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ZAX

FOR SAM COUPE & SPECTRUM



PRINCE OF PERSIA

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by D. BLACKBURN

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Back in October, I received a letter from Mandy Rodrigues, the Editor of the 3D Construction Kit User Group (and of the Adventure Fanzine: Adventure Probe). The letter she wrote concerned the 3D Construction Kit review in the Sept/Oct issue of ZAT.

Mandy pointed out about the several unfair, and unfounded, comments directed at the User Group which were included in the said review. Her reason for writing was to address, to me, her opinions on the comments and basically to set the record straight. In good faith, both David and myself have contacted her to apologise about the inclusion of these comments..and to make full amends, I am also going to apologise to her, and the members of the User Group through this Editorial. So on behalf of myself, and David, we apologise for this grave error and wish both yourself, the User Group, and Adventure Probe, live long and flourish in years to come.

In fact the entire episode raised much debate at our regular meetings concerning the policy of "freedom of speech" and "censorship" in general, not just concerning reviews, but about matters in general. In fact, if anyone has there own comments on such matters I'd very much like to hear them. Perhaps they could form part of a future edition of Soapbox, considering one of the questions in the Reader Poll was directed to you, the reader, participating more fully in this popular section..

About the poll, I want to thank

everybody who has sent in their forms, but as yet not everyone has written in, so as a result if you haven't sent in your form the closing date is now JANUARY 31st, 1992. All forms gathered by then will be processed and the results will appear next time.

The New Year is only a few days old and already events are shaping ZAT as we enter our third year in print. Not only does this issue mark our "second Birthday", but it's with sorrow, and joy, that I inform you all that this issue turned out to be David's last issue as Technical Editor, and as writer for many of ZAT's numerous sections.

Now don't jump the gun, this isn't a parting of the ways on bad terms. Just before the end of November, David received a phone call from SAMco, from Alan Miles. Plans were afoot to replace the numerous newsletters, and the Samco Hotline, with a monthly, up-to-the-minute-, news disc, which will be called: SAMco NEWSDISK! But what does this have to do with David's departure? Well, basically he's the one who has been asked to be the Editor, compiler, and overseer of this new service. In order to give the service his full attention and energies, David will be working at SAMco direct, and as a result, it sadly meant that he would have to limit his ties to ZAT, namely giving up writing, and his position as Technical Editor.

Anyway, I (and I expect all of you) wish David the best of luck. In the time that I, and the other ZAT stalwarts, have known him, he's a smashing chap, and should be able to weather any challenges and duties that the job entails.

Of course this leaves me the problem of filling in "his shoes", so turn to the news section for an appeal, and for news on the News Disk. Anyway, goodbye for now and I'll see you soon

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TO D. BLACKBURN C/O ZAT.



First off I want to apologise on the behalf of Malcolm, who due to other commitments, is unable to do this edition of the letters page. Instead, you'll have to bear with yours truly a bit longer. So lets immediately get down to business with a letter from YS adventure columnist: Tim Kemp..

Dear MAC

David Ledbury, having heard I was the new YS adventure columnist, sent me a couple of copies of ZAT (9 and 10 to be exact) and I must say they were rather impressive. I've known about ZAT since it's first foray into the fanzine world back in 1988 - when it appeared briefly - only to disappear after 1 issue. That fact alone made it a bit hard to subscribe to, though I must chastise myself for failing to try it out a couple of issues when it re-emerged in 1989. As I also run a fanzine (FROM BEYOND - a Spectrum only adventure-zine) I should really have made an effort and checked ZAT out! I know only too well how difficult it is to get anyone interested in helping out with setting up a fanzine, or to contribute an article, or to write a review, or to have some faith in what you are doing. Nowadays I always try to subscribe to any new fanzines, or at least offer what support and help I can. Mind you, that doesn't mean that a fanzine (or disk-zine) has the divine right to get their hands on any of my money, but if the venture is good enough (or even simply shows promise) then I'm more than happy to part with some dosh in exchange for a good read. So, without further ado, find enclosed that cheque for a subscription to ZAT.

Anyway, all I really wanted to say is

that I've just brought a SAM Coupe/ 512 (after Phil Glover - a regular ZAT contributor raved about it to me) and would like to know what other Coupe owners expected from their Coupes when they first got them? I'd never actually seen one in action before, and was genuinely delighted when, upon loading it and running a supplied DEMO disk that it didn't perform anything like a super-Spectrum. (Which is basically what it's always branded as.)

My story ends there really as my new SAM Coupe actually arrived with a partially non-functioning keyboard.. but hey, these things happen, right? I'm now eagerly awaiting my replacement (from SAMCo) and look forward to seeing what the machine can do. It's a darn shame that there isn't a whole heap of top quality software available for the Coupe yet, though I'm looking forward to getting some classic Speccy adventures up and running on it in the near future.

Oh, by the way, if Prince of Persia on the Coupe is anywhere near as good as it is on the Amiga, then buy it without hesitation. It's really superbly animated, horribly addictive and simply one of the best Amiga games I've seen since, er... Lemmings.

Tim Kemp.

Thanks for the letter Tim and welcome to the ranks of the enlightened. Although the original ZAT did get off to a bad footing, this issue sees the start of our Second year of the revised, improved and revitalised version! Now, if that isn't the sign of success, then what is? Many readers forget that the first ZAT was a one man effort (i.e. as in David), while this incarnation is a TEAM production! (i.e contributors and readership alike).

If any other people want to dabble with Adventures on SAM, look back at last issue for details of the SAM Adventure Club. Issue 2 should be out soon. If you read on you're not the

only one new to the ranks of Coupe users. You'll find that there's a review of Prince of Persia this very issue, and yes I agree with you that POP is a very addictive game (my two brothers would win the POP endurance award, if one existed). Again thanks for your letter and hope hear from you again soon.

I could be your youngest subscriber (timewise) but I may also be your oldest (agewise). Only you can decide the former. As regards the latter, I throw my age into the ring. I am 73 and getting older by the minute.

I reached Sam via the well worn path of ZX80, ZX81 and the Spectrum and I've enjoyed every minute of the way. The early months were a bit "iffy" with compatibility problems, but it is now proving to be a really versatile machine. Some of the software available for it is brilliant and the prices very reasonable. How are the PD discs produced for the price? I've enjoyed issue 10 and look forward to future issues. I would like it to be Sam specific, but realise that would be a bit too much to expect at this stage.

Eddie Oates.

It's nice to see that we have readers of such a wide age group and are all dedicated users of the Coupe and Spectrum alike. Since you mentioned PD discs, some of which are truly fantastic, and to buy at such low prices, ZAT is endeavouring to build up a collection of PD contacts for ZAT readers to purchase discs through us. Already we have demo master Guy Middleton, and very soon well have Mike A.J.: an up-and-coming talented programmer whose musical demos are excellent. More on this soon. We would like to cover the Coupe 100%, but since so many readers are Spectrum orientated, we like to keep both sides happy. Lets see what the future brings..

Hiya, its me again. After becoming famous (well nearly!) last issue (issue 10) I though I'd write again.

This would be on disk but my drive broke down last Monday night and to cut a long story short, I phoned SAMCo on Tuesday morning, sent it off then it came back on Friday, but not working. I phoned SAMCo again and they said to try the drive without the screws-that-keep-it-in-place but it still didn't work, so I phoned yet again and they said they'd phone back on Monday (which they didn't) so by 4.15 Tuesday I phoned them and they said to send it back again, and I hope they're quick! (Did I really cut that short?!)

Just a couple of mistakes in issue 10 that I spotted. Firstly in my letter instead of putting "issue 9" you put "issue 10", and on Integrated Bits" you spelt Stephen Wilson's name wrong, you put "Steven" instead. Oh yes, hiya Stepen. Is there anybody actually reading this drivel? In fact has this letter been printed? I've only had one last issue. If I say "ZAT is mega brill and fantastic" will this be printed? Just one complaint though. I usually find when I read the news page(s) the news is about 1 month old!

Kevin Cooper

Sorry for cut your letter short, Kevin, but it was the only way to fit it into the letters page; having said we're mega-brill, we had to print it, if not fully. I hope you managed to get your drive sorted out. Both Dave and I appologised to Stephen for spelling his name wrong..but since there's a Steven, a Steve and a Stephen writing for us mistakes can occur.

Kevin also mentioned the lack of Coupe users writing in but I want to see Spectrum users write in; on paper or disc. We try to insure we get up-to-the minute news reports, which should be easier with David working for Samco Direct. Anyway that's it. See you soon.



INTERVIEW with.. **Colin Jordan**

What background information can you give us?

I was born in London on the 10/11/64 (making me 26 years old). I studied computer studies at school, but wasn't really interested in computers until my Grandfather bought a Commodore PET (with a massive 32k of RAM!) in 1981. I became instantly hooked and was soon producing simple games in Commodore BASIC (not the easiest of BASICs to use!).

When did you first become interested in Adventures?

Since 1983 when I saw "The Hobbit" which was the first Adventure I ever played. I was instantly hooked, and wrote my very first Adventure in 1985 as a present for my girlfriend to play!

What was this first game that you wrote?

It was called "The Dungeons of Tharn"; a very simple graphic type Adventure (although I had not seen a "proper" Adventure type game at the time) which I later converted to the Spectrum and tried to get published without success - it was quite crude really!

Which game titles that you have written are your favourite and least favourite?

My favourite (to date) must be the "Famous Five". I'm very pleased with

the way Enigma have marketed it and the way it has been generally received. I suppose that a sequel is inevitable eventually. The game I really hated doing was "The Great Peepingham Train Robbery"; a b£\$@&d to write, which was originally commissioned by Top Ten software who let me down and generally ripped off most of their programmers (including me!). I ended up selling "Peepingham" myself through my own mail order company Axxent Software.

What do you think of the current Adventures on the market?

The various English Adventures which were released by Melbourne House set high standards which I feel that even today most Adventures don't approach. I tend to prefer Adventures which depart from the more common themes such as D&D, etc..

Which are your favourite and least favourite Adventure game titles?

My favourite I think, must be "Lord of the Rings" by Melbourne House, though I think this suffered from trying to be a bit too ambitious, and was painfully slow in places. The feat of fitting this all into 48k on the Spectrum was truly remarkable. I can't really think of my least favourite Adventure, but it was almost certainly one which was written using the Quill.

Which Adventure programmers do you admire?

I really admire Phillip Mitchell (who wrote the English style Adventures) and Level 9 who also did some excellent Adventures. Rob Holman at Enigma has done some excellent work for the Sam Coupe and deserves some praise. I really hate programmers who can't be

bothered to play test their games properly - especially Adventures!

What do you think about Adventure game creators/utilities?

