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ISSUE 14 - NOVEMBER 1988 - £1.50

ACE

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Ever fancied a trip on a real state-of-the-art military flight simulator? Andy Wilson takes to the silicon skies, and just how close a game-like Interceptor can get to the real thing, and reports on Microsoft's Flight - recently adopted by the Pentagon.



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Major Tom flying off into a 4000 colour sunset.

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THE ACE CARD

Win an Amiga ST!

By now EVERYONE should know that an ACE card is your passport to sharing in free gifts worth hundreds of £3 every month. Find out on page 14 how to get your own card, while if you've already got one, check Random Access to see if you're one of the lucky winners.

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What a great ACE and Advisor are giving you the chance to walk away with America's latest state-of-the-art computing unit... absolutely free. Only a pen, turn the page, and make it into yours!



Commodore's Model 6400 will fit into your life and pocket!

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The 16-bit revolution can cause problems if you want to upgrade - just which machine should you go for? Check out the facts with the magazine's definitive feature tables, designed to put you in the picture and save hours of tortuous when your money turns out to be a turkey.

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A whole magazine within a magazine. We show you what's new, previews, tables, talking points, and the devoted Wilder Theorists. This month, the Sonic Sprint discovers the joys of wings.

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Sale empty the business. Your business. Mini-reviews, helpful offers, announcements, prizes, games and hardware for sale, and so on there. Cook these pages, and let your games do the talking.

SOFT AND HARD

We've become accustomed to seeing state-of-the-art software following hot on the heels of state-of-the-art hardware. Jack Tramiel produces the Atari ST and suddenly a host of 16-bit stammers start hitting the charts. Commodore produce the Amiga and we get Interceptor; Sir Clive gives us the Spectrum, and we get Ali:Alien... and so on, and so on...

This state of affairs has gone on for so long that it is now a universally acknowledged law that you do not release a new computer unless you are sure it will attract software support.

But what about the other way round? Supposing you had a game so hot that there wasn't a computer you could run it on, except possibly a mainframe? It just doesn't seem feasible that software development could drive hardware development. Could this ever happen?

It already has. Inside this issue, you'll discover how Microgrisee set out to write a military-spec flight sim, but couldn't find a computer to run it on. Even when we showed them the specs for the Cambridge Flame machine (see issue 11) their reaction wasn't enthusiastic. 'It's just too slow to do the things we want to accomplish,' they moaned. Now they're planning to solve the problems themselves... by producing their own games mega-machine. Find out more on page 76.

This raises some interesting possibilities. A long time ago, a lot of people paid a lot of money for little games consoles that were dedicated to a single range of games (usually tennis). Perhaps in a couple of years, we'll see dedicated hardware units selling at around £70 each and developed purely in order to play the best possible version of the best possible game, with future upgrades available on smart cards.

The state-of-the-art F18 Stealth Fighter console and the ultimate Ultima machine may not be so far away after all...

The ACE Team

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CHRISTMAS JUST WOULDN'T BE CHRISTMAS WITHOUT THE ATARI USER SHOW

ALEXANDRA
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NOVEMBER
25-27
1988



Too early to think about Christmas? Not when it comes to the Atari User Show.

For this is the festive event that has it all:

- LOADSA exhibitors (around 70)
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- LOADSA software
- LOADSA new products
- LOADSA games
- LOADSA happenings
- LOADSA technical advice
- ...and most important of all for you, the visitor —
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With hundreds of special show offers to choose from, here's one place you can do your Christmas shopping and end up in pocket.

You can even save £1 a head before you get there by using this advanced ticket form.

If you enjoy computing with Atari, you'll be thrilled with the Atari User Show!

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FRI-SAT 10am - 6pm
SUN 10am - 4pm

No matter which Atari machine you use from the 8-bit through to the mega ST you'll find just what you are looking for. And even some exciting things you don't know existed!

For all the leading companies in the Atari market will be out in force to demonstrate their latest developments.

Traditionally the finest Atari event of the year, this pre-Christmas show is shaping up to be the most entertaining of them all.

Don't miss it — and make sure YOU enjoy a Merry Christmas!

How To Get There

Alexandra Palace is so easy to get to by car, rail, underground or bus. It has its own British Rail station, just nine minutes away from King's Cross, and there's a free bus service shuttling between the station and show every 10 minutes.

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Please quote credit card number and/or address.

DATABASE EXHIBITIONS ...and more

F only music, coloured lights and a slick film show accompanied Amstrad's pre-PC show announcement of a new model, three new PCs and a networking system. Does it stand for...? Here's also the title number they're launching under the British brand name - the Sinclair Professional PC200.

This other strange beast has an Intel 8086, 16-bit chip running at 8 Mhz. It comes complete with 128 Kb of RAM, an integrated display adapter that will allow you to plug it into your television set, parallel and serial ports. An enhanced AT style keyboard with 102 keys and a single 3.1" 120 Kb disk drive. Two full sized expansion slots, a speaker with volume control, a mouse and an analog joystick port. All the machines run under MS-DOS 3.0 and come with OS/2 Basic and Gem 3 as the bundled software. Overall the machine looks vaguely like a matt black Amiga or AT but otherwise it bears no similarity whatsoever.

You have the option of two different monitors, or none. The first is a 12" monochrome that displays 60 columns by 25 lines with the second is a 14" colour CGA with the same resolution capable of displaying 16 colours

AMSTRAD PUZZLE

■ The new Sinclair PC200 is here at last. We're excited. Or are we? ACE takes a critical look at Amstrad's latest offering to gamers...



at any one time.

The price ranges from £200 to £400, excluding V.A.T. The entry level machine is monitor-less and

includes just the basic specification. For an extra 100 you get the mono monitor, a joystick, PC Organizer and four games. Finally at the top price you get a colour monitor, joystick, etc.

There are a couple of minor quibbles that need solving though before rushing out to buy one. Firstly, those expansion slots. Are they as full sized, lengthwise but not depthwise - if you fit a card you have to leave the cover permanently open and the motherboard exposed constantly. Second, what is the machine intended for? The manufacturer claims for using it "the serious games machine...ready to work hard...the professional, personal, computer". You can add a second drive, externally, or extend the RAM with expansion cards or add an 8027 co-processor but...

The only question that remains is: Who is the machine aimed at? The answer: Only Alan Sugar knows! Especially when

ACE NEWS

CHRISTOPHER HARRIS

you can buy an ST, complete with colour monitor, for just a few dollars more.

According to the great man himself the Sinclair PC200 will be available at the beginning of October from selected branches of Comet. Obviously intended for the Christmas market.

DAMP SQUIB?

Let's face it, the PC200 isn't going to set the world alight with its CGA graphics. No matter how cleverly it's used, a few rescaled cyan and magenta display columns look ugly in an age of STs and Amigas. Even CGA, CGA is 16-colour, low resolution successor is still flat. The big news here is VGA - the Video Graphics Array - and that's hardly surprising. VGA is very impressive stuff.

ISA can do anything CGA or EGA can, but that's just the start. It can display at a resolution of up to 640x480 in 16 colours, but that's not the stellar either. No, what really makes your nose twitch is VGA's 256-colour mode. That's a 330,000 screen in 256-colours from a palette of over a quarter of a million colours.

Great! That means we're already on the ISA bandwagon. In truth, contrast to the PC200's sorry graphics, all three modes in this new updated PC2000 range give ISA as standard. The cheapest of these, the PC2000, costs under £1,000 even with a top-of-the-line colour monitor.

Sound's expensive? Well the monitor alone accounts for over half the total price - and that makes it a bargain, believe it or not. Special monitors are needed for VGA expansion modes, and they aren't some cheap. The official IBM equivalent of Amstrad's top monitor costs more than the PC2000 and monitor combined!

The enormous colour range of VGA would make it a natural for computer art or by hobby, but the memory overheads would make this slow for some types of game. Scrolling through maps and solid 3D would be particularly difficult. Of course, ISA career modes still work on VGA-PCs, so they're probably the best bet for game programmers.

GOING TO VENICE

Four thought VGA-PCs were impressive with their quarter of a million-colours to choose from, 48 hardware film texture Technology convinced that into a packed list. For a mere £1,250, their **Venice 600** graphics card gives Apple's Macintosh II a 640x480 screen display in 16 million colours, producing almost photographic quality. The only thing that stops you using all 16 million colours is the fact that you get just 60 pixels resolution. It's true, should note that the colour range is the same as Macintosh II's 16-bit simulator display featured in our *Parthenon* article - though obviously the Mac II doesn't have quite as much processing power!

...AND THE ATARI SOLUTION?

Jack Trammell of Atari hasn't got any doubts about what you should be buying this Christmas - an ST, now reduced to its pre-holiday price of £250. So now you've got three choices: PC200 - all the advantages of the MS-DOS software base but an outdated graphics standard; the ST which, as all know and some love, and the Amiga, one hundred pounds dearer, but beloved of the Americans, Germans, Danes, and others, for pays per money, and yet plays per game...



Two legends - from another without words and text, Michael Douglas - discussing the latest product, Parker Brothers, Head by Parker Brothers, under the new banner.

newly for gamers because they allow smaller companies with games expertise to bring us games (often good ones) that would otherwise languish and die in the small ads sections. In a world dominated by quantity, it's good to see quality being given a hand every now and then...



Parker Brothers: Making It Up on the Edge.

SMALL GUYS AND BIG GUYS

A long-standing association between System 3 and Activision/Medalionis has been officially renewed, bringing us *Las Vegas 2*, *Tiger*, *Plan Out*, and *Commodore* over the next year for all major systems.

Activision deals like this one, where System 3 produces the games and Medalionis enable you to buy them, are becoming more and more common these days. They're good because they allow smaller companies with games expertise to bring us games (often good ones) that would otherwise languish and die in the small ads sections. In a world dominated by quantity, it's good to see quality being given a hand every now and then...

4,000 COLOUR GAME

Modern are getting all-out-outout *Pinner-Playe*, which uses the Amiga's full and mighty capability to put over 4,000 colours on screen at once. Whether it plays as good as it looks remains to be seen, but we're keeping our fingers crossed...

GO HELTER SKELTER!



We've got a great special offer for ACE readers. Thanks to Helter Skelter publishers Autogames, this still valid game features a number of challenging screen layouts that you have to negotiate in order to stamp members with a flourishy tail.

Now here's a challenge for you. Using either your knowledge of the game, or our review of it in the September issue, for inspiration, design your own Helter Skelter screen. We'll give two pairs of Atari Top Insults to the authors of the two most original, creative screens and print their entries in glorious technicolor on these pages. Go on, show us what you're made of and get a great 60c out into the future! Entries must reach us by November 5th - and don't forget to include your name and address!

AFTERBURNERS ON

Medalionis, formerly Activision, are aiming to have two number one hits before Christmas, and with two games by *Top Gun* and *Afterburner* it's hard to argue with them. Indeed Medalionis are so excited about *Afterburner*, *Top Gun* and *SDI* that they're running a series of TV ads in November. Mind you you'll have to get up at Saturday morning if you want to see it.

There was also exciting news for fans of Games Workshop, the fantasy role-playing games producers. They've signed the game rights to all C&A's products, including the *Warhammer* wargames. Initially they'll be producing *Warhammer Fantasy Battle* and *Warhammer 40,000*, but not until early in 1985. It's got more evidence of the rise of role-playing games. As Colin Wilson would put it, watch out the wargamers are coming.

Another interesting game on view was the ST version of the Israeli Air Striking Spies. We mentioned after seeing a preview of the C&A version a couple of months back that this would be one to watch and the ST version makes it look even better.

COMMODORE PLOT THE FUTURE OF 8-BIT?

Commodore announced special 'boxed retail' packages for the Commodore 64 of the PC Show, reinforcing feelings that 8-bit machines aren't going to fall down and die with-out a fight - and raising some interesting questions about the future of our old 64K friends into the bargain.

The first package is the least interesting, but still offers excellent value at £149.99 for a C64C, C24 cassette, joystick, and ten games. Called the 'Hollywood' pack, the bundle gets you *Blade*, *Miami Vice*, *Platoon*, *Great Escape*, *Top Gun*, *Tiger*, *Parrot*, *Blackbeaters*, *Strike Out*, *Kryphon Painter*, and *Every Second Counts*. Price...

It's the second 16-to-number that makes the question. Called the Commodore Family Entertainment Pack, it features a C64C, C24 cassette, five games and...wait for it...a Namco 640-10 keyboard. This little devil offers 3 onboard sound sequencers, 33 pre-set sounds ranging from synth to harmonica, and 25 programmable rhythms/accompaniments.

It also offers MIDI OUT, so it's going to be a sore point with many of us that Commodore haven't included a MIDI interface as well. It's also sad the keyboard doesn't have a MIDI IN, so you could get into some squabbling with the computer. You can't have everything, however, but surely an interface would have been a more useful inclusion than the personal alarm, which you can get from just about anywhere nowadays for peanuts.

Let's not be stingy, though.

Starting games - *Blade*, *Blade 2*, *Blade 3*, *Blade 4*, *Blade 5*, *Blade 6*, *Blade 7*, *Blade 8*, *Blade 9*, *Blade 10*, *Blade 11*, *Blade 12*, *Blade 13*, *Blade 14*, *Blade 15*, *Blade 16*, *Blade 17*, *Blade 18*, *Blade 19*, *Blade 20*, *Blade 21*, *Blade 22*, *Blade 23*, *Blade 24*, *Blade 25*, *Blade 26*, *Blade 27*, *Blade 28*, *Blade 29*, *Blade 30*, *Blade 31*, *Blade 32*, *Blade 33*, *Blade 34*, *Blade 35*, *Blade 36*, *Blade 37*, *Blade 38*, *Blade 39*, *Blade 40*, *Blade 41*, *Blade 42*, *Blade 43*, *Blade 44*, *Blade 45*, *Blade 46*, *Blade 47*, *Blade 48*, *Blade 49*, *Blade 50*, *Blade 51*, *Blade 52*, *Blade 53*, *Blade 54*, *Blade 55*, *Blade 56*, *Blade 57*, *Blade 58*, *Blade 59*, *Blade 60*, *Blade 61*, *Blade 62*, *Blade 63*, *Blade 64*, *Blade 65*, *Blade 66*, *Blade 67*, *Blade 68*, *Blade 69*, *Blade 70*, *Blade 71*, *Blade 72*, *Blade 73*, *Blade 74*, *Blade 75*, *Blade 76*, *Blade 77*, *Blade 78*, *Blade 79*, *Blade 80*, *Blade 81*, *Blade 82*, *Blade 83*, *Blade 84*, *Blade 85*, *Blade 86*, *Blade 87*, *Blade 88*, *Blade 89*, *Blade 90*, *Blade 91*, *Blade 92*, *Blade 93*, *Blade 94*, *Blade 95*, *Blade 96*, *Blade 97*, *Blade 98*, *Blade 99*, *Blade 100*.

Considering that the Namco keyboard alarm costs around £100 at the prices, this is an extraordinary bargain. You can almost view it as getting a computer, cassette, games, and a free keyboard.

HOLD YOUR BREATH

Much more significantly, however, you can view it as getting a keyboard, some games, a cassette, and a free computer. 8-bit machines are now very cheap to produce and, despite their tarnished appearance along with the new 16-bit com-

puters, still pack a surprising amount of computing punch. By putting these units into bundles dedicated to particular applications, we could see a very exciting revival of 8-bit computing.

How about, for example, an Amstrad 6120 bundled with Aut Studio, a graphics tablet, and a colour printer? Or a Spectrum 128, MIDI interface, sequencing software, and keyboard? Or - to look even further - how about Sam's Bank buying up hundreds of thousands of C64s, packaging them with software and software, and selling them as home banking units?

But don't let a bit of it. On the contrary, when prices start falling, we may see, for the very first time, a true mass market in home computer-based products. The key to success will be in the design of the bundled software and the strength of the marketing. Hold your breath.

Starting games - *Blade*, *Blade 2*, *Blade 3*, *Blade 4*, *Blade 5*, *Blade 6*, *Blade 7*, *Blade 8*, *Blade 9*, *Blade 10*, *Blade 11*, *Blade 12*, *Blade 13*, *Blade 14*, *Blade 15*, *Blade 16*, *Blade 17*, *Blade 18*, *Blade 19*, *Blade 20*, *Blade 21*, *Blade 22*, *Blade 23*, *Blade 24*, *Blade 25*, *Blade 26*, *Blade 27*, *Blade 28*, *Blade 29*, *Blade 30*, *Blade 31*, *Blade 32*, *Blade 33*, *Blade 34*, *Blade 35*, *Blade 36*, *Blade 37*, *Blade 38*, *Blade 39*, *Blade 40*, *Blade 41*, *Blade 42*, *Blade 43*, *Blade 44*, *Blade 45*, *Blade 46*, *Blade 47*, *Blade 48*, *Blade 49*, *Blade 50*, *Blade 51*, *Blade 52*, *Blade 53*, *Blade 54*, *Blade 55*, *Blade 56*, *Blade 57*, *Blade 58*, *Blade 59*, *Blade 60*, *Blade 61*, *Blade 62*, *Blade 63*, *Blade 64*, *Blade 65*, *Blade 66*, *Blade 67*, *Blade 68*, *Blade 69*, *Blade 70*, *Blade 71*, *Blade 72*, *Blade 73*, *Blade 74*, *Blade 75*, *Blade 76*, *Blade 77*, *Blade 78*, *Blade 79*, *Blade 80*, *Blade 81*, *Blade 82*, *Blade 83*, *Blade 84*, *Blade 85*, *Blade 86*, *Blade 87*, *Blade 88*, *Blade 89*, *Blade 90*, *Blade 91*, *Blade 92*, *Blade 93*, *Blade 94*, *Blade 95*, *Blade 96*, *Blade 97*, *Blade 98*, *Blade 99*, *Blade 100*.





Speed 3 - it's not just your usual water-sports. Transferable (and - usually) for all boats.

HYDRAULIC HEAVEN

The movers and the shakers were out in force at this year's PC Show. Microsoft ruled out the biggest of the lot in the form of their 14-wheeler Super 3 (Proton) simulator. Close inside, people grabbed for the paper bags as they flew (Proton) barbed, soared, and blasted off through scenarios after scenario. Definitely not to be missed if it makes another appearance...

Other software houses were showing things up on a smaller, but just as exhilarating scale. The helicopter combat game Thunderbolt was available in both single and deluxe versions on the (32-Bit) and Macintosh/Sega systems. The provided aerial action from both overhead and behind-the-cockpit views.

Green had their own lot of moving magic in the form of a 3D-Cat-Mouse machine. This thing game spins around at you faster along the track.

Most prestigious stake however had to be the 3D-in-4th-Dimension horrifico creepies at the lot on the Frank, where Activision/Bioshockers had a courtesy suite. After hobnobbing with the millionaires in the lobby, you could wander in to the suite, sample some light refreshment, and then slip doozy into the console and shake away the hours, unattended by hordes of queuing visitors. Even the millionaires looked a little uneasy...



Stevens, sitting away from the sun in Spain and showing us with software in the UK.

Spanish software house Dinamic is now releasing its own titles over here, the first of which is Diana (Over it). Other games on the way also include the follow up to Army Moves - Navy Moves. The Games label Limit also put in an appearance at the show for the first time, showing, amongst other things, their 16-bit adventure titles. Stay near they looked too... stand by for further details in forthcoming Flight pages.

Foreign magazines were also over in force, showing just how much respect there is now for the UK games scene. French Amiga magazines, Danish Commodore magazines, Spanish rags, and even Swedish ones turned up to glaze our own mags and report to their readers back home. One mag from Sweden sent eight representatives - one to write the story, and seven to play the games!

MEET THE BITMAP BROTHERS

■ Bob Wade catches up with two of Britain's hottest programming properties at the PC SHOW.

Eric, Stephen and Mike are the Bitmap Brothers and they've been responsible for two of the most distinctive 16-bit games of the last year - *Monon* and *Speedball* (covered in this issue). We managed to tear them away from an even busier programming schedule to talk to us.

Their first project together was *Demol* but prior to that they'd all been involved with games programming for some time. Stephen goes back the furthest, his first machine was a *Merit* Intellivision and his first programming was done on a ZX81. It didn't take him long to get published either - anyone remember *Super Stroker* from *Micro-Cent*? Well that was one of Stephen's early creations. He was soon working for *Pison* and wrote the classic *Chopper* flag, and also worked on *Survivable* and *Blitzkrieg*. After working with the *Revolver* 32, for a while he moved onto the ST and does all the ST programming in their games.

Eric spent six years at an college, so it comes as no surprise to learn that he's responsible for the distinctive graphic style of *Monon* - although he didn't do those in *Speedball* despite their similarity of style. Mike programs the other versions of the games, most of his programming experience being at *Laurus* Canada working on games like *Monopoly* and *Survivable*.

Eric was responsible for coming up with the idea for *Demol*, but initially they had trouble selling it because *EdBros* had just come out on the ST and nobody wanted anything about an ups. The alternative to *Speedball* was different, 'we wanted to get away from the proven format and do something different,

but it was harder to sell. By now everybody wanted about-us-ups.'

They took the deal with *Micro-Cent* because 'they were professional and treated us like business people, not kids at some other fest.'

As yet they aren't sure what their next project will be but we can expect to see more games from them because they're looking to take on more people. It will almost certainly be something completely different again, perhaps reflecting some of the current influences. Stephen is into role playing and all three of them got hooked on *Dungeons* Master, so maybe we'll see some RPG features - *Speedball* already has character development of a sort.



Speedball - the thing that's been given the most respect by game writers.

They're also heavily into table-top games. Current favourite though is to breeze into an arcade and play pinball and fruit machines till the money runs out, and then rig-to the nearest cash till. They're also into games of *Final Lap*, but don't play as many arcade games as they used to.

One minor note they've had is a game based around the logo of the TV show *Blind*. 'There's just something catchy about all those balls on sticks flying around' said Stephen.



SNIPPETS...

UP AND COMING TITLES FOR YOUR MICRO

LONGHORNBOAT RALLY
SIMULATOR

Macintosh

Atari ST \$24.95K
Amiga \$24.95K
(preorder/prerelease)

This latest game from Simulating Things Inside Flat Flat is billed as a hybrid to excitement of the rally it allows the player to slip behind the wheel of a 3000hp Group B Ford Sierra RS Cosworth.

There are four stages to the game: road, forest, mountains and night driving. The ST and Amiga versions will be first, with PC and C64 versions following shortly after.



F16 COMBAT PILOT

Digital Integration

Atari ST \$24.95K
IBM PC \$24.95K

The American F16 is definitely flavor of the month at the moment as far as simulations are concerned. Every simulation house worth their salt seems to be bringing out a program that they reckon will knock the spots off the opposition. This one from DI has been a while coming, but it now looks likely to be here and soon.



SUPER DRAGON SLAYER

Code Masters

C64 \$4.95K

This arcade adventure of enormous proportions is coming out on the Code Masters "Flat" label. That means you'll get two versions of the game to play. Once you've mastered the standard version, you can try to complete the expert version, but make sure you collect enough magic to slay the dragon.

CAVEMAN OLYMPICS

Electronic Arts

C64 \$14.95K

Caveman Olympics brings to the computer the best bit of clubbing. It features the original games with the original athletes. It shows Olympic events before they had their fun, before dinosaurs became extinct and before evolution made clubbing painful.

The game features some six events, so you'll better get your clubbing arm-in-shape now!

SERVE AND VOLLEY

Electronic Arts

C64 \$24.95K \$14.95K
IBM PC \$24.95K

Amateurs are set to release 3076 four sports simulations before Xmas. This one's a tennis sim with the emphasis on served ball placement, timing and stroke selection. The game features three different levels of difficulty and three different court surfaces. The game features "Double-D-Double" animation that makes the serves and hits appear very realistic. The C64 version is going to be here first with the PC version following.

MANHATTAN
DEALERS

Entertainment International

Atari ST \$19.95K
Amiga \$24.95K
IBM PC \$24.95K

Manhattan Dealers is an action-packed 3D console game that puts you up against vicious street gangs of Bronx Skinheads and Chicago maracas, and Charleston Ninjas and Samaras. If you like your games with fast hand-eye, watch out for it coming soon.



KIXX TO KILL?

Maniacs and Code Masters feel better watch out. Kixx are a new badge label determined to grab a slice of the ever-increasing budget \$10 market. Kixx has been formed by ex-Maniacs employees John Measman and Larry Bossen, who rework the Kixx philosophy of quality not quantity is just the thing the market needs.

While the initial releases will be called from the U.S. Gold and Gemini back catalogue - both to Gemtel and Amstrad - they do plan to release some original games. The first of these looks likely to be a game called Skateboard which will be available for Spectrum, Amstrad and Atari machines. Kixx plan to release some 24 titles over the next year with approximately a third of those being original titles. All games will retail for £2.99 on cassette.



GROWTH

Entertainment International

Amiga \$19.95K
Atari ST \$19.95K

Having pioneered the nerve center of the evil Dragoon, you must prevent the alien growth from spreading and causing a global annihilator of the Universe. With 64 360 degrees of visibility you must block the growth and blast your way to the heart (before finally destroying the tumor).

CBM 64/128

CBM 64/128
THE NEW COMPACT FORMATS FOR
COMPUTER GAMES

METRO CROSS

KIXX
GAMES

Can You Stop The Russian Bear?



Based on the NO. 1 best-selling book Red Storm Rising by Tom Clancy, Larry Bond co-wrote Commander's Challenge. A game developed by MicroProse Ltd and Larry Bond. All rights reserved.

AVAILABLE
NOW

The storm has broken. MicroProse's latest title is here. This high technology simulation of strategy and tactics is based on one of the most dramatic and detailed stories of modern warfare — Red Storm Rising, the international best seller by Tom Clancy and his technical collaborator Larry Bond.

Working with the authors, MicroProse have brought the bear's intense action and excitement to your computer screen. You are put in command of an American nuclear attack submarine at a time when the two super powers collide.

Standing between the Russian bear and global domination, you play a crucial role in the conflict. MicroProse take you

to an astonishing variety of unique environments, plunging you into challenging and exciting situations.

Prepare for action in this heart-pounding simulation. Available for Commodore 64-128, Castele 114/95, One 128/95.

MICRO PROSE
SIMULATION SOFTWARE

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Please send _____ Copies of Red Storm Rising Old Cover to _____ Only

Name (please print) _____ Address _____

_____ Post Code _____

Send me _____ including V.P.P. Cheques payable to MicroProse Software Ltd _____

or debit my Access/Visa card. Expiry date _____ No. _____

MicroProse Ltd, 2 Market Place, Watlington, Gloucestershire GL4 8DA, UK. Tel: 0600/54330. Telex: 6200 MPPLG

PUFFY'S SAGA



Screenshot on ST



Screenshot on PC

You are Puffy... Your girlfriend is called Puffyn and you are both trapped in an Alien World. Your only chance of survival is to solve a great number of clues.

GOOD LUCK!

Available on Amiga, PC, Atari and CD-ROM
Distributors in the UK:
ELECTRONIC ARTS, 143 STATION ROAD, LANGLEY, BERKS SL3 8YN
TEL: 0494 7033 8899 - DEALERS PLEASE CALL: 075340999

UBI!

SMASH HIT!

That's *R-Type* from Electric Dreams/Activision, and it's also what you could be with this tremendous prize competition...

ARE YOU READY FOR R-TYPE?

Of course you are. After all, you are the meanest, toughest gamer/player around, aren't you? If you're not, better bring out all the old, decade Electric Dreams makes this game is a real brawler.

It's programmed by Bob Pajo, Karl Jeffrey, and Dave Joffe, who have combined their talents to bring you an even more polished program than their acclaimed *Rampage* conversion. The game presents eight stages of battle against ruthless enemies and you have to seek out power-ups to give you added weapons, strength, and protection.

R-Type already been a smash hit in the arcade, where it has a deserved reputation as a state-of-the-art shoot-em-up with numerous playing options and original features. Electric Dreams have a great reputation themselves, so we would be looking forward to a real hauler of a haul. *R-Type* is being shown in Spectrum, C64, Amstrad, and ST versions — don't miss the



review in next month's ACE!

R-Type — the video game you have to be ready for the 80's!

WHAT YOU HAVE TO DO

R-Type promises to be one of the classic arcade games of the year, and it's programmed by the lads who brought you *Rampage* last year. All you have to do is answer the three questions on the entry form correctly. Then fill in your name and address and pop it in the post to:

R-Type Competition, ACE Magazine, 4 Queen Street, BATH BA1 1BJ

Your entry must reach us before 31st November 1988. The first prize will be awarded to the first entry drawn at random from those entries received by the closing date above. Several prizes will go to the second correct entry drawn. Get it?

THE RULES

1. Employees of Acorn Publishing, Electric Dreams/Activision, or any company involved in the sale and distribution of ACE Magazine are ineligible for entry.
2. Entries must be received by the post.
3. The decision of the judges is final and no correspondence will be entered into.
4. Only one entry per household.
5. The purchase of ACE Magazine is necessary and price applies to the entry form and envelope.

THE PRIZE

Hold your breath. In conjunction with Activision/Electric Dreams, we're not only giving away a stunning Amstrad Studio 100 multi-track recording studio. SUT A,50 a fabulous Casio MT100 polyphonic synth with MIDI, auto-rhythms, chord sequences, and a whole lot more!

That's all you need to explore the whole world of electronic music, home recording, demo tapes, radio air time, contracts with CBS, and the long term... Well, perhaps not quite all you need — you'll have to add in a bit of inspiration as well, or what? Well, even if you don't end up a star on-stage at Wembley, you'll have tremendous fun with this great package.

Amstrad's Studio 100 has professional home studio recording, allowing you to record and mix up to four tracks. Not only that, but it's a complete audio system in its own right, featuring two cassette decks, heavy bass-shelf terminals, graphic equaliser, and even a 60 second-timing. Now you can really get into the music too!



Now MT100 sports two built-in MIDI capabilities so you can take it into your existing video-pulse system. It also has programmable sequencing with up to 32 user-programmable patterns and 10 user-programmable rhythms. Oh yes, and there's also a chord sequencer, pitch-bend, key-board split/midrange, auto-memory, and MIDI real-time ability that can save trouble, too! Just make sure you get a chance at it being yours!

ENTRY FORM

NAME _____

ADDRESS _____

TEL. NO. _____

COMPUTER OWNED _____

1. Which of the following people programmed Electric Dreams' *R-Type* conversion?

- (a) Bob Pajo
 (b) Karl Jeffrey
 (c) Dave Joffe

2. Which company converted *Rampage* for home users?

- (a) MIDI stands for:
 (b) Musical Instrument Digital Interface
 (c) Melodic Interference through Dispersed Information
 (d) Music Improvisation using Datomic Infrastructures

WIN AN ATARI ST!

Has your ACE card come up trumps this month? There are 25 great prizes.



For everyone who's received a free ACE card of us, see below on how to get one. And here's another great opportunity to win prizes.

Using the **NEW** program (see **NEW PROGRAMS** box), just type in the 25 new 4-letter codes printed on this page. If the program claims your ACE card, you win! The program claims the ACE card for the personal number, you're a winner!

WE WANT A WINNER!

Note that we are now printing FOUR winning codes for the ACE card. If the owner of the 1ST CLAIM code hasn't claimed his prize by the closing date, it goes to the owner of the 2ND CLAIM code. If he hasn't claimed his prize by then it goes to the owner of the 3RD CLAIM code...and so on. Should the 1st Claim owner claim his prize, the owners of the 2nd, 3rd and 4th claim codes automatically qualify for one of our **SECOND PRIZES**.

NEW PROGRAMS

In order to accommodate the **HUGE** number of entries for the ACE card competition we've had to modify the program slightly. **MAKE SURE** you type in the revised program.

LOOK AT THESE PRIZES!

ONE 1st PRIZE: ATARI ST + COLOR MONITOR

1st claim **WKHE** 2nd claim **WMOH** 3rd claim **XOYG** 4th claim **UXJH**

FOUR 2nd PRIZES: \$50 of software - chosen from the ACE Special Offer pages

The winning codes: **YTXP** • **YTVW** • **WMME** • **VLJJ**

TEN 3rd PRIZES: \$25 of software - chosen from the ACE Special Offer pages

The winning codes: **YHSW** • **YCYC** • **WRJC** • **UJNH** • **WQOW** • **WUOT**
• **ZSPY** • **XWSD** • **XHOW** • **WIMRF**

TEN 4th PRIZES: A year's free subscription to ACE magazine

The winning codes: **VULT** • **WKKK** • **XCFM** • **YEMX** • **ZMYG** • **ZNWH**
• **ZTCV** • **YPTV** • **YMYT** • **VTEJ**

HOW TO CLAIM A PRIZE

Type in the ACE card, you'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

If you win a prize, it's usually by sending in a card for the prize. You'll receive a card for the prize (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

Address: ACE CARD PRIZE CLAIM, 4 Queen Street, South Bay 154 (Closing date for claims November 15th, 1987)

HOW TO OBTAIN AN ACE CARD

You can get an ACE card by sending in a card for the prize. You'll receive a card for the prize (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

THE DECODER PROGRAM

The decoder program (included in the ACE card) will convert any code in the ACE card into a prize. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

The ACE card program will convert any code in the ACE card into a prize. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

If you win a prize, it's usually by sending in a card for the prize. You'll receive a card for the prize (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

004, 005, 07, 08000 version

00 FOR A-I TO-00 INPUT 'Code' 04
00 B=0 FOR C-I TO 0 A-B-05
00 I=4000000000 C-I I
00 IF C=0 THEN C=0-00
00 B=0-00-00 NEXT C PRINT 'Winning Number is' B NEXT A

SPECTRUM version

00 FOR A-I TO-00 INPUT 'Code' 00
00 LET B=0 FOR C-I TO 0 LET B=B-05
00 LET I=CODE B=0 C-I
00 IF C=0 THEN I=0-00
00 LET B=0-00-00 NEXT C PRINT 'Winning Number is' B NEXT A

TYPING IN THE PROGRAM

SPECTRUM

00 Press on average the Spectrum using a numeric keypad (0-9) and the use of arrow keys. To get letters (A-I) use the letters on the numeric keypad (with space for code). When you've entered the code, press the RETURN key. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

000 Press on average the Spectrum using a numeric keypad (0-9) and the use of arrow keys. To get letters (A-I) use the letters on the numeric keypad (with space for code). When you've entered the code, press the RETURN key. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

08000

Type the program as shown. Always RETURN key at the end of each line. Type the code on the keyboard. Press RETURN key at the end of the code. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

ATARI ST

Type the program as shown. Always RETURN key at the end of each line. Type the code on the keyboard. Press RETURN key at the end of the code. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

08000

000 Press on average the Spectrum using a numeric keypad (0-9) and the use of arrow keys. To get letters (A-I) use the letters on the numeric keypad (with space for code). When you've entered the code, press the RETURN key. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

08000

000 Press on average the Spectrum using a numeric keypad (0-9) and the use of arrow keys. To get letters (A-I) use the letters on the numeric keypad (with space for code). When you've entered the code, press the RETURN key. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

08000

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RULES

If the program is open to competition the winner of the competition of Atari ST magazine will receive a complimentary shipping label so you always get the best value for your money.

000 Press on average the Spectrum using a numeric keypad (0-9) and the use of arrow keys. To get letters (A-I) use the letters on the numeric keypad (with space for code). When you've entered the code, press the RETURN key. You'll receive your prize shortly (usually in your ACE magazine) with a complimentary shipping label so you always get the best value for your money.

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HEROES OF THE LANCE

Advanced Dungeons & Dragons

COMPUTER

ARCADE ACTION

HEROES OF THE LANCE marks the first computer action game that re-creates the epic battle between good and evil on the world of Krynn.

Controlling eight Companions, each with different specialized attributes and skills, guide these brave adventurers deep into the treacherous ruins of the temple K&K. Strive to retrieve the precious Disk of Mikhal.

As you descend into the Abyss, the Companions must defend the bodies of companions (D&D can't do hand-to-hand combat), deal with powerful magic and survive the onslaught of attacks from giant spiders, skeletal undead and countless other terrors.

But your final obstacle makes these adventures innocuous by comparison. The platinum disk you seek is guarded by Kilgashin, an ancient black dragon. And there is but one way to vanquish this mighty beast...

Find the key to destroy Kilgashin or you are doomed to failure.

IBM AT/XT



SPECTRUM
6128K

AMSTRAD

IBM PC
COMPTON

MSX2

FM TOWNS



Advanced Dungeons & Dragons

HEROES
OF THE LANCE

Advanced Dungeons & Dragons

COMPLETE PRODUCT

POOL OF RADIANCE

FANTASY ROLE PLAYING

Located on the northern shore of the Moonsea in the forgotten kingdom, the fabled city of Pelion has been overrun by monsters led by a mysterious leader. Your quest: discover the identity of this evil figure.

Pool of Radiance adheres faithfully to the legendary Advanced Dungeons & Dragons™ fantasy role playing system. No detail is missed, including 4 player

characters, computer controlled non-player characters, the Adventure Journal packed with history, maps and clues and the Translocator which may convert Black and White writing to English. The gameplay is exhilarating and the graphics state of the art — portrait displays, 3D perspective, tactical combat display and personalized weapons selections compile to form the ultimate breakthrough in fantasy role-playing computer games.



CHARACTERS

AMICA

IBM PC
or compatible

128K BIT





The Undead Countess prepares to make another strike.

DRACULA • UBI SOFT

As the evil Count, you're set to recover the powerful talisman stones from you by Doctor Van Helsing. You'll need to keep doing away with people in order to feast on their life-giving blood, but watch out for the stakes and garlic!

ZENITH • MARTECH

In this shoot-'em-up you play the part of Rex - a black-skinned, piggy-eyed marionette with no friends. Using an array of lasers, multiple spinning machine guns and deadly fire sword blades, you're set to infiltrate a vast underground cave system to get at the weak spot of The Great Tower. Destroy this tower and it'll teach these unaring, atmosphere-polluting mutants a thing or two.

ZENITH - see the look for a handy weapon!



FEELING HOT, HOT, HOT

SIEGE ON LONDON • CRI

A whole host of mechanical warheads have breached the capital, so it's down to you to save the day and destroy them. It's going into your craft and get Maxing - try not to shoot too many of the landmarks through, eh?



SIEGE - One of your warheads at the end of the mission before it drops off you.



SIEGE - Show your reactions at you blow up the House of Parliament!

ACE takes its monthly look at what software houses are going to be tempting us with in the near future. Will we be dancing for joy on the way to the shops - or wishing they hadn't bothered?



SHINOBI • SEGA

The console version of the arcade hit, for the Mega-CD you're introduced a boss run by evil dogs and outlaws who've been capturing children. There's plenty of high-speed action, a variety of weapons and a wide range of Ninja techniques to use in the battle.

SHINOBI - All these battles at the moving battle.



0310 - you're the lucky brute in the middle, about to be slain.



SAVAGE ● FIREBIRD

Well, both the fury like in *Savage* involving this level's one. This 2-Doll multi-leader features some stunning graphics, fast gameplay and a host of bonuses to help you stand strong at. You'd better get your own fastest machinery to prepare for these.

0310 - you shouldn't be out at night without to look at a great job done!

PUPPY'S SAGA

● UBI SOFT

This Quake-like bouncy ball game features some great graphics and little puzzles to solve. The French certainly know how to make a game look good, so here's hoping it plays just as well.



03 - My baby's on the first level and is surrounded by lots of useful items. These up the creature are coming for your very thing.



03 - Puppy certainly enjoys getting the rest of the party together.

OFF SHORE WARRIOR

● TITUS

In the year 2000, violent street sports aren't enough to satisfy the people's bloodlust. They want more violence, so a new sport has evolved to satisfy anything goes. You have to take part in this new sport, that's played all over in super-fast speedboats. Because you've got initial 10 takes to survive!



03 - Getting your way round the course is hard work.



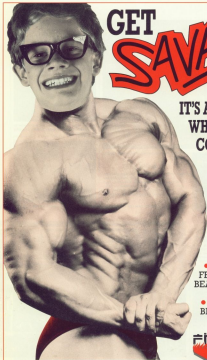
03 - We better be careful, you're not to second position.



Cyberoid II on the PC - The greatest thing hanging from the ceiling doesn't look too friendly.

CYBEROID II THE REVENGE ● HEWSON

The sequel to *Cyberoid: The Fighting Machine* includes some major new features such as new weapons systems (flame and smart bombs), new attack features (bullet-proof life and optional scaling) and new alien features (bullet armor to drive the opponent from screen to screen, and automatic reattachment).



GET **SAVAGE.**

**IT'S AMAZING
WHAT A REAL
COMPUTER
GAME
CAN DO.**

- HURL A VOLLEY OF AXES
- FIRE BOLTS OF LIGHTNING
- WRESTLE FEROCIOUS BEASTS
- LEAP OVER BLAZING CHASMS

FIREBIRD



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SEE US ON STAND J167 AT THE F.C. 1406, EARLS COURT, 14-18 SEPT.

A LEGEND IN GAMES SOFTWARE

FRANK N. STEIN'S AMIGA IDENTIKIT

What would the most famous 'mad professor' have given for Electronic Arts' latest graphics package? His right arm - or someone else's? *Deluxe PhotoLab* provides almost all the tools required to cut up pictures and stitch the best bits back together - then print them out monster size. Would you take the risk? Brian Larkman does - and lives to tell the tale.



GRAPHICS SEWN UP...

ACE Panel Professor Brian Larkman brings us a monster installment of his DIY graphics course this month, with a review of *Deluxe PhotoLab* from Electronic Arts. Plus - Panel Post, the section where our readers' graphic glitches get an airing. If you've got any problems, queries or helpful hints, drop them a line via Panel Post, ACE Magazine, 4 Queen Street, BATH, BA1 1JA.

B. LARKMAN

So you want to build a monster, eh? And the idea of clipping up bodies does not appeal? *Deluxe PhotoLab* - Electronic Arts' \$29.95 may be just what you need. Several other packages have been released over the last year that together would allow you to do much of what *PhotoLab* can achieve - *Stappler*, *Pin, Scale and Mappert* (or, example, *Herzoth's*). But it's the best complete system, claiming to offer all of the tools required in one package (though the original seems to have been let out of the monster's clasp).

Deluxe PhotoLab consists of three programs - or one file. *IDENT* allows photo quality images to be pointed out, composed. *COMPOSE* will process the file, resolution and removal of existing pictures. *PRINT* prints any picture of any size up to 10 x 12 inch.

IDENT is of its best processing digitised pictures. It allows the user to work in one screen resolution as well as HiAM and Super HiAM (see box for details), and some of its point modes are most effective using the 4000-bit address of HiAM. Almost every drawing tool imaginable is available, but the perspective and mirror mapping of *PhotoLab* (see review ACE 10). The range of effects is so broad they will take a long time to list, so rather than discuss them in detail let's do something with them. Let's make a monster.

COLLECT THE 'BITS'

In the last P.S. their location we will start with a body. Any body. As usual, the only size available is the wrong size, so pick it up as a book and then enlarge it. In contrast



FRANK'S FACE

One of the most bits of using *PhotoLab* is the user with which images can be cut to matched segments or rounded at ends. The screenshot was originally the passage drawn by Larry Shiner, included in the (very early) issue of the disk and restored by picking up an adjacent area of background as a brush and painting it in. (After work started up using a small brush rather than the 'Water' - instead, shade it.)

with most Point operations, both of these actions can be done in a number of ways.

REPENSURE

Selecting the *Repensure* (stretch, stretch) object allows any rectangular or circular screen area to be cut in the usual way. (The area within the last or free-shape is copied and stretched to the corner of a frame.) More remarkable is the fact that you can stretch from the front screen. Selecting the grab whatever you draw in your last pointing operation, even if you were already using a multi-colour custom brush, if the Shift key is held down, as well, the area beneath is selected instead, so that the previously pointed object acts as a stencil. Certainly, the whole body is painted with one contrasting colour in one operation, then that/this last is selected. The body looks best.

PLACING IT UP

Displacement can be carried out on the last brush or, if you know exactly where it is to go, on a drawing operation drawn to the screen. The latter method works best, especially with a large brush. Try it. If the lines or links are not graphic-enough, use *Brush Warp* in the Fill requests to distort them.

As the new touch-sensitive body installation on the operating table it becomes obvious that something quite unusual is taking place. Instead of the tiny individual squares of the original growing to ugly gaudy blocks in the enlargement, the body is just as smooth as before, though a little blurred. Growth stored away goes on in the laboratory.

RECOLORWORK

Now that we have a body we can start to add limbs. Once again, any size or resolution will do because we can expand or contract, change resolution or screen mode as well – but what happens when we can lift on? These studies will surely make ugly soon? Much like *Newsday* *DigitPoint*, the original screen



WEIRD UP

The background in *Point* (the package cover) by Larry Krasner. Both the entire image, *Graphic* and *Image*, were loaded using a separate 2D colour screen and their backgrounds created by filling with *Multi-Colours* (on the 60 resolution) set in *about 10*. This means that several shades of a particular colour are at hand but nothing else. Each image was then painted up, stretched and transferred to the main RAM screen via *Paint* boxes, the *Graphic* with *After Background* selected.

colour point system, *PAMT* has a wide range of Point Modes. These can control exactly the way a brush affects the colour of an area if it is painted over, varying the degree and distribution of transparency. In practice, a link or fixed feature can be copied with hardly a trace. Very soon the incised is lying complete-out coloured, on the table.

ADD THE COSMETICS

A complete, expensive routine on the table is one thing, but we must put some colour into the cheeks. A little 'make-up perhaps' level once can be changed using the *level*

mode, but if the whole picture needs to be transferred to screen into *COLOUR* is required. Although multi-linking is possible, the Amiga's advanced facility is not used in the picture must be saved and reloaded.

COLOUR is designed to give full control over the colour palette. Any palette can be saved or activated using one or more of seven parameters – Red, Green, Blue, Blue, Yellow, Red, Blue and Population. It would have been nice to add using *Contract* and *Brighten* controls as well, but these effects and most others can be achieved with the controls provided. The relative amounts of all these



WAVE AND STAYS

As you're sure in previous issues, erasing backgrounds can be very useful. Here is the same landscape filling some walls and steps. In fact all that was done in this picture could have been achieved using *Remove Point* if, though the limitation of 22 colours would have made the entire image look a bit odd. The difference was the ease with which it is possible to work in any resolution. Unlike *Master Point*, *Remove Point* can work in *about 10* or *about 100* or even in *about 1000*.

AMIGA SCREENS

The Amiga is capable of displaying 320 pixels or 140 pixels across and 256 lines up to screen using the PAL video standard. By scanning the screen twice in the same period of time it can interlace twice as many lines, giving 512 lines vertically. When 320 horizontal pixels are displayed, a maximum of 32 colours can easily be displayed, though a further 32 colours (all as bright) (24-bit) can also be used. With 140 pixels across only 16 colours are possible. Using a special technique called *Fast* and *Steady* (FAST), all 32-bit colours can be used in low resolution and interlace. Almost all Amigas, therefore, have 3 screen modes – low, medium, video or fast, high, low (LMS), low (LMS), low (HMS) and fast (HMS) is few very early Amigas do not have (LMS). In all display modes it is possible to have several degrees of brightness to remove the normal border which also alters the vertical and horizontal resolution.



An example of the sort of images that can be produced with PlotLab.

PlotLab can, as well as again, recognize and utilize the shapes for each individual pixel (defined as the rows) and position can be accessed by pressing the right mouse button, which lists the row into a corresponding list. (This would also have been very useful in IBM.) All these have can be exported as screen ready for printing out. In the printing industry, Dyes, Inkjet and other systems are essential for mass production.

Other tools are offered by COLORD to manage the size and display mode of any picture, with a virtual scrolling screen. COLORD is not as powerful as PlotLab or Butcher, but it is as easy to use as DayView. As the third of a trio package it is somewhat perfectly adequate.

THE STORM APPROACHES

Well, perhaps, anyone can put a monitor together given the right components and a living element, but can you give it life?

CLIPBOARDS

The Amiga's graphical interface - called *Intuition* - allows the information contained on one screen to be transferred quickly to another screen via a device called the Clipboard. This is especially useful when multitasking - running two or more programs at once - because the less screens can be in different programs, in PlotLab it should have been possible to run all three programs and transfer a picture from one to another without saving to disk, provided the machine has sufficient memory. Clipboards work equally well with text.

SCOTTISH TECHNO-MONKS SPREAD THE WORD

There is often something almost religious about computer enthusiasts. Dedication to one daily long evening and even whole nights spent crouched alone before the altar, single-minded preaching of one true faith. House of this is a monastic building and you might get a community of techno-monks.

Hardly monks, the folk at Amiga Centre Scotland (founded in an ex-monastery) are non-the-less dedicated enthusiasts and fundamental for the cause of the Amiga and especially the Amiga's graphics. As a result they have built up in less than two years one of the best sections of hardware and software for the Amiga in Britain.

Martin Lowe, the founder of the company, started his involvement with an £1000, one of the first in Europe. Finding himself made a dealer for the machine without any proper premises, Martin began selling them by carting the whole setup round from place to place in his car. Now the company is fit strong and based in an ancient four storey building down a narrow lane near the Centre of Edinburgh.

The Amiga Centre specialise in importing graphics software from the U.S., acting as sole distributors for several products including Martin Healy's ANIMATION series and Eric Graham's SCULPT ANIMATE 3D. They can also source almost any product you may require from anywhere in the world. Martin Lowe is constantly on the search for new graphics products for their catalogue is constantly expanding. Recently for example two new graphics products have appeared, MATHS TOP, PUPPER from Heath Enterprises, and PAVIC 3D PORTS from Access Technologies. On a



recent trip to AmErgo in Chicago Martin secured distribution rights to three and several other, non-graphics oriented products.

As well as software Amiga Centre Scotland distribute a number of hardware products including a hand held scanner, Puffed Vision digitiser and several upgrades to increase speed of operation.

Customers specializing in this area are hard to find. If you know of one let us know. The Amiga Centre Scotland can be found at a Hart Street Lane, Edinburgh EH1 3PH, tel 031 557 4343.

Frankenstein succeeded with the use of an electrical storm, we must make do with a printer, preferably colour. The POSTER module of Deluxe PhotoLab is the simplest and least fussy part of the package. Its results can only be described as superb. The monster truly comes to life. (See also)

Any ST picture can be loaded to POSTER, but unless you choose to 'preview' it a only displayed as a grey box of the correct aspect ratio on a grid representing the maximum size possible. Each grid square is in the proportions of the paper size selected in preferences, but can be changed to suit any size paper. The grey picture box can be dragged out to any size, either to its original aspect ratio or any-size. This means preview at the remaining options: zoom - Print and Quit - plus Horizontal Printing and August Data flags. (Selecting Print allows you to select which pages to print and whether the picture is to be 'screened' - optimised - before printing. That's just about all there is to it. Much simpler

ANTI-ALIASING

This smooths the jump between colour-bearing colours with average coloured pixels, creating a slight blur but reducing the dreaded 'jaggies'.

and very much more reliable than lighting.

Using a Xerox 4000 laser printer a few feet by three feet picture printed horizontally in three steps looks extremely professional and alive-once. Even with a colour L200 with a Trust station the resulting poster has a quality never before seen from a 7-pin printer, especially with the Amiga's new 1.3 printer preferences. (Topfelsenberg randomised dithering gives us the best results, though the colours may need to be adjusted on screen.)



Just one of the images supplied on disk with PhotoLab.

FRANKENSTEIN GETS CALLED

In many ways the failure of the first best movie-colour packages runs up the same difference. PhotoLab is probably the easiest to use, but still a very powerful painting system. PhotoLab is sometimes more professional (not more complex), offering several modes to achieve any effect, leaving the user more room to experiment, as it is a laboratory. They are both cleverly named.

The one real flaw in PhotoLab (apart from a couple of worrying visits to the guru while in use) is perhaps not regret of a missed opportunity. To transfer a picture from RAM to COLONIES, the image processing module, requires saving it, queuing Print, naming Colonies and locating the picture again. Multi-tasking or naming the module from a BAM disk speeds things up greatly but why is the Amiga 'Clipboard' feature not used (see box - 'Clipboard?'). Manuals show the way here with its ability to 'paste' the next screen (usually). The three packages comparing Deluxe PhotoLab could surely have been integrated in this way.

Nevertheless, from within POSTER it is possible to open several screens of different size, resolution and type - say low res HAM and medium settings - and cut and paste pieces back and forth quickly between them - a very powerful tool. Combined with the ability to set-size any enlargement - whether of features in POSTER, whole multiple screen pages in COLONIES or 10 best square pixels in POSTER - the multiple modes of PhotoLab make it a unique and extremely versatile system.

The next time you are threatened by a WASTE monster, think closely. If it is made up of eight- or a half-inch strips of paper, Electronic Arts are to blame for your predicament. ■

L E T T E R S

Dear ACE,

I have recently built up a collection of digitised pictures from SWS and PO. I have got a copy of Quantum Paint so that I can have a go at altering and cutting up my pictures on my ST but I would like to do the same sort of things that my friend can do with the Amiga. Is there anything available for the ST?

James Broad, Slough

Dear James,

In a word the answer is no. The problem is that so far there has been no need for the type of program as the ST still has no equivalent of a HAM digitiser so there are very few bit colour pictures around. Almost all of those that are available have been transferred from the Amiga. The best way to change the colour balance of your pictures using an ST is with Spectrum 512 from Artic. Unfortunately this is quite expensive compared to Quantum Paint

but it is still probably the best-equipped semi-colour program for the ST. Quantum is supposed to be having more facilities using its 48-bit colour mode, but even on the latest version just received they are grossed out and unusable.

Dear ACE,

I am really interested in drawing pictures on my CH using Advanced Art Studio. I always read the graphics section of ACE but you never feature the Commodore or any other 8-bit computer! I know the graphics are not as good on these machines but what about a review of something we can use?

Cathy Wallace, Cambridge

Dear Cathy,

Well, we made a start in the last issue with Morph (design for the Amibest DPO). The trouble is that we only review fairly recent software and there is very little of it for your

machine - in fact there is none. As soon as an update for something appears I will update it. Most graphics programmes seem to have given up on the more limited 8-bit machines in favour of the advanced features of the 16 and 32-biters. A great pity really because there is still a lot of potential left in the CH4 and DPOs, especially using clever techniques. Advanced Art Studio is a good example because it provides all of the basic facilities required but it could still be upgraded with some special features loaded from disk, like smoothing of selected areas, surface 'bump' mapping, edge detection and many other things. All these would work very nicely on 8-bit machines but the wait would be worth it - just as it is with ray-tracing on the Amiga. Let's hope someone sees the worth of these magazines and does something about them.

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THE ART OF GAMES

PART THREE

DESIGN

What's in a game? This month, in our on-going series on game production, we find out how Psygnosis generate their spectacular displays, and get some insights into game design from Lamshead and Paterson – the design partnership responsible for *The Fourth Protocol*...plus their tips on how to make your game ideas **SELL**...

For most ACE readers, the trend toward "realistic" and "game design" dated in all but the most sophisticated software is obvious. What's not so obvious is how it does. Whether it be in graphics or in game ideas, advances in gameplay have been largely the result of greater expenditure on design by software companies. Let's look at graphics first and check out some of the steps behind the screens of advanced computer entertainment.

The main thrust of improvements is taking place on the two obvious fronts: 2D and 3D, though the difference is becoming increasingly blurred. What's crucial right first in terms of 2D is terms of the wide range of systems being developed, as there are so many companies involved. 2D with reference to the efforts of one representative company, Psygnosis, and looks to their distinctive graphic style.

■ 40 SPACE-TIME

As it applies to games design, the term 2D should now really be changed to 4D, for the vital factor is almost all the latest examples is the fourth dimension, time – translated for the viewer into speed. Until the arrival of desktop, desktop-like and the Framecube games, almost all 2D-games were limited to windowing, using the burden on overworked processors. The exception – *Flight Simulator II* for example – was so processor-intensive that, so as to update in real time the display appeared as a series of stills rather than an animation.

Using the powerful 486 or 586 processors of the latest machines, smooth real-time animation in 3D is possible, but while the new programming techniques necessary are developed, several strategies have been used to produce games that are both playable and visually attractive. Two techniques in particular can get round the time/speed problem – stop it space, or USE the animation.



Stopping your mouth off, Psygnosis designers check out tactical animation – very difficult indeed to do well.



Build on the frame, Peter Paterson begins. Working out the animation for the shooting.

Motionless have produced an excellent example of the former technique with *Whodunnit*. In space there is little or no background to be updated. Site running on the painfully limited BBC showed how smooth animation in 2D could be achieved if there was no background, identifying that idea to 486/586 machines with Whodunnit has allowed an interesting degree of motion for the solid objects involved, including the light source and shadows. To increase speed further, Whodunnit operates in a very limited form of 2D. The objects are solid and move independ-

ently about their own centre of gravity but the space they move through is two-dimensional – effectively the xy plane of the screen. In practice, they never change their range here for obvious reasons.

It will be interesting to see what Whodunnit looks like on a screen that computes, probably a slower update rate and less detail. Nevertheless, as hardware here shows, with their very effective Framecube games it is also possible to make a feature of a slightly jerky screen update. The fact is that most of us are becoming visually acclimated to jerky animation updates via the latest pop video and TV advertising techniques. The stunning, *Ironknight* style was originally itself a compromise developed partly from the low frame-update rates of the cheaper digital processing equipment (namely, what looks amazingly jerky on flight simulator it supposed to be a smooth view from the cockpit seems acceptable on the viewscreen if an explosion probe it. Drive or through the eyes of *Starbirds Sentinel*).

A third generation of 3D games has now arrived with Electronic Arts' *Demolition*, Bethesda's *Comix Zone* and Psygnosis' *Viva*. The type of solid 3D seen only be achieved with sophisticated programming techniques that take time in developing and can only work effectively on 486/586 machines. These provide both smooth 3D animation of multiple complex objects AND fully detailed solid backgrounds. Such programs seem to stretch the available hardware to the limit – but this limit are only there to be overcome.

■ LEAD TOBACCO TIME

Over to the heavy hitters, the key-words have been heavily progression. Since the earlier *Mirror Edge* type platform games, exploration has taken on a decidedly more sophisticated appearance with its more detailed and better rendered smooth scrolling backgrounds. 3D scenes, larger and better

minuted game and leads better gameplay. Forward in the progressive development on 16-bit machines has been the unique style of graphics.

One kind of the best things in 16-bit graphics games grow progressively. Starting from the initial idea of one member of the team, a graphic artist works on a series of visual outlines. All of the artists work closely with computer point systems (usually Amiga) using Deluxe Paint II and are constantly experimenting with new techniques that may not even find their way into games, sometimes as little as one fifth of the artwork produced in a game is actually used.

The results of the experimentation are taken back to the rest of the team and modifications are discussed. Programmers might suggest ways to save memory space or make the game run faster and other designers may suggest new visual techniques. In this way the game grows naturally. As the result of this development process for one image, the opening screen of *Ultimate* was drawn, and it is obvious that a lot of revision and reworking has taken place. Attempts have been made to change games from scratch, but those usually produce inferior products.

Graphically, a game is designed in three interlocking parts — the opening screens complete with animated objects, the background/foreground objects, which the action occurs, and the moving/animated objects in play. Opening screens like that for *Ultimate* are often designed on computer images with the animated sections drawn separately on between 10 and 100 individual frames.

Backgrounds are designed in the form of tessellation tiles. Initially, 10 or 15 pieces are drawn — steps, rocks, crates, rough-terrain hills etc. — each about 16 x 32 pixels. These are assembled into large screens that can be scrolled about in the game. Each piece is stored individually and each time it is used



Collecting the tiles. Each will be worked on separately and then they are stored for future use.

in certain positions coordinates a record. If a new shape is required it is added to the list. Huge libraries of these parts have been assembled which can be re-used in different combinations or with changed patterns. All artists are encouraged to think laterally and the files they put on to the programmer include the raw data ready for inclusion into the game.

Objects, objects are also often assembled in parts in their latest games, some of the objects which move towards/away from us depicted and controls are in 2D sections



We're getting there now. This is what the background designers.



Putting it all together.

allowing very smooth animation. Objects like the backgrounds, might be composed of some repeated parts from other sections or even other games.

Generally speaking, the system used so far by Progress is similar to that used by many games producers. The style of Progress games is purely dependent on the skill of the artists involved. The craftsmen of these artists for experimenting with Deluxe Paint and other software packages is what gives these games the edge: usually in parallel with the programmers are constantly creating their skills and exploring the so far untapped resources of the ST and Amiga hardware. This allows for more complex and smoother scrolling backgrounds and larger and better animated objects. Progress development engineers are now exploring regions of the Amiga that no-one else has yet tapped. They promise exciting things! ☺

PRACTICE MAKES PIXELS

Designing a successful graphic — a sprite, for example — involves a lot more than simply an ability to draw. To develop your skills in this area you need a good set of package with a team feature sometimes called "tutorials" after the statement of the original *Madware* program. Here are some of the things you need to bear in mind.

■ **memory.** Graphics are often the real culprits when it comes to overflowing on precious RAM. This can be particularly crucial when working with animated figures where you need to store several frames. You'll need to know how much space the programmer is setting aside for graphics and whether or not they will need to be compressed in any way. Some compression methods work better with certain types of screen layout, so make sure you know what's expected of you.

■ **screen layout.** This is pretty obvious, but one point occasionally overlooked by beginners is the aspect ratio. You may, for example, want to develop your graphics on the ST and then get them onto another machine — only to find that the ratio of horizontal to vertical resolution on the target machine is different. Unless you need to look like circles, not eggs.

■ **luminance.** You may try to sketch out some rough designs using graph paper, but you'll find this misleading. Print displays look very different on-screen, because the eye does funny things with the juxtaposition of colours and their relative luminosity. Practice makes perfect here, since you'll find that adding in little touches of colour under high magnification often has unexpected effects on the actual size graphics. The same applies to transparency — what looks best when magnified doesn't always work best at actual size. By blowing up some conventional images with your set package and see how the images are put together in terms of colour and pixels.

LAMBSHEAD AND PATERSON

What happens when two games-obsessed boffins get together and start dreaming? They make a fortune, that's what. Or do they? And could you get in on the act as well? Find out as we check out the secrets of the dastardly duo...

I sat across with role-playing games and time to see, Gordon Paterson used to develop RPG scenarios for his friends, and John Lambshead bopped for world supremacy in the wargames arena. Then they met up and their lives were changed forever...

'You see, when I read the books of the game scenarios,' explains Gordon, 'they give me an idea of how you actually load it [RPG] the games, so I had to start from scratch, developing my own scenarios.' His frustration was echoed by John, who had not finished a spell-on-games review/letter of both board games and computer games for an old magazine called 'The Games Computer games effectively killed off that mag,' he muses, 'but a game took in Lambshead and Paterson.'

'So what do these boys actually DO? We design games,' they reply simply. And this is how they do it...

■ THE IDEA

There are three possible ways to look at it: you take these two:

- books/file cabinets, The Fourth Protocol & the obvious computer files
- other licensed subjects, including games and/or board games
- your own original ideas

Although each of these demands a different approach, there are some very important basic rules to keep in mind, first. 'We look for a hole in the market. We don't overvalue the importance of that. We ask ourselves what the market doing at the moment and, most importantly, what it's missing. It doesn't matter how brilliant your game is, you have to produce a product that the market wants.'

Second, be realistic: 'chance the best. Game-design is still seen as an art-form and by software houses, so you have to give them something for their money—originality!'

Finally, get a great story. The brand names all have that story quality. They point out you ignore it of your past however: 'develop your design ideas, unless there's a strong story-element (e.g. a plot of some kind and an atmospheric background) then the ideas are likely to fall on barren soil.'

■ SELLING YOUR IDEAS

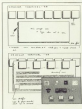
You can't ignore the business element. Lambshead and Paterson have all their work handled by the Malpas agency, 'who also



John Lambshead and Gordon Paterson, the partners in the design/development studio.

handle people like Jim Iles and David Braben. They get on with the whole business side,' says Gordon. If you want to send your own compelling contacts, you can't get on with designing games. It's a very rewarding feeling to know that someone is taking care of the sale - and that's especially important in the games industry.

As always, you need to express your ideas clearly and professionally. However, there was agreement that even a briefcase-up presentation to a software house can be taken up if the idea's right.



Designs often get changed at the coding stage - and not always to the designers' liking. You can see John and Gordon's original design for the alien interface for The Fourth Protocol, and below you can see what the Electric Power Company came up with. 'The main intention for that product is well, save Braben, taking of programmers. We can't have a good product if you have a programmer who just works in a frame.'

■ DEVELOPING THE DESIGN

John and Gordon are old-style designers. Their background is hand-drawn design ideas that they tackle the design stage methodically and meticulously. Their first objective is to immerse themselves in the subject, by reading books, seeing films, and if it's a film reading the script. Only when they're thoroughly grounded themselves in the subject do they move ahead to design.

'It's getting what we call the gist of a book,' says Gordon. 'It's a term from book-writing, and was also used during the war by planners who had to recognize different types of terrain. Getting the gist of the idea is the most vital part of the process.'

With the gist worked out, a substantial amount of their work involves creating guidelines. Unless you're working on your own individual idea, you'll find yourself presented with a fixed plot or a rather loose or free form. Computer games require a good deal more, of course, as you have to carefully control the logic of the game both aspects.

Before you reach the final stage of plotting and logic, you need to have created a game structure or system which enables the player to interact with your design - the 'front end'. Here Lambshead and Paterson get a lot of ideas from their business world, where they operate as powerful business computers. However, they do have some general comments to make - in particular their dislike of power. 'We've come a long way down the road since the power-driven. Robot says John, 'but systems are definitely fixated at the moment.'

One thing for sure - if it's got to look good. 'With business software you can get away with something that doesn't look attractive, but it would be fatal in a game,' points out John. As a whole, they can up their image of the steel case intention as easy to use, flexible and attractive. 'Sound simple - eh?'

■ PUTTING IT ALL TOGETHER

Once the design is sorted out, it goes to the programmers who in this case are EPC the Electric Power Company of Fourth Protocol and Sods Inc. 'You don't need programming experience to do games design,' says John, 'but you do need to be aware of the technical points of the machine. Anyone can design fabulous games that are not technically feasible.'

This can become particularly crucial when there's that one machine format involved. Obviously you can't design a game for the IBM and then expect it to run on the Spectrum,' says Gordon, 'but we obviously you also need to be knowledgeable about different graphics standards within similar ranges of machines (e.g. IBM CGA, EGA, and Hercules). As John says, 'you definitely need to be computer literate, but equally definitely you don't have to be an assembler whizz.'

John and Gordon have definitely proved you can make at least a part-time living out of game design. Expect to see more of their work in the next hours, including the interview recording. Contact the Journal to Advertise and Contact: Wilderness Wishes Mail 27...

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PLAYING FOR REAL

Are micro flight simulators getting serious? Can you actually train fighter pilots on home computers? Andy Wilton hits Farnborough to find out what the Pentagon want with your PC, while Neil Graveney takes reconnaissance photos.

A Callisto Inc. called Perceptor as home suit takes the PC-A2 version of Spectrum Holobron's Falcon and built it into a sit-down rig, complete with genuine F-16 controls and separate monitor screens. They're so pleased with the results that they've been showing a demonstration of the rigistry's top UK show. Home micro boards have been turned into cockpit boxes, so that shouldn't be too surprising – except that Perceptor's don't make one-ups. They build virtual flight simulators for the US Air Force, and their Falcon cockpit – the Arabian International Interactive Flight, or ASAT for short – was on display at Farnborough International Air Show in a pair of military training equipment.

Spectrum Hobby's and their UK distributor Merrell are understandably cocky about one of the – after all, what better grounds for a fight are there than the Pentagon's test of approval? – but there's no more to it than a publicity gimmick. The USAF makes ASAT cockpits around the world, selling by trade instead of the Farnborough demo, they may not be the only ones. Why?

PRICEY PLANS

If you're a man of taste, is the rigged for

WHAT'S ASAT GOT THAT FALCON HASN'T?

- **Finger-tip weapon selection:** you don't have to look down for the right control.
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- **Extra networking:** ASAT lets you fly anything from two-man formation exercises to a four-against-six air battle, complete with intercom links between 'team-members'.
- **Instruction:** an experienced flier's teaching can vastly improve your performance.
- **Classified data:** air forces can replace published equipment data with real-life limitations, failure rates or extra capabilities – information not normally available to software developers!
- **Speech:** throw the Falcon into a dive and you'll hear a female voice repeatedly urging you to pull up. (A gimmick perhaps, but not on ASAT's part: the voice is a genuine – and much desired – feature of real F-16s.)

THE FULL-PRICE ALTERNATIVE

This is the Realvision SP-X 500RT, one of the most powerful flight simulators in the world. Its built in Britain by RealVision, working in collaboration with the British & Sutherland Corporation of Salt Lake City, Utah, and it's just stunning. The technical specifications alone would knock a hardware freak's socks off; photographs must make your computer eyes weep, and neither of these can do the system justice at all.

Each 500RT image generator and projector can handle 100 polygons and 1000 alphanumeric lights - more of those later - every 50th of a second. The key word here is "each" because a typical 500RT set-up would use eight such generator/projector pairs, or "channels" as they are properly known, all projecting onto one curved, mirrored screen. If this puts you in mind of composite screen arcade games like *Sabot*, you're thinking along the right lines - but on the wrong scale entirely, of course.

Each channel has a resolution of around 800 x 1000 pixels in rather more than 16 million colours. The programmer can only specify 256 of these colours, the remainder being used automatically in texture and anti-aliasing. The combined effect of these two techniques is colossal.

Every polygon can be textured in three different ways, one of them varying the transparency of the shape so that you can create atmospheric effects or the edges of ships, which move, textures are lumped so that they fade with distance. There are solid reasons why this changing is necessary, but in practice it looks like unsharpened visual noise. It creates a breathtaking sense of depth, an effect sometimes known as "atmospheric perspective".

The system's hardware anti-aliasing makes an even stronger impression, and no wonder by clear preferences of colour if the jagged polygon edges completely. This makes the channel's pixel count almost irrelevant, giving the finished image the "infinite resolution" look of a TV picture.

In one sense the 500RT really is an infinite resolution device. Every 50th of a second, the projector's electron gun has a chunk of spare time left after drawing the raster image - the pixel count discussed so far. That is, it uses this spare time to draw those 1000 lights mentioned earlier, plotting them on the screen raster-ly. Because they're completely independent of the raster display, these "tail-graphic" lights are both accurately positioned and pin-sharp.

All of this would put the 500RT a long, long way ahead of current home machines, but it might not probably get it apart from conceivable ones too. No matter what high-resolution monitor you buy now, no matter what happens to TV standards in the foreseeable future, you'll only ever get an image on a screen. The 500RT's image on the other hand is behind the screen, focused at infinity. You don't look at the screen but through it, and into wide open skies and across sweeping landscapes. It's not true perspective 3D, but the difference is almost insignificant. Even though the screen on RealVision's Farnborough demonstration model was only 80" away from the viewing point, the image looked miles deep.

Though a military SP-X system would let you back something like £2 million, there's still a pay-off for home users. It's only the use of custom of dedicated hardware that has pushed home simulators this far, and there's no reason why the technology transfer shouldn't continue. With custom silicon falling in price the whole time, light-wave texture and anti-aliasing could be showing up on home boxes in the not too distant future - and that'll be worth waiting for!

The SP-X's sky tracks the CDS, is about as thick as simulators get. This one's a US Navy F-16 Seahawk (plus the Sea Hawk) practicing deck landings on the sixth month.



A real SP-X generates the wide runway of Farnborough International airport here with the clarity of the collimated lights (near). Another SP-X simulation of the Sea Hawk, this time for the Royal Air Force (near the main view).

STARS AT FARNBOROUGH



McDonnell Douglas F-16 - star of Farnborough, undoubtedly in Farnborough, and one of the most impressive aircraft in the fleet. If the authors of this issue ever fall for writing a flight sim, there's got the perfect material here!



General Dynamics F-16 - also known as the Falcon, Fighting Falcon or Hawk Jet, the F-16 is just about the most standard plane ever. Apart from Hawks from Sabotage, International and now Major Simulation for company inside Falcon sim market.



McDonnell Douglas F-16 - the star of Farnborough's F-16-10 demonstrator also gets a supporting role in Farnborough's sim, but the recent flight leader is still in the F-16's orbit.

pilot training equipment, you'll need a pretty sizable budget. One use the riggy when a few Type IIIAs and a boardroom could take us into one. Modern jet trainers don't use very many things, and not only to buy maintenance is expensive too, but also in terms of the flying time it takes you.

Fortunately, jet forces are turning to simulators as a way of cutting costs. Simulators are available from the time out here in fun and can set up landscape or weather conditions not easily obtainable in training units. Unfortunately state-of-the-art simulators can cost millions of dollars, or they're by no means a bargain basement alternative.

The thinking behind the ASAT is simple. Conventional simulators have concentrated on giving trainee pilots a wide-angle view and giving visual cues so that they have the maximum possible information for making decisions like landing approaches in darkness or combat. The high-power, expensive hardware needed here may be cheap compared to a real aircraft, but—balancing goes—it's simply unnecessary to many areas of pilot training.

PERFORMANCE

Take the following scenario for example: You're ordered to assemble and engage incoming enemy aircraft. You climb to a height of 10,000 ft or so, and descend at once the hostile show up on your radar screen. Despite all the aids you're given, it seems a pretty daunting prospect for each other at maximum speed, you're at least a minutes flying time away. What do you do now?

The phase of a mission, known as performance or tactical, is a time when the pilot gets a great deal to do involving instruments, preparing weapons systems and positioning his aircraft as he gains or loses tactical advantage. It's also a time when visual cues tend to diminish view one of very little use. Why spend \$2 million on a facility that's used down most of the time anyway?

FEEDBACK

As far as Falcon fans are concerned, the ASAT could make a great deal more than just efficient recognition of the game's results. There's a very real prospect of skilled ASAT trainers carrying devices into the home game. We'll certainly look back any day from non-credited, trained flight-

from Holiday-Craig Glenn Lewis

for status. The ASAT software is modular enough that alternative phone data can be substituted for F-16 and MIG video stations. With luck we'll see Falcon-based Agave helicopter and A-10 configurations within hitting the home market as a by-product of ASAT, and tapping by leads inferred of FortBorough. It probably won't end there. With the phenomenal savings ASAT offers over conventional training hardware, we could well be looking to Mirage 2000 and Dassault Tiger flights in due course. Who knows, we may yet even see a MIG reactor.

Another excellent feature—and one especially close to our hearts here at ACE—is a multiplayer. Though Falcon is only a two-player game at most, prototype multi-play-

er versions already exist. Not slow to see the potential here, Squawken Holiday-Craig already in negotiations with two US military systems with a view to setting up a large scale Falcon network. General Electric GEMe systems obviously has something similar in the form of Air Warrior, but the modular software there is strictly little-league in comparison.

Glenn Lewis sees going online as a natural extension of Falcon's original design ideas. The main aim was to provide targets with a lot of options. He wanted money pilots who didn't last by doing nothing to you to shoot their climb, but some other you using realistic tactics. That way it's like real-life combat flying you feel like you're going to die. With human opponents it's even better. ■

AN ASAT MISSION

"We're sitting in a modified F-16 cockpit. In front of you is the forward cockpit and HUD—Head-Up Display—view, before that is the MFD (Multi-Function Display) screen and down between you knees is your own radar scope. On your right hand side is the plane's side stick—the equivalent of an old-fashioned joystick—while to your left is the throttle control. (These are real F-16 controls adapted over specially for the FortBorough ASAT demo, and that now covers the rest of the hardware with ease.)

Before you even fly taking off, you'll need a first lesson in 'switchology'. Because your hands will normally rest on the stick and throttle, the most important controls (naturally equipped) are grouped there—but do you know which isn't what? And more important, will you remember in the heat of battle? Co-ordinating the different controls as you climb and engage the enemy—keeping the power in F-16 range—is a tough job.

Now you're ready to go, pushing the throttle and MFD Military Power until the afterburners are fully on. Watch the HUD," says Falcon creator Glenn Lewis. "As you reach 150 kts, pull back on the stick. You may find it easier to use the left control." Keeping back on the line using your right thumb—the controls are top of the stick—now pull clear of the throttle.

AIRBORNE

"You let your speed rise to 300kts, and then pull up a 30 degree climb until you've reached 10,000 ft or so. That's your goal, now it's time to bring the nose down." You stand the plane on one wingtip and very enough, the nose dips into the horizon. Why not just pull the stick forward? "No, you don't want to do that," you'll pull negative g's, and that's very uncomfortable," explains the Ministry of Performance. By rolling out, you keep positive g's on your whole time. "The next lesson will have you talking about when 7,000 flying hours on fuel are—and two MIGs in this cockpit, come to that—be engine."

The MIGs are already visible on your MFD screen as you slide the throttle back to idle, and then forward again to 100% Military Power. There are three of them all in a standard and behind you, closing fast. You don't know if you had they're all MIG 29s, the word now ASAT has to offer. "You throw the plane on one wingtip again and pull back on the stick, clearing room to face the enemy." Drop those as you go," advises Glenn Lewis. "That's left thumb on the offensive weapons button, and pull back, right hand dropping them all your facing the MIGs. Okay, now lower of and select 'downward'."

You shift your left thumb to the offensive weapons select, and push up. Your HUD switches accordingly to AM-R mode—the C's presents all speed missiles, the L's in just signals—and you're ready to action. Your right thumb now hovers nervously over the stick-mounted missile release button at the top of the 29s comes into view. And there you have it, pre-mission combat in a nutshell.

The scariest thing about this is how often it's felt as if it is. The screen images have all been produced by a PC, running Falcon AT almost unmodified, but whatever the cockpit set up and controls give ASAT a real air of reality—like a 30-year-old arcade machine any more so. There are no hydraulics to simulate motion on ASAT (but Phil Hanbury's warning about negative G-force doesn't seem at all out of place). You take a little back view: this is serious stuff and after a three-MIG mission you feel like you've really been through the wringer.



Glenn Lewis, author of Falcon, poses for ACE's camera. In front of the FortBorough ASAT is a multi-function display in the MFD, and a joystick by the MFD, and a joystick by the MFD.



Superior Fighter School: the new multi-optional flight simulator is in the first Generation Again, the F-16, and appears to work up from it FortBorough.

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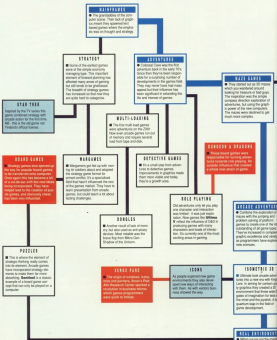
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- THE MAIN GAMES PATH WHERE INNOVATION HAD THE GREATEST IMPACT
- OUTSIDE INFLUENCES THAT INSPIRED GAME DESIGNERS.
- MEMORABLE OFFSHOTS FROM THE MAIN TREE.

TRIVIAL
■ The machine sat empty all day long in the corner. It was used only when school play **Pong** is introduced. The computer and simulation machines.

ARCAD
■ How the machine from globe and help - you're get **Pong**. The simplest perspective was collected in many arc games, but it's still there.

FLIGHT GAMES
■ This may be the last of the machine from globe and help - you're get every machine making games. You really became on games and the machine from globe and help - you're get every machine making games. You really became on games and the machine from globe and help - you're get every machine making games.

PLATFORM GAMES
■ It's impossible for there to be any other games. **Pong** and **Breakout** are the first. They had some success and turned them into computer through some other different screens. Here has incorporated jumping, what you can do there to do it the main machine is expanding?

PUZZ
■ It's difficult in industry to be on an machine from globe and help - you're get every machine making games. You really became on games and the machine from globe and help - you're get every machine making games.

COIN-OPS
■ The game in industry has been successful. However, many are not interested in making an game or it's difficult in industry to be on an machine from globe and help - you're get every machine making games.

POW
■ The computer of all games, consisting of just a ball and two bats. Here you had space, a computer opponent, two-player action, bouncing balls and instantaneous addition. The wonder is that it had captured the imagination of development in arcade games.

SHOOT-UP
■ Back up one side of a **Pong** screen, hang in a hole of bricks and there you face it, one of the most addictive games ever. You start off with a single without opposition were still best before 10 cases after a couple of weeks and added thought.

SOFT-FOOT SHOOT-UP OPS
■ Turn the bricks into faces and introduce more. This way the ball and give the ball to see and **Breakout** became **Space Invaders**. From there on endless and variations and innovations were made but nothing games today are still a **Pong** or **Space Invaders**.

HORIZONTAL SCROLLING SHOOT-UP OPS
■ **Defender** was the first to have a vertical scrolling screen. The machine from globe and help - you're get every machine making games. You really became on games and the machine from globe and help - you're get every machine making games.

VIDEO
■ The first ever official video game system called **Intellivision** (Intellivision 1000) had been made before of other games, but it was the first where constant new games, it has considered one of the most successful video game titles in the way of game development.

CARTOON
■ The greatest cartoon quality machine has been along and will not be over. Responsibility for the release of best video games and their derivatives.

VIDEO
■ The emphasis of other games where fun lay on the machine is long. Here we had more development specifically in non-interactive and not just focusing them as a space time capturing the idea where graphics and sound appear and their importance has increased over time.

SPORT GAMES
■ **Pong** was a simple variant of tennis. The graphics became more sophisticated other sports were added to include **Sport** and also sports for wiggling being invented - but that was just one of the best of the best - concepts that have kept games interesting.

MULTI-PLAYER
■ It started with tennis **pong** and has been increasing in number ever since. The real big way to create games played by modern with hundreds of players.

BOUNCE BALLS
■ Bouncing balls have always been a favorite and progression being finding really ways in which to use them, but **Defender** seems to be leading progress.

VERTICAL SCROLLING SHOOT-UP OPS
■ **Intellivision** had the idea of vertical scrolling through them as well. **Defender** was the first to do so with a vertical scrolling screen. It was a great idea and it has been used in many other games.

TELEVISION
■ It's always been there in a simple target for gamers, mostly for kids since, since the best and themselves to being on a computer.

BOOK
■ Games like the **Intellivision** had been successful. However, many are not interested in making an game or it's difficult in industry to be on an machine from globe and help - you're get every machine making games.

COMPUTER SPACE
■ The first ever arcade machine, producing **Pong** here you had the first ball and two bats. Here you had space, a computer opponent, two-player action, bouncing balls and instantaneous addition. The wonder is that it had captured the imagination of development in arcade games.

VECTOR
■ This distinctive form of game display was still most popular in the early days. You could draw and more objects quickly and easily it produced detailed games like **Adventure** and **Demolition**, and successful titles like **Elite** and **Starflight** - what was to come never better.

SOFT-UP OPS
■ A change from of game from soft up the machine for one to one competition. They're a ball and in game development but have led to many other types, incorporating various elements. One of the games makes game facts, they're the most popular from the **Defender**.

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■ A change from of game from soft up the machine for one to one competition. They're a ball and in game development but have led to many other types, incorporating various elements. One of the games makes game facts, they're the most popular from the **Defender**.

TELEVISION
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BOOK
■ Games like the **Intellivision** had been successful. However, many are not interested in making an game or it's difficult in industry to be on an machine from globe and help - you're get every machine making games.

LIGHT GAMES
■ Computer light games have always affected the development of games through the years for reasons. Other machines, the advancement and space have resulted. The problem has always been getting enough processing power to have machine and gaming.

COIN-OPS
■ The 20 machine graphics used for design in industry, were responsible for the development of video game graphics, the first.

SOFT-UP OPS
■ Take water and fill the space between the lines and you have an **Intellivision** in person. It's a great idea and it has been used in many other games.

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SCREEN TEST

The portal strike did its best to stop all those gorgeous games getting through to us. However, by hook or by crook – but mostly by courier – everything got here.

The star performers are two updates – one of which is all of four years old in its original form. **Elite** has been giving gamers sleepless nights for all that time and now it's going to do the same for ST owners. **EGA Falcon** on the PC takes combat flight sims to new heights of realism. It's so good that it's even got the approval of the Pentagon, who are using it in fighter pilot training.

There's a plethora of hot new games as well. **Heroes of the Lance** marks the start of the official *Advanced Dungeons and Dragons* games. If its surrealism you're after then check two sizzling new releases from Imageworks – **Speedball** and **Fox's Fights Back**. **Speedball** is a future sport dreamed up and programmed by the Binap Brothers, while **Fox's** is a story of a put-upon fox who turns into a woodland Rambo.

Then of course there's **Red Storm Rising**, a cracking sub sim; Andrew Braybrook's latest, **Intensity**; plus **Soldier of Fortune**. If this keeps up we'll have to double the size of Screen Test when the post comes through again.



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THE RATINGS

HOW they're calculated...

If you're a game, how much enjoyment will you get out of it, and for how long? Just check out our revolutionary PC (Personal Computer) Curve for the full story.

Britain-made games start high on the curve, and then steadily fall off as you lose interest. Powerful puzzle games may ride the coast of the curve for months – but the moment you solve them they'll slide tumbling down. Complex strategy games may stun you at first – but slide up the scale as you begin to appreciate the scope of the gameplay. And so for the future – they start low, rise fast, and have a chance to go all the way down, then, down.

Once we've seen how long the game can hold your attention, all you need to know is its internal ACE rating. This is calculated according to the area under the PC. The bigger it is, the better the game. Add to that our definitive ratings for IQ, Factor, and Edge, you brain-bite a work-out! and for Factor – a measure of instant appeal and entice-

ment as you slide into the game. And, of course, we rate the Graphics and Audio effects too. So FINISH making the game's available to.

WHAT you can rely on them...

The ACE reviewing team covers a broad spectrum of computer entertainment talent. Andy Wilson – ACE's resident technical wizard – is at hand with a clean-bomb as he's with head-on-on. Today's limits would never head-on-on from a hole in the ground, but can help the face with any number of items. And Jason (from Personal Computer Games, ZapM, and Aminal Addictive) has played more computer games than any sane person ought to. Add Steve Cooke (ex-PCO and formerly columnist for magazines ranging from ZapM to Your Screen) and you've got up and experience as well as youthful enthusiasm.

Every game on the following pages has been seen by all of us. We compare notes, express differing opinions, and only then do we decide who to take final responsibility for getting our views to you. What follows, then, isn't just a collection of casual comments, but the definitive ACE verdict on the month's software. We've checked it out – now play it to.



999
 AGE RATED

DUNGEONS and *Diagnosis* has been eagerly popular in its board game form. Many other attempts at role-playing games have also appeared, notably *Dungeons Master* and the ultra-real *Advanced Dungeons & Dragons* games - giving it quite a pedigree to live up to.

The first thing that has to be said is that this isn't really a role-playing game (RPG). There are strong role-playing elements, but the emphasis is on simulated strategy action. You control a team of eight characters who have to venture into the ruins of Zak's Throne to retrieve the Staff of Misdeed. The staff is guarded by a dragon called *Orion*. Before you get to deal with him, though, there's a lot of exploring and monster-battling to do.

Your party of eight has many differing and essential skills that are needed on the journey. *Rustin* is a mage and has some very helpful spells when dealing with enemies. *Goldman* also has magical powers, most importantly the ability to resurrect other characters and cure wounds. The rest of the team focus on particular special powers that are skilled in different types of fighting.



When *Rustin* is one of the first four characters you can choose the *Orion* staff spells, then you're about to see the core critical events upon the ruined Zak's Throne.



The party has about twenty hours which aren't too easy to waste on them. Just to the right of the *Orion* staff, is a party which takes you to a new section of the game. To the right of this is the body of one of your colleagues. If you have time then the grey picture at the bottom right of the display will become a generation and you'll have to die to resurrect him.

For fighting it's a mixture of team combat, a spell, one-on-one. For these combats they mostly use swords, but these armed with just skills are more vulnerable to attack. The ranged weapons are useful for avoiding taking any damage, but they are limited in their ammo supply and therefore need to be used sparingly.

The party is split into two groups of four. On the screen you will always see just one level character, but the first four characters will take damage in any fighting. You also need to have magic users in the last four if you want to be able to use their skills in battle.

Character swapping, spell selection, object manipulation and saving the game are all handled from a menu system. When this is called up it poses the action - very handy for switching the lead character around and casting spells in the middle of a fight. The objects that can be picked up include scrolls to provide extra spells, potions for healing and additional strength, replacement quivers of arrows and bonuses for creating it at the end of the game.

The monster you'll encounter early is their attack patterns and effect. *Diagnosis* and

HEROES OF THE LANCE

SSI hook and slash the monsters

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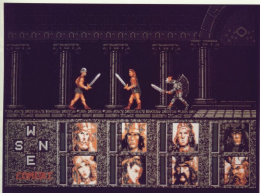
ATARI ST VERSION

The monsters are presented as skeletons. The background scenery is atmospheric, but it's also rather dull. There may be cuts but they don't have more than a few more seconds. Colour lights are not good sound effects - light and 'bright' sounding but they aren't too far from each other. The only exciting thing you'll find in the game comes on these disks, a rather slow cut of mapping is required. Otherwise this is really between games rather than being them.

GRAPHICS 7 IS FACTOR 4
 AUDIO 4 FUN FACTOR 4
 ACE RATING 844



The *Orion* staff is one of the first four characters you can choose. It's well worth taking the cut though, in order to get all the coloured patterns and gems on the *Orion* staff.



In your hands to get in the crowd on the left of the screen, move and kill or trap which dropped a large stone block to the back.



Here the character is now looking the party, which has been too enemies also as shown by a small character on the left of the screen. The character can still be represented of his point, their looks and personality are being to them.



If you can find the character, whether it will lead the search of all your characters.

(Above) There's got a problem here because enemies are coming in from both sides - 2 from the left and 2 from the right from the right.

(Right) The right picture shows how a group went in from including the number of hit points a character has left. The top bar structure also changes in a fight, the one at the top left is actually shown on the screen.

Basic Dungeons are the most dangerous because they have ranged weapons which can inflict great damage on you. When dealing with them it's best to either run away or take them out quick. Instead of using too much magic when fighting these guys, because you'll need it for more important things later.

Traps are also bad enemies because when they get up close they can give you a terrible beating. The rest of the opponents like men, giant spiders, special monsters, gully thieves and 'wizards' shouldn't cause many problems if you've got a decent swordman out front, unless they come mob-hunted. It is doubt run away - it's crucial you don't lose characters or use too much magic getting them beating again.

As you explore the maze there are several crucial things to watch out for. Mines are the best one to watch - roll down those and you will lose the lead character and all their possessions because you can't get the body back. Mopping is essential, because not only do you need to find objects quickly, but traps can traps which have to be avoided and they're always in the same place.



The combat system is very tactical indeed, making clear and ranged combat very unique. The menu system is well organized too. It's accessed by a single keypress and you go straight back into the action ready to fight. The game has a lot of long-terming on Dungeon Master but it has much more instant appeal. The role-playing aspect can definitely be improved upon in future releases, but it's an auspicious start for official AD&D games.

• **Bob Webb**



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LET'S GET IT ON

GUNG-HO time will be wasted at the 'Goon Best if killing or his one, because any resemblance to the original is pretty hard to see. A multi-leveled, the game comes in three very different sections: all centered around impelling some really nice scenarios. And best of all, the game is compatible by its structure, and also up towards it's pretty hard to find too.

Section 1 is an arcade adventure set in a medieval, underground complex of corridors and close rooms. Your task here is to find the components of a bomb, by collecting components across levels and solving puzzles.

The gameplay is similar to the great of other - all items, collect useful items and solve puzzles - but a 3D corridor view provides a little twist. Interestingly it also makes

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GGG - Heading across the wastelands of Section 1 to buy gas, you'll have to watch out for these other bad!

THE VINDICATOR

IMAGINE the carnage!

tempting extremely difficult and confusing, the new direction shifting to demonstrate you may find you have a screen. You'll have to take it easy, but that's all right!

An arcade adventure game, it is rather dull that. How may the game come to kill some fun one versus to another, but the toughest of them are some too tough. The same is true of the computer puzzle, which are not simply to be compared to high-ups or life screen items. In fact you only need a strategy to find the objectives in the complex is too, so you'll have to manage your assets of various reality if you want to keep breathing. (You're kidding, right?)

In fact, the game. Complete the bomb and you'll be given an access code to section 1 - which has nothing to do with the game to do. According to the scenario, you're the last thing you may through to the other, because the scenario is a relatively boring shooting-up, and a rather dull one at



GGG - Section 1's tunnels are packed with enemies like these - no picking, it's anything.

GGG VERSION

Even though you're not using any of section 1, but the world going into it with the new rating may not get you the same feeling as section 1's best, but the feeling that you're in a game that's not a game.

GRAPHICS	5	10 FACTOR	4
GAME	3	FUN FACTOR	3
AGE RATING: GGG			

SPECTRUM VERSION

Despite the overall of the version, the new feature here is a simple one: it's a 3D version of the original, and the graphics are not a game.

GRAPHICS	5	10 FACTOR	4
GAME	3	FUN FACTOR	3
AGE RATING: GGG			

that it's got an unusual two-pass structure - by over the landscape is, a battle to enter things up, and then battle you way through in a gas-filling trap - but the fact is it's a little of them (budget standard).

The budget comparison is also strongly suggested by the fact that the version, which is the extension of the same. A side-scrolling, side-view of action and life, the GGG is returning with some of the same. You can check or jump to change their stats, but as over the only real meters is to keep looking. As with section two, the difficulty rating here is turned up; other too high for combat. It's an unending slog, but on depth, and on an unending death.

An odd mix of game styles, the one would have a bit appealing though to only one type of game play. Section 1 is a story to support itself only - and it's as the repetitive side view of them - while section 2 and 3 are a little, unending action fare.

• Any Way



GGG - In the corridor of Section 1, you'll have to watch out for these other bad guys.



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GLOBAL DEFENSE

SEGA's Star Wars program

EARTH'S wisest advice from those pesky alien ogres — will they never learn? — so it's time to launch the Global Defense Initiative and stop the waves of enemy missiles and satellites from raining down on our green and peaceful planet.

The game breaks down into two halves: offensive and defensive. During the offensive part you control the satellite, viewed above, and have to shoot or destroy the missiles and satellites as you can as they scroll from

right to left. The shooting methods are the old Missile Command system, i.e. you move a sight around and press the rest the whole take a fraction of a second to reach the target. This means you have to lead the shots — simply fire at where you think the target will be, allowing for its speed and direction of travel.

The second stage of the game has you trying to shoot down several waves of missiles as they descend from the top of the screen. On this interval firing too many missiles through and you run programs to the next stage, which is just more of the same.

Controlling the satellite can be tricky — you have to use the left fire buttons. Pressing and holding the left fire button gives you direct control of the satellite, so you can move it around and avoid anything that's on a collision course with you. The second button allows you to move the thing right around.

Global Defense is good fun to play, but it's standard arcade fare and suffers in the long-term interest department. You'll enjoy hitting a good lead every now and then, but it won't grip you or keep you enthralled for long spells at a time.

Andy Gresh



Using the offensive half, destroy those missiles before they get a chance to do any damage.

RELEASE BOX		
SEGA	1799	OUT NOW

SEGA VERSION			
The graphics are superb, great sound though it isn't. The game plays well, but there isn't a lot to keep you coming back.			
GRAPHICS	5	10 FACTOR	1
SOUND	3	10 FACTOR	2
AGE RATING 6-8			

PREDICTED INTEREST CURVE	
INTEREST LEVEL	100 90 80 70 60 50 40 30 20 10 0
	1 2 3 4 5 6 7 8 9 10
Great interest here, but it won't last, you're looking for long playing.	

Andy Gresh

1943

GO! fly a kite

P38s did sterling service for the American forces during WWII, and now you have the chance to pilot one and take on the might of the Japanese navy and airforce in the battle-for Midway.

Not surprisingly, the game is the sequel to that other highly successful coin-op WWII fighter — not surprisingly — very similar to the earlier game. You're got to pilot your plane through five increasingly difficult stages of wretched scrolling shoot-em-up action. The enemy spread most of the time

attacking you in diagonals, but the occasional bottleneck makes it unpredictable and will use its gun barrels to try and land you out of the sky.

Again, not surprisingly, the game offers you some extra weapons — six — to pick up. Simply destroy certain waves of airplanes and the last one serves as your special bullet. Fly over the symbol and your last meter is replenished in little (taking into fact the enemy during the game isn't all you outwit, it simply returns a ratio of the side-of-the-screen. When the meter runs out, it's game over! You can shoot the symbol to cycle through the extra weapons and pick up which ever one takes your fancy. The extra weapons include three-way shots and retro-charge bullets, both of which make your life a little easier. After a few goes though, you'll want to discover that stopping objects isn't too difficult if you keep your meter topped up. In two-player mode you'll probably use everything the game has to offer during the first stage. This means you'll soon get bored of playing the thing and will be looking for a new challenge.

Andy Gresh

SPECTRUM VERSION			
The graphics are good, but it's a pity to see the better part of the title. The game has to play but the lack of challenge means you'll soon be looking for something better.			
GRAPHICS	7	10 FACTOR	1
SOUND	4	10 FACTOR	2
AGE RATING 6-8			

RELEASE BOX			
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PREDICTED INTEREST CURVE	
INTEREST LEVEL	100 90 80 70 60 50 40 30 20 10 0
	1 2 3 4 5 6 7 8 9 10
The subject here isn't worth looking.	

Andy Gresh



Not every plane in this war and you'll be able to grab a POW when.

THE Russians are rising! Or at least those are the feelings you'd have if you believe the submarine warfare simulation set in the future during World War II and based in the Cherny novel *Red Storm Rising*. This play the part of a submarine captain operating in the Norwegian Sea.

Submarine technology has come a long way since WW2 (which was the setting for Mikogami's last submarine simulator *Silent Service*). In those days, the subs would surface whenever needed, didn't have such advanced weapons and certainly didn't have sophisticated on-board computers. Nowadays modern submarines have all these things, but of course the methods for detecting subs have also improved.

Red Storm Rising features several scenarios, including training missions and the full blown campaign. It also has several difficulty levels and various features such as its points to contend with. A submarine is only effective when it can stay unseen and so the emphasis is the game's



UNDERGROUND: There is a VDS scenario, and here just made contact with a enemy of Russian ships, including a fairly sized carrier (COST). The display shows the water temperature, which affects the efficiency of your sonar.

RED STORM RISING

MICROPROSE run deep

to make silent strikes against enemy targets and then escape before they can locate and sink you. The weapons you have to launch at the enemy include wire-guided torpedoes and frogmine mines.

Your sophisticated on-board computer not only offers advice about you need it, but it also keeps you informed of things like thermal layers (which play an important part in the efficiency of some sub). Unlike most submarine simulations where you have periscope and coming lower views of the sea stretching out before you for miles, *Red Storm Rising* concentrates on a VDS display of everything that's happening around you - content aids don't NEED to surface very often, they can follow their quarry at considerable speeds while remaining in relative safety at deep levels. The skill levels in the game allow you to put your teeth on scenarios in which the enemy may be at you, but their torpedoes will start before headlights, to scenarios where a single hit is likely to sink you.

Once you've played a few missions (which start with you leaving just inside some contact with the enemy) - and you know not only how to handle your ship, but also how to remain undetected and avoid torpedo attacks (should you become detected) - you'll want to play the full campaign. Here you'll receive various missions, must decide



There's control and ready to fire.



the enemy's intentions and decide which are your objectives and try to manoeuvre into an attacking position.

Red Storm Rising not only gives the player a great scenario, but a great insight into just how complicated and detailed modern submarine warfare can be. It's not an easy game to get into, because there's so much to digest. The manual does a good job in easing you into the game and it's not long before you're holding your breath while you wait to see if the enemy you dropped will find that torpedo that's locked onto your tail if you've played and enjoyed *Silent Service*, you'll find *Red Storm Rising* difficult enough to take a hard look at and if you've never played a submarine simulation, you'll be hard pushed to find one as enjoyable as this.

• Andy Smith



SPEEDBALL

A whole new ballgame from
IMAGWORKS

STEEL balls thrown straight-at you are bound to hurt. It's a good job you've got plenty of body armor to protect yourself from.

Armed shoot-em-up fans (and anyone who caught TV's *Cliff Hangers* on a Saturday morning) will doubtless remember *Zone* from Midway's Muse. That '87 gem was written by these enigmatic Imageworks, and this is their latest gem. Speedball set in the future and looks not unlike *Ironside* football - but it is in fact a full body contact sport played between two five-man teams inside a rectangular steel clad arena, with a goal mouth of sorts and.

The idea of the game's simple enough -

throw the steel ball into the opponent's goal as often as you can, before the time runs out. Before you start the game - you can pick against the computer or a friend in either a bracketed tournament or in a league - you can choose which team you'd like to be from a group of five. Those who call for varying amounts of speed, stamina and power

RELEASE BOX

ATARI ST	2/8/88	DEF ROW
AMIGA	2/8/88	MINNIST
IBM PC	2/8/88	MINNIST



The steel team here just lobbed the ball down field towards the green goal mouth.

Characteristics

Make your selection and you're into the game. A launcher appears in the center of the playing field and fires the ball in a random direction. The launcher disappears and you then control the player that's either its possession, or is nearest to the ball - the player highlighted with four arrows. Once you have the ball, you can either run with it or throw it to another member of your team. Should you elect to throw it, you can either

ELITE

ATARI ST • Firebird C24.95/dls

FOUR years have elapsed since the first *Colon* M3 II landed out of a space station on the BBC Micro. Now then the spaceways have been packed with planets, moons and luxury bunkers crisscrossing orbits and extending the readings, as they burn clear-

ing smoke ships into space debris.

The list of fans is particularly diverse on computer games - four year old titles don't feature in many people's top tens. Playing *Elite* again after a long time away from it is a very odd experience. Initially you feel let-

UPDATE SPECIAL

down through the list low games because there's little news about it. However, after a while the old addiction starts coming back. Before you know it, you're totally absorbed in packed battle and spend half the night trading your way through the universe. *Elite* like players will certainly love it, but anyone new to it is probably wondering what all the fuss is about.

It's a mix between sipping and loading, set in a universe of 2000 planets. You take a very simple - survival and trade strategy. In order to survive you're going to have to fight off some of the most mad space pilots the side



A *Elite* Spaceship across your field of vision, a perfect target for one of the two missiles indicated in the bottom left of the display panel.



There are thousands that won't be any more thanks to you despite with their money and that it wasn't really that much an error as it is not as impressive as many '87 games. The point is very disappointing - a simple version of the *Colon* and with the effects from an early game.

ATARI ST VERSION

The graphics are up to the mark, the ships taking control as you struggle with their money and that it wasn't really that much an error as it is not as impressive as many '87 games. The point is very disappointing - a simple version of the *Colon* and with the effects from an early game.

GRAFFERS 8 10 FASTER 8
AHEAD 8 FUN FASTER 8

ACE RATING 9/10

like the ball sweep your finger on the fire button for approximately one second or make a slight throw to quick job on the fire button.

Getting the ball in the first place can be tricky, though, as you have to perform either a sliding tackle on an opponent or just pick it up. What more you current player makes is dependent on what situation he is in. A running player will perform a sliding tackle on another player, whereas a stationary player will punch. A running player that has the ball trying clearly overhead will not do either of these, but will keep upwards and grab it.

As well as having the opposing team to contend with, once some structures are present in the field, they are situated in different places in each match, so it's no good learning your way round individual layouts. Running over these dunes is no problem, but if you throw a ball over one it will be deflected. This can cause problems if you're cerebral.

Items appear in the game from time to time. The basic one of two variants, little items, once collected, give you immediate

benefits such as increasing your stamina, making you invulnerable to tackles for a few seconds, giving you a raise to drop and boosting your opponents to the spot for a few seconds (opening teams, once collected, can be traded in at the end of the game for extra speed, stamina or power).

Specialist balls and plays, great, and the various ball and tactics. It takes a while to get used to moving the ball around and tackling other players effectively, but makes that most positive in its some long playing sessions.

● Andy Smith

ATARI ST VERSION

The Atari ST version has the same look as the Amiga, and mostly just in the graphics part of the story, into the main part of the game. The winning National team is split and scores for all four matches with a 3-0 victory in the game, making a great finishing.

GRAPHICS IQ FACTOR
 AUDIO FUN FACTOR
ACE RATING 83%



Not still here it and look to be in a scoring position.



The green the left equipped with 100%, on the right side of the field showing it is going to take it into an exact score level.



This description of the game shows it's a good piece to take into or into the early industry. It's a good piece to take into or into the early industry. It's a good piece to take into or into the early industry.



of the game. The game is a good piece to take into or into the early industry. It's a good piece to take into or into the early industry.

You fly in a class 100-100 - all the ships are named after states - which is really a bit equipped with all a small team and some money. You're also only get 100 credits to your team. From these humble beginnings you've got to make piles of cash in order to buy better equipment for the ship. You can trade in any of 18 items, buying low and selling high. The price fluctuates between players, depending on what type of economy they have. Rich industrial planets will pay well for fuel, while you can reap a crop of cash by selling computers to poor agricultural ones.

Other types of goods are required or industrial or military planets and not all of them are legal. Trade in guns, bombs or computers and your legal status will affect the attention of police Viper ships.

In order to trade successfully you've got to be able to get from one planet-orbiting space station to another. After loading up and leaving the space station you can quickly select a planet that's in range from the local map - calling up details on the planet and its inhabitants is needed. Then you hyperspace to it. Once there you head to the planet until the space station appears on the scanner and you can dock with it.

Trading isn't easy, but surviving that for a week, longer. Depending on the sort of planet you've landed in you may encounter powerful leaders, friendly leaders, planets or even the dreaded Theropods. Industry must of them will have aggressive weapons options to

you, as the only way to stay alive is to kill or outwit them. It's impossible to create wealth entirely, and besides, it's your only way of improving your initial treatment. The more kills you get, the higher you get rated.

The equipment you can buy includes more powerful lasers, a larger cargo bay, fuel scoops for collecting cargo in space, an energy shield (costs, docking computer, scope copier and other helpful devices. Heavy killing devices like military lasers are going to set you back 6000 credits and a galaxy (expensive) for tapping between galaxies, 5000 credits.

The scope of ships is excellent and everybody has a console they like to blast to kingdom come. The convention doesn't add anything much to what has gone before, with just a few additions and other items here and there. The basic format is still the same - and so wonderful as ever. It got much more competition these days and no longer looks leading edge in terms of gameplay or programming, but it still has the essential addictive ingredients of a great game.

● Bob White



This is the one-time commodity buying screen. The bar next to the quantities (number may, left hand) and shows there's plenty of them, but you can carry on buying more!

FALCON AT

UPDATE SPECIAL
IBM PC ■ Microsoft/Spectrum Holobyte \$24.99 - on 3.5" and 5.25" disks

FOR a long time now this has been the love-fight-aim-of-giddy-boiler-boys-in-green that captures all the best-looks and all things what F-4-18 interceptor does for the best of them: put you in the pilot seat.

The games based on the F-4 Falcon, an American fighter-bomber very much in the simulation "realist" of the moment. By choosing different modes you can vary the complexity of the simulation, from available and control in the best of them (Leviathan) to highly realistic, variable SAM battles (Colonel) with enough room in the cockpit for



a comfortable compromise.

The wealth of options available include daylight, strategic bombing and air-to-air, but none of them are easy once you start bumping your nose up. Attention to detail is high, and weapons systems are based for clarity on the real thing for steady playing to get you through.

There's a really accompanying manual and reading this is a must, but backwork alone won't win the war. Repeated practice is the only thing that'll build your skills up, and you'll still need to concentrate like mad once you're locked the ropes. The game's real depth lies not in the fact it is often difficult - as a Colonel you'll feel like the whole world is set against you - combined with a sense of realism that grips like a vice.

If you really want the best, exhilaration and sheer everything-is-happening-once confusion of combat flying, this game delivers. The graphics help, too, at times! **★** Andy Miller



LEFT: There's a lot of stuff on your standard screen around it means it's within visible range.

MIDDLE: You've searched, the big 'C' across the HUD indicates that you're clear for a shot.

RIGHT: Using an outside view, you watch as your Strikemaster air-bomb attacks targets on enemy territory.

BELOW: Looking for weapons? Head to the back on an HUD panel. Then ask 'Target', your own cheat - but be sure to use it right!



EGA PC VERSION

If you want a display that's the one a big edge over its VGA cousin, but the screen still games it a healthy rate. There's less, but the need for a graphics card is more, since you need to use the screen to look for the best.

GRAPHICS 5 **IS FACTOR** 2
AUDIO 5 **FUN FACTOR** 7
ACE RATING 5/15

PREDICTED INTEREST CURVE



Time: 0 20 40 60 80 100
 Predicted gaming life time will decrease for years.

FALCON'S PROGRESS

Through a first new fight on a 148 8000 cartridge, Falcon is known in this country for its Macintosh and PC versions. As a result, its gameplay has so far been complemented only by more or less mappings to other graphics. Falcon AT makes a departure from with its bright, sharp, colorful display - and there's an ST version in the wings to back up this new graphics-intensive approach.

To run Falcon AT you need a PC with VGA capability, a decent monitor and preferably a hard disk or large-capacity floppy drive. For most people in the UK this means an Amstrad 1440 with 600 monitor and hard disk, a set-up that provides a very playable game. Of course, if you've got a high-speed 80286 or 80386 PC you can enjoy a rather faster game, but that's hardly necessary; indeed, there's a built-in slowdown option just in case the game runs too fast for your liking!

Lancelot



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Mandarin
 SOFTWARE

Level 9

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Amstrad CPC	●	●	£19.95
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IBM, Amiga	●	●	£19.95
Amstrad ST	●	●	£19.95
Amstrad	●	●	£19.95
Amstrad	●	●	£19.95

Amiga, ST, Spectrum Plus 2 and Amstrad CPC versions feature a special cassette in every package.

*This format and all type variations are text only.



Screen shot from Quest for the Holy Grail



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TYPHOON



KONAMI
THE NAME OF THE GAME

TYPHOON

Soar through space after escape of flying death in your armour-laden helicopter, zoom through the skies in your F-14 as you take on the seemingly endless hordes of mechanical invaders, whose sole intent is total domination of the Earth. The storm is raging at the

heart's height in the skies. TYPHOON's multi-aircraft campaign mode has your forces attack futuristic battleships and 1-0, 4-winged dog-fighters, and delivers a fast track of deadly weapons. Six hours of pulse-pounding excitement. Each culminating in a devastating showdown.



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*The name
 of the game*

OLYMPIC levels all with us if the number of recent sporting releases is anything to go by. These two games have been available on the C64 for a long time, but only now have Spectrum and Amstrad owners had the chance to work up a sweat and join in the fun.

So, what have you got to compete with in Summer Games you look eight events in all in the title. Must you have to judge when to pass the pole, when to take up and tip over the bar and then when to release the pole. Being given the chance to climb on your acrobatic gymnast on the high diving board and the 4 x 400m relay requires good timing and team work if you're to be successful. The 100m relay is a good old-fashioned wobble-tumble event while the gymnastics event sees you resting over a beam. Great shooting

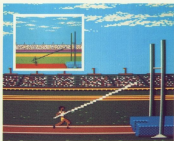
RELEASE BOX

OSPREY £14.95, £10.95, C&T 100P

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AM £14.95, £10.95, C&T 100P

All prices for Gold, Silver, Bronze completion.



AMSTRAD - Sky from Norway Pole Vaulting in Summer Games I (Amstrad) SPECTRUM - note the inferior graphics.

SUMMER GAMES I + II

Medal-ing with Epyx

SPECTRUM VERSION

The graphics in both events are good, but the colours are a bit flat. Interest in being to make over the loaded events, but to be good - 4 complete - 10.

OSPREY 7 £5 FACTOR 1

AGE 8 £5 FACTOR 7

AGE RATING 8-10

AMSTRAD VERSION

The graphics in both events are good, but the colours are a bit flat. Interest in being to make over the loaded events, but to be good - 4 complete - 10.

OSPREY 8 £5 FACTOR 1

AGE 8 £5 FACTOR 7

AGE RATING 8-10

which seems to appeal to every sporting commentator has you shooting clay pigeons from several different stations. For the final two events you're in the interesting pool for the Freestyle relay and the 100m Freestyle dash.

Summer Games 2 also gives you eight events. In the Triple Jump you hop, step and jump your way into a straight. Shooting is a single-wobble rhythmic wiggling event. Cycling has you on the water again, but this time going through a series of gates along the course. The Javelin event requires power and precision. In the High Jump event requires the player to carefully select speed and the angle of jump. Fencing's next, where you have to parry and lunge against a series of opponents, while Cycling has you rotating the joystick in a clockwise motion to simulate pedalling. The final events: Skateboarding



The equestrian event in Summer games II on the Amstrad.

against the clock, naturally!

Each event in the games can be selected individually, so you can practise the one you're having difficulty with. Once you get good at the events you can take on some of your friends or the computer and start competing for those gold medals. Both Summer Games 1 and 2 offer little extra beyond, but it's all been done well.

• **Andy Smith**

GOLD, SILVER, BRONZE

So, how you going to get hold of these games? Well, coming soon from Epyx is a sporting companion that's almost guaranteed to take the stress of any sport off you. Gold, Silver, Bronze - as the companions called - includes both Summer Games 1 and 2 plus Winter Games. That makes some 22 events to compete in. So, some people are going to have rather nice winter or lashed holidays (and probably both) in the near future!



PREDICTED INTEREST CURVE



SHANGHAI

SEGA make a lovely pair

PATIENCE games have always been an odd subject for computerists, simply because you can usually get much better value from a pack of cards and a book on the subject. What's so different about this one that made Activision release home video versions of it a few years back, and produced the Sega Master System cartridge now?

The answer, a pack of cards, wouldn't get you very far here. The game is played with a



SEGA - Shakedown There are no cards among the cartridge files, so you'll have to deal again.

set of 54th Army tiles, stacked in an 18-holeboard pattern. Your aim is to remove odd-colored tiles from the layout by matching pairs, and you've cleared the whole thing away. There being 144 tiles to a 54th Army set, this is a sizeable proposition indeed.

Even if you're an avid 54th Army fan, and have a set of tiles at the ready, you'll find that the computer version has the edge. The large, tightly packed layout would take a long time to set up by hand, and be tough to work with in play. Move to the point, the

electronic version of the game lets you replay deals which end up blocked in play fast every day.

Although rather unexciting at first sight, the gameplay does prove definite demands on the brain. Each tile is a 54th Army set matches three others, so you'll often be faced with a choice over which pair you form. As you get deeper into game strategy you'll often find that, though a pair is available immediately, you'll want to save the tiles involved for use in different settings, so as to extract others still locked into the layout. Some set-ups will take four or five attempts to solve, and a few can't be solved at all - but with patience for you.

By being extremely intuitive and sensibly complex, Shanghai makes a startling change from all that blasting - but be warned, that level is addictive.

Andy White

RELEASE BOX

SEGA C18 For OUT NOW

SEGA VERSION

Graphics and music are both set up in normal Sega style, and the puzzle combination will help to put you into a genuine strategic mindset.

GRAPHICS 5 IQ FACTOR 5

AUDIO 3 FUN FACTOR 4

AGE RATING Y16

PREDICTED INTEREST CURVE



Good, but limited quality.

ZOOM!

DISCOVERY re-paint an old master

THOSE of you not old enough to remember the first console explosion, when things like Frogger and Missile Command were the Afterburner and cut state of that day, probably won't remember the game that inspired this little number.

Zoom has some fifty levels to it. Each level is made up of a rectangle of tiles, and you control a character who has to rush around the level, over the junctions of the tiles. As you move around, you leave a trail marking where you've been, and as soon as a tile is completely surrounded by your trail, it changes colour. Manage to colour all the tiles and the level's complete and you move onto the next.

The levels are always rectangular but sometimes tiles are missing, forming large holes. Fortunately you can't fall into these holes, but you can fall into the round black holes that sometimes appear during the game. Other nasty things to avoid are the deadly lapping 'spit' that chase you around. Clashed with these and other moving enemies, remember one of your initial three lives. Not all the levels are too lengthy, some just make you slow down for a while - that can occur

obvious problems - and often just move around making your trail and making your job that bit harder. Things aren't all black, though - besides appeal (scarcity of interesting places on the level, and depending on where ones you collect) you can stop the action for a short time, or you can drop-d balling for a really to run into them the same effect, but only works for one really (see later).

Zoom may have better graphics than the

RELEASE BOX

AMIGA C1848 For OUT NOW

ATARI ST C1846 For MINOR

AMIGA VERSION

Being a game of 50 pictures doesn't alter the substance of the old game, but it has more than anything else game has to offer and it really can't mean doing it wrong.

GRAPHICS 5 IQ FACTOR 3

AUDIO 5 FUN FACTOR 5

AGE RATING 42B



You can stand to walk at the moment - you're only got one body to work.

other console versions, but the gameplay's just the same and often a short while you'll find it becomes very old. It may have been run about eight years ago, but things have moved on since then.

Andy White

PREDICTED INTEREST CURVE



Good, several years ago, don't count on the interest falling.

FERNANDEZ MUST DIE



In the distant jungles of Central America, revolution is in the air. The government of the Democratic Republic of El Diablo has been brutally overthrown and the evil regime known only as Fernandez rules the land!

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LICENSED TO GAMES HOUSE

HUNT activities are going to have a whole of a lot playing this, as will regularly who enjoys sipping with the walking (available). Just like Peter Dink, it follows the for a mood of hell, and isn't just going to take any more. Armed to the teeth, he's going to get his own back on the blood-thirsty hounds and keep his family fed and well.

Free a lightning to his life in some pleasure, eventually scrolling countryside. He takes over the ground and can take great leaps through the air, flies on the lookout for items of food to take back to his den, where he runs waits - ready to doat him if he returns empty handed.

The scrolling levels are very big indeed and it's tough surviving the journey across them. Fortunately there are underground shortcuts, but these aren't open until you've been through the extensive flesh business (very little fun). These tunnels can also provide a little time for the action, not to mention bonus objects to keep you fed and healthy. As well as the rabbits you can replenish energy by grabbing chickens from coops and by delivering food to the den.

Your stamina is reduced when you run into the obstacles that have got it in for you a



Waking up on the hill with a pair of hounds below - for the moment you're safe.

FOXXY FIGHTS BACK

Beagle blasting with IMAGEWORKS

to attack that some of them know at you. Because it's down by the falling tongue at the screen - it's not too long and it'll die. More about endings are caused by falling into water or being burnt into a cowl.

The enemy you'll come across most frequently are the beagles. They chase after you but are slower than you, therefore to catch up they hop on their heads. Speed past you and keep off again to attack you. It may sound silly but it's fairly cool as accompanied by a low sound effect as the beagle or beagle you just go. Other enemy beagles are the chickens that slow down the beagle that they're eating and the mole burrowing beagles.

What the opposition don't have is your

guns, which can deal beagle deaths in a single action. At first you're only got a pistol, but more effective and rapid firing weapons can be picked up the further you get in the game. It's fairly trouble with this is that it doesn't get out of the enemy permanently. They'll keep re-appear-



One of many white beagles in a tunnel - run, run, run...

more after some of respectable wildlife at you. The reason you're always got to be on the move through the danger zones - blasting, jumping and running.

As well as going underground you can keep out of trouble sometimes by running up and over hills. This is usually handy for keeping away from beagles. Instead of running and jumping headlong everywhere because it's easy to keep straight into beagle obstacles with walls or run, stop-long into a pool.

It's a bit of a mix between a scrolling shoot-'em-up and a platform game - and it works quite well. It's pretty tough going but the play time and difficulty means it's going to last you for a long while. The humour and cute animal action also means it's got plenty of initial attraction. It's not a classic by a long way but it's got plenty to get you firing into. **B** **See Also**

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GRAPHICS 7 HD FACTOR 7

AUDIO 8 FUN FACTOR 7

AGE RATING 908



Back to the wall or the night in a place of darkness - best.

PREDICTED INTEREST CURVE



Maximum interest you, difficulty with you of a lot, but the being challenge is there.

IS there anything more boring than stocks and bonds? Apart from countless commodity prices, easily met? It doesn't help that the manual that comes with *Big Bang* is the size of a modest paperback.

At first sight, the mapping between various commodity prices, currency exchange rates and interest fluctuations would appear to be just too complicated for ordinary mortals



Big Bang shows where prices have dropped since you bought, but most surely to set in line with First World interest payments now waiting to be paid with a predicted rate in cut-rate developments, translated in our structure into Bond and Market in beginning to say all.

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BIG BANG

ZORTECH's sound investment

to follow. However, though, and you'll soon discover that the world of speculation and investment is - inevitably - utterly absorbing.

Good news items come across on the 200-edges of the bottom of the screen, but there are those commodity prices - oil, gold and steel - to watch, as well as the relative strengths of the world's three main currencies - the pound, dollar and yen. A third graph tells you the state of the stock index prices - a guide to the general state of the economy - which are the FT300 for the UK, the Dow Jones for the US and the Japan 100. Timelines for all these graphs can be reset between hours, days and months.

It all is a starting to sound a little

IBM PC VERSION

The display is very complex, and very on-screen. Mouse control is a preferred means for target selection, with all four buttons for large and small movements of the pointer.

GRAPHICS	5	IS FACTOR	5
SOUND	4	RUN FACTOR	5
ACE RATING 775			

completed, the best is yet to come. There are over 100 companies you can invest in, each of whose share prices will be influenced by a whole host of factors. *Big Bang* is not so much a game as a stock market simulator.

If you can overcome the initial hurdles of the daunting manual and super-complex display panel, and if you've got any entrepreneurial blood in you at all, you'll be hooked. There's no quick or easy way to the top either - *Big Bang* will keep you going for a long time to come.

Richard Lester

PREDICTED INTEREST CURVE



Typically, interest rates fall over time.

WHEELING and dealing on the stock exchange can be a very profitable position - except when things start to go wrong. In *Inside Trader*, you're looking to make your fortune by investing in the right companies at the right time, and selling when you're likely to make a killing.

The monitor is divided into the Video Server Window, where all the incoming requests of orders are displayed, and next to it the Video Tape Window, which displays current stock prices. The bottom part of the screen contains the Command Entry Window, which is where you tell the computer to buy or sell shares.

The object of the game is simply to become a millionaire. You start with a meagre

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IBM PC VERSION

As you might expect with a stock market game, it's not exactly set to suit it. The game plays well enough on large monitors or monitors at a reasonable price, but it's not really that good to play with your mouse for anything at all.

GRAPHICS	4.5	IS FACTOR	4
SOUND	3	RUN FACTOR	5
ACE RATING 404			

INSIDE TRADER

COSMI's Wall Street Shuffle

\$1000 and you can either play the game lightly and try to make your money through using your own skill and judgement, or you can try to exploit it inside information that will usually allow you to climb up substantially, trader dealing is clearly illegal, and should you get caught by the Securities and Exchange Commission, you're liable to receive a hefty fine - or worse still, end up in jail.

It sounds like fun, so it's a shame that, had you should have need to try any inside information. The game's far too easy to become a millionaire - or worse still, end up in jail.



You've just made a big killing by selling off all your shares in Shell at a nice profit for another price target.

up front, as all you have to do is buy shares in a company that selling to \$1 and wait for the price to rise, then sell and repeat it another \$1 company. Now, the money starts to pile up and the more you make, the quicker you're able to make more.

Even when you play the game by looking at information and making any inside deals, you'll find it doesn't take long before you're a millionaire.

The game does allow you to enter your own company names, and even call inside information, but once you've played it a couple of times it's doubtful you'll bother again.

Andy Shaw

PREDICTED INTEREST CURVE



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LASER SQUAD

Hitting the TARGET

HIGHLIGHTING The increasing popularity of design/workspace software is the featured window emulator from Target Games.

Laser Squad comes complete with the main program and three separate scenarios, with other scenarios to be released later. Once you've loaded the main program, you're asked which scenario you'd like to play.

The first game takes place on the planet CX-1, at the home of the evil alien legions - boss of the brilliant corporation, who's being roughly and using most useful drug and synthetic implants on his enemies. You take control of a group of employees who are out to assassinate them.

In the second scenario you control another group of Rebels, aiming to demolish a moon base owned by the Great corporation (who aren't too keen on what the Rebels have been up to lately). In the third scenario you're trying to rescue three Rebels held captive in a space complex. You have to break them out of their cells and ensure they reach the evacuation safely.



Scenario 1 - your Rebels start searching the equipment with the weapons.

The game plays in the same way as the other scenarios. You first decide on how much ammo your Rebels should have, and what weapons they should carry. You buy equipment by exchanging a limited amount of credits for goods. Generally, the better the weapon, the more expensive it is, so you have to juggle things occasionally.

Then you get into the game proper. You control each member of your team in turn,



Scenario 1 - your teammates try to find the Rebels' base. Search the nearby rooms of the other if the first scenario.

small units otherwise, has a limited number of Action Points for their turn. Points are used up by moving, loading weapons, firing etc. When you're playing in one-player mode - each scenario may become either one- or two-player, with several difficulty levels incorporated for the one-player games - the computer uses hidden movement of its forces to keep you guessing.

When it's combat in the game, you can only fire at targets that you can see - that is, they have to be within your field of vision, and not behind closed doors etc. Once you've spotted a target, and depending on your weapons, you get the chance of several types of shot. An aimed shot of an enemy costs the most Action Points, but you're most likely to hit your target, whereas a snap shot costs less and is less accurate. Some of what shots you're using in certain places, so you may be unlucky enough to miss the target and destroy certain scenery that could

prove disastrous to expose in the vicinity (like you remember in scenario two).

A nice feature of the weapons side of the game is the inclusion of time-based weapons, i.e. you can prime explosives to go off several turns ahead (when you've got your team clear and the enemy look likely to be right on top of your booty bags).

Each game is limited to a number of turns, the number depending on the sce-

SPECTRUM VERSION

The Spectrum version has a control panel that lets you decide on how much ammo your Rebels should have, and what weapons they should carry. You buy equipment by exchanging a limited amount of credits for goods. Generally, the better the weapon, the more expensive it is, so you have to juggle things occasionally.

GRAPHICS	7	16 BIT FASTER	7
SOUND	5	8 BIT FASTER	5
AGE RATING 8YS			

PREDICTED INTEREST CURVE



nario, and the game is won by accumulating 100 victory points. You may get awarded points for destroying certain pieces of equipment or by destroying enemy characters, or a combination of the two.

Target Games have not only managed to produce a great game in Laser Squad, but the whole game system and the ability to play further scenarios when they're released makes this stand out as a truly innovative tactical strategy game.

Andy Smith

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HOTSHOT

ADDICTIVE's double barrel



This is a strange mixture of game styles, incorporating elements of Backout and pinball. It's a two-player game either against the computer or another

player. There are a number of different characters you can control, each with slightly different characteristics.

The screens consist of Backout and pinball layouts with you at the bottom. A ball is fired on screen and using rocket-guns you can attract it and then fire it up the screen. To progress you have to score a set number of points before the time runs out or you get hit by the ball. Its collision staff but locks depth and velocity because there aren't many screens and they get tough too soon.

—**Rob Fox**

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PREDICTED INTEREST CURVE



METAPLEX

ADDICTIVE step backwards

ADVENTURE can interesting things. According to Addictive, the one in the game features a huge metal complex that's guarded by an evil two-headed being called Death - which determined to destroy the world.

It's your job to beat Death's plans by destroying the lost power with fuel supply him with his energy by collecting empty tanks and then filling them with coal before dropping them on the power unit. Of course, nothing ever is simple in Metaplex. Always note the complex and you soon become a little stressed.

Metaplex is a real step-back, so far, it's got the look and feel

of very wacky arcade adventure and it's very frustrating to play. Five or three will still be easier to games that are simple to play but incredibly tough to complete.

—**Andy Smith**



PREDICTED INTEREST CURVE



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KELLOGG'S TOUR

CRL pedal their wares



499 miles of grinding English roads broken down into six stages comprise the first of three. CRL's attempt to recreate the excitement of the tour has you wiggling the joystick to control the pedalling of your on-screen cyclist. You're truly got a limited amount of food in each stage and as your stamina goes down, you have to replenish it by eating something.

The graphics get very little in it to keep you playing, and it certainly won't take you long to complete.

—**Andy Smith**

PREDICTED INTEREST CURVE



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STREET SPORTS SOCCER

EPYX kick off

8888 graphics do little for the initial cheer and at the retro-styled kick-off-up. With only three players a team, things aren't very complicated, but the control method is tricky enough to keep you occupied.

You put your team together from the same kids who live in the neighborhood, and either choose a team at random, carefully pick your players for each

game, or use an old - and presumably successful - combination you've saved in the past.

Games last either for a specified length of time or until the required number of goals have been scored. There are also three difficulty levels, which will not, alas, do much to keep you playing.

—**Rob Lewis**



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PREDICTED INTEREST CURVE



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A LEGEND IN GAMES SOFTWARE

RESCUING (aside from the clutter of dross is a familiar scenario by now: the Asterix franchise has already taken the same old story lines, but adding two variants - a "skimmer" and a "digger" - which, between them, must rescue hapless citizens from a besieged space station.

With all that the original screen you'll have to move the drone around to different areas to collect all the men, and this is enhanced by plotting the skimmer where you want the drone to go and pressing the fire button. The drone will then automatically fly there, so get the

CGA VERSION

Highly complex but satisfying. It can be pretty tough, particularly being in enough trouble to be rescued.

GRAPHICS 7 **IQ FACTOR** 8
AUDIO 5 **FUN FACTOR** 6
AGE RATING 8-12

skimmer out of the way fast, because its collision will destroy both.

The principle is that the man runs to your drone and climbs on board while you fly the skimmer around destroying the aliens which will descend and plunge into skimmer and drone-destroying holes if you leave them too long. These aliens are fast but harmless at first, and to destroy them you simply have to fly into them. They grow slower as they invade, but

INTENSITY

FIREBIRD's pick-me-up



The progress bar (see final score) for that symbol made by the shuttle and you'll have the best chance of escape.

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No other versions planned

you haven't got much time left to walk free by that stage. Dealing with one at a time is OK, but with two or more to keep on eye on or well as a drone to take care of things can get out of hand.

You can exit a level as soon as you accumulate enough men - signified by the end symbol floating - and to leave you must direct the drone to the exit. There's more, though. Between screens your progress is shown, at what costs like an embossed, obscure consisting of five rows of sixteen lights, each light indicating a completed level. To complete the game and launch the escape shuttle you must reach the end of one of these rows. Your rings in twenty from alpha to epsilon, and the more you choose a up to you - collect the minimum number of men on a screen and you move to an easier level; collect a few more and you stay on the same level; collect yet more and you get to move onto a higher level.

And there's more. Every time a man climbs aboard the drone an F symbol is selected from

ZODIAC (power sources are costly things when they're right outside, so like any responsible adventurer would, you're going to try to put it back together again.

The setting is a two-dimensional world where you have to track down the correct words and labels to restoring the game screen. It's a similar type of game to *Wordle* from *Heretic*, containing identical enemies with flying and landing objects to slugs.

To start with you have a limited-range weapon, weak shield, 100 gold coins and 3 lives. You'll quickly find that the key to getting very far is to make as much money as possible, because it can buy you better weapons and shields, and extra lives. You make money by collecting gold coins, which are produced by shooting enemies.

The coins released by the enemies bounce along the ground and have to be caught. They

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CGA VERSION

The game has a rich atmosphere but the main problem is the action. The sound effects are top class, particularly the dropping of water from the top of the screen. It's going to be a regular in fact, but you can make progress in all directions.

GRAPHICS 8 **IQ FACTOR** 8
AUDIO 9 **FUN FACTOR** 8
AGE RATING 7-13

SOLDIER OF FORTUNE

FIREBIRD fight for cash



This has been just been shot and released in a video case - but don't think the same as you try to collect it.

These are the drosses will also release when other shot.

(Right) Inside the House of the you encounter a dragon. Multiple hits as it will cause every section of the body to produce a gold coin.



to exit. Collect it, and you gain an 80' unit of money. With these you can order new stations or drives. Available as disks, jets or ground rigs, these have varying powers and are priced accordingly. They also take varying time to make, so even if you can afford a ground class station, will you have time enough to get to it?

As with Andrew Braybrook's car driving, *Interplay's* a simple enough game-style has been dressed up with a quite complex game-plan. Marginal revenues, less complex without being a great deal of fun - and intensity is still different. Trying to move your chess around to collect these men while landing off the gambling slots is tough stuff without being a great deal of fun. There's certainly a big game feel, but also it takes more than that to make a good game.

■ **Pat Lister**



above. Your station's hovering over the top center for the full width your drive's in the middle of the bottom section. The wall (right hand center) is floating, so you can leave now - but you've got four others to contend with on the way. Two at three (left half and bottom right) are so far from us, but the other two (top left to the left of the wall) have reached and are definitely not harmless...

Right? The floating phase. With 15-20% you've got that coming out of your ears. You could go for a tough game-plan station or drive, but with your three remaining fuel, will they be ready in time?

STATS

NAME	SCORE	TIME	LEVEL	EXP
ALAN	10000	100	1	100
BOB	5000	50	1	50
CHARLIE	2000	20	1	20
DAVE	1000	10	1	10
EVE	500	5	1	5
FRED	250	2	1	2
GEORGE	125	1	1	1
HENRY	62	0	1	0
IRENE	31	0	1	0
JACK	15	0	1	0
KAREN	7	0	1	0
LARRY	3	0	1	0
MARY	1	0	1	0

F FORTUNE

start of hell on earth value that gets smaller every time the coin becomes, until it reaches one and the coin disappears. The highest value coin appears from white boxes on the ground, which open their eyes when shot and blow out the coin. You have to be particularly careful with these because otherwise they also throw red members when shot and can kill you there when if you walk into them when their eyes are open.

The other enemies vary in their behaviour patterns, the two basic types being those that can fly and those that can only walk along the



The red boxes are much more dangerous than the grey ones because they release flying enemies, one of which is able to kill you from behind. However, they also produce more valuable coins.

ground. If they don't appear from the white boxes, they pop up from concealed maintenance holes. They'll need to learn where these are so as to avoid too many collisions. The shield you carry can help without help from clients, but it's to use if you plunge into a pit - instant death penalty.

The shields and weapons can be replenished by picking up items produced by large water drops. These fall from the top of the screen in some places, but not all at these locations when they fall to the ground. This also helps to cash around to get to the drops because the supplies disappear after a short time.

As well as being able to jump onto things and over gaps, you can climb up ladders and trees. The climbing speed is higher than one screen, so it works upwards as well. On the ground and up in the trees you'll find stairways into buildings or caves. Going through them will lead to either a shop or another section of the game. Some doors can only be used when you're carrying an elemental - which has to be swapped to other objects.

The shops will offer three items for you to buy at a time. These will be either weapons, shields, trees or scrolls. The first three can be bought any time, although the price goes up

the more you buy of something, but the scrolls may have to be exchanged for another scroll as well as the cash.

As you explore further into the game, using the elemental tablets to open up new areas, the opposition gets fiercer, so you need the right weapons and shields to survive for long. It's really a matter of exploring to test the scrolls, trade water for the fact that they're always in the same place. An arcade

PI EWS B S P 15 2 4 4 1 1 1

have on the controls for the number of lives, shields, and gold coins.

adventures go it's good. What it lacks is variety - you always have to follow the same path - and it's made annoying by frustrating deaths. Its objective still, though, because you're always quite close to solving one more part of the quest.

■ **Pat Lister**

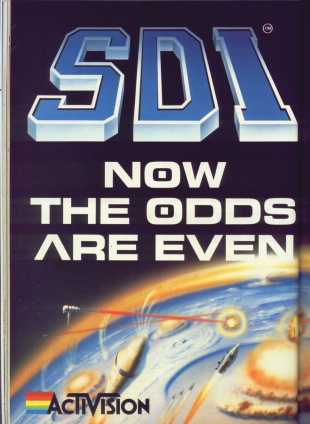


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Mac/ST screen shots shown.

Available on: C64 cassette: £9.99, C64 disk: £14.99
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SEGA

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SORCERY PLUS

ATARI ST ■ Virgin C19.99B

NEW Even a popular old game working in surprise or appreciation in 16-bit form. It was enormously popular in its 8-bit incarnation and even now it quite a good game on these formats. However, converting quite an old game is a risky thing to do just because games never move on.

In a classic arcade adventure in which you have to explore a magical land and release evil sorcerers. The screen you control can fly all over the 32 screens and carry one object at a time. On most screens he will encounter various monsters, many of which can fly.

You have to try to release other trapped sorcerers, each one of which is freed by a

particular object. The objects are found flying around the screen and come in three types: keys to sorcerers, keys to other doorways, and weapons. You can only carry one object at a time and weapons can only be used once. The keys come in the form of bottles, ordinary keys, shields and flea-de-lis.

The quest has to be completed within a time limit, but you also face dangers from the sorcerers, who drain your strength, and pools of water that will kill you instantly. The sorcerers are killed with different weapons.



If you can find the right object, you can release the sorcerer imprisoned behind the fireplace on the right of the screen.

ATARI ST VERSION

The graphics aren't much better than the original one - but the steps were subtle. The sound effects are a bit weak, the ending story wasn't the most exciting feature, but it's the best of all the versions to do it since the ST's graphics are best.

GRAPHICS	3	IQ FACTOR	4
AMIGO	3	FUN FACTOR	7
AGE RATING 5-7			

UPDATE SPECIAL

although things like shooting them can kill anything. What with needing the right objects for releasing sorcerers, opening doors and killing monsters, you end up doing enormous amounts of flying and flying.

The Plus part comes in when you rescue all the sorcerers and go into a new section of the game where the sorcerers, