassette when everything else might be on disk. This is particularly weird as the *Amdrum* software can't load anything from cassette when it's loaded from disk itself. If you don't manage to transfer the demo rhythms, you have to run the whole shebang from cassette when you use them.

The 'drumkit' provided with the *Amdrum* consists of eight sounds: bass drum, snare, mid and low tomtoms, cowbell, open and closed hihats and claps. Each sound is very close to its acoustic original, although some still have an electronic overtone. This, if anything, adds to the overall effect, giving the whole kit a 'modern' sound.

When you do run the demo rhythms, you can hear that the *Amdrum* is capable of some very complex and professional-sounding patterns. The demo covers rock, reggae, latin, march and several other music styles, and can be used as the basis of complete songs or edited to produce the effects you want. You can also create your own rhythms from scratch, of course.

The software allows you to create new rhythm elements and to link these together. Elements can be repeated in any order you like and loop around to repeat complete sequences, which *Amdrum* refers to as songs. Songs can be saved to disk or cassette, and reloaded later for replay or edit.

Individual rhythm elements can be made up by entering numbers on a chart displayed on screen, or by tapping out a rhythm in real time. In real time you can add or delete any of the drum sounds while listening to the beats already laid down. If you use the display two bars are shown on either side of the current one, which helps line up repeating beats. A sound is added to any beat by pressing its corresponding number key, and you can have up to

three sounds on a beat.

It's a pity you can't see the cursor following the beats as your rhythm is played back, as this would help debugging. But the facilities that are provided give a lot of sophistication, and are similar to those on a Roland drum machine I used once.

The *Amdrum* can be used for some quite serious work, but as it doesn't support midi it can't be used for triggering other instruments. It does have a synchronisation feature however, which can lay down the pattern for each sound separately on a multi-track recorder. You can then treat each sound individually and add extra effects such as reverberation.

The manual is well laid out, but a bit brief and very small (A7). I suppose it saves on staples, though!

Supplied for review with the Amdrum were two cassettes offering different drum sounds, one electronic and the other Latin-American. Both are good, offering a wide selection of sounds for particular kinds of music.

The drumkit editor, provided on each cassette, allows you to combine sounds from more than one kit, making up new selections. Sounds can be saved backwards, which means they play backwards, although you can't play them through the editor - reverse play is all that can be achieved with individual sounds. It would be handy to be able to treat the sounds digitally through a separate sound editor too.

BUILDING UP TO A 'SONG'

If you're constructing an *Amdrum* rhythm pattern or 'song' from scratch, you first define the number of divisions per beat, which depends on the complexity of the final rhythm.

Amdrum lays down a pattern of single closed hihat beats to act as reference for your rhythm. They can be deleted later if you don't want them in the finished song.

You add sounds to a pattern by tapping the Control key in real time or by adding sounds to a display of the current pattern. When you're happy with the pattern it can be saved to memory and you can define the next.

Once you have defined all the patterns you need you can link them together to form a complete song. If, for instance, you have defined patterns 1, 2, 3, 4 and 5, your complete song pattern might be 1, 2, 3, 1, 3, 4, 5, 1, 3. *Amdrum* software can then repeat the complete sequence.

ON THE BEAT

The *Amdrum* is a very reasonably priced alternative to purpose-made drum boxes. You've got to have an Amstrad micro too of course, so the cost of that should be added in a direct comparison. It's a unit which is really of more interest to someone who does quite a bit with electronic sound or music rather than the casual explorer, and offers a lot for the home music-maker.

Being largely software-based there is a lot of scope for extensions to the system. It should be possible to create the data needed for an *Amdrum* sound either from scratch with a sound designer, or perhaps by capturing it with a microphone and feeding it in from cassette. You would then have sound-capture facilities approaching those of the fabled Fairlight keyboard.

MUSIC MASTER

Vanguard Leisure: cassite & disc

This is the software packager marketed to go with the *Maestro* amplifier and speaker system. It comes on cassette or disk and loads without difficulty. Unfortunately, once loaded you start to wonder whether it's worth the money.

The screen shows three octaves of keyboard, and when you press a key you can hear the corresponding note. The keyboard can be transposed up and down to cover a full eight octaves and you can select any of six voices for the notes. The six function keys f4 to f9 give you rather poorly enveloped percussion sounds. A foreground track can be laid over one or two background tracks.

All this sounds rather good, until you realise that it's all *Music Master* can do! You can only lay down notes in real time, and when you've laid down a backing track (which has to be the right length and in perfect tempo) you must then play the accompaniment and melody line without stopping. I'd be interested to hear of anyone other than a trained musician who can do this without error.

If you do succeed in creating a tune, you can save it to cassette or disk and reload and replay it later. There are no facilities to edit the piece.

So sophisticated is *Music Master* that Vanguard doesn't seem to think it needs a manual, printing brief instructions instead on the back of the box. They contain some odd English, suggesting that DataSync, the people who wrote the program, are from abroad. A pity someone at Vanguard couldn't have edited it through.

This article continues next month with a run-down on the amazing "Advanced Music System" by Rainbird, and the Electronic Music Utility (EMU) from Discovery.

Adventurer's Attic

by Philip Riley

It was at a user group meeting that the system described in this month's column was suggested to me. I have been toying with the idea of coding the location descriptions of adventures in order to save memory. It was at the meeting that I mentioned the system I had been working on and one of the members gave me a listing of a small test program that he had been using. Although using much the same principle as my own it was much better, so the old system was scrapped and the new one started upon.

The basic idea of the system is to use ASCII characters stored in strings that are used to pick words out of a dictionary also stored in string variables. The listing that I had been given had the bare essentials to make it work so I set about expanding it a little.

Originally the program would only encode and decode, the dictionary of words had to be put in manually. The program now encodes and decodes and updates the dictionary with any new words that are used. You can also load and save to disc or tape and keep a check on the amount of memory while at the same time performing a garbage collection.

It is when saving and loading data files to tape or disc that a particularly nasty little problem can arise. We are using ASCII characters within the strings, two of which can cause problems. I was fortunate enough to hear about the problem before I started using this system. All of this fuss is over just two innocent characters - the comma (,) and quotation symbol ("). You cannot save these characters to tape or disc on a data file successfully. When the computer reaches these two symbols it thinks that it has reached the end of the string. It will take the remainder of the string as the next string along and so you will find that all of your data has been completely mixed up for you. I am not sure if it is when saving the data or loading the data back into the computer that the computer actually mixes your data for you but it really makes no difference anyway as the result is still the same. Also remember that you cannot use the lower section of ASCII characters (No. 1 to No. 31). I always start at character No. 45 [CHR$(45)] as this not only takes us past the lower characters but also puts us past the Comma and Quotation symbol [CHR$(34) and CHR$(44)].

Many of you out there who like to write your own programs may have encountered the problem of string variables eating up the memory. For those of you who have not had to contend with this problem or do not understand what I am talking about I will explain. The Amstrad is not a very tidy computer when it comes to strings. All of the string variables that you use have to be stored in memory. When you change that string it does not go to the same spot in memory that it has been using, it will go to the next area of free memory and store the updated string in that area of memory. So if you are constantly using and changing string variables you can very quickly use up all of your free memory and the program will crash. To prevent your Amstrad from locking up on you, you will need to perform a garbage collection at regular intervals within the program. To perform a garbage collection you use the FREE command: a=FREE(""). Unfortunately the more strings that you use the longer this process will take and this can be rather tedious as time goes on.

The reason I mentioned this little quirk in the Amstrad is that the coding system that I use employs a lot of strings and this is one of its major drawbacks. Of course this problem could be solved by writing the routine in machine code or by writing it in Basic and then compiling it. I do not know the first thing about machine code, but I have tried to compile the program without much success.

Next month we will publish the listing of the program with a full explanation of how it works and how to use it and so, until then, keep adventuring and keep those letters coming in.

SOME QUESTIONS

From Danny Liebke of Ocean Shores in NSW: I need help with the **Hobbit** - how do you get out of the wood elves dungeon? And with the **Hitch-Hickers Guide to the Galaxy:** how do you get the Bugblatter Beast to go to sleep?

From D. Hughes of Ryde, NSW comes: In Sorcery+ the bubbling

spring at the main gate restores energy, but I cannot get past the door in the top right hand corner on the wooden bridge. Also, do you have any clues to find what's at the Altar Scene in **Souls of Darkon**. The area to the east of the altar contains metal but I can't find it. Also, how can the blacksmith help?

Stephen Snow takes up James Edmundsen's offer to help out "lost souls" in **Forest at World's End**. He writes: I have got to the part of the program where you are at the Witch's Hovel and I cannot get past that point. Every time I go into the Hovel I get magic dust thrown on me and then get beaten to death with her broom. *(Some of us have experienced this on a Friday night - Ed)*. I cannot find any other channels to go past that point no matter what equipment I have with me. Could you please assist?

Adam Musial, who offers some answers below, requires help with **Sea Base Delta**. He needs help in getting past the top security area which is covered by a TV scanner. In **Subsunk** he can't open the hatch in the machinery room or get the pill out of the bottle.

SOME ANSWERS

From Adam Musial for Clinton Willis who is having a problem with **Sea Base Delta** the answer is apparently REMOVE BEAT. Other clues include JOIN AIRBOTTLE when you have the airbottle and diving suit. Then WEAR SUIT. When at the lift on level 2 STICK BUTTON with the bubble gum you have chewed. In order to use the travel car again, you need to SHOOT OCTOPUS with the spear gun and then FILL PEN with its ink. This will enable you to fill in the required form.

Our thanks to Adrian Booth - we'll put your mammoth hints and questions (at least the ones that have not been so far covered) in next month's issue.

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