I have very mixed feelings about them. On the one hand, I feel that Adventure game utilities pave the way for shoddy Adventures appearing, which in turn leads to software houses becoming reluctant to release Adventures at all. How many Adventures have been released by MAJOR software houses recently? On the other hand, such utilities do enable some genuinely creative people to put together Adventures which might not have appeared otherwise. Of the Spectrum utilities available, I would say that Gilsoft's PAW was the best. I found GAC by Incentive riddled with bugs and almost impossible to use.

How do you formulate an Adventure game?

I'm afraid to say that I usually start with a vague concept of the plot and start coding in the locations. I then find that as I code the location descriptions, various ideas and puzzles present themselves and are incorporated into the overall plot of the game. Not very professional I know, but this method seems to work fine for me. The "Famous Five" Adventure was an exception, as of course I had the novel to work from which restricted my own contributions to puzzles, etc, somewhat.

How long does it take to write an Adventure?

It varies. Because I write my Adventures from scratch without using utilities, they tend to take a fair bit of time to write and test. In the Spectrum Adventures I have written, most of the time has been spent trying to cram as

much text and plot as possible into the memory available. "Peepingham" was exceptionally difficult from this point of view and took me about 11 months to write. The Sam version of "Famous Five" took me 3 months to put together (memory was no problem!), but the Spectrum version has been in production (on and off) for about 18 months!!

Apart from computing, what other interests do you have?

Well, er, programming doesn't leave me much time for doing much else, but I have a small music studio at home. I've got a whole room full of Synthesizers that I like to muck around with, to make some tracks with in my spare time.

What are your favourite and least favourite books?

Well I like reading Science Fiction; I like Arthur.C. Clarke. I also read a lot of Tolkein, Lord of the Rings, that kind of thing. Least favourite books have to be the Mills and Boon ones, not that I've ever read one, but I wouldn't touch one with a barge pole!

What are your favourite and least favourite radio and television programmes?

Favourite television programmes?, Well I like comedies like Monty Python, that kind of thing. I'm a great fan of Danger Mouse, Count Duckula. I like science programmes, like Horizon, Tomorrow's World. I hate about 90% of all American TV programmes, I know I'm going to make a lot of enemies but it's true. I really can't stand a lot of the soap operas either.

When did you start working for Samco?

I started work at the end of November, 1990.

Do you enjoy working at the company?

Well, yes I do, every day is different, so I guess I must enjoy it. I travel 120 miles to work and back each day so I guess I must be a sucker for punishment!

When did you become head of Revelation?

Well, when ever Revelation was formed, so I've been "heading" Revelation ever since it was formed.

Which has been your favourite title on Revelation to date so far?

It has to be "Prince of Persia", has to be. I've also got quite an attachment to "Quizball" too since I ended up writing up half of it

What future titles would you like to see on the Revelation label?

I'd like to see all kinds of software included on the Revelation label. We've already got a strong commitment into getting educational software out and we'll continue with that. We want to see the games obviously, a lot of people want to, stuff like "Prince of Persia". I'd like to see perhaps more totally original products, rather than straight conversions or licensed titles. I think that's something sadly missing a great deal from today's software. I also think the Coupe has a great potential for being an Adventure machine. I'd like to see lots more Adventures appearing, not that I'd write them all, but I'd like to see more appearing, and not of course forgetting the serious stuff as well. The "Comet Assembler" is going to be Revelation's first serious piece of

software and I'd like to see more titles along those lines as well, its really a case for something for everyone.

Would you do another "Famous Five" game?

Yes I would, but I think it's unlikely the way things are looking at the moment. Unfortunately "Famous Five" hasn't done as well as we'd all hoped it would, so it doesn't look very likely that Enigma will ask me to do another one. The Coupe version out of all the formats was probably the most well received and I suppose it's conceivable at some stage that I might do a follow-up.

Is there any specific subject that you think would make an ideal basis for an Adventure game?

I don't want to be stuck with the image of writing children's adaptations but I think there's a lot of books that have enormous potential; the "Chronicles of Narnia" would make a fantastic adventure, something I'd like to do actually but probably won't get around to now. Let's see more original Adventures. A lot of Adventures seem to fall into the same old categories. It's either Dungeon and Dragons or Detectives, I'd like to see more original ideas.

What are your opinions on PD software?

Because of the lack of software released for the Coupe, I think the PD scene is perhaps very important at this stage. They're a lot of good, quality programmers out there producing stuff on PD, there's no doubt about it. However I'd like to see them devote their time to producing some proper full-priced, finished software rather than the odd demo or two that everyone likes to see, but once they've seen it, there's

not a lot anyone can do with it. There's a lot of people making their debut in PD; Edwin Blink, like Frank Fuka who went onto do the music for "Prince of Persia", it's providing a good spring-board for people who want to go onto better things. I think Brent (Stevens) is doing a fine job with his PD association, it never ceases to amaze me the stuff that appears.

What do you think of Sam Cassette games/software, and the Coupe in general?

We'll talk about cassette games first for the time being. Cassette games aren't really feasible for the Coupe. The amount of time it takes to load something really doesn't make the cassettes very popular. A lot of people have already up-graded their Coupe's to disc based machines, I think less than 5% of the Sam's out there use tapes. It's unlikely any future commercial software published for the Coupe will be done on a cassette format because they aren't selling to make it worthwhile. There aren't enough machines. That's why Enigma didn't release a tape version of any game after Pipemania, and we haven't released any products on the Revelation label using tapes either; if the demand was there, we'd do cassette versions too.

How I feel about the Coupe. I think the Coupe is an idea machine to up-grade from the Spectrum, particularly for programmers, who are used to the Spectrum and all its quirks, who can feel really at home with a Sam. Particually Machine-Code programmers, familiar with the way the Spectrum ROM handles things. Andy Wright has really done a marvellous job in keeping the same approach in writing the Sam ROM. The machine has vast potential, which so far hasn't been tapped. It has lots of prospects.

The software we've seen so far hasn't stretched the machine's capabilities

enough yet. Over the next year or two, there's a lot of stuff appearing that's really going to amaze everyone. By talking to Bruce, I realize how the machine was designed; he's given me a glimpse of what the machine is capable of. The best is yet to come: definately.

ZAT would like to once again thank Colin, for allowing us to interview him.

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Mind Games

D. Ledbury
AND
J. Crawford



I hope that last issue's shock announcement didn't catch too many people off guard! I also hope you all managed to have a happy Christmas, and hope you have an even better new year! I aim to! (I'm currently writing this in November still! It does get confusing!)

Anyway, enough of this waffle - you didn't turn to this page for that, did you? I was recently lucky enough to receive a copy of the first FULL issue (not the demo version we were selling in Birmingham at the All Format's Fair) of the new SAM disk, published by the SAM Adventure Club, the new group headed by Phil Glover and his partner-in-crime, Dave Whitmore. So, without further ado, here goes a quick look at what's on offer:

This disk starts off with a very impressive Pirate title page, inspired from the Adventure "Treasure Island", recently released from River Software. Although this is certainly not a Spectrum screen!

Dave then shows his sense of humour, with his unique method of asking for line feeds! Err... different Dave, definitely different!

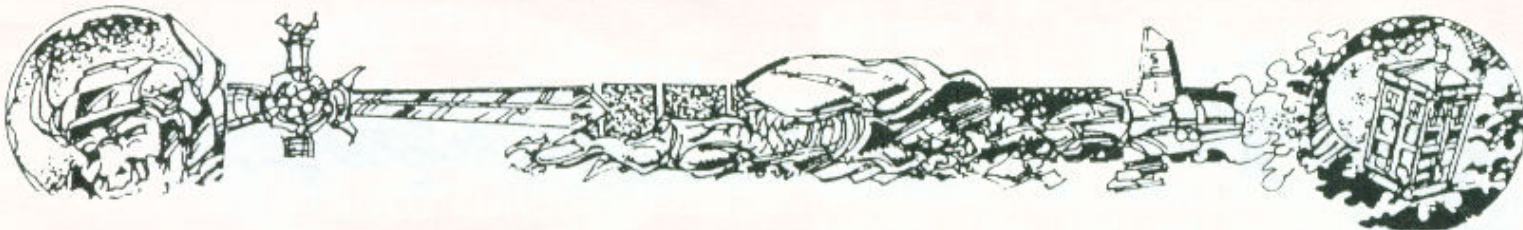
The disk has a wide variety of contents, all selected from a neat menu. Contents range from the obligatory Editorial to a Technical section. Also covered are articles on the "From Beyond" Spectrum PD library (run by the YS

columnist, Tim Kemp), Reviews of Grue-Knapped! (which looks worth reviewing soon!), Treasure Island, Ice Station Zero - all these are SAM compatible Adventures, details of Publishers of Adventures, etc.

Of special interest is the Hints and Tips section. This is normally one of the most controversial points of any Adventure related magazine, as it is possible to give too much information away, and thus spoil the game. The SAC covers this nicely, by allowing you to step through a solution a page at a time, with the option to quit at any time. The solution is not a straight forward one either, so a bit of thought is needed still!

I also was impressed with one item that Dave Whitmore was "forced" to include "reluctantly", a "basic" Adventure Creation program which, although unfinished, could be quite useful. The only problem is that Master Basic is needed to run it (see review this issue). I hope Dave gets a chance to finish it!

On the subject of Programming, a special item of importance is also present on the disk - Assembler routines from Colin Jordan! These are routines that help with the development of an Adventure, including Vocabulary searching routines. These routines were used in the Famous Five, so they are proven! The files are in SC_Assembler and COMET formats.



A full report on the Adventure Probe Convention is enclosed, the first part of a feature on Emulators, details of the "From Beyond" PD titles possibly making an appearance on SAM Disks, and much more besides! What can I say, but with support like this the SAM has an awful lot of potential in the Adventure field. Let's hope that we can get more than just one game to act as a showcase for this potential! The disk is available from:

43 Ferndale Road
Hall Green
Birmingham
West Midlands
B28 9AU

...and costs a mere £1.00 per time. (Or a blank disk plus the necessary postage stamps.) Please make all cheques payable to Phil Glover. Additionally, if you are a Spectrum owner, then you may wish to contact "Doctor Dark" for more details of the Adventure Tapezine - "Adventure Link" which we looked at last issue. Issue 2 should be out by now, although I have not seen it, it should be worth giving a try - the trial issue was VERY promising! Drop the good doctor a line at:

16 Montgomery Avenue
Beith
Ayrshire
Scotland
KA15 1EL

Don't forget the all important SAE though! Now, a review of another PD puzzle game by Joseph:

Shanghai - Fuxoft
Price:PD SAM Coupe

With every new game-type there comes a clone, i.e. Manic Miner, Dark Side, Molecule Man etc. Not to say that any of these games are bad, just very disheartening if you buy it and already have that particular game-type in your software collection.

Shanghai is the clone of Dragon Tiles. However, the game features many improvements on Dragon Tiles game that would have been very beneficial to the original game as I will explain.

You don't have to stick to the same layout as you played with on Dragon Tiles. You can have four heaps of tiles, three rows or just a flat layout which is the biggest of them all. A common advantage of the "three rows" is that you see the tiles in 3D which makes it easier to understand the "pyramid rule".

What else? Well, you can replay your moves, either your last or your last five. A common criticism of Dragon Tiles was that you would get so far and then be left with no matches. With Shanghai, you can replay your moves and find out where you went wrong, thus giving you a greater chance to complete it. If you totally mess it up you can select the option "replay all" which will send you back to the start of the board.

Although they are mostly the same tiles, you have the addition of one or two more sets which add to what little originality is present.

Shanghai is an improvement on its predecessor and a great game in its own respect, too. My only criticisms are the lack of a "Help" command and no save game option which balances it out.

Although, it comes in to its own in presentation, easier rules and playability.



In my opinion the replay option is the best which really does make the game stand out from Dragon Tiles.

Shanghai is a worthy sequel to Dragon Tiles, with the advantage of more options. For those who missed Dragon Tiles can't afford to miss it, and for owners of Dragon Tiles should prove a good buy. All in all, an excellent game. Buy it!

RATINGS: PRESENTATION 86%
COMPATIBILITY SAM
PARSER N/A SOUND 61%
OVERALL 87%

Thank you Joseph. There is only one thing I can add to this review, as you may have read on the PD page, we are currently unable to contact Turbo and have been given information to the effect that they have ceased publication. If this is true, then we should know by next issue. In the meantime, since this game is PD, and if you are interested, then I will see if I can include it on a later SAM Quartet disk! No promises though!

One thing that has been needed for a while on the SAM is a good Adventure creation system. However, Gilsoft have been of the "we'll wait and see" attitude. However, it seems that without realising it, they may have created a SAM Adventure System! Let me explain...

On December 14th, a new title is due to be launched for the SAM. This is not a game, or an ordinary utility, but a DOS. Not an ordinary DOS, but Pro-DOS. Pro-DOS, is actually a "compatible" version of the well-known, if aging,

business DOS - CP/M.

Now, as you may also know, the Amstrad home range (CPC, PCW) also run CP/M, and what do they also have available ... a CP/M version of PAW!

I have spoken to Gilsoft, and they have said that if the SAM will run the CP/M version of PAW, and it can be transferred to 3 1/2 disk, then they will certainly consider marketing it as a SAM Version. If this is true, then it could be VERY interesting!

Two possible drawbacks are that the Amstrad's run 2 versions of CP/M - CP/M 1, and CP/M 2.2. 2.2 is the older version, and that what the SAM's getting. If the Amstrad PAW is written for the wrong version, then it may not work. The other drawback is that you would need to have a copy of Pro-DOS to get the games to run, and it is £25.00!

I have passed the above information on to the publisher of Pro-DOS, Brian Gaff, and other relevant people. If anything comes of it, then ZAT will let you know!

Well that's the end of another session of Mind Games and in more ways than one, since this also happens to be my last stint on the column, well for the future maybe. Puzzled? Well see the news page and the Editorial for details.

Taking over from me is Mindgames' resident reviewer, Joseph, who's eager to get started next issue. So it's goodbye from me, hello Joseph, and in other words: the end. (perhaps I should've never revealed my true identity last time, eh Andrew?).

Until next time? David Ledbury.

Back-chat

BY ANDY DAVIS

Hi. This month we are going to learn a few more BASIC commands and put the tips from last time (issue 10) into good use and put them all into a little programming task that I'll be setting at the end. Don't worry, it should be easy if you've been paying attention!

COUNTING.

The primary task of the simplest of computers is to count. Computers can make up to four million calculations per second! So let's see how it would count to twenty:

```
10 FOR x=0 TO 20
20 NEXT x
```

Run this and you should get an OKAY message. So what happened? Well when it was run, the computer was told to count from 0 to 20, using the variable "x". The second line tells the computer to increment (increase) x by one and return to line 10. But, how do you know the computer actually counted? The computer did it "in its head", but we need proof, so add this line:

```
15 PRINT x
```

Now RUN, and we see the numbers from 0 to 20 print on the screen. So how can we manipulate the program and get a different count. Well, look at line 10, there are two numbers in it. The first number signifies where to start counting and the second signifies where to stop. So to count from 5 to 100, we'd put:

```
10 FOR x=5 TO 100
```

But how about if we want to count

backwards, from 15 to 1 say? Experiment a little and come back if you give up. Well, we would reverse the numbers but we have to insert a new command, the word STEP. Before I explain this, just put in this line and test it:

```
10 FOR x=15 TO 1 STEP -1
```

STEP really means increase or decrease depending on the number after it. If no STEP is used then the computer just increases by one. You could add STEP 1 in the first example but it's just a waste of memory. To get the computer to decrease, we just put a minus sign before the number. So have a look at the next examples and fill in some of the blanks:

STEP 4 will INCREASE by 4.

E.g. 1,5,9,13...

STEP 1 will INCREASE by 1.

E.g. 1,2,3,4...

STEP -1 will DECREASE by 1.

E.g. 10,9,8,7...

STEP -5 will _____ by 5.

E.g. 20,15,10 ...

STEP 10 will _____ by ..

E.g. 10,20,30,40..

STEP __ will INCREASE by ..

E.g. 10,12,14,16..

STEP -3 will _____ by ..

E.g. 18, __, __, __, __

QUESTIONS.

To perform certain tasks, the computer must ask questions about certain parts of the program. Here is a brief example:

```
10 PRINT "Enter your name"
```

```
20 INPUT n$
```

```
30 PRINT "Are you male or female?"
```

```
40 INPUT s$
```

```
50 IF s$="male" THEN PRINT "Hello Sir";GOTO 80
```

```
60 IF s$="female" THEN PRINT "Hello Madam"; GOTO 80
```

```
70 PRINT "Hmm, bit unsure are we?"
```

```
80 STOP
```


Run it and enter your details. Basically, it asks you what sex you are and responds to what you typed. Breaking the program down we can see: Line's 10 & 20 ask your name, Line's 30 & 40 asks your sex, Line 50 checks to see if you typed "male" and responds to that, Line 60 checks to see if you typed "female" and responds to that, Line 70 is the "Prat Catcher", I'll explain more in a moment and Line 80 stops the program.

THE "PRAT CATCHER"

Normally whenever there's a part in your program where input is necessary, you can guarantee all the idiots will come and try to confuse the computer and make it cause an error. That is why you add a "prat catcher". Basically, it just responds to any data which has no use, and is blatantly wrong. I wonder how many people typed in "Yes please" to the second question in the above program! When you're writing the 'answer' part of the program, first work out how many correct answers there could be, then add one. In the above example, there were two right answers: "male" and "female", the added third was the "prat catcher", to print a response to any erroneous data.

ELSE.

Some computers, such as the Coupe, have an ELSE command. Standard Spectrums don't unless you have an extended basic system installed. BetaBasic is one example. ELSE simply adds a better class of programming to your program. Here is an example without else:

```
10 PRINT "Enter age"
20 INPUT a
30 IF a<18 THEN PRINT "underage"
40 IF a>=18 THEN PRINT "eligible"
50 STOP
```

Now with ELSE:

```
10 PRINT "Enter age"
20 INPUT a
30 IF a<18 THEN PRINT "under age"
ELSE PRINT "eligible"
40 STOP
```

This does as the program states. If the age entered is less than (<) 18 then print underage otherwise (ELSE) print eligible. The most commonly used function of IF..THEN is on a menu of a game. For example:

GALAXY INVADERS

```
1. Player One Start
2. Player Two Start
3. See High Scores
4. Select Joystick
5. Define Keys
PLEASE CHOOSE AN OPTION
```

The input system would be as follows:

Wait for keypress.
If key 1 is pressed then start with 1 player.
If key 2 then start with 2 players.
If key 3 then show high scores.
If key 4 then select 'Joystick control'.
If key 5 then program keys and select 'Keyboard control'
Return to 'Wait for keypress'

REMS

REMS or REMarks are lines in the program which are totally ignored by the computer and are just there for the users benefit. REM statements aren't compulsory, in fact they use memory and can sometimes hinder you, but they provide excellent 'bookmarks' to your program. To use a REM, you'd just type in the line number, the word REM and then anything you like. It doesn't need to be in speech marks (") or be printed neatly, it's purely for your benefit. For example, if you've just written a very long program and come back to it in a

few weeks, you can guarantee you'll have forgot what variable stored what data, where the line which asked your name is and so on. So, everytime you start a new program, something like this should be lines 1 and 2

1 REM Fred program one. Written
14/11/91 by Fred Bloggs.

This program asks you a series of questions and shows you the results.

2 REM VARIABLES USED: N\$:Name,
A\$:address , p\$:postcode a:age,
h:height (in Centimetres), w:weight (in
Kilogrammes) p:number of pets
owned, c:number of cars owned. 10
rest of program.

THE TASK

I have written part of a program which operates on a menu system. I have written the menu and part of the lines where the responses are. Here's what you need to know.

A. There are 5 options, as follows..1: Clear the screen, 2: Print "Hello" 50 times, 3: Save the program, 4: Print some random numbers, 5: Stop.

B. Each option is on line number option*1000. For example option 2-line 2000 option 3-line 3000

C. There are 4 variables. These are..a: main menu variable counter: The hello counter (0-50) n\$: The filename to save under num: Random number. So, here's part of the program 1 REM 2 REM:

```
10 CLS
20 PRINT "MENU PROGRAM"
30 PRINT "1: Clear screen"
40 PRINT "2: Print hello 50 times"
50 PRINT "3: Save the program"
60 PRINT "4: Print some random
numbers"
70 PRINT "5: Stop"
```

```
80 REM ** AWAIT USER INPUT **
90 REM *****
100 INPUT
110 IF a=1 THEN GOTO 1000
120
130 IF a=3 THEN
140
150 IF a=5 THEN STOP
160 GOTO 100
1000 REM ** CLEAR SCREEN **
1010
1020 STOP
2000 REM ** PRINT HELLO *50 **
2010
2020 PRINT "HELLO"
2030 NEXT counter
2040 STOP
3000 REM ** SAVE **
3010 PRINT "Enter Filename"
3020
3030
3040 STOP
4000 REM ** PRINT RANDOM NUMBERS
**
4010
4020 PRINT numbers
4030 GOTO 4010
```

And thats it! The blank lines with just the numbers are the lines which need filling in. Don't worry, because the only parts which you have to do are the parts we've already covered. Next issue, we'll cover more basic keywords and I'll give the solution to this problem and I'll set a harder one!

If you get really stuck or have any comments on this section or would like to see something covered, then drop me a line via the address stated below. Bye!

ALCHEMIST RESEARCH

Computing & Communications, Z80
Machine Code, BASIC, ZX Hardware &
Software

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NEWSFLASHES

By D. Ledbury and Co.

Software Boom

As you know, ZAT has run a Disk Library for a few issues now. However, due to a variety of factors, the disks sold have been rather dear, to say the least. Now, thanks to the generosity of a talented SAM Demo Programmer, Mike AJ, ZAT can boast a much larger group of demos which you can order via ZAT. A full advert of Mike's Sample Demos, is somewhere in this issue, but for the mere price of £1.50 (UK only folks!) you will get a high quality demo. Each disk order is passed directly to Mike, who will duplicate and dispatch your order, meaning all we have to do is forward the orders to him. Less paperwork for us, and less charge for you!

Mysterious disappearance.

Recently, a member of the ZAT team was given a "offer he couldn't refuse", the chance to produce/edit the OFFICIAL SAM "News Disk". The "News Disk" is a new service from SAMCo to provide at regular intervals a variety of news and information, formerly provided by the Hot Line and the newsletters that appear 4 times a year. However, the News Disk is much more frequent and will also include demo versions of software, technical manual upgrades, interviews, world-wide reports, exclusive demos, etc.

Obviously, a premium service such as this must have a charge, but when you take into account the fact that to ring the Hotline for a full month would total

to over £4, the price of the disk (which is around the £2 + mark) is a great saving.

But who is running the new service? Well folks, in case you haven't read Darren's heart warming editorial, it is I, D. Ledbury who is currently down in Swansea working on the first disk!

Although this means that I am not going to appear in these pages as much as before, you haven't seen the last of me! If you want to ask any details of the new service, drop me a line via SAMCO, or preferably ring up during standard office hours. The number, as usual, is 0792 700 300.

SQ News

Any readers of SQ, ZAT's SAM Diskzine, may realize that the above does pose some problems for me to continue with the disk mag.

However, I am currently looking for a production team to carry it on, so please be patient! The disk may be delayed, but if it doesn't appear within a month (after FEB 10th) all money owed will be refunded.

Fancy being a member of the Z-Team?

What with my impending departure, it means that there's a few positions available for anyone who wants to grab them!

Firstly, and most importantly, there's my job as Technical Editor of the mag. Now since ZAT covers two computer formats, we're looking for two willing volunteers, one to cover the Spectrum, the other the Coupe, although if you're able to cover both computers, then that would be excellent. The lucky (or unlucky) person/s selected must have a good working knowledge of the computers in general, able to check over all computer related material in the mag (mainly for the CHIP SHOP section, programs, reviews, etc, and importantly

be able to translate all the "technical jargon" into proper English for the benefit of ZAT'S illiterate Editor! Also if you wish to contribute articles of your own, then that's fine to.

The other position up for grabs is for the writer of the PD section, PUBLICA DOMINIUS. This section covers any PD software, disc mags and zines, shareware, etc for the Coupe and Spectrum. The section covers on average 2 pages.

In general though, anyone wanting to contribute in anyway is more than welcome to do so. If you are interested in taking on any of the above "positions", then please write to D. Blackburn, c/o ZAT, 103 CHILTERN GARDENS, TELFORD, SHROPSHIRE, TF4 2QJ.

Crash smashes back!

Last issue we reported on the "demise" of Newsfield, but it seems the forces of chaos couldn't keep the likes of Crash, and the other collection of Newsfield titles, out of the public eye for long. In the last week of November, issue 94 of Crash, arrived on the shelves, proclaiming on their "this is Crash" page that the magazine was back with a vengeance.

Crash, now produced by Europress Impact, has under-gone some changes, during its time out of circulation: the major one being the change of Editorship to Lucy Hickman (as Richard Eddy has now moved on to Codemasters). The demise of Newsfield has chalked-up some casualties, with the disappearance of Fear and some of Newsfields other mags, but already Europress intends to bring out more titles in the future..

The future looks once again rosy for Crash. Welcome back, we all missed you!

Other news

Another soon-to-be-released game from the halls of Revelation is BATZ'N

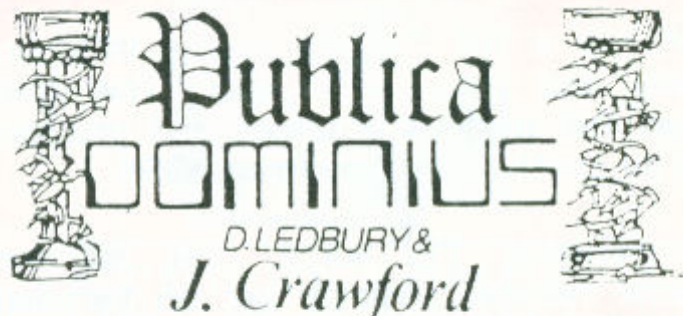
BALLS; a tile flipping games involving balls and bats (what else). The game uses full mode 4 graphics, and promises to be another winner. Price £9.99.

Impatience, FREDsoft's first software game release, recently got an excellent review in the current issue of YS, which has really gone to town with a 3 page feature on the world of the Sam Coupe. The game received the coveted YS MEGAGAME motif, receiving an overall rating of 90%. It also featured a bit of the game cover, which was drawn by someone familiar to me, whose name I can't quite remember.

Also there was a feature on the current crop of Coupe/Spectrum disc/paper-based zines around. All the familiar names were there including us. I'd like to thank Jon Pillar for including us, and for including ZAT in the special competition, where the lucky winners receive a free sub to ZAT, and those other famous zines, whose names also I can never remember..

Rumours are bouncing around that another fanzine is in the process of being formed, again based here in the hallowed acres of Telford new town. This zine, is dedicated to Science Fiction-Adventure-Fantasy fans, and will cover all aspects of these subjects, from films to videos, books, TV, computers, D&D, LRP and more. A major part of the zine will be its policy to let would-be authors have their opportunity to see their writing in print...short stories, serials, whatever.

Any willing contributions for the first issue must be sent in by the end of FEB 92 latest. Send your contributions, or enquiries, to the main ZAT address. Why? Well, as it happens the forces behind this mag are Mick (Editor), Polly (Asst Editor) and Darren (Art Ed). The zine is provisionally titled SQUARE ONE, it'll be a quarterly, and issue one is slated to appear in July, next year. More on this soon.



Publica DOMINIUS

D. LEDBURY &
J. Crawford

Have you ever noticed how fast things seem to change these days? No sooner was I moaning about the distinct lack of Spectrum PD last issue, than an impressive list dropped into my lap from a PD group, called Propac PD, complete with a vast range of - you guessed it - Spectrum PD!

Alex Kinch, of Propac, has sent a list of over 200+ titles ranging from utilities to demos, Fractals to Educational. Not only is the variety impressive, so are the prices: 4 titles for £1.50, 8 titles for £2.75 and so on.

Drop Propac a line at 153 Pickhurst Rise, West Wickham, Kent. BR4 0AG, and don't forget to say who sent you! Additionally, you could also drop them a line via their own area on the Orb Viewdata Bullitin Board System, who are based on 081 761 8220 on V21/23/23v systems. Their area is entered via *PROPAC and should be open now.

Now, as you may know, ZAT recently took a stand at the November 10th Birmingham All-Format's Fair. Apart from doing very well indeed with sales of SQ (possibly due to the fact that Colin MacDonald only turned up 1/2 an hour before closing! He was in Swansea the previous night, and apparantly Chris White couldn't wake him up! Tut, tut!) and ZAT, I also was informed by a customer that the SAM fanzine Turbo has ceased publication. Now, since I cannot yet confirm this or not, I have decided to still run the following review, but I am currently awaiting further details as to if this formerly long running fanzine is still in existance! Anyway, Here's Joseph with a review of: TURBO-DISC No 12, Price:£2

In these times the growing number of PD disks available for the SAM Coupe is reflected by the special disks which some fanzines produce and advertise in their 'zines. TURBO, the popular SAM Coupe fanzine has now reached its twelfth disk. On it is a lot of assorted screens and one utility, the Casio Midi Sequencer. As it's quite a large disk I'll review each part separately, save Shanghai which is reviewed in MindGames.

DESTROYER (Picture) This particular piece is a full colour mode 4 graphic, converted from the Atari ST. It is an impressive picture of a young warrior covered with armour and brandishing a battle axe. Accompanying this is a nice piece of music and a scrolling message which scrolls along the top of the screen for ages and then starts all over again. A great picture!

CASIO MIDI SEQUENCER (Utility) The idea of this is to use this program in conjunction with a Casio keyboard (or other MIDI keyboards) connected to the SAM by the MIDI cable. It allows you to create your own songs, save them, edit them if you wish and then play back the complete version. A useful utility for budding musicians, or for those programmers who would dearly love to incorporate music into their software very simply.

DIAZ 1 (Two pictures) This contains two monochrome pictures of very high quality. It is of no surprise to hear that they have been converted from the Commodore Amiga. It also contains a few other non-converted graphics, my favourite being a Dire Straits poster repeated all over the screen which is very impressive.

ZENGAMES (Demo) This package contains the screens of forthcoming games from Zenith graphics to play on

your SAM Coupe. A selection of graphics which range from "cutesy" graphics to screenshots of an ordinary platform game. A lovely demo which makes me eager to see the finished software titles when they appear.

SWORD (Picture) An impressive picture with an evil ring to it, surrounded by grey rocks and skulls. In the centre is a goblin-type creature holding a sword. And that's about it!!

BUGS (Picture) No this is nothing to do with bad programs, viruses or whatever! It's a lovely picture of my favourite cartoon-character Bugs Bunny. In it are two pictures of the beloved bunny with the word COUPERUS (whatever that means) in the centre.

FIRE (Picture) An average picture which shows two goblin-types of creatures (again!) surrounded by fire. It has the same evil ring to it as is present on the "Sword" picture but is ruined by a poor colour scheme. The graphics style is strongly reminiscent of the Commodore 64.

COYOTE (Picture) Here in all it's glory is a very impressive picture of that ever-popular cartoon character Coyote. This picture has that special style of cartoon art to it and is probably the best non-converted picture on this disk. Brilliant!

HORSEY (Picture) As is clearly obvious from the title this picture shows a graphic of horse pulling a cart. An average picture which has a nice (but wrong) colour scheme and lacks the detail of other pictures which would have been very beneficial to it. OK, though.

DICK TRACY (Picture) On this screen is a picture of the "insignia" for Dick Tracy (a cartoon picture viewed from the side). Although average, it fails to reproduce that special kind of cartoon art that

appeared in the Coyote picture. Nothing special.

DREDD 2 (Picture) Yes, this screen shows a picture of that popular cartoon character Judge Dredd. It's pleasing to see all the colour in this picture but is a lot more on the cartoon-side which explains the lack of detail. Nice though.

BLINK (Animation) On this particular screen is an animation routine. In it is the "King Tut" picture from "Flash!" but he blinks! You can't really comment on the picture but the animation is good and lifelike. A refreshing change on a disk with lots of screens.

CIRCLE (Animation) Yes, this is a picture of a circle (however did you guess?!!) Silliness aside, not a very good picture which is just a pretty (if that) display of a circle and a few colours. The only other thing to it is the animation of the circle but that's about as good as the picture! For your own sake, don't load it in.

Well, that's the disk for you! But what's it like on the whole?

It is a disk which is lacking in some sort of a balance, really. It does have some great pictures but also contains some pretty bad ones. There is hardly any music, what there is has been taken from FRED. All in all an average disk which is boosted by the presence of Shanghai simply because it's software.

**RATINGS: PRESENTATION 70%
GRAPHICS 79% SOUND 47%
LASTIBILITY 72% OVERALL 79%**

Thanks again for a great review Joseph. I would also like to thank all the readers who have ordered SQ 1 from me. I was taken back by the rush of orders, and ended up having to try to beg disks off Darren to fulfill the orders! Keep an eye on the News page for more SQ news!



PLAYPEN

COMPILED BY
POLLY SHEPPARD

Hello and welcome to Playpen. I hope you can join me every issue to see what new, improved, or new re-releases there are in the Spectrum or Sam Coupe games world.

**Manic Miner (SAM COUPE):
REVELATION
PRICE £9.99**

Manic Miner, is without a shadow of a doubt, one of the most classic computer games ever devised; setting the standard for all future games to come in its wake. Therefore it was with trepidation back in late 1990 that Matthew Holt (who once upon a time used to be Technical Adviser to ZAT in the "early days") began to outline his plan to do the Coupe version of the game. Matthew wasn't content with doing a straight-forward "conversion"; with the Sam's unlimited graphic, sound and programming capabilities in mind, he wanted not only to update the original Spectrum version, but to expand it to make this version a game for the 90's and beyond..

Manic Miner on the Sam is very faithful to the original plot: Miner Willy (who has ditched his identity with the National Coal Board with those famous NCB Wellingtons and boiler suit for a "smarter" red boiler suit, jeans and trainers?) is still trapped in a vast system of underground caverns and tunnels, seeking a way out in time for his afternoon repast. To open up the "portals/exits" to each individual cave/cavern, he still has to collect a number of golden keys, but in some of the "newer levels", other objects have to be gathered in their stead.

Accomplishing this objective isn't easy. The caves are populated by all manner of weird lifeforms (teddy bears, kong beasts, penguins, etc) and animate, inanimate objects (telephones, spikes). What's more the travel ways (platforms) are prone to collapsing and the caves have a limited breathable atmosphere so if Willy's Oxygen tank runs out, or you fall, or touch any of the "residents", all result in losing one of your lives.

In the "new levels" (there are the 20 original Spectrum levels and 40 new ones) other dangers await. Amongst the new perils are the Muncher, fireballs, trains, clocks, and even falling 16 bit computer consoles and discs! Apart from the platforms, there are conveyor belts and lifts. As with the original levels, these too have odd screen titles; joining The Vat and The Menagerie are Night on the Tiles, Dante's Inferno, the dreaded Twilight Zones and many more.

The graphics were drawn by Brian Mc Connel and Jeff Coppard and the music is by the ever talented Frantisek Fuka. Several ideas and concepts were devised by ZAT contributors and some of its readers. We were hoping to do the review this issue, but as I write this the last screens are being added and the final checks for bugs, so next issue, tune in for a full review.

Preview by Darren Blackburn.

**Chase H.Q. Hit Squad (formerly by Ocean)
Spectrum Budget re-release. Price
£3.99**

There must be a million driving games available for the Spectrum. A lot of them are awful, some are mediocre, some are good and one of those is called Chase H.Q. To say that all other driving games pale into insignificance when compared to this one would be absolutely right!

The amazing thing is that the Spectrum conversion of Chase H.Q. is better than any other, even the ST and Amiga cannot match the smooth running graphics and playability.

I suppose I should describe the plot: you are a fast driving, cool thinking disciple of Chase H.Q. (a law-enforcement bureau based in the U.S.). Your duty is to free the streets of the crime wave that holds the city in duress. You jump into your sports car and go chasing after the latest batch of evil criminals. Sitting next to you is your co-driver and erstwhile friend, who gives you occasional encouragement to catch the criminals.

That's the plot out of the way, now down to the review itself. After you have received your orders from Chase H.Q. you go tearing down the highway after a drug dealer. Once you have caught up with the rogue, your next job is to ram him off the road before overtaking him and making your arrest. As mentioned earlier, the graphics maybe monochrome, but the realism is there. The speed of the arcade coin-op has been captured well. The roadside is well decorated and the other cars on the road add to your frustration. The graphics are all well drawn and animated.

The level of difficulty is pitched just right. The first level is no pushover, but it is not impossible to finish. For 48k users, the game is a multi-load, and you also miss out on the excellent music but that is the only difference between the two versions. In conclusion, Chase H.Q. shows everything the Spectrum is good at, and at four quid, is a must buy.

RATINGS

PLAYABILITY 95%
ADDICTIVENESS 94%
GRAPHICS 95%
SOUND 85% (128K)
OVERALL 94%

Review by Stephen Mullen.

Prince of Persia. Sam Coupe.
Revelation/Domark. Price £14.99

Back in issue 9, ZAT did a preview of this long awaited arcade/adventure from Revelation. The game was due for release a few months back, but a last few minute checks and re-checks were required before the game was released proper. Now that it has arrived, is it the "smash hit" that everybody expected it to be?

For those of you who don't know the plot: a resume. While the Sultan of a far-off distant land is fighting a war, his evil Grand Vizier, Jaffar, has seized control of the country. You play the part of an adventurer, who has fallen in love with the lovely Sultan's daughter, who has been imprisoned in the Royal Palace by Jaffar. She is the only person who stands between Jaffar and the throne. Jaffar captures you, and throws you into the deepest dungeon within the bowels of the palace.

Meanwhile, Jaffar gives the daughter an ultimatum: marry him, or die. She has one hour to decide, thus this gives you one hour to break out of the dungeon, make your way up through the levels, rescue the princess from her fate and foil the plans of the Grand Vizier. If you fail, you doom the kingdom to a reign of terror, as well as the Princess, and also forfeiting your chances of becoming a future Prince of Persia.

That's the plot, but now for the game itself. Game play is very difficult; the actual challenges presented "in theory" should be easy to complete, but actually carrying them out in "reality" is another matter entirely. Controlling the movements of the character must be "spot on"; any slight error of judgement will result in you falling to your death, or worse, being impaled on vicious

looking spikes; being cut in half by razor sharp cutters or being hit by falling debris. Each level consists of 4 main tasks:

- 1) Progressing through each screen by opening and closing the portcullises via standing on "pressure pads" within the floor, avoiding all pits, traps and fatal drops. Other routes can be found, by feeling the ceiling for loose tiles.
- 2) Collecting all magic potions which replenish your energies by varied amounts; some though are fatal!
- 3) Collecting your sword (at the end of level 1), or operating the "switch" to open the end of level portal.
- 4) dueling with the guards to gain entry to the exit, and to the next level (in later levels, the guards are supplemented by "dead skeletons", who do the Vizier's bidding).

Graphically the game is excellent..even beyond excellence. Chris White has done a top-notch job, the backgrounds are well rendered and detail is immaculate. The "adventure" sprite (in fact all of the sprites) utilises animation techniques that are truly dynamic; very movement, whether he is jumping, climbing, or fighting, has been rendered to its fullest, making him a truly "living being". Sound effects are equally well rendered: the clanking of metal as the portcullises open and close, the hollow footsteps as the character walks on stone, the clashing of metal as the future Prince fences with the over-weight guard.

Animation also plays a part in the opening sequence, activated by pressing "I". Here you see the daughter, locked in her chambers, menaced by Jaffar who discloses his ultimatum, and sets same by telling her that the sands in the hour-glass will quickly trickle away.. Also credit must again go to Frantisek Fuka for the opening music which reflects the Eastern flavour of the

game, and to Neil Holmes who drew the opening splash page.

To answer the question posed at the start, Prince of Persia is indeed the "smash hit" that everyone expected it to be, and should set the standard for games of its ilk on the Sam Coupe for years to come.

RATINGS

PLAYABILITY 90%
ADDICTIVENESS 89%
GRAPHICS 95%
SOUND 91%
OVERALL 96%

Review by Darren and Jamie Blackburn.

The New Zealand Story. Hit Squad.
Spectrum re-release. Price £3.99

This might just possibly be the first ever game to be based on New Zealand, and it's not an All Blacks Rugby Simulator either! It is, in actual fact, based around the well-known New Zealand bird, the Kiwi. Normally Kiwis are very happy, if elusive and shy birds, at least that is until a mad walrus decides to kidnap a whole family of them. This is where you come in, as Tiki the Kiwi, whose mission is to rescue your captured relatives.

The game itself is a variation on the classic Nintendo game, Super Mario Brothers. The basic idea is to find a route to the captured Kiwi on each level; on early levels, there are arrows telling you the route to take, but later on you must work out the route for yourself. Each level is populated by baddies which will stop at nothing to attack you: luckily you are armed with a bow and arrow to fire at them, which leaves either a fruit (for bonus points), an item of weaponry or a balloon (so you can travel upwards) when you shoot them.

Other features are the various balloons

you can travel upwards) when you shoot them.

Other features are the various balloons and rockets, areas of water, which you can only survive in for so long until you drown, and huge end of level baddies which occur every 4 or 5 levels. And what does the game play like. Well, it's a fairly challenging game, with levels starting easy and getting gradually harder, but a major fault I found that my Kiwi was a little hard to control when jumping left and right, and the fire button was not very responsive (although I think this was deliberate because I had a poor weapon to start with). The other problem was with the multi load, which is very annoying after a few minutes play on 48k mode, but is acceptable on the 128k version, which also has some lively music. However I found the game exciting to play, and very addictive, especially when the race was on to reach the end of the level before the time ran out.

To sum it up, I would say you could do a lot worse than rush out and buy this game, especially at the bargain price.

RATINGS

PLAYABILITY 85%
ADDICTIVENESS 90%
GRAPHICS 70%
SOUND 85%
OVERALL 88%

Review by Richard Swann.

Other games to take into consideration is the new addictive puzzle game from Czechoslovakia; Hexagonia, for the Coupe. Price £9.99; and Smash T.V.: a very exciting arcade shoot them to pieces game, which is priced £10.99. Both of these, and more besides will be reviewed in months to come. So join me next time for the review of Manic Miner on the Coupe and if you have any suggestion for future reviews then drop me a line at the main address.

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CODE BREAKER_{by}

Daniel Cannon

This issue I'm going to explain more about the BEEP, the BORDER, a few more registers and a few more commands. First the sound and border which is controlled by the border port (see issue 10 for a description of a port).

BORDER port (254) - controls all tape, border and sound output.

Bit	Dec	Description
0	+1	BORDER output.
1	+2	
2	+4	
3	+8	Microphone output.
4	+16	BEEP output.
5-7		Unused on the Spectrum, explained later on the SAM.

Your BORDER colour can be from 0 to 7, and as only 3 bits are required to make the number 7 (type PRINT BIN 00000111 to confirm this), we might as well use the other bits for an entirely different purpose instead of leaving them unused.

The microphone output is used to drive the SAVE signal to the tape recorder. strange as it may seem, setting bit 3 will produce NO output, resetting bit 3 WILL produce an output - the opposite of what you may expect. There's no need to directly control the output to tape yourself, a nice routine in the ROM will do all the saving you need.

The BEEP output drives the loudspeaker (OK, not that loud if you're a 48K owner!). If you don't own a Spectrum

48K then imagine that you do for the following explanation:

The speaker is simply a couple of wires connected to a little buzzer inside the computer (yes, it's the cold truth!). These wires eventually end up connected to bit 4 of port 254 (the border and sound port). When we set bit 4 then a voltage is applied to the speaker which will make the speaker's diaphragm flip in one direction, and make a clicking sound. Then when we reset bit 4 the diaphragm is flipped in the opposite direction, and another click is made.

If continually flip bit 4 on and off then the speaker's diaphragm will continually flip in and out, and you will hear a series of clicks. Flip the speaker faster and these will blur together into a low-pitched note. Still faster and the pitch of the sound will rise. That basically is how a sound is made on a 48K Spectrum! Although the 128K Spectrums and SAM have a dedicated sound chips wich can do more exciting things I'll be covering this one because all the computers here have the BEEP chip, and mastering a sound chip takes quite a bit of time (ie. I'm not that good at sound!).

Here are a few more registers which you should know about:

The PC register (=Program Counter) holds the address of where in the memory the processor is going to execute the next instruction - it's used to work out where in your program the computer is. It's a 16 bit register, a 16 bit number gives $2 \uparrow 16 = 65536$ possible

addresses (from 0 to 65535). This allows the processor to access $65536 / 1024 = 64\text{K}$ of memory. 48K users have this filled up with 16K of ROM and 48K of RAM, those with larger memories have to get around this problem using a trick called paging which will be described in a future ZAT (or if you've got a SAM and can't wait then have a look at SAM Class).

The SP register (=Stack Pointer): The Machine Stack is an area where information can be stored and retrieved fairly quickly without having to go through the rigmarole of working out where in the memory the information you want to store has to go. The stack is like a stack of plates. If you want to put information on the stack simply write it on the plate (yes, slightly expensive I know!) and slap it on top of the stack. To get information from it just take the top plate off and read what is written on it. This means that all the information you want to use has to be put in first and taken off last. It may seem strange but is more practical than first in, first out (and there's less chance of breaking the crockery...).

The Stack Pointer's job is to hold the address of the top of the stack. It always keeps track of the top of the stack and changes automatically when you add or remove a number. This means that the processor can't get confused as to where in the memory the top of the stack is, and you don't have to worry. Now you've just grasped how the information is stored using a stack there is a problem. The stack actually starts at the top of the memory and grows downward as you add more information, and shrinks back upward as you remove it. In other words it's upside down! When you add a new item of data onto the stack the stack pointer is decreased, and when you remove a piece of data it is increased. Not to worry, apart from that small detail it behaves just as you

would expect a stack to.

The F register (=Flags) is kept aside for storing information on the outcome of the last few instructions executed by the processor, and can't be used by you for storing numbers. It does this by giving each bit in the F register a different thing to record (as you saw in the border port, each bit can hold a different item of information). It's called the flags register because each flag in it can be up or down (like each bit in a byte can be on or off) - don't get smart and suggest half mast! You can tell what has happened by checking the state (either set or reset) of one of the 8 flags. There are 2 unused flags, 2 used by the processor, 2 flags which aren't used as often as the 2 main flags, which I'll describe now.

Z (=Zero flag): If the sum you have just calculated came to zero then it is Z (=Zero), otherwise NZ (=Not Zero). Also used in the machine code version of IF THEN where Z means = and NZ means <>.

C (=Carry flag): The maximum number allowed in an 8 bit register is 255, so if you ask the processor to work out a sum whose answer is outside the range 0 to 255 then it just can't be done. This is where the carry flag comes in - it acts as the 9th bit of a register, so if the answer is less than 256 then it is 0, if it is 256 or greater then it is 1. As an example:

$250 + 10 = 260$. 260 is 10000100 in binary. The carry flag is bit 8 (the leftmost bit) and the answer in the register is taken from bits 7 to 0 (second leftmost to the right), which gives a carry and the answer 4. If there is a carry then the flag is set to C, otherwise it's set to NC (no carry).

You can test if a carry has happened and take some action if it has, or you can ignore the carry, depending on what

you want. Similar things happen with a register pair (eg. HL) where the 8 bits of both registers are connected up to make a 16 bit number (from 0 to 65535) and the carry flag acts as the 17th bit. Also used in the machine code equivalent of IF THEN statements where C means < and NC means >=.

Here are the general nuts and bolts machine code instructions:

NOP (No Operation): You met last time - it just wastes a bit of time.

JP (=jump): Tell the computer to follow the instructions at the new address which follows the JP. Can be thought of as similar to GO TO in Basic, but don't get wrapped up in the analogy. A few examples are: JP 0 - jumps to address 0. JP label - jumps to a label. JP (HL) - jumps to the address held in HL. Some confusion can arise as the brackets (which tell you to look at the data at the address held in HL) should not be there (it should be JP HL). Why they were used is a mystery.

You can also only jump if a specific condition is true by checking a flag, otherwise continue with the next instruction. Examples: JP Z,0 - only jump to address 0 if the zero flag shows 'zero'. JP NC,label - jump only to the label if the carry flag shows 'no carry'. You can't JP flag,(HL).

PUSH: Will store a 16 bit number from a register pair (BC, DE, or HL) onto the stack. You can't store single registers, so if you wish to store B on the stack you must use PUSH BC. You can also store the A register and the flags together on the stack by using PUSH AF.

POP: Will retrieve a 16 bit number from the stack and put in in a register pair (AF, BC, DE, or HL). You DON'T have to POP into the same register that you PUSHed from, so you can transfer data between HL and BC by using PUSH HL :

POP BC.

CALL: Store on the stack the current address, then tell the computer to jump to the address which follows the CALL. Similar to the Basic command GO SUB. You could think of it as PUSH PC : JP address. You can CALL using a condition (Z, NZ, C, NC) but you can't CALL (HL).

RET: Get the address stored on the stack, and tell the computer to jump to that address. Similar to Basic's RETURN. You could think of it as POP PC. Because you can store numbers and addresses on the same stack it is VERY important to make sure that you balance the stack (always POP off the stack the same amount of numbers that you PUSHed onto it) because if you don't then the computer will treat one of your numbers as an address and jump to it - which 9 times out of 10 causes a crash.

INC (=increment): Add 1 to a register, register pair, or byte at an address pointed to by HL. If you INC when at 255 (or 65535 in the case of a register pair), then the number will loop around to 0. Could be thought of LET x=x+1. Examples: INC A when A=58 will make A=59. INC B when B=255 will make B=0. INC DE when DE=65535 will make DE=0. INC HL when HL=456 will make HL=457. INC (HL) when HL=16384 and the data in HL=24 will make the data in 16384=25.

DEC (=decrement): Subtract 1 from a register, register pair or byte at an address pointed to by HL. If you DEC when at 0 then it will cycle round to 255 or 65535. Could be thought of as LET x=x-1. Examples: DEC A when A=32 will make A=31. DEC B when B=0 will make B=255. DEC DE when DE=0 will make DE=65535. DEC HL when HL=512 will make HL=511. DEC (HL) when HL=23606 and the data in 23606=20 will make the data in 23606=19.

DJNZ (=decrement B and jump relative if not zero): Basically the same as DEC

B : JR NZ,label. There is no other command on this type which operates on any other register, so it makes the B register very useful as a counter. The DJNZ command can jump backwards (so that it can loop around a piece of code). For example, if you wish to loop a piece of code 8 times you would use LD B,8 : code : DJNZ loop. If you wish you can also jump forwards, not used often but can be useful.

Here are a couple more sound effects to be leaving you with. Fire up your assembler and bash them in. You can give these any ORG address (from 32768 to 65000) so you can easily build a library of effects by giving each effect a different address to CALL (or RANDOMIZE USR) from BASIC:

```
00010 ;PROGRAM 1: SIREN.
00020 ;Start 32768, end 32798,
length 31.
00030      ORG 32768
00040 ;Siren effect. Use by 10
RANDOMIZE USR 32768 : GO TO 10.
00050 ;as an example. A holds border,
B holds length of siren:
00060      LD A,0
00070      LD B,255
00080 siren1:PUSH BC
00090      XOR Z00010000
00100      OUT (254),A
00110 siren2:NOP
00120      NOP
00130      DJNZ siren2
00140      XOR Z00010000
00150      OUT (254),A
00160      PUSH AF
00170      LD A,255
00180      SUB B
00190      LD B,A
00200      POP AF
00210 siren3:NOP
00220      NOP
00230      DJNZ siren3
00240      POP BC
00250      DJNZ siren1
00260      RET
```

00010 ;PROGRAM 2: LASER.

00020 ;Start 32768, end 32799,
length 32.

```
00030      ORG 32768
00040 ;Laser effect. Use by
RANDOMIZE USR 32768 or CALL 32768
00050 ;as an example. A holds border,
B holds length of laser:
00060      LD A,0
00070      LD B,150
00080 laser1:PUSH BC
00090      XOR Z00010000
00100      OUT (254),A
00110      PUSH AF
00120      LD A,255
00130      SUB B
00140      LD B,A
00150      POP AF
00160 laser2:NOP
00170      NOP
00180      DJNZ laser2
00190      XOR Z00010000
00200      OUT (254),A
00210      POP BC
00220      PUSH BC
500230 laser3:NOP
00240      DJNZ laser3
00250      POP BC
00260      DJNZ laser1
00270      RET
00280 ;As before, experiment with
these two programs.
```

00290 ;Alter NOPS, XORS, OUTS, etc...

More next time..

Program Box by Steven Kemp

Serious Reading, Part 4

I've been awoken from my sarcophagus just in time to write another part of this serial..now where did I put that bandage..

BORDER (23624) + ATTR P (23893)

Border contains the attributes for the border and the lower screen. ATTR P also contains colour attributes, but this

time for the PAPER.

ATTRIBUTES

These are calculated in exactly the same way for both variables. The value used to poke is calculated, simply, from the method shown:

128 x FLASH (0-1) +
64 x BRIGHT (0-1) +
8 x PAPER (0-7) + (or BORDER
colour for BORDER)
1 x INK (0-7)

So for a yellow border with yellow paper and red ink, you would do the following:

POKE 23624, 50; POKE 23693,50;CLS

$(0 \times 128 + 0 \times 64 + 6 \times 8 + 2 \times 1 = 50)$

The use of colour pokes in a program can be less cumbersome than long strings of colour statements. As well as being used from basic, these variables can be utilised in machine code:

PAPER CHANGE

BORD-SET 8859
ATTR-P 23693 (5C8Dh)
ORG 60000

58,141,92 LD A,(ATTR-P)
15 RRCA
15 RRCA
15 RRCA
230,248 AND 248
198,0 ADD A, 'BLOCK'
7 RLCA
7 RLCA
7 RLCA
50,141,92 LD (ATTR-P),A
201 RET

BORDER CHANGE

62,6 LD A,YELLOW
205,155,34 CALL BORD-SET
201 RET

INK CHANGE

62,248 LD A,248
253,166,83 AND (ATTR-P)
198,4 AND A,GREEN
50,141,92 LD (ATTR-P),A
201 RET

For temporary colour changes the CHR\$ command can be used for printing strings, etc:

10 CLS
20 FOR F=0 TO 7
30 PRINT CHR\$ 17+CHR\$ F; " "; TAB 32
40 NEXT F
50 POKE 23692,255
60 GOTO 20

The CHR\$ command, in regards to colours, is used twice, once with a number from 16 to 21, and then with a colour number, (0-7), or an on/off number 1/0).

EFFECT	VALUE	CHR\$ NO
INK 1	0-7	16
PAPER	0-7	17
FLASH	0-1	18
BRIGHT	0-1	19
INVERSE	0-1	20
OVER	0-1	21

Anyway that's it for this time. If you want to write to me, then its STEVEN KEMP C/O ZAT. Until next time..

Intergrade0Bit5
by STEPHEN WILSON

SAM CLASS, PART 3

To use the high memory:
PORT 251

Bit 0-4: The Page no to put into slots 2 & 3.

Bit 5 & 6: Set these to use the combination of 4 palette registers in MODE 3. ***

Bit 7: When this bit is set the CPU looks at the expansion port for extra memory for slots 2 & 3. THIS IS HOW THE 1MB UPGRADE WORKS.

The data appears at the expansion port, so this is how it is unavailable to BASIC.

*** Bits 5 & 6 Normally in MODE 3, you can only access 4 palette registers, 0-3. Well selecting these bits will allow you to use registers, 4-7, 8-11, 12-15. But not at the same time!!

When 5 & 6 = 0 0, then palette positions 0 - 3 are used.

When 5 & 6 = 0 1, palette positions 4 - 7 are used.

When 5 & 6 = 1 0, 8 - 11 are used and when 5 & 6 = 1 1 then 12 - 15 are used.

The SCREEN:
PORT 252

Normally, on a 256K Machine, the screen lies at 245760, in Page 14. (You can see this using IN 252 BAND 31).

Say for example you are running a machine code program of your own. You may have your code in slots 0 & 1, you may have a small buffer in slot 1, and graphics data in slots 2 & 3. The ASIC will be looking at 245760 for the screen data.

Now you can tell the ASIC to look at a different page for its screen data. You may want to leave slots 2 & 3 free for the screen, and slot 0 for your codes, and slot 1 for the graphics. Its as simple as that. You just send the page no as before to port 252.

Alternatly, you may want to have 2 screens, and switch between once in a while. Just set up a screen in slots 2 & 3, or any 2 pages in memory, prepare another screen, in another 2 different pages, and when you want to switch between them, just change the data at the port.

Here's the format for it:

Bit 0-4: (as before) Page to look at for screen.

Bit 5 & 6: These determine the MODE for the screen you are using at these pages (see later)

Bit 7: This register is a read/write register, meaning that when you use IN to read it, it is the same port as when you OUT to it. Some ports are not like that: (E. g. port 249: When writing to it, it is the LINE INTerrupt port, but when reading it is the STATUS port)

When Bit 7 is READ, it shows the bit JUST RECEIVED from a MIDI Device. When WRITTEN to, it transmits that bit to a MIDI device.

(The status register caused all the commotion, when New Computer Express said the SAM could not use MIDI properly, it was in fact when using the ROM, under MODE 1, the status register, detects any interrupts either from the keyboard, MIDI, Comms, or mouse, and if these all happen at the same time, timing to READ these became a problem.

But what most people didn't realise- and I myself didn't believe SAM had a problem, I believed MIDI was OK-other programmers didn't realise that if you are going to make up your own MIDI program, you are not going to use MODE 1 interrupts, - you are not going to use the ROM, so you then have your own routines to control the MIDI ports, no need to worry about mis-timing any interrupts-rant over!

Anyway back to the ports. In BASIC you can easily use OUT or IN to read a port:a=address, d=data OUT n,d or IN a .it's o.k. if n> 255, the ROM copes with this. But in machine code, you will notice as this is an 8-bit machine, where the bit size refers to the number of bits on the data bus, and 8 bits, the maximum data is 255. BUT WHAT IF YOU HAVE A PORT THAT IS ABOVE 255???

Well, when using ports in machine code, I said you could use either:

```
LD A,d OUT (a)A) or alternatively..
LD C,a OUT (C),d
```

If a port is above 255 you MUST use the OUT (C),d. This is because the b register also comes into it and you will remember (hopefully) that B and C pair up together. E.G. we need to send a byte to the sound chip.

The sound chip uses port 511 if it is a register, and 255 if it is a byte of data. You will hopefully know that the sound chip uses 28 registers which do various functions: E.G. register 28 turns the sound chip off or on. We use SOUND register, data in BASIC, so to turn the sound chip on we use SOUND 28,1 To turn it off we use SOUND 28,0. The 28 is the register, 1 is the data. Now to do this in machine code:

I said we use port 511 to send to a register, so we will want to send 28 to this port. When using a port above 255, we must set the B register to how many times the port is above 256- it REALLY is a 16 bit number, but for ease we can just calculate the b by doing: B register = port no/256 which in our case would be: $B = 511/256 = 1.9960938$. We only need it as an interger so that would be 1, ans we put the remainder into C register, by doing port number-(256+b) in out case this would be: $511-(256+b)=255$ so b=1 and c=255. So we would set b to 1 and c to 255 and to a the data, which will be the register.

```
LD B,1
LD C,255
```

Or alternatively, LD BC, 511 which avoids what we have done above, but it's better to understand what is going on anyway.

```
LD A,28
```

We must remember the value of B as we do not see it come up in any of the instructions:

```
then OUT (C),A
```

This would tell the sound chip that the next piece of data sent (as long as it is data and not another register) will be for register 28. We are lucky that the sound chip values are the same in both cases. c= remains the same: REGISTER B=1 C=255 DATA B=0 C=255 so to swap bewteen sending data and registers we just have to change the B register. It is just the same to send data: LD BC 255 notice B=0,C=255 LD A,1 OUT (C),A. This would complete the BASIC equivilent of SOUND 28,1.

Next time there will be a example routine which shows you how to send some data to the sound chip which utilises Steve Nutting's SC ASSEMBLER. Until then...

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Meanbiz

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Welcome back. Both Andy and myself hope you all had a Merry Christmas, and lets all hope that 1992 will be an even better year for Coupe and Spectrum software. From indications via certain sources, there's interesting developments on the horizon, and hopefully we'll be there to cover them. Our first review is the latest arrival for Sam programmers, Master BASIC, as reviewed by **Daniel Cannon**.

MASTER BASIC. SAMCO/BETA SOFT.
15.99.

Master BASIC has been written and designed by Doctor Andy Wright, creator of the SAM ROM, and the popular Master DOS. To use it you need a Sam with a ROM 2 or greater (type PRINT PEEK 15/10 to check) and a disc drive with SAM DOS 2 or Master DOS. When you first load up, your DOS and Master BASIC are combined and a new BOOT file is created which is saved to a blank disc, this is your working version of Master BASIC.

Once the program was set up I checked out the extended editor. It's slightly faster and allows you to skip left and right between words using SHIFT and the cursor keys. You can join two lines together or split one up, and recall the last 10 to 20 lines which you've typed in; useful if you forget to put the disc in the drive for instance. Full search and replace of your BASIC program is available, from keywords and variables to numbers and text. A trace is also available (it displays the line the computer is currently executing) to help in debugging.

I haven't time to list all the commands but here's the important ones. The EDIT

command displays contents of a variable in the edit line and allows you to alter it (like INPUT but doesn't wipe the variables, if you see what I mean). You can join strings together (similar to LET A\$=A\$+B\$ but very (very) fast!) and wipe them from memory. SVAL\$ will crunch numbers into strings so that they take up less memory and to display them you need to use the PRINT USING function which tabulates your numbers neatly. You can search string arrays using INARRY (like INSTR but searches the entire array, not just one string) and sort string arrays and strings in forward or reverse or alphabetical order, both are very fast. There's a command to compare strings without having to worry about the case of the letters in them or you can force a string into a case before checking it. Very accurate timing is available if you have Master DOS and a SAM BUS (to within 0.0002 of a second, so the manual says!) and you can totally remove the dreaded GO TO's from all programs with EXIT FOR, EXIT PROC and EXIT DO which leaves FOR NEXT loops, procedures and DO LOOPS from the middle. You can also (effectively) add your own commands to SAM BASIC by storing procedures permanently in the memory so that they can't be overwritten by NEW or LOAD.

By now you'll probably know about the RECORD and BLITZ commands which record graphic commands into a string and slap them on the screen very fast. Now you can record and replay music. Once the RECORD SOUND TO a\$ command has been executed all the SOUND and PAUSE commands which follow are recorded into a string. When you replay them you will find that the sound plays back automatically whilst you get on with something else. There are 3 tunes supplied on the demo disc and it doesn't take a lot to convert other tunes to the BLITZ SOUND format. I've been busy converting music from various PD discs. If you're clever you

can create better than BASIC sound effects because the sound can be BLITZed back faster than the original record speed.

The PUT command has been speeded up. The example program shows you that, but it's not until you load up something like No Way Back or The Chocolate Factory demo that you'll see the difference. It's so fast that there's even an option to go back to the old (slow) command in case it makes your programs too quick! You don't have to worry about sprites leaving a trail of destruction on the background they move over any more, the PUT GRAB command takes care of that. It stores the background that the sprite overwrites in the memory, and when you want to move the sprite on, the background is returned to you unaffected - no need to set up temporary sprites to keep the background in.

The POKE address, string command has been speeded up - which is good news for anybody creating animation in that way or moving chunks of memory around the computer. To do this you'll use the SCRAB function which returns the screen address (which can easily move around in a Sam). The CSIZE command now allows you to create letters from as little as 6 by 6 pixels to as wide as the whole screen! You can also COPY SCREENs to each other - MODE conversions taken care of - now you don't have to load up Flash to convert MODE 1 to MODE 4 or whatever! You can also have split mode screens, which allows you to have really colourful graphics and a good text area side by side; great news for anyone creating Adventure games.

Printer support is everything you could ask for. It's better than Flash (choice of 3 widths and 3 heights in any direction for any part of the screen using any amount of overprinting for almost any printer!) you get a text dump and a black and white dump. If you want to

write to foreign countries there's an international character set on hand and both parallel and serial printers are catered for in a single command. But you won't be wanting to sit around waiting for a screen dump to print, will you? That's where the interrupt driven printing comes in. First, select an area in the memory to be used as a buffer (from 1 to 256k) and the computer will store the data you want to print in it. Then, whenever it has a chance, the data is set to the printer whilst you get on with something else. So you get on with a bit of word processing, or programming, or whatever, while your picture is being printed!

The extended DOS includes an automatic file compressor (which you can turn off if desired) which can crunch arrays, code, and screen files. I set it to work on my collection of graphics discs. Particularly impressive was a MODE 4 screen display which compressed from 24k to 3k! (that was a Mutant Ninja Turtle thingy). Cartoon pictures compress the most because they are simple and use large blocks of colour. There's a faster MERGE (with a few limitations) and a SAVE BOOT command which means that you don't have to mess around copying Master BASIC as blocks of memory. Limited protection of your machine code programs can be selected (before this only could be used by messing around with the disc directory) and the RAM disc and the DIR command has been speeded up. Many other DOS commands have been improved, and there are some extra system variables (XVARs) to go with the DVARs and SVARs.

MOVE appears to be changed slightly, because it now crashes on a regular basis when you MOVE one file to another (this isn't any real problem though, your old Master DOS can be used), and I'd like to see a command which gives you the remaining free memory in the SOUND and LPRINT buffers, and a BLITZ SOUND LOOP

command which continually repeats some music until told to stop. So it's good news to know that you won't be caught out in the cold when a new version is released because Andy mentions that existing customers will be able to up grade when a new version is written.

All in all this program adds a few commands which have been lacking, many which are useful, some which are excellent, and adds to an already brilliant BASIC to give you one of the best BASIC programming languages to be found on any computer! I can't hope to tell you everything in this review, but it's well worth the 15.99 asking price, and if you want my recommendation, then here it is: buy it!

To purchase Master BASIC, or for more information, either contact SAMCO or BETA SOFT C/O ANDY WRIGHT: 24 WYCHE AVENUE, KING'S HEATH, BIRMINGHAM, B14 6LQ.

RATINGS

Usefulness 99
Presentation N/A
Compatibility SAM
OVERALL 95%

Thanks to David for an excellent review. Another winner from Doctor Wright. Now its a change of scene, and computer, as **Richard Swann** delivers another snippet of Technical Trouble..

Some time ago, someone asked me if I could fix their Spectrum's keyboard, which I did. So if anyone wants to know how I did it, read on.

First of all, you **MUST** unplug your Spectrum. You will need to take the cover off, and this act makes the Spectrum prone to short-circuiting due to static electricity between you and the circuit board, so do it!

Now, unscrew the cover. **WARNING!** This invalidates your Spectrum

guarantee if it is under 1 year old (in which case your best bet would be to return it to the shop you bought it from if trouble occurs). Now, lift off the keyboard if it possible (On a 48k Spectrum, you have to life the cover off, and then the rubber mat underneath). You should see a white, transparent key membrane underneath, which goes into the circuit board at two contacts. Gently, push the membrane away from the contacts, so it comes completely free from the computer.

Examine the membrane carefully. On a perfectly working membrane, all you should see are white and transparent areas. On a faulty keyboard, there will be some grey patches or cut areas where white should be. If these areas are near the bottom of the connecting strip, you can simply cut the keyboard just above these faulty areas and connect the keyboard membrane up again. If however, the faulty areas are near the top of the connecting strips, you have a problem. Try cleaning the grey areas with an organic solvent: dust may have just accumulated on the membrane. If the patches don't dissappear, I'm afraid your keyboard membrane is permanently damaged, and you will have to replace it. Check out the classified adverts in the back of the most popular Spectrum magazines, or check out a copy of MICRO COMPUTER MART.

Once you've got your new membrane fixed, or replaced, push the new membrane back through the two holes you pushed it out of in the first place and gently back into the connectors. **DON'T PUSH TO HARD:** otherwise the membrane won't fit in. Once in place, replace the keyboard and screw the case back on. Now plug in and hopefully your keyboard will feel a lot healthier.

If you can't manage this, there are loads of Spectrum repair shops. Again, look in the adverts. It will cost you a bit more, than if you fixed it yourself, but at least you'll know it'll work when it

comes back

Finally **Andy Davis** makes a touchdown into MB with a look into a new project for Spectrum users..

In 1988, when I got into examining games and programs in a constructive way (the posh name for hacking!), I stumbled across a program called Sceptical2, on the flip side of the spoof adventure THE BOGGIT by CRL / Delta4. This program was a fantastic Ceefax type program for the Spectrum 48k (128k Spectrums weren't around those days). The program was mostly humorous and contained jokes, stories, strange lists, and most of all had a poke at the computer world in general. Sadly, Delta4 fell into obscurity and Sceptical3 never came about.

After a brief 'sentence' with Micronet, I met a great pal, Dave Walker who runs a Bulletin Board in Darlington. Recently, he gave me a piece of code which allows Spectrum users the opportunity of 40 column text. Putting this and the PRINCIPLE of the Sceptical program, I decided to write a small test tapezine using this code. The result? Well, the small test copy recieved quite good acclaim. So I decided to work on a jam packed full copy for release early this year.

Well, so far, I've got the basic shell of the program worked out. The magazine is to feature news, reviews, letters, a huge clasified section featuring buying, selling, swaps, penpals, lonely hearts, messages, contacts, fanzines and anything else. It will also feature helplines for games, adventures and programming and also tips for the previous. I also aim to include special interest sections like help on the PAW system, music, an art gallery of readers masterpieces, interviews, competitions and a mini mag; where YOU, the reader, gets to write a five page section on whatever you desire.

At present, the test copy, the first full

issue and the second are available FREE as long as you send an SAE and a blank tape, and if response is good, then I will charge a miniscule fee (about 20-30p) per issue. I aim to produce a new magazine every two months, but theres one thing I need..HELP!! Firstly, the code used to print out all the characters will only work on 128k Spectrums, and I don't have the copyright to use the code on Sceptical. So what I need is some clever programmer to create a piece of code to do exactly what the Sceptical code does. I also need someone to help modify my existing code to print at a brighter density, and help me to get more colour onto the screen. Another request I ask is for CONTRIBUTORS. So If you want fame (and maybe fortune, but I can't promise anything yet!), then jot me a line at the Alchemist Research address (see BACKCHAT). I was primarily looking for reviewers, but as my workload is too high and other pressures, I need all the help I can! So if you want to write a section, review, edit or want to be a technical back up source then please get in touch. Some relatively well known bods already recruited are DOCTOR DARK of Adventure Link, DAVE WALKER: a comms expert from his BB D-TEL and STEVE SHEPHERD: the inventor of the Softrom and DEBUG magazine and hopefully a little input from the editors of this fine publication! (grovel grovel!). So, if you want a copy or want to work for me, then get in touch, after all the worst I can say is 'welcome aboard' (I'll take anyone!). Hope to hear from you soon.

Thanks Andy, see you next time. Well that's it for this edition. If you have any suggestions for utilities to review, technical advice or anything in general, then just write into us via the new main ZAT address, which to remind you is: 103 CHILTERN GARDENS, DAWLEY, TELFORD, SHROPSHIRE, TF4 2QJ..

PAIN PALACE

with

THOMAS VANNER

Welcome to another batch of tricks and teasers! Don't despair if you couldn't work out last issue's efforts because I have the solutions, later on.

MIME TIME

A deaf/mute man went into his local hardware shop to purchase a hammer. As he couldn't speak, he mimed hammering in a nail. Later, another deaf/mute man entered, this time wanting a wrench: so he mimed loosening a bolt. A few minutes later, a blind man walked in, wanting to buy a saw. What sort of a mime did he do?

COMMON GROUND

How much soil is there in a hole measuring 15m by 14m by 11m?

MORE ANAGRAMMATICS

Unscramble the following letters so that they spell just one word. The letters are: W, E, S, U, T, O, N, R, O, J, and D.

PRIZE PUZZLER 3

This one'll separate the men from the boys! Yep, this is this issue's mega prize-winning-totally-radical brain stormer, in other words Prize Puzzler 3. (Doesn't time fly?).

My alarm clock has gone crazy! It was correct up until Midnight but after that it started to lose 12 minutes every hour. It now shows one o'clock in the morning but it actually stopped 10 hours ago. I'm

supposed to be at work by 10 o'clock this morning. Will I get there on time?

And there you have it! A few hints: as always give everything straight-forward and it's a good idea to work with the 24 hour clock and to foil any guessing that might go on, your answer must also include the CORRECT TIME!

Finished? Then write your answer on a postcard (or stuck down envelope) and send it in to the main address, making sure you mark your entry "Prize Puzzler 3".

ANSWERS TO LAST ISSUES PUZZLES

ANAGRAMMATICS: 1)Angered 2)Grenade.

NEEDLING: One big haystack!

PRIZE PUZZLER 2:

FATHER	SURNAME	MOTHER	CHILD
CARL	BELL	FIONA	FLEUR
GREG	GATES	BECKY	CHARLES
EDMUND	CROSS	CELIA	ELIOT
ARRON	FITCH	ELLA	ALICE
BOB	EVANS	GAIL	GARETH
DAVID	AYRES	DONNA	BELINDA
FELIX	DAWSON	ANNA	DAISY

Well, that brings the show to the end for another issue. In the meantime, why not commit yourself and write me a puzzle for this very page? See you soon..

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