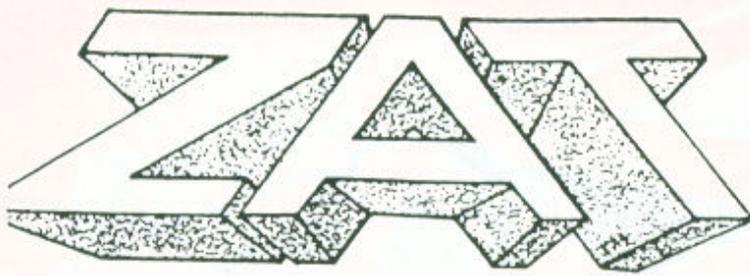


ISSUE 9
JULY-AUG
80p

KRAT

FOR SAM COUPE
& SPECTRUM





CONTENTS



EDITORIAL

by **D. BLACKBURN**

Before you begin to read this issue's contents, I suggest all you Sam users turn to page 11 and check out the competition that happens to be in print there: because a) it's ZAT first ever big competition, in conjunction with Samco's game arm Revelation, and b) it also happens to be exclusive to ZAT only! So go on, have a look, then come back here after you've finished.

Done that? Right then; Then I want you to get ready for the arrival of ZAT's first PD compilation disk 1, starring David and a cast of, well, a few well known names at least. This disc will be coming out very soon, more details to follow in next issue's PD column.

Now after you've done all of the above, I want you to then spend a bit of time reading this issue's packed contents. This issue is a debut for many new items and writers, including Andy Davis's Backchat guide to Basic, and Daniel Cannon's guide to Machine Code, plus waiting in the wings next time is Steven Wilson's Sam Class series to..

Well, it's time to go. Before I do, make a note of the events coming up on the back page, in your trusty diaries and start scribbling some notes down for the first annual ZAT poll, to coincide with issue 11. Right, I'm off now and hopefully we'll all reconvene in September. Have a nice Summer!

General

EDITORIAL	2
LETTERS	3
SOAPBOX	4
TEAM SAM REPORT	33
BOOKSHELF	34
PAIN PALACE: ZAT's new puzzle page!	35

computers

INTERVIEW: part 1 of our exclusive interview with Alan Miles!	6
ARCADE ALLEY: with Thomas & Richard	9
REVELATION COMPETITION.	11
MINDGAMES: Quizball & Famous	12
PLAY PEN	15
PUBLICA DOMINIUS	18
BACKCHAT: Andy begins his Basic tutorial here this issue!	19
CHIPSHOP:	21
CodeBreaker: Machine Code made easy with Daniel	
Samantics: Sam's colour secrets	
Program Box: System Variables with Steven	
G.M. BASE reviewed!	
Intergrated Bits: Sound Help continued.	
Tech Tit-bits	
ON THE ROAD	36
strip	
SENTINEL	29

Cover by DB/David Addey



LETTERS with MAC

Hello everyone, at last I am getting through to some of you in the fact that I need lots of letters from you readers. At the moment I'm getting one per issue: please! that is not enough, surely there must be lots of you out there who have something to say and no one to say it to! If so then say it through ZAT. We have hundreds of readers who would like to comment on what you say. Be it praise for ZAT (in which case you will definitely get your letter printed) or debasement in which case we will print it anyway to show that we ain't biased and to promote comment from other readers.

Anyway, here's a letter from Phyl Alman of Windsor in Liverpool (honestly Windsor up there, look on the map! I had to!)

Dear Mac

You've been asking for letters to print in ZAT, so I thought I'd knock one together for you (very enterprising lad here, Mac) (Shut up Mac and let the lad get on with it, with out interruptions from you, or else! Ed) (All right! all right! I'll shut up, now! that Editor is a flippin face ache, Mac) I've only known about the Sam Coupe since March of this year, when I read the Sam page in Crash magazine (here they go plugging other magazines, hoping they'll get a freebie from the big boys, ED) (Shut up Ed, and let him get on with it) I was hooked straight away and I had to know more. I wrote to SamCo and duly received their News letter, full of info and addresses.

I've contacted all the people mentioned in the Sam contact section and was overwhelmed by the speed of most replies, also by the availability of both printed and Disc mags, Utilities and digitized demos' for the Coupe. I've never received such a good response to requested info as I have with the many Coup based companys'. It's good to see people making a living from a computer. The majority of the Industry think it is a lame duck, don't forget it's the people who show support and produce the software, mags and hardware in the early days' of a new computer, who are remembered by the punters when the people on the fence now, jump in when the waters warm up a bit. Through this letter, I'd like to thank all of the people, too numerous to mention, who have sent me info about Sam Coup related products. You have more than convinced me that the Sam Coupe is an excellent choice of computer.

Regarding your issue 8 problems getting to print, I myself can't see any change in quality over the standard photocopied issue. Best to go for the cheapest if the overall quality is the same, but that's only my opinion. Maybe you or other ZAT readers think differently. You'll have to conduct a poll to see what the subscribers think. Any way, keep the good

work and carry on spreading the word on the Sam Coupe.

Be seeing you Phyl

Well Phyl, thanks for the compliments on the quality of our magazine, and it was very nice of you to write to us. I hope that other readers might follow your lead and start writing as well. I'm glad that you have took to our little mate the way you so obviously have and hope that you have many hours of happy enjoyment with this nifty computer. The speed in which you say you recieved replies goes without saying as most of the Sam Coupe related companies, being TEAM SAM members, have no choice but to get info to potential customers like your self as they will get their donnies rapped by Messir's Miles and Gordan if they didn't. Jocking aside, it's in the interest of the individual company to reply to enquiries as soon as possible to creat good public relations and keep you as a customer hopefully for many a year. Yes the Coupe is doing well now after a rocky start in which it was virtually killed off by the press, without good reason I may add, but Alan Miles and Bruce Gordan rose like a Pheonix And fought back with abuse success and is comming along nicely now with the help of TEAM SAM. Since you have mentioned the idea of holding a poll, there will be one at the end of this year, with ZAT 11. Thus I suggest that you all get your moan/praise caps on and get ready for the first annual poll.

Just a brief mention that owing to the huge success of ZAT over the last 15 months or so, we are going to produce another fanzine, only this time it will be for the Atari St computer user. I will be the Editor for the New ST Fanzine which will be called BLAST-It. In it will be such sections as Hints 'n' Tips, Adventure game tips and maps, Game reviews, Art Gallery, Letters page, Business software reviews, Tutorials in DTP, WP, S/sheets D/base etc etc; This new fanzine will be of the same, if not better quality, than ZAT and will be launched in November at the All Format's Fair to be held at the National Motorcycle Museum, Birmingham. Price of Blast-it will be £1.50 +p.p. We do need contibuters to write for sections of the new mag, So if you would like to contibute to Blast it Then please write to MAC, Dept Atari, PO Box 488, Tweedale, Telford Shropshire. Giving your name and address and what section you would like to write for and I will get back in touch with you as soon as possible. See you next time.

Now it's time to announce the winner of the competition we ran in ZAT 6. The answers to the compo were the 24th Century, 1P, 5 and Borley Rectory, not necessarily in that order, and the winner is Neil Mc Lean from Scotland. Congratulations, your prizr is on it's way. For another great Competition, then I suggest you turn to page 11, for the grand Relevations Competition, created by SamCo's own Colin Jordan. Race you there!



SOAPBOX

BY Martin Scholes

Now that's rich!

Imagine, ZAT has very kindly been offered a chance to get rich.

We have been offered a money making "kit" by someone called Andrew Lamb, who describes himself as a "student of computer science". (He obtained our address from a "Computer Shopper" letter.)

However, although the idea is described as being as "an amazing discovery" and "fantastic" - Bloody well unlikely, is how I'd describe it!

The scam - sorry, scheme!!, is a re-working of the old chain-letter, where you write off to 100's of people and they send you money.

Despite the questionable legality of such schemes, they will always fail at some point, because the only way that they could work as Mr Lamb claims ("Now you can make a fortune all year round - Every year, for as long as you like") is if the population was expanding, at what would be virtually at an infinite rate!

Mr Lamb claims that if you send 100 mailshots a week, for one man year, you will have a return rate of about 90%, with 360 sending you £5.00 each, or £1,800.

But, having dealt with mail shots professionally, the average response is 1%. But to be nice to Mr Lamb, let's increase that by 100% and say that you get a response of 2%. Before we work out how much you can expect to receive, first we must work out how much the operation will cost.

Obviously, you will need 400 copies of

your letter. Mr Lamb uses a computer printer (well he would, being a "Computer Student"!) but let's suppose that you use a copier, and get the discounted price of 8p per copy. So the copying alone would come to about £32.00.

Of course, if you were to send these mailshots 2nd class, nobody would really believe that it was making you rich, so you'd have to use first class, right?

400 first class stamps at 22p each would come to £88.00. Plus - say, 3p for each envelope, a total of £12.00. Thus, the grand total expenditure is some £132.00

To break even then, you'd have to at least make £132.00. But, on a response rate of about 2%, you'd actually only make a potential income of £40.00, thus rather than an income of £1,800 you've made a loss of £92- £112!

Gee, thanks Mr Lamb. When you said it was an incredible money making idea, I didn't quite know just how incredible you meant!

No Future For The Stupid?

Poor old Future Publishing. Despite the fact that they have had the sense to employ Rob Alway (a great Sinclair type person!) New Computer Express' sales figures are down about 2,000 a week. Perhaps as a combined result of loss of specialist columns and the ridiculous anti-SAMCo blitherings of a few sub-human sub-editors and a few free-lance columnists who really ought to grow up.

And I was surprised that the price of the issue out on Thursday 27th of June, which came with the ST/Amiga disk, being £1.50 as opposed to the usual 88p, did not indicate the VAT increase, if any. Because the 88p for the magazine, being a publication, is zero rated, but because the disk is included, VAT should have been charged on the total cost of magazine and disk!

Your's Stupidly?

And what about Your Sinclair? The "joke" about them being in a shed in the back garden, of Future Publications, was nearly funny when first coined, but is now way past it's use by date.

Reading YS, tends to remind me of the British comics of my childhood, where men whose prime in the comic industry, had been past long before world war 2, and attempted to sound like youngsters. As in "See you next week, chums!" or "More next week, pals!" (of course, one notable exception is the great Leo Baxindale, whose stunning genius and talent whoops, sorry Darren, that's your department!!)

Yes, you know that some people at YS are like those poor old things of the 60's, trying to show what hip dudes they are. (man)

Not to say that YS doesn't have it's own Leo Baxindales, though. People like Mike Gerrard, for example - and others.

The article, "How to write a fanzine", in the June issue was, marred by the DIY Fanzine Kit, which consisted of a bit of paper, a pot of glue, and a few felt tip pen - What, no Letraset?

See you next time chums!!

(We would just like to point out, that Martin's views are purely his own, and may not be those held by ZAT. Besides which, if this section wasn't topical or positively controversial, Martin wouldn't be writing it in the first place, wouldn't he?)

AD RATES

We have a readers classified section, catering for: For Sale, Wanted, Under £10, Pen-Pals, Notices, Forthcoming Events, Messages, Etc. Charges are 50p, for up to 30 words. Make Postal Orders/Cheques payable to: ZAT (Programming).

Send to:

ZAT, PO BOX 488, Tweeddale, Telford, Shropshire TF7 4SU.

Trade prices available on request. Any advertisements printed at ZAT's discretion. No piracy encouraging adverts accepted!

SUBSCRIPTION SERVICE!

To take out a subscription to ZAT, simply send a cheque or postal order, for £5.50 to:

ZAT (subscriptions), Po Box 488, Tweeddale, Telford, Shropshire. TF7 4SU

Please make your cheques etc payable to ZAT (Programming)

SPECIAL OFFER!

Subscribe now, and get 7 issues for the price of 6! This offer must end soon, so hurry!

KUNG FU MANAGER SAM COUPE DISK

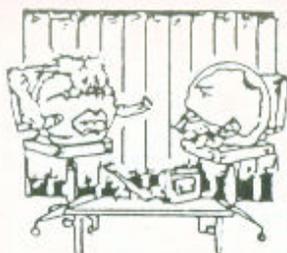
"Could a street fighter become a World Master?"

"Only a manager with vision, could achieve such a feat"

"Battle your way through the top 100 fighters, turn your street fighter into a super fit World Class challenger"

Take him to No. 1, and from there on, to the World Master. Sign up the contact for this job, if you DARE.

Available through mail order. Send Cheque or PO for £9.95, to: Creant, 68 Farm Lodge Grove, Malinslee, Telford, Shrops. TF3 2HN



INTERVIEW
with..

Alan Miles Part:1

Can you give us some brief information about your background?

I started life as an English Language teacher, writing school course books, training teachers. I wrote the series of course books that were used for many years in the Gulf in English Language teaching, and by 1982, after a brief excursion into radio, I ran the Abu Dabi Radio Station for a while, and was involved in TV News, and that sort of thing.

After a brief excursion of that, I came back into this country in '82, having spent 10 years in the Arab World, missed the computer revolution here, but was interested in it because of my linguistic background. (I was a trained linguist.) I saw words like "Word Processor" and "Database" and "Spreadsheet", and thought "What the hell are people doing to my language? Murdering it like this with these words, and I don't understand what it's about!". So I started picking up computer publications, simply because I was interested in the language that was used.

Then, what I was doing, was working with MacMillan the book publishers, and again I was working in Saudi Arabia. We had the English language course for the country out there. This is a pretty bad course, and we were going to lose the contract, but MacMillan and Sinclair at that time were working on a joint Educational Software publishing venture, and while I was sitting around, waiting for a signature, which can sometimes happen in Ryad, for about five or six weeks, I decided to go and see the



Bruce Gordon and Alan Miles
outside SAMCo HQ

Sinclair agent in Jedda, just to see what it was about, and whether anything could be added, and one thing led to another and before I knew it, Sinclair were saying to me, "Would you like to join us as our Middle East Manager, as we are just setting up an Export Department". This was '84, but I said "I don't know the first thing about computers!". So they said "That's okay, that's the way we prefer it!".

So I worked for Sinclair for two years, and at the end of that time, I still knew nothing about computers, but I knew a lot about the Middle East. What I knew was required, in places like India and Pakistan, was a computer that could be built by people in that country, for that country. There is a pressing requirement for that in education, and no British company had provided it with, at that time in '86, machines falling off the shelf here. So what I wanted to do, and I made it known that I wanted to do it was to build a

computer, that would be very simple to build, very easy to build, reliable, would therefore have the lowest possible chip count, would be compatible with a range of software that already existed, so I wouldn't need to build up software, and preferably be Spectrum compatible and that's how SAM Computers was born.

When Sinclair collapsed, I was introduced to Bruce Gordon by a mutual friend. The mutual friend said, "I believe you are looking for this sort of computer, here's someone I think who could build it for you". We met, and we started from day one, in April '86, working towards the SAM Coupe computer.

When was Miles Gordon Technology first founded, and where were you first located?

Well originally, we set up with this third person, it was in Cambridge. The third person lasted about six weeks, I would say, before it was clearly not going to work for him. I said to Bruce, "I don't think this is going to work out", and he said "Well, I think we could work together", and I said "Well, okay".

So, by around July '86, Miles Gordon Technology partnership, was founded, again working in Cambridge, out of my garage in Cambridge! We'd had, in the first weeks very plush offices that the third party had arranged, but we'd thought "This is silly!", that we shouldn't be starting in this way, if we were very small. So we were working literally in the garage, and we continued to stay there until September, when it got too cold and we found some offices that we could use to help us with the Disciple, our first product, which was there simply to test the principles of what was to become the SAM Coupe, the computer we wanted. We wanted to do something to test the disk drive, the printer, the network, the joystick operations for the computer we would later build, and that

Who thought of naming the computer "SAM Coupe", and where did the robot come from?

It started with SAM. The machine was well underway by 1987, we didn't have the funds to build the computer at that time, but the press had picked up on it and people started getting excited about it. We went to see one of the major high-street retailers, I think it must have been early '88 possibly late '87, and we didn't have a name for it, and the person we went with to the multiple retailers said "Well, what are you going to call it?". We said that we didn't know, so he said "Why don't you call it SAM?", and we said "Why?". He said "well, it's Some Amazing Micro!", and I think also his son was named Sam as well! So, SAM was there and when the magazines picked up on the story, they called the thing SAM, because people kept saying to us, "What's it called?", we said "SAM".

Now the problem was, as we came close to production, we realised that we couldn't call it SAM, because there were so many other products that were possibly competing, that were also called SAM. So, we needed another name.

We had got the design done by early '89 of the actual externals, and it was this funny looking thing with things that looked like wheels, (In fact at one stage we even thought about putting wheels on instead of feet!) and just the day that we'd seen it, we'd been sitting in a Pizza Hut with our Financial Director who had a voracious appetite, who was eating this huge ice-cream "COUPE", and we said, "That's it! It's the Coupe! Of course, it's a car". So what were we going to do with the SAM name?

That was solved when later in the year, Mel Croucher did the manual, he said that "I want to incorporate a cartoon character, in the manual, to make it

"That's it, he's SAM!".

We've always thought of SAM, as being the character that shows we are an anti-technology, technology company. We want to be a company that breaks down the barriers, which means that in the future, people like me in 1982 coming into the industry aren't terrified by the technology, because SAM has opened it up for them.

When did the concept of Team SAM come into existence?

When MGT collapsed, we realised that we couldn't do everything alone in the Summer of '90. We'd tried to do everything by ourselves, we'd grown our company enormously large and it was the wrong decision to make. So we said, "Look, we can't do it alone, but their seems to be good will out there".

There was a conversation between Enigma and ourselves, and Enigma had the done a little piece of software, and we said "How about establishing the concept of a number of different companies helping us in various ways, either with hardware or software (We hadn't actually thought about magazines in the early days), but a community of developers, with a loosely knit affiliation".

So Team SAM was founded at that time, but it's only recently that we are beginning to put rules to it, and flesh it out and now trying to involve retailers as well. So it's a six month old organisation.

ZAT would like to thank Mr Miles, for giving up his valuable time, and allowing us to interview him. The 2nd part of this exclusive interview, will appear next issue.

ZX Guaranteed / Essential Software

Mr G.A. Bobker, 29
Chadderton Drive,
Unsworth, Bury, Lancs.
(Tel: 061 766 5712)

007 DISASSEMBLER

(Consisting of 2 programs: 007 Disassembler and 007 Reveal)

A full Z80 disassembler which, at the touch of a button, switches from Hex to Decimal, or vice versa. Centronic printers supported. I.A.L.L's and HEI's displayed in a different colour, to aid reading.

007 Reveal, displays the bytes from ANY disc program, in Hex, Decimal or ASCII. Displays messages in "SamDoc" Even works with +D/Disciple SNAPS and programs.

Available SAM Disc. £6.95

INTEGRATED LOGIC

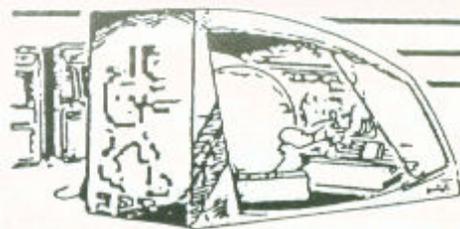
SAM UTILITIES DISC Inc
SOUND/SPRITE/FLASH
HELP, TAPE/DISC READER
ST CONVERTER.
PLUS MORE ON DISC!

PRICE: £1.00+ DISC

ALSO SPECTRUM ART CLUB
MEMBERSHIP FEE £1.00+ TAPE

FOR DETAILS CONTACT:

STEPHEN WILSON
INTERGRATED LOGIC
41 WARRIX AVENUE
IRVINE, AYRSHIRE
SCOTLAND
KA12 0DW



ARCADE ALLEY

BY *Thomas Vanner & Richard Swann*

Hello, and welcome to the new Arcade Alley. Without further adieu, let's get down to business..

CARRIER COMMAND

Two years of programming went into Rainbird's epic. Almost seems a shame to tip it! Ta very much to ZAT regular, David Nicholl..

Select "action game", then set up a defensive island at a key point and load up with Hammer Heads. When the enemy ship arrives, load all the Mantas' with bouncing bombs and let loose your ship's missiles on the enemy. Then crash your planes into it. It should then explode, leaving you to get on with things

IMPOSSABLE MISSION 2

David reappears again, this time with a few tips for Epyx's spy thriller..

To blow open a safe, make sure your holding a timebomb whilst you search it. To dispose of robots, make sure you drop your time bomb right next to them. Always fiddle about with the computer lock, even if you've only got one digit

EXOLON & OPERATION THUNDERBOLT

A few quickies..for Exolon, redefine keys as Z,Q,R,B,A, for infinite lives and for Op Thunder, type EFI on the high score table and then, while playing, type KEV to skip levels.

ALIENS

Deja vu or what?! Yup, you've guessed it, it's Mr Nicholl again...

Always move your team together and make sure you check where you are on the map. Never blast through doors, just press the space-bar and they will open for you automatically

POKE SPOT

It's me again, back from my puzzle explorations (see Pain Palace), but already I'm thrown into the cut and thrust of pokes and whatnot. It's a dirty job, and who better to get your fingers tapping at the keyboard again, than Richard!

I hope you find all my stuff useful, because it took me quite a long while to work everything out! Anyway, tune in every issue for Pokes, tips and listings for the Speccy..

How to use a poke: These poke listings are normal Basic listings that you can find in your Spectrum manual. If your not 100% sure on how to type out a Basic listing, look it up (or tune in to Backchat for more info). Once you've typed out the poke, type run and enter. The screen will clear..

Don't touch anything on the keyboard, but insert the game tape at the very start. Start playing the tape, and you'll get the usual loading sequence. Sometimes you may get extra loading messages, or the loading screen doesn't appear, yet the game still loads. Once the game has loaded, play as normal, only this time with the extra cheats activated!

ETHNIPOD

For infinite lives. In this routine, you have a choice of pokes. If you type out the whole listing, you'll get infinite lives for both players. If you type in the listing, but leave out line 80, you'll get infinite lives for player one only, and, so on. DON'T delete line 90 otherwise the game will crash.

```
10 REM ETHNIPOD BY RICH
20 CLEAR 24499: LOAD " " CODE
65000
30 FOR F= 65054 TO 1E9
40 READ A: IF A=999 THEN
RANDOMIZE USR 65000
50 POKE F,A: NEXT F
60 DATA 62,0
70 DATA 50,9,239: REM PLAYER
ONE
80 DATA 50,13,240: REM PLAYER
TWO
90 DATA 195,199,97,999: REM END
MARKER
```

TIR NA NOG

For no baddies

```
10 REM TIR NA NOG BY RICH
20 CLEAR 24099: LOAD " "
SCREEN$
30 LOAD " "CODE: LOAD " " CODE
40 POKE 34202, 200: RANDOMIZE
USR 24100
```

SWEEVO'S WORLD

For infinite lives. There are two versions of the game. If you are loading the GARGOYLE or REBOUND-HEWSON version, don't type in line 51, but type in line 52. If you're loading the YS version, don't type in line 52, but type in line 51.

```
10 REM SWEEVO'S WORLD BY RICH
20 CLEAR 24799
30 LOAD " " SCREENS: PRINT AT
3,0;
40 LOAD " " CODE: PRINT AT 3,0;
50 LOAD " " CODE
51 POKE 33122,182
52 POKE 33219,0
60 RANDOMIZE USR 24800
```

KRAKOUT

For infinite lives

```
10 REM KRAKOUT BY RICH
20 CLEAR 65535
30 FOR F=65280 TO 65301
40 READ A: POKE F,A: NEXT F
50 RANDOMIZE USR 65280
60 DATA 221,33,0,64,17,156,190
70 DATA 62,60,55,205,86,5,48
80 DATA 241,175,50,229,181
90 DATA 195,168,131
```

There's plenty of stuff to choose from there, but watch out, because there's more of the same next time..see you.

Tsk the end is here, I'm afraid. If you fancy getting your mitts on some ZAT goodies, send anything remotely resembling a tip, map or poke to Arcade Alley, via the main address. I'd be ever so grateful (and beats the hell staring at blank pages). Tooodle loo.

COMPETITION

Although ZAT has run a number of competitions, up to now they have all contained relatively small prizes - that is, until now!

Thanks to the generosity of Colin Jordan, the esteemed head of Revelation (SAMCo's software division) and the programmer of the acclaimed adventure, "Famous Five", we now have a slightly bigger prize to offer our loyal readers!

What would you say, to a copy of every single game released by Revelations, to this date?! Not at all bad, eh? But how about if it included all of Revelation's titles: PAST, PRESENT AND FUTURE!!

How do you win this Mega Prize? Well, it's quite simple really....
In the "Famous Five" adventure, Timmy

the dog, is apparantly unable to say anything, other than normal "doggish" noises (Woof, etc). Colin says, that on the SAM version, there is ONE particular circumstance when Timmy will say something intelligible in human volcabulary. (ie, speak in English!)

Tell us the EXACT circumstances, in which this will occur, in enough detail for us to duplicate it exactly.

We do not know the circumstances, and in fact - only Colin knows, and obviously he's not telling! So therefore, the only way we can tell if the answer is correct, is by trying out your solutions ourselves!

There is no closing date to this competition, as the first correct answer will win. So this competition will continue until a winner is found. BUT DON'T DITHER!

Send your entries to our usual address, marked "ZAT/REVELATION MEGA COMP".

(Appologies to Spectrum readers, as Revelation only deals with SAM titles.)

ENCELADUS

6 RAWLINS AVENUE, WESTON-SUPER-MARE, AVON BS22 0FN

Biggest & Best SAM Coupe Disk Mag!

Issue 5 includes: Relion Word, Balls Demo, Mode Switcher 2.9, LC200 Colour Dump, Big Text, NLQ Font Designer, Interrupt Driven Colour Cycler + Interrupt Demos, Colour Whizzer, Final FLASH Mod, SCREENS & Text Compressors, Slideshow, etc. etc. etc. Plus News Reviews, Mags, PD Column, SAM BASIC Tutorial, FLASH Help, Interviews, etc. etc. etc!!!

Plus A Complete Text Adventure!!

Equivalent to 3 or more full disks - everything has been compressed!

£3.99 Per Issue



Blind Games

by A. Vincent

QuizBall - Revelation - Phone
SAMCo (0792) 700300 for details

QuizBall, is the first release, from SAM Computers (SAMCo) Ltd's new software arm, Revelation. As it's name suggests, and as the cover boasts, its a "game with a quiz, and a ball!".

So, what's the aim of the game? Well, in simple terms, the game is based around snooker - in the sense that you have to pot balls. However, you can only pot the balls, if you have answered a question correctly. Get it wrong, and you loose your turn. Get it right, and you gain points.

The balls are potted in the same order as in normal snooker - initially a red, then a colour, until all of the reds have been potted. Then finally yellow, green, brown, blue, pink and black. The scoring is equally as familiar - 1 point for reds, 7 points for black. Thus, a 147 break is possible, with luck!

With each question, you have a time limit to answer it within. This is shown by a number of balls being potted. The longer you take, the more are gone - until it is too late!

The questions are of the multiple choice type, and cover a wide range of topics. You select a topic, by simply selecting which ball you wish to pot. A grand total of 2000 questions are claimed on the cover, although, if this is not enough for you - further questions can be created, using a supplied program (which,

although uncredited, was written by Colin Jordan!) which is easy enough to use, as it features a simple "menu" system of control.

The game is neatly presented throughout, right from the nicely drawn title page - mimicking the eye catching cover art accurately, with a well-defined "snookery" selection menu, on-screen instructions (which makes up for the lack of instructions in the packaging!), redefineable key controls, and 1 or 2 player options.

Although the redefineable control option is certainly useful, I found myself staying with the standard key definition which, although being awkward, led to faster option selections.

The 2 player option, is another good idea, although I found it a little unfair with the one player game, when 2 wrong answers caused you to finish your game. This happened frequently to me!

Preceding each change of player, and the start of each game, is a neatly presented animated sequence, of the "SAM" robot going up to the table, and playing a shot! This, together with excellant musical ditties (which I am reliably informed are by "Master Of Magic" - Stuart Leonardi), and the games neat presentation, raise it's status from a "mere" puzzle game, to an well-produced combination of talents.

I am additionally informed, that the game was written by the SAM veteran himself - DATON. If



that's the case, then let me be the first to congratulate David, on his best puzzle game yet! It certainly knocks spots off, even Yahtzee, in Mind Games 2! (Pun Intended!)

If this is what they can do with a "simple" puzzle game, then what can Revelation do with any of the arcade games, that they promise for the near future? Well, from what we have seen, they can promise a lot - and deliver it!

RATINGS

PRESENTATION	82
COMPATIBILITY	SAM
PARSER	N/A
SOUND	91
OVERALL	84

We have recently contacted, the Editor (Editoress?) of the popular Adventuring "fanzine" - Adventure Probe, Mandy Rodrigues.

Mandy very kindly responded, and as well as sending an issue of "Probe", she has also invited the ZAT "hordes" down to Probe's annual convention (unfortunatly, since the convention is in daylight hours, this excludes me, as I am working until 6am!). This is due to be held at the Royal Angus Thistle Hotel, St. Chads, Queensway, Birmingham, B4 6HY, on Saturday 26th October. However, I do believe that it may be members only, so if you would like further details, then write to: 67 Lloyd Street, Llandudno, Gwynedd, LL30 2YP.

In case you have never yet seen or heard of "Probe", it is a very long running Adventure "fanzine" - recently celebrating it's 5th year! It has a very mixed bag of content, from it's many readers/writers, who have no qualms in expressing opinions on matters.

I highly recomend "Probe", as it is a very interesting read, and any keen adventurer should find something of interest within it's pages. It is a veritable bargain at it's mere £1.50 price tag.

Hopefully, there should be one or two famous face at the convention (apart from ZAT!) including: Mike Gerrard, Tom Frost, John Wilson, and many others that I have never heard of!

We have recently also been in contact with Graham Burtenshaw, who is the Editor & Creator of the very highly praised SAM magazine disk, Enceladus. As well as numerous goodies (which David will cover in the PD column), one of their latest issues - number three in fact, contains an excellent adventure, by the name of "Cell Of The Ridges".

This game, which is written with the PAW, is a good example of the standard of text adventure that this system can create in the right hands, and has certainly succeeded in stumping me!

Rather than review it, I'll simply say: If your a SAM owner, buy it, and try it! See the



PD column for the address.

Back to the reviews, now I think!

Remember back a few issues ago, when I reviewed the SAM version of "Famous Five"? Remember I said I would try and get a review copy of the Spectrum version? Well, thanks to a certain Mr Jordan, I did!

Famous Five - Enigma Variations
- Phone for price details

As mentioned in the earlier SAM review, this game follows the exploits of Enid Blyton's popular and most (in)famous child detectives, and their pet dog. To remind you, the children are: Julian (the eldest), Dick (his younger, greedy brother), Anne (the timid one), George (their "Tom-Boy" cousin, Georgina) and Timmy (George's dog, with a passion for rabbits!).

The game is based around the "Five's" first adventure, "Five On An Island", although the game is only loosely based around the book, deviating enough from it, to prevent it being too close a copy of the book, and thus far too easy to complete for any ardent Blyton fan.

Like the earlier SAM version, the game features multiple character facilities, ie you can control any of the children, and change control with ease. This is certainly very essential to the solution of some of the trickier

problems. However, it is at times made more difficult, by the fact that uncontrolled characters have a habit of wandering off on their own business!

Although the SAM version featured full colour graphics, and full text descriptions, in most locations, the Spectrum has slightly less memory to play around with. Thus, something had to go. However, this is only apparent on the Spectrum 48k version - which is text only. The Spectrum 128k version, has a number of graphics, which - although hardly SAM quality - are nicely drawn, and are of a good quality. The text in all versions, is clear, concise, and well written.

On the whole, the adventure has lost little in its translation from the Coupe to the Spectrum, except possibly a few minor items, no doubt due to lack of memory, such as: the extensive "EXAM" information, the ease of the function keys (that gave you pre-programmed common words, and directions), and a few problems that have been simplified. But, with all things taken into account, I believe that Colin Jordan has done it again!

<i>RATINGS</i>	
PRESENTATION	81
COMPATIBILITY	SPEC 128k
PARSER	86
SOUND	N/A
OVERALL	85



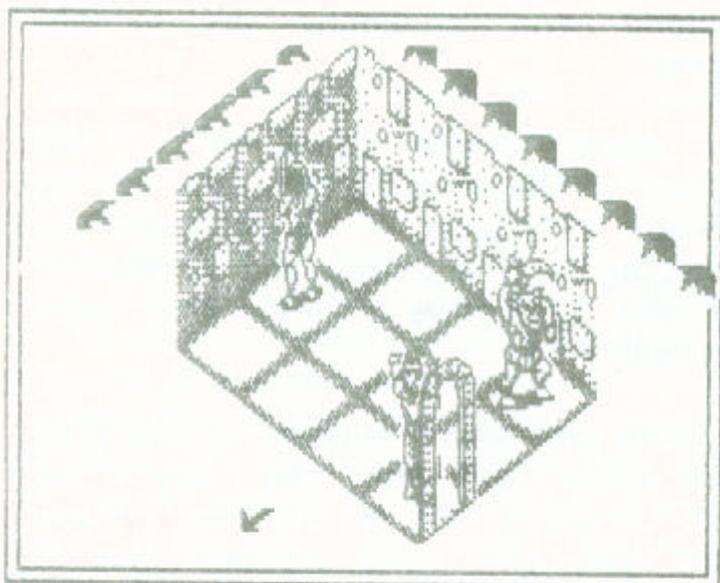


PLAYPEN

Hero Quest: GREMLIN
New release 8.50

Hero Quest, for the unilluminated, is the best selling game for Role Playing. It's a passport that enables players to leave behind the mundane trappings of "our reality", and travel head-long into lands of myth and fantasy, populated by sword-wielding barbarians, fire-breathing Dragons, monsters, Dark Lords, Elves, Dwarves and the whole atmosphere prevailing thick with magic and the unknown.

The computer version of Hero Quest is set in familiar Dungeon and Dragon territory, 10 levels of cold, dank corridors and death-trapped rooms set



within the confines of a labyrinth populated by all manner of nasties.

Each level has a different objective for you to solve, done with the aid of four familiar Hero Quest characters: The Barbarian, Elf, Dwarf and Wizard. Before playing, your characters must buy ample provisions, weapons, and luck, before entering the maze. Once within though, survival is the name of the game, that, and achieving the intended goal without forfeiting any "hit points" or losing any

of your valuables, some of which will prove useful in situations that will arise through your stay in the maze.

Characters are controlled (keys or joystick) by a menu activated by a arrow cursor that you move. options include a universal key that opens doors, a map, inventory (to keep track of what you have, and have found on your travels, an "eye" to search any room for useful items, a "sword" for battling meandering orcs and ogres, directional arrows to move your character and a "next player" icon to swap between characters. Before each character can act, a "die" is automatically thrown to determine the number of turns each character has. A good tip is use those turns wisely, a mistake can lead to diaster!

The game can be very hard to play, especially if your not a regular RP, but it's very enjoyable; your character's life-expectancy may be brief to begin with but with patience, your luck will increase, as will your enjoyment of the game. Graphics and sound are excellent, apply fitting in to the game theme. The only gripe is that movement of the cursor can be tricky at times, especially when using a joystick, but apart from this, this is another Gremlin winner.

By the way, anyone interested in R&R can enjoy further reading of this genre in magazines like the popular White Dwarf: from TSR/Game Workshop and fantasy, D&D fanzines like Telford's own Adventurer's Herald.

RATINGS	
PLAYABILITY	87
ADDICTIVINESS	90
COMPATIBILITY	SPEC
GRAPHICS	92
SOUND	80
OVERALL	89

by Darren, and David Nicholl

Prince Of Persia - Revelation / DoMark
- Price £14.99 (ish) Ring Revelation
(0792 700300) for details

One of the problems with ZAT being a bi-monthly fanzine, is that occasionally we come across something that we wish we could review, but we know it won't be ready to hit the shelves, before we meet our deadlines. This is the case with this new SAM title from Revelation and DoMark, Prince Of Persia.

Prince of Persia, which is due to hit the streets a matter of days after this issue has left our hands, so as you can do doubt guess, since we have no time-travelling facilities, this is not a review of the finished game! Indeed, we only have a copy of a single level playable demo, with no instructions, sound, or background story! So, we'll have to do what we can!

Prince of Persia, seems to be set in the days of the Arabian Nights and Sinbad the Sailor. It concerns a Prince, and his quest to find his true-love, who has been held captive by a villain. The Prince is being held prisoner, within an imposing "fortress", and has a time limit to escape and to rescue his sweet-heart

The game is more-or-less, a combined platform, and Slice-'em-up type game - a sort of Turrigan 2 meets Ali Baba, together with a sprinkling of Barbarian, Technician Ted, and Jet Set Willy! The "rooms" on the early level (the only one level we have!), are based within an over poweringly large stone building - presumably the dungeon where the Prince is held.

The dungeon is constructed out of solid stone blocks, perilous pits (complete with sharpened spikes!) with fatal drops, and gates. The gates are normally closed, and can only be opened by standing on a "floor switch". However,

finding these switches isn't easy! Additionally, the ceiling can also hide secret entrances to other caverns. These can only be found by humping up and down, and seeing which panels wobble!

The most important, and impressive thing about POP, is the incredible animation! Forget about any other animation you may have seen on a games central character, as I have seen nothing that compares with the detail that the programmer (Chris White, I believe, who aided in the programming of Pipe Mania) has put into this! Every step, every leap, every lunge, every creep, every drop, has been animated expertly! Even Darren, with his preference for Atari ST games, was impressed with this (and that's praise in itself!)

This attention to detail, has been carried through on to all animated sequences, right down to stone slabs crashing and smashing on to the ground!

A special credit must go to Neil Holmes, of the Masters of Magic, for his excellent title page, which recreates the packaging in fine detail (and is possibly the best title page I have seen since QuizBall!).

I have also heard snippets of the final game music, and what can I say - but wow! Certainly one of the best I have heard yet, and quite possibly one of SAM's best so far!

If we've wet your appetite for this game, then hold on to next issue, when we hope to give it a full and complete review. Until then, take a gander at the next issue of CRASH, as they are supposed to have given it a smash review!

Previewed by D.Ledbury

Mercenary - Originally published by Novagen - £2.99

Mercenary places you in the role of a 21st Century Soldier-of-fortune (a Mercenary, in other words) who, during an inter-stellar space journey, develops a fault in his ship, and is forced to make an emergency forced landing on the planet Targ.

Targ is currently in the midst of a war. The two factions being the Playars, and the Mechanoids. You are in the unenviable position of being wanted by both parties, in your Mercenary role, to inflict damage on the opposing side!

Your aim is to eventually find the means to escape from Targ, although when and how, is up to you to discover, and there is certainly nothing preventing you making a "fast buck" by the odd destruction, gun running, kidnapping, etc! Your only assistance, is from your in-helmet PC, "Benson", who is responsible for the displaying of events.

Mercenary, when it was first released, was an eagerly awaited game on the Spectrum. It had been available on the C64 and Atari 800XL (remember that?) for a number of years, and had gained near cult status. The Spectrum version of the game surprised most people, as it was one of the best versions.

Although there have been many excellent 3D Spectrum games (see my 3D games series, for details on others) Merc. holds it's head over many of them, due to the sheer speed and fluid quality of it's wire-frame 3D.

Simple (apparently) details, such as the animated structures that when shot collapse instead of disintegrating, the comic results of shooting signs (look for the C64 and Novagen signs, then see what happens when you shoot them!), are examples of the fine detail that went into this game.

Game play wise, it could be described as a cross between a good flight simulator, a basic adventure, and a version of Rommel's Revenge (the

ancient 3d tank game, by Design Design).

As mentioned previously, the graphics are in a wire-frame format, as with Star Glider, in a nice plain blue and green combination (which at least avoids colour clash!)

The play area is rather large, although it seems particularly barren in large stretches. This is quite an illusion, as the planet is catacombed by many hidden tunnels, rooms and hangers - all waiting to be explored! Fortunately, the variety of craft to be found (bought, or stolen!) can make your exploring much easier. Especially as there is a floating sky-base which needs to be explored, when you can get to it!!

Sound effects are minimal. Although in the case of this game, it is more likely due to lack of memory! They are at least, simulated multi channel effects.

One of my few complaints about the game, is that absolutely refused to load on my computer, with my Plus D Disk Interface attached! (Hence the lack of a screen shot!) Additionally, it also refuses to work on my Coupe.

I believe that the SpeedLock loader is the cause of both these problems - ironic really, as the programmer of the game, was the original SpeedLock Programmer!!

As much as I would like to find something bad to say about this game (so it looks like I am not on the Novagen payroll!) it is impossible. To put it plainly, if you enjoy Star Glider, Star Strike, or games of this ilk - I am sure you'll enjoy this. It is a bargain, at it's re-release price!

RATINGS

PLAYABILITY	88
ADDICTIVINESS	93
COMPATIBILITY	SPEC
GRAPHICS	95
SOUND	75
OVERALL	97

Reviewed by D.Ledbury



Publica DOMINIUS



D.LEDBURY

Thanks for tuning in to this month's column! Unfortunately, as Guy is a little busy this issue, you'll have to put up with just me! (It's a hard world, ain't it!)

I believe the "boss" (hummph!), said something in last issue's editorial, about the ever-growing ZAT library, well - I suppose I'd better say something, as it is supposed to be me that's running it!

Okay, well at the moment the Library has a mere 2 disks. These are in fact, 2 SAM demos that have been written by "a source", on who's behalf I am distributing them.

The first disk is based upon a particular Amiga demo, with which Amiga owners used to show off their computers. Entitled the "Walker Demo", it is based around the gigantic armoured vehicle, from the "Empire Strikes Back". The demo uses the RamDisk facility of the SAMCo 1 Meg upgrade, and MasterDos, to replay sequences back at a fast rate. (Warning - if you are lucky enough to have MasterBasic, don't use it with this, as it speeds up the demo far too much!)

I sold few of this one, at the Birmingham show, as many people thought that it was being run on an Amiga! (Due to our being next to an Amiga stand, I suppose!). Is this a complement, or an insult??

Disk 2, features the "Frog Demo". A "cutsie" cartoon animation, featuring a frog on a swing.

Although the demo does show off what you can do with a 512k SAM, you can get to the point, when you wish the frog would fall off the swing and hurt itself! However, if this cute and cuddly display isn't enough for you, I have also included 3 other useful bits and pieces.

1) Flash Help - Integrated Logic's guide to using aspects of "Flash!", telling you certain things better than the manual ever did!

2) Flash Plus - A collection of some of the best "Flash Tweaks", as from readers of the "SAM Supplement", although I did correct a couple of points, which you can simply MERGE into Flash!

3) Slide Show - which features some previously unseen material, such a display of graphical violence, from 2 dinosaurs, another Darren Blackburn "Masterpiece" (Where's my fiver Darren?) which will probably end up on every PD disk in existence now, and some other piccies.

The disks cost £3.99, for the "Walker", and £2.99 for the "Frog Demo". Write your cheques to me, or to ZAT (Programming).

Next issue, I hope to unveil another disk, which is MUCH cheaper than these two!

Last issue, you may have recalled my raving about "Fred" and the "Supplement", and telling you that they were "must buys".

Well, it seems that they have, a pretender to their crown, in the shape of the new SAM disk magazine "Enceladus".

"Enceladus", is assembled, edited, and (mostly) written & programmed by Graham Burtenshaw, and has in it's short existence, recieved great critical acclaim. Every issue, contains a number of useful routines: Text & Screen compressors, a word processor, a screen curving utility, fractal generating programs, etc. The standard of both the programming, is very high - with a variety of areas covered. Additionally, the textual content, is high and well written (by both Graham, and Integrated Logic's graphic master - Brian McConnell!).

I will come back to this mag, next issue. For details, see the Enceladus Ad this issue.

Back-chaT

BYANDY DAVIS

Hello and welcome to Backchat. I'll try to tackle problems as easy as possible. I shall be referring to the Sinclair manual, INPUT, the Home Computer Course and my own manuals.

VARIABLES.

"Imagine a little box with a number card inside it". That's what I was told when I inquired my manual about variables. The box has some writing on the front, usually a letter or a word, but never a number alone. A variable is a store for a particular number you may need again. It's called a variable because you can "vary" it! So, lets get to work and fill some boxes!

```
LET X=21
```

Imagine a card with the number 21 falling into a box labelled "X". That's it! Now lets fill some more boxes...

```
LET Y=33  
LET T=12  
LET A=156
```

Okay? Good. Now clear the screen by typing CLS. Now, can you tell me what you set variable "T" to? I thought so! It's a good job the computer isn't human! So how do we get a copy of the number? Type in this...

```
PRINT T
```

Did "12" just come up on the screen? If not then either you typed in your LET T line wrong or your computer is

having serious trouble counting.

Try the exercise again and if there's still a problem, PANIC! Anyway, the computer recalled the value of T for you. Now, T has been defined and it will always be in memory until you type CLEAR or reset the computer.

Can I just point out the major difference of CLEAR and CLS here: CLS will just wipe the screen clean, it's short for Clear Screen. CLEAR wipes the screen clear AND makes the computer forget the variables! Now lets get the computer busy and type this.

```
10 LET T= RND * 100  
20 PRINT T  
30 GOTO 10
```

If you have a Spectrum, also add this line: 35 POKE 23692,0 Now please observe the strange command in line 10: RND. It stands for RaNDom number. It will make the computer choose a number between 0 and 100.

It's part of the computer's instructions called a KEYWORD. It cannot be used to hold a number. Just try typing this:

```
LET RND = 4
```

You should get an error. 48 users probably won't. Now lets get this straight from the start. RuLe 1 is NEVER CALL A VARIABLE THE SAME AS A KEYWORD. It will confuse the computer and you! If the computer accepted LET RND =1, what's going to happen when you type PRINT RND ? Will it print a random number, or just 4? In short programs, you usually use variable names like X, Y, or A, B etc.

In longer programs where you have lots of variables, call them logical names so you don't forget what each one does. For example if you are constantly adding one to a variable, then call it COUNTER or something similar. Say you had 10 counters, call them COUNTER A to COUNTER J, and not x,y,t,d,e,h,d,r,a,s.

Now lets run that program. The left hand edge of the screen should fill with numbers with lots of decimal places. We don't need all those decimal places, so lets re-enter line 10 to...

```
10 LET T= INT (RND 100)
```

Breaking it down, we still have T, and 100 and RND but what's INT? Well it's short for INTEger which means whole number with no decimal point. If I invented Basic, then I would have picked a word like WHOLE. The brackets are necessary because the INT and RND commands won't sit next to each other for some reason or other, so you must put it and the number range in brackets. To alter the range, alter value 100. But how do you get the computer to choose from a certain number? Well, say you want it to pick from 50 to 100, then enter this...

```
10 LET T=7 INT (RND * 100) + 50
```

Can you see the link? Now, make the computer choose from 70 to 100. Try making a dice simulator. You will need the values 6 and 1, remembering that the limit is in brackets and the start number is at the end! Now lets test your ESP powers and make a guessing game. Delete lines 20 and 30 by entering their line numbers and add these...

```
20 INPUT "Guess my number ",GUESS
30 IF GUESS = T THEN PRINT
"CORRECT!"
40 IF GUESS <> T THEN PRINT
"WRONG!"
50 GOTO 10
```

Run it and see how good you are. If there are any paranormal investigators looking in, could you answer me this question: Can you read

the computer's mind? Physically not, but I actually have a computer program where you have to guess a number the computer is thinking of! Now lets put the RND command to a pretty use and get two random numbers running together. NEW that old program and begin from scratch.

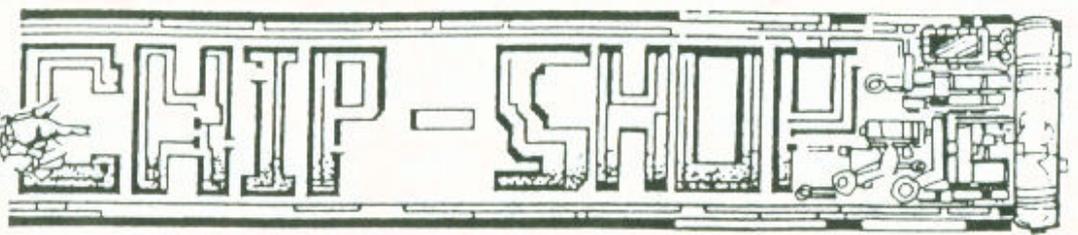
```
10 LET X = RND * 255
20 LET Y = RND * 175
30 PLOT X,Y
40 GOTO 10
```

Run that in Mode 1 on Sam or as usual on the Spectrum and behold, instant stars! Now for something better, but may not work on the Sam. Try it anyway as it will only result in an error message at the most. Replace line 30 with...

```
30 DRAW X - PEEK 23677 , Y - PEEK
23678
```

If it runs okay, it should draw lots of lines all over the screen. Just to clear up any queries the PEEK 23677 and PEEK 23678 tell the computer to change direction if there is any chance that the line will go over the screen. Earlier in the article, I told Spectrum users to add POKE 23692,0. This just tells the computer that we don't want the "Scroll?" message to appear all the time. (SAM users use the "scroll clear" command).

If you need to write to me for more help then jot me a line to: c/o Alchemist Research, 62 Tithe Barn Lane, Woodhouse, Sheffield, S13 7LN. If you want a personal reply then please could you enclose a SAE or if you want sample programs then why not enclose a tape? Bye for Now and keep experimenting!



CODE BREAKER by Daniel Cannon

If you find Basic a trifle slow, and want to move on to something a bit faster, may I direct you, gentle reader, to try another programming language? Something that runs the computer at top speed, which allows you to do smooth scrolling graphics, and nifty sound effects. Something like... machine code!

A machine code program is written in the instructions which the processor understands. These are just add, subtract, shuffle numbers around the memory, and other simple things, which are executed at great speed. It is possible to execute up to 875,000 machine code instructions per second (or 1.5 million if you have a SAM!). Basic is just a machine code program which is supplied with your computer, in it's ROM. If that's so, why is machine code so fast, and Basic so slow?

The reason is that Basic has to interpret commands which are almost English into a series of simple machine code instructions. For a command to be interpreted, Basic has to look at it (including all numbers and strings and whatever), translate this into a series of machine code instructions, perform these one by one, and maybe give an answer (which has to be converted back to English), then move onto the next command. When this is repeated for a whole program, it's easy to see why it is so slow.

To write machine code you have to shell out for an assembler. This allows you to write your machine code programs in a similar way that the Basic editor allows you to write your Basic programs. Among the many Spectrum assemblers available a few stand out from the crowd. The Gens assembler from Hi-Soft is certainly a well known one. You can ring (0525) 718181 for details of this. Z80 Toolkit 2 from Lerm Software is also another popular assembler, call (091) 2533615. Disciple and +D users may like to know that a version of Astrum+ is now available which caters specifically for these interfaces, contact Bradway Software on (0433) 30779.

As for SAM, there are two that I know of, both have received good reviews. SC_Assembler from Steve's Software - (0223) 235150 after 6pm - is disc only, and SAM Assembler 3 from Lerm - see above - works on both tape and disc machines. I'm using SC_Assembler to write the machine code in this course. The editor is certainly the easiest to use that I've found so far in an assembler, and the speed of assembly leaves most of the others stood at the starting block. However, I suppose I should stop there in case I'm accused of blatant favouritism (which, of course, it is).

This month I want to look at how the computer stores numbers, and the three main ways of writing a number down. Each way can be of good use if you know how to use it. First of all, let's look at the binary number system, which is the one which represents most of all how numbers are stored inside the computer.

Inside a computer, different numbers are

really just electronic pulses of different voltages traveling around it's circuits. 0 volts is used to represent the number 0 and a value of around 5 volts is used to represent 1 (similar to a switch with off and on). Hang on! What about the other numbers, 2 to 9? In practice it is hard (and expensive) to design circuitry which can recognise 10 different voltage levels. To show how far just 2 numbers can go, I'll first explain some simple mathematics of decimal numbers. We all use decimal, but like riding a bike, you just know how without having to 'think' about it.

In decimal we only have 10 digits (0 to 9) but can count up to many more numbers than this. This is because the position of each digit in a number shows what value it can take. For example, in the number 102 - the number 1 in 102 is clearly worth more than the number 2 because the 1 is in units of 100, whereas the 2 is in units of 1.

When we add 1 onto a number then the right most digit increases by 1. If it was a 9 then it cycles back to 0 and there is a carry which is added onto the next digit to the left. If there is a carry in that digit then this continues until a digit can be added onto without another carry happening. This may sometimes create a 'new' digit (eg. $999 + 1 = 1000$). Subtracting one to a number is almost the same, except the numbers cycle backward instead of foreward.

In binary, our binary digits (0 or 1) are called bits. As in decimal, we can string bits together to make more values available (see the example above with the number 102). However, the processor is very particular how many bits you stick together. With our processor, the Z80 (Z80A in the Spectrum and Z80B in the SAM), you are allowed to stick 8 bits together to make up a number. For the quick amoung you, this is why it is called an 8 bit processor. 16 bit processors allow you to stick 16 bits up to make a number, so you have a

bigger range of numbers available. Not to say that a Z80 doesn't have any tricks to get around this, it has quite a few!

In all computers, whatever the processor, a byte is always made up of 8 bits, and the bits which make a byte are counted from right to left, 0 to 7. If we had 8 decimal digits, we would have $10 \uparrow 8$ possible numbers (ie. 0 to 99,999,999). So for 8 binary digits, we have $2 \uparrow 8 = 256$ numbers (0 to 255). Each bit contributes a value to the byte, it's value being $2 \uparrow$ of the bit number (ie bit 7 gives $2 \uparrow 7 = 128$). When you add them all up (ie. $2 \uparrow 0 + 2 \uparrow 1 + \dots + 2 \uparrow 6 + 2 \uparrow 7$) then you will get the answer of 255, which tallies with the idea above.

The value of the bits in binary is much the same as for decimal as an example, take the binary number 11001011. Bit 7 (which takes a value of $2 \uparrow 7 = 128$) is worth more than bit 6 ($2 \uparrow 6 = 64$), which is worth more than bit 0 ($2 \uparrow 0 = 1$). When you add numbers in binary, much the same happens as in decimal, except that the binary digits cycle round after the number 1, not 9. In general, there is no need to know how to manually add binary numbers up, as any assembler worth it's salt should easily take them in it's stride. However, you should know which bits contribute which value to a binary number.

So that you can easily see what happens to a number when you alter the bits in it (this can be done by setting a bit (making equal to 1) or resetting a bit (making equal to 0)), I've written a short program to demonstrate this (see later).

Hex is short for hexadecimal. It is based very closely on binary, using base 16. You may have noticed that $2 \uparrow 4$ is 16, so there must be a very easy way to convert from binary to hex and back. And there is. Hex is simply a short-hand way of writing binary. Short hand because you can simply split up

the binary numbers into groups of four bits, find the relevant hex numbers, and stick the number back together again. The reverse can also happen.

Bin	Hex	Dec	Bin	Hex	Dec
0000	00	0	0001	01	1
0010	02	2	0011	03	3
0100	04	4	0101	05	5
0110	06	6	0111	07	7
1000	08	8	1001	09	9
1010	0A	10	1011	0B	11
1100	0C	12	1101	0D	13
1110	0E	14	1111	0F	15

So, for example, the binary number 1100101 would be 1100 0101, finding the hex numbers would make it C 5, and sticking them together again would make a C5! (subtle humour, eh?). In this way, any hex number can easily be converted to binary, and vice versa. The Basic program printed with this issue should also help - input numbers and check the binary and hex on this table. Notice that this method doesn't work for decimal. 11110000 would be 150 (the 15 from 1111 and the 0 from 0000), when in fact it is 240. This is because decimal is base 10, and 10 is not a power of 2.

Although we can convert binary to hex, and the other way round, on the face of it there doesn't appear to be an easy way of converting decimal to binary or hex. That's true, there isn't. To convert binary (or hex) to decimal, look up the relevant decimal numbers on the table, times the second number by 16 and add it to the first number. Eg. 11110000 becomes 15 and 0. Then $15 \cdot 16 + 0$ is your decimal answer. Decimal to binary or hex doesn't bear thinking about! In any case, I get my assembler (SC_Assembler) to convert it for me, because it has a built in base converter. The Basic program supplied will also convert decimal into binary or hex if your assembler won't convert bases automatically.

If you are confused about binary, hex, and decimal then you may like to type

in the short Basic program (no machine code this month!) which allow you to enter any number from 0 to 255 in any base, and convert it into the other forms. You can also add and take 1 from the number to see how the numbers change.

Next time I'll tell you about assembly language, and I may even have a short program for you to type in...

```

10 REM Base converter,
20 REM Spectrum version.
30 LET number=0: BORDER 0: PAPER 0:
PEN 7: CLS : PRINT
"Binary:""Decimal:""Hexadecimal:""Press:
";B - Enter binary";"D - Enter dec";"H -
Enter hex";"O - Back";"P - Forward"
40 GO SUB 1000: GO SUB 2000: PRINT
AT 0,16;b$: AT 2,16;number;" "; AT
4,16;h$
50 POKE 23658,0: LET a$=INKEY$: IF
a$<>"o" AND a$<>"p" AND a$<>"b" AND
a$<>"d" AND a$<>"h" THEN GO TO 50:
REM POKE = Caps off.
60 IF a$="o" THEN LET
number=number-1+(256 AND number=0):
GO TO 40
70 IF a$="p" THEN LET
number=number+1-(256 AND
number=255): GO TO 40
80 IF a$="b" THEN INPUT "Binary: ";
LINE b$: IF LEN b$>=1 AND LEN b$<=8
THEN FOR a=1 TO LEN b$: IF b$(a)="0"
OR b$(a)="1" THEN NEXT a: GO SUB
3000: GO TO 40
90 IF a$="d" THEN INPUT "Decimal: ";a:
IF a>=0 AND a<=255 THEN LET
number=a: GO TO 40
100 IF a$<>"h" THEN GO TO 50
110 INPUT "Hex: "; LINE h$: LET h$=("0"
AND LEN h$=1)+h$: IF LEN h$<>2 THEN
GO TO 50
120 LET h$=CHR$(CODE h$(1)-(32 AND
h$(1)>="a" AND h$(1)<="f"))+CHR$(CODE
h$(2)-(32 AND h$(2)>="a" AND
h$(2)<="f"))
130 IF ((h$(1)>="0" AND h$(1)<="9") OR
(h$(1)>="A" AND h$(1)<="F")) AND
((h$(2)>="0" AND h$(2)<="9") OR
(h$(2)>="A" AND h$(2)<="F")) THEN GO
SUB 4000: GO TO 40

```

140 GO TO 50

1000 REM Decimal to binary:

1010 LET bit=128: LET temp=number: LET
b\$="00000000": FOR p=1 TO 8: LET
temp=temp-bit: LET b\$(p)="1": IF temp<0
THEN LET temp=temp+bit: LET b\$(p)="0"

1020 LET bit=bit/2: NEXT p: RETURN

2000 REM Decimal to hex:

2010 LET a\$="0123456789ABCDEF": LET
hi=INT (number/16): LET
low=number-hi*16: LET
h\$a\$(hi+1)+a\$(low+1): RETURN

3000 REM Binary to decimal:

3010 LET number=VAL (CHR\$ 196+b\$):
RETURN

4000 REM Hex to decimal:

4010 LET number=16*(CODE h\$(1)-48-(7
AND h\$(1)>"9"))+CODE h\$(2)-48-(7 AND
h\$(2)>"9"): RETURN

10 REM Base converter

20 REM SAM version

30 MODE 4: CLS £: LET number=0: DO :
PRINT AT 0,0;"Binary",BIN\$

number"Decimal",number,"Hexadecimal",H
EX\$ number"B - Input binary"D -

Input decimal,"H - Input hex""- - Take
1""+ - Add 1": DO : GET a\$: LOOP UNTIL

INSTR("bBhHdD-+",a\$)

40 IF INSTR("bB",a\$)

50 INPUT "Enter binary: "; LINE new\$:

IF new\$<>" " AND LEN new\$<9 THEN

FOR a=1 TO LEN new\$: IF new\$(a)="0"

OR new\$(a)="1" THEN NEXT a: LET

number=VAL ("bin"+new\$)

60 ELSE IF INSTR("dD",a\$)

70 INPUT "Enter decimal: ";a: IF a>=0

AND a<256 THEN LET number=a

80 ELSE IF INSTR("hH",a\$)

90 IF INSTR("hH",a\$) THEN INPUT

"Enter hex: "; LINE new\$: IF new\$<>" "

AND LEN new\$<3 THEN FOR a=1 TO

LEN new\$: IF

INSTR("0123456789abcdefABCDEF",new\$(a

)) THEN NEXT a: LET number=VAL

("&" + new\$)

100 ELSE IF a\$="-"

110 LET number=number-1+(256 AND

NOT number)

120 ELSE IF a\$="+"

130 LET number=number+1-(256 AND

number=255)

140 END IF : LOOP

SAM-ANTICS

BY GUY AIDOLETON

As you know, the SAM Coupe has a palette of 128 colours.

Choosing your colours is very important, but, unless you load in FLASH! and try out a colour, you have little idea of what colour a number is. The manual goes through all the colours, giving them names, most of which, whilst funny, are absolutely no help at all.

Here's a simple way of working out your colours. There are 3 main primary colours that computers and (colour) TVs use; red, green and blue. Each can be off altogether, or on in 3 amounts of brightness. Furthermore, each level of brightness can be increased by a half (known as half-bright).

I know this may be a bit confusing, but here's a little diagram that I guarantee you'll look at many times in the future!

BRIGHTNESS

COLOUR Dull Normal Bright

Red 2 32 34

Green 4 64 68

Blue 1 16 17

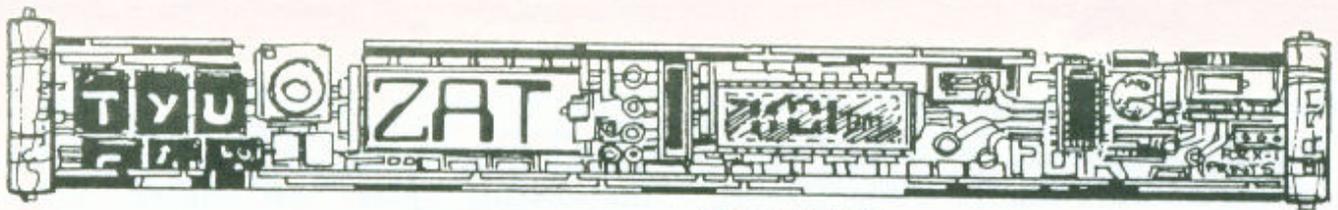
NB: Add 8 for Half-Bright !!

You should see bright red is 34. To get brighter, pure red, add 8 to get 42. It's as easy as that.

You should now be able to see that bright white is 127 because you take bright red (34), add bright green (68), add bright blue (17) and also the half-bright (8); $34+68+17+8=127$.

On the more complicated side, an even brighter red than 42 can be achieved by adding matching levels of green and blue. So, $42+4+1$ (dull green and blue) gives 47. In this way you can work out 9 possible levels of brightness for each primary colour.

Don't forget that mixing different colours produces the rest of the spectrum! (Pun intended!)



Program Box by Steven Kemp

SERIOUS READING SYSTEM VARIABLES PART 1

Hi and welcome to the start of a new series aimed at those proficient programmers amongst you. What I hope to be doing over the next couple of issues is showing you what can be done with the System Variables. These if used properly can be enormously beneficial- and conversely immensely destructive, well you might cause a crash, (and thus loose anything in the memory). I shall only be dealing with those variables that exist on both the Spectrum 48 and 128k machines.

PROG 23635 & 23636

PEEKing this will give the start address of the basic program area, to peek this a two byte-number you would issue the following command: PRINT PEEK 23635+256*PEEK 23636

This shows you where the basic program area starts, on a normal unexpanded Spectrum this is 23755, but if microdrives, etc, are connected this may change. Now type in the following short program, changing the 23755 in line 20 to your value if different:

```
10 PRINT "123456"
20 FOR F=23755 TO 23755+13
30 PRINT PEEK F; TAB 5;F; TAB 17;
40 IF PEEK F > 32 THEN PRINT CHR$
PEEK F, : NEXT F
```

50 PRINT ,
60 NEXT F

Now type in RUN 20 and you should see the following:

0	23755	
10	23756	
10	23757	
0	23758	
245	23759	PRINT
34	23660	"
49	23661	1
50	23762	2
51	23763	3
52	23764	4
53	23765	5
54	23766	6
34	23767	"
13	23768	

The first two lines show the line number, in this case 10, the number is stored most significant byte first. The next two lines show the length of the line, this time least significant byte first as normal, the length in this case also being 10. The last line is the end of the line marker. This marker, decimal 13, is at the end of every line, and immediately following this is the line number of the following line, or the end of program marker, decimal 128, if it is the last line in memory. Knowing this we can write a simple renumbering routine for the 48k Speccy. This is a 48k only routine, so 128 users should switch into 48k BASIC first, or use the in-built "renumber" option in the 128k BASIC's edit menu.

```
9000 REM
9010 REM 48K RENUMBER ROUTINE
9020 REM (Remember to change the GO
SUB's AND GOTO's)
9030 FOR F=3E4 TO 30037
```

```

9040 READ A: POKE F, A: NEXT F
69050 INPUT "Start line (0-9999)",
START
9060 INPUT " Line step size (0-9999)",
SIZE
9070 POKE 30008, START-256*INT
(START/256):
      POKE 30009, INT (START/256)
9080 POKE 30029, SIZE-256*INT
(SIZE/256):
      POKE 30030, INT (SIZE/256)
9090 PRINT "RANDOMIZE USR 30000" to
use": STOP
9100 DATA 237, 75, 75, 92, 42
9110 DATA 83, 92, 17, 10, 0, 229
9120 DATA 237, 66, 225, 48, 21
9130 DATA 114, 35, 115, 197, 35
9140 DATA 78, 35, 70, 9, 35
9150 DATA 193, 229, 33, 10, 0
9160 DATA 25, 84, 93, 225, 24
9170 DATA 229, 201

```

And thus it ends. I'll be back next time with more of the same. Until then its the good old fashioned English GOODBYE. If you do have any problems, programs or ideas then write to me: Steven Kemp, C/o of the ZAT address.

GM Base - GM Soft - £7.95

GM Base, is a low-cost SAM business/home serious usage data base, from the GM Soft stable.

The program, has been designed to work with either the 256k or 512k SAM model, and automatically adjusts it's capacity to suit.

Soon after loading, a simple menu screen appears. This screen, like the rest of the program, is in the clear colour combination of bold white characters, on a dark blue background. The options displayed on the screen include: Create,

Load, Edit, Save, Copy, Erase, Rename and Print. These are selected by using cursor left and right, and pressing Return.

CREATE: This allows you to create and name your database file. First, you are prompted to enter a 7 character (max) name for your database files. Make sure you have a disk in at this point! Next follows field naming.

This is extremely simple. Just type in the name of the field, press return, enter the number of characters and carry on.

When you have reached 10 entries, or have typed quit (to quit), the maximum number of possible entries is displayed.

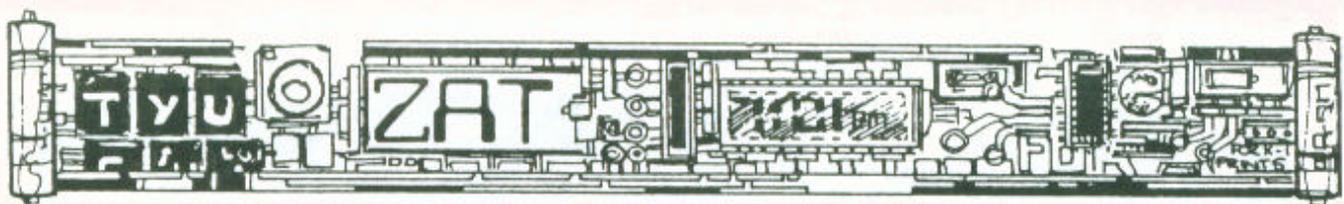
On a simple address database, (30 chars for name, 20 for 4 address fields, 10 for postcode) I managed to store 954! And that's on a 256k SAM!

Back on the main menu, and the commands:LOAD, SAVE, COPY, ERASE and RENAME. These are all self explanatory disc handling commands, so I won't dwell on these.

EDIT: gives you the chance to enter, view, edit, sort and search your data. There is a handy key guide on view, to help you with the necessary commands. These are all in the form of single key presses, and utilise the function keys.

PRINT: This final option, gives you the chance to print out your data. Options are available for either NLQ or Draft printouts, with a number of combinations available including: Pica or Compressed.

A prompt asks you for the range that you wish to print, before printing. This allows you to print only the first 50 entries (for example) or just a single entry.



Overall this is an excellent utility, at a bargain price. What is surprising is, that it is actually written in BASIC, which for the most of it you would hardly guess! Recommended for anyone running a fanzine, or any other small business!

GM Base is available from:
 GM Software
 48 Main Road
 Cryant
 Neath
 SA10 8NP

But don't forget to enclose a stamped address envelope for a reply!

IntergrateOBitS by Steven Wilson

SAM Sound Help Part 2 Tones On The Sound Chip

A Tone on the sound chip, is a number between the values of 0 and 255 (inclusive). The Tone Registers are numbers 8 to 13, for

RATINGS	
USEFULNESS	81
PRESENTATION	83
COMPATIBILITY	SAM
OVERALL	84

(We will be reviewing GM Calc - the Spreadsheet - in issue 10.)

generators 0 to 5 respectively. There are numbers that match exactly the notes used on any music sheet. These are shown in the diagram. (Frequencies are measured in Hz)

Due to both the size, and the nature, of this article, I have decided to continue it in it's complete form, within the confines of ZAT's first SAM Coupe PD compilation disk. For more details on this disk, see next issues PD column. I hope this does not inconvenience anybody. D.L.

Note	Tone No	Oct	Requ. Freq	Actual Freq.
Mid C	33	3	261.626	261.506
C#	60	3	277.183	277.162
D	85	3	293.665	293.427
D#	109	3	311.127	310.945
E	132	3	329.628	329.815
F	153	3	349.228	349.162
F#	173	3	369.994	369.822
G	192	3	391.995	391.85
G#	210	3	415.305	415.282
A	227	3	440.000	440.141
A#	243	3	466.164	466.418
B	5	4	493.883	494.071
C	33	4	523.251	523.013

Tech Tit-Bits!

Just a couple of little items of Technical news, to keep you going until the next issue!

Comet Sighted!

I was recently treated to a glimpse of Revelation's new SAM Machine Code Assembler - Comet. But before you groan, and say "Oh no, not another one!", let me give you a few details of it.

Comet is being written by both Colin (doesn't he get around?) Jordan and Sample Master Edwin Blink.

It features (amongst other things) fast on-screen editing, flexible block manipulation facilities, uses all available internal memory, and retains file compatibility with both SC and LERM Assemblers.

Putting it simply, it is looking great, but I have only seen the prototype version, so the finished version may take a little longer, and may have a few more features.

Once again, contact Revelation for more info.

Wanted: Dead or Alive! (1)

Help! Although ZAT's first PD Disk is nearing completion, I am in urgent need of any further suggestions or programs for future disks!

So, if you have written anything that you think is worthy of appearing on a future disk, be it game or utility, then please contact me!

I am also on the look out for anyone who wishes to do any writing for the magazine section of the disk. So, if you wish your work to be read by thousands, write away, Right away! (Did I crack a joke?)

Humphrey - The Story So Far...

Following the popularity of ZAT's first Tech Advisor's excellent Disk Utility, Steve Nutting has decided to release the program onto Public Domain!

Naturally, ZAT will be stocking this disk very shortly!

Keep tuned for further developments!

If you have any other technical related news items, send them in to D.Ledbury!

ZAT Disk Library Proudly Presents

SAM Demo 1 £2.99

Containing: "The Frog Demo" - a cartoon-like animated sequence, that needs 512k

"FLASHHELP" - a guide to some of Flash's abilities, by Integrated Logic

"FLASH+" - small extensions, by "SAM Supplement" readers

SAM Demo 2 £3.99

Containing a conversion of the classic Amiga Demo - "The Walker"! One Meg, and MasterDos needed.

Please make all cheques, payable to either: D.Ledbury, or "ZAT (Programming)", and send to: ZAT Disks, PO Box 488, Tweedale, Telford, Shrops. TF7 4SU.

All costs include mainland UK postage - overseas apply for price details.

Spectrum +D/Disciple Disk, planned for later this year - with simple graphics package, and numerous Adventures!

If you have any Demo's, Utilities, Games, Routines, Books, etc - for either the SAM or Spectrum - that you would like ZAT to distribute, please contact D.Ledbury on:(0952) 684864. 7pm - 8pm. No mag enquires, please!

Now keep your eyes and ears on our rear and your weapon at the ready we haven't reached the winning line yet



Outside, some 20 minutes walk from the taverna...

So are you going to tell me or do I have to

Okay, okay TBI were given top priority as long as Pandora was recovered, that's all that mattered, even if it meant bending a few house rules in the process



They paid your friend Murphy to set up a blind-hire contract for your company to Sal-Dp a Com-Link Satellite, which really was Pandora, although you wasn't aware of this

With Ryvanna already in crisis, TBI knew you'd request protection and that's where I come in.

We'd rush in, rush out. Get Pandora, keep it safe until TBI could pick it up and take it away for disposal. You'd get paid for your trouble. I'd go back to being a CST regular. end of story

But things didn't go exactly according to plan. Sanchez died...

Then TBI screws around with my orders. Ground-Watch has located the Octogon HQ. The acting Terran government, who've got Ryvanna under their collective thumbs, immediately request that the camp must be taken out and any Octogon prisoners taken alive at all costs.



They specifically asked for a Sentinel to lead the attack, as since I was in the area...

As long as you play your cards right, it shouldn't interfere too much with your assigned mission... Proves the point that most of TBI's head-honchos haven't had any experience of being in a war-zone.



It wasn't all acting, I w...

I don't remembe, wait. That time in the silo, you were getting your orders from another Sentinel, an you kept quiet with all that malarkey about bein zapped by the computer.

An all this time I've been working for the bloody TBI, sure going on a treasure hunt, find'in war relics for the rich who want the odd souvenir, when the firing gone on, stoped, that I can stomach.

But doing TBI, an a bunch of board-heads a favour, no, let me re-phrase that, manipulated to do their dirty work, an expect to get blood-money in return.

Well no way!

* See Issue 2.

But what makes it worse is that my so called partner - whom I once pulled outta the dirt



forced him to believe life was worth living...

Christ, John you an your stuck up officials have used me! ...Playing out their bloody schemes



Thinking that they're trying to make everything nice an' rosy when all that really counts is if they can gain enough votes to keep them in a life of luxury

An you expect that after giving me all the sordid details, an a few bloody apologies, you expect it to be business as usual



Well wipe the grit from your eyes, an see the light, cause that's bullshit an' you know it!

Now if you don't mind, the best company I want is several cans of Miller, an



I didn't have a choice! You were already a vital part of the plan. By time I found out, there was no tim



I said

Feel better?

Dumb question. An if you're reading my thoughts, you better stay down there, or I'll knock you down again, an twice as hard too

You want to do some apologizing? Go to Emily Sanchez, tell her how you and your puppeteers are sorry that her husband got killed

cause it seems to me that if that execution had gone ahead then one of the sods involved in all the action would've deserved all he got



The rain falls, cleansing the streets of filth, but not of troubled thoughts...

Steam hisses from the depths, people run to find shelter...

Then the night is pierced by sirens... followed by a multifarious din of weapons firing...

screams... screeching...



As the pursued vehicle draws nearer, he senses a familiar aura...

He scans the two occupants: one of them has a fractured mind: a mish-mash of greed and dreams laced with alcohol and Opium blossoms.

But the other one... His mind has great depths, filled with hate... betrayal...

...all of which is abruptly ends, as to John's surprise, his probe is viciously attacked and expelled...



He fires several shots.

Two hit. The rest go wild. His concentration reeling from the sudden Mind-Shock...



Around the rim of his subconscious, he's aware that he can hear footsteps splashing through the puddles towards him...

Smell lingering ozone wafting through the rain... feel raindrops running down the back of his neck...

But inter-mixed with all these, and other sensations, his mind is consumed by a feeling, that somehow he knows who the other man is...

But before he can continue this path of memory, other matters become more paramount.

...Idiot! Thanks to you, we've



There's someone hurt, caught in a crossfire on the other street. Off-Worlder, Oceanian I think.



Ned.

L
A
T
E
R
Hoo-harl we've lost em, an we're home free! Time for a Miller wouldn't you agree.

Angelo. I only ever drink alone.

The only sounds that resonates through the night..

A whine of an electrical engine growing fainter and fainter..



Is of the rain and wind coming down from the high-ground..

...and a single, echoing thought that repeats over and over..

Paris...Paris...Paris...

SENTINEL

Darren Blackburn	David Ledbury & Mike Garbett	Phillip C & Vincent
PLOT, SCRIPT & ART	SCRIPT ASST	LETTERING



Revelations From Revelation

Revelation, has just announced two new SAM games, due for impending release. They include a conversion of the smash-hit 16 bit platform/slash-'em-up game, Prince Of Persia (which is previewed in this very issue), and a conversion of Digital Integration's (the Fighter Pilot veterans) popular air combat simulator F18.

F18 boasts selectable wire frame/solid 3d animation, and ST quality full-colour graphics

We have seen previews of both of these games, and there is nothing we can say except They're amazing!

Save your cash, as they will be around the £15.00 mark. Reviews to follow soon. But keep your eyes on the next issues of Crash, as a favourable review is promised, along with a demo of SAM F18.

Contact Revelation at: 0792 700300. Ask for Colin Jordan.

Quick Off The Mark

We do know that game reviews need to be written quickly these days. However, we were rather surprised when a recent copy of Amstrad Computer User, fully reviewed Colin Jordan's Amstrad version of "The Famous Five" Adventure

Why the surprise? Well he hadn't actually finished writing the game at the time! Although the review told him that he had done an excellent job!

It is strange how Amstrad graphics suddenly look like Commodore 64 graphics, isn't it!

Mousemania

Many people have been eagerly awaiting a SAM Mouse, ever since they realised the computer had a Mouse Port. So, everyone can now rest assured, as there is finally a SAM Mouse, more to the point, there are now two!

Blue Alpha was first off the mark with it's mouse, "The Joy Mouse", as it is called, is a self contained unit which boasts compatibility with almost every piece of

games software available for the SAM and even quite a few Spectrum games! This is done by it's emulation of the Joystick, as the Mouse is treated like a Joystick (thus using the Joystick Port).

SAMCo were soon to follow, with the OFFICIAL SAM Mouse, which uses the REAL Mouse Port, although a simple interface is placed in between the computer and the Mouse. SAMCo has both a Mouse, and a Trackball available, both of which are treated as Mice.

Contact Blue Alpha (between 2-4pm) on 0792 310885, or SAMCo on 0792 700300 for details on prices etc.

An Outlet For Abilities

SAM Demo writers, eager to show off their abilities, may be interested in an interesting competition being currently run by SAM Disk magazine - Outlet.

For the next 8 months, they will pay £10 for every demo they are sent, that is published. If that wasn't enough, they promise to pay the best Demo Writer a whopping £100!

Demo's can be graphical and/or musical, so hurry with your entries! (Quick! Where's my mouse?)

Flexibase's "Flexipal"

All purchases and updates of Sam Flexipage now include "Flexipal": a simple to use colour block designer enabling Sam's 127 colours to be viewed on screen and the 16 colour "pots" to be "filled" with the user's choice.

Flexipage will automatically load these colour blocks from the menu or at any stage of an exercise, making full use of Sam's colours whenever required.

"Flexipal" designed colour blocks are not restricted to use with Flexipage; they can be simply included in any other program. Full instructions are included.

ZAT readers should note that there is a 20% discount off the price for both Flexibase and Flexipal. Flexibase will cost you £15.00 and Flexipal £3.00. This applies to ZAT READERS ONLY!

Just a quick mention that Steve's Software exclusively sell an exception and useful Assembler utility for writing machine code, take note of this issue's course. Contact Steve Nutting, 7 Narrow Close, Histon, Cambridge, CB4 4XX. At this moment Steve is re-writing SC Filer, and is working on SC Monitor.



BY MICK GARBETT

THE FADED SUN TRILOGY BY
C.J. CHERRYH

This book was originally released as a three volume trilogy by The Science Fiction Book Club and was only available to their members. Now it is available to all as a single volume paper-back, and is one of my personal favourites.

C.J. Cherryh is an excellent writer anyway and in this case has produced a work to satisfy most tastes in science fiction. In this book She has used Her skill as a linguist to enhance the atmosphere of the story by developing a believable alien language.

The story revolves around the surviving members of a race called the Mri and their struggle to stay alive at the end of a devastating war against Mankind. A key element in this tale is a human soldier called Sten Duncan. Sten is known as a SurTac officer, a kind of futuristic SAS, who becomes linked so closely with the Mri He becomes adopted in their warrior caste, known as the Kel, and forms a semi-telepathic symbiosis with a Dus, a form of teddy bear 10 feet tall with poisonous claws.

This sounds as if it is a fairly simple story, but there is more to it than first seems apparent. The Mri appear to be no more than mercenaries for a reptilian race called the Hegul, and to save themselves these attempt to wipe out the remaining Mri before it becomes clear that the treaty has been broken.

In the attempt two Mri escape and try to leave what appears their home world.

I won't say anymore about the plot because this will appeal on a number of levels, and to people with differing tastes. As example of this:-

- The first part..... KESRITH
Is a fairly straightforward adventure.
- The second part..... SHONJIR
Is a story of personal struggle.
- The third part..... KUTATH
Is almost pure space opera.

FANG THE GNOME BY MICHAEL
CONEY

This is a book that someone asked me to read and review without finding out that it was the last part of a trilogy

Putting that aside, the book was very enjoyable on it's own, this is because Michael Coney is a top flight writer.

The trilogy is entitled 'THE SONG OF EARTH' and comes under the category of science fantasy (with a strong emphasis on fantasy).

I won't spoil the whole trilogy by saying too much about the last book, I just say that if You think about Arthurian legends in a new way, read it.

HOW TO BE A SUPERHERO.
BY JOHN LEPINE, MARK LEIGH
AND ILLUSTRATED BY STEVE
DILLON.

What can I say? These are the same team who produced 'HOW TO BE A COMPLETE BASTARD', and this is another winner.

Any book that is written by perverted individuals like these, has got to appeal to the more honest side of human nature.

Be warned this is not for kiddies, the language is the type to make your granny snap her knicker elastic with laughter.

Aside from mentioning that they have some interesting designs on Paula Abdul(not as interesting as mine)there s little more to say than BUY IT NOW!

Two books to look out for in the libraries or bookstores are LEGEND and THE KING BEYOND THE GATE by DAVID GEMMELL. I have just completed these books, which are connected, and have found a factor in them that is very often partially or totally absent in science fiction and fantasy novels. The factor in question is characterisation, not just the depth of background and feelings in the principal characters, what is found in these two novels is a amazingly empathic insight into characters who only appear for half a page. David Gemmell seems to have a very deep understanding of soldiers, from the highest General to the Lowest grunt who finds himself in shit street with 20 000 screaming bar-



MENSA?! Never heard of it! Then enter the realm of puzzling mind-benders with resident brain pulverizer, Thomas..

MENSA it most certainly isn't. Not that I'm a member or anything, but then again, you might well need to be to set about solving this issue's batch of puzzlers..

PAINTING BY NUMBERS

Kicking off this issue with a clever little trickster for all of you who bear big brains..

A wealthy merchant died, leaving some valuable paintings to his three sons. The eldest son was to have one half of the paintings, the second eldest one third, and the youngest was to get one ninth. The brothers were in despair. They could not divide the paintings in the equal amounts their father's will had wanted without cutting the paintings in two.

They explained their problem to their rich uncle, who simply smiled and gave them one of his own paintings. The brothers then found they could divide the paintings without cutting any, and what's more, they were able to give back the rich uncle's painting afterwards.

How many paintings had their father left them in the first place?

TRUE OR FALSE

Here's a quickie teaser I thought I'd just throw in..

Can you hang a man with a wooden leg?

Right, this is the first Prize Puzzler, something that I'll be regularly featuring in ZAT's Pain Palace. What will happen is the best puzzle that you lot send in each month will be used as a competition. Get the gist?

This issue's gem is a real crafty one. What you've got to do is decipher the clues with the help of the money table. I've done the first one for you so you get the idea, just bear in mind that all the clues are to do with old money and if that doesn't help, get the oldies to help you out..and remember, everything must add up to eighteen pounds, two shillings and nine pence!

Once you've finished (or done as many as you can), write your answers on a postcard (or sealed envelope) and bung them off to the address at the bottom of this page, marking your missives "Prize Puzzler 1". And don't despair if you can't get any of the clues, I'll be publishing the answers to all these puzzles next ish.

		S	D
WEIGHT	1	-	-
GIRL'S NAME	-	-	-
TYPE OF PIG	-	-	-
LEATHER WORKER	-	-	-
MAN'S VOICE	-	-	-
MARS, SATURN, & VENUS	-	-	-
MODE OF TRANSPORT	-	-	-
ILL SEA CREATURE	-	-	-
BOY'S NAME	-	-	-
TOTAL	18	2	9

If you'd like to get your hand on some ZAT goddies either a) enter the prize puzzler or b) write me a puzzle for inclusion on this page. Make sure your puzzle is ORIGINAL and don't forget to include the answer! Send your words of wit and wisdom to ZAT, Pain Palace, PO Box 488, Tweedale, Telford, Shropshire, TF7 4SU. See you next time..



BY Richard Swann

The Computer Shopper Show - 1991

On Friday 10th, to Sunday 12th May 1991, the normally fairly peaceful Alexandra Palace was turned into computer madness as everyone from north, south, east and west came forth to see the latest in computer technology on display, and yet again broke all attendance records...or did it? Well, I turned up on the Saturday afternoon, to have a look around.

The first thing that everyone did once inside, was to fill in a quick registration card with your general thoughts of how you'd spend the day. One thing I particularly noticed was the first question - "What computers are you interested in? - IBM/ Atari/ Commodore/ Amstrad/ Other/ "; note the lack of the Spectrum (or Sam for that matter), a fact which became more apparent inside, as I could hardly find any Speccy software, save for about three very old and over-priced items on a mail order stand, and copies of "Your Sinclair" on sale at the Future Stand (but no YS staff to be seen). I hung around this stand for a bit, until I realised that nobody remotely Speccyish was going to appear, so I got into a conversation with "Big Bang" Jonothan Morris (apparently, he's well known in Amiga circles, but I haven't got an Amiga so I wouldn't know.)

IBM most definitely hogged a lot of the action - a whole area of the hall was designated to IBM products, and there were numerous other stands supporting IBM (like the PC User Group which was next to the Future stand.)

A couple of other noticeable places of interest were Acorn, who's display of Archimedes graphic and sound demos

were mildly stunning, 2-bit systems, who had a wide range of keyboards to sample and muck around with, and Rivendene PDL, who had a massive range of free software (but sadly not for the Speccy.) Otherwise, it was a case of "looks nice, but too expensive" or "looks nice, but doesn't grab my attention."

A completely different problem aside, was the colossal amount of litter everywhere. Bits of free magazines, leaflets and other printed material along with bits of food were strewn all over the hall carpets. The organisers, Computer Shopper (who were flogging their highly successful magazine) obviously had thought of this and employed a load of cleaners to deal with the problem, but the more litter they cleaned up, the more there seemed to accumulate. It's a bit of shame, as some of the more elaborately posh stands looked a bit of a tip.

In conclusion, I'm afraid I'd have to say that the show was a bit of a mega-flop. It may have been something to do with the lack of advertising (none of the major Spectrum magazines had any advertisements of the show, although other publications may have), but I'm sure that a lot of Speccy enthusiasts would have been greatly disappointed by the lack of support for their machine.

SHOW NOTES

Readers of Adventure Probe please note that ZAT is planning to take a stand, at the October Probe convention, to be held at Birmingham on the 26th of that month. For further details, see the "Mind Games" section.

Also ZAT will be "attending" the All Format Fairs on the 14th of September and 10th of November at the Motorcycle Museum also in Birmingham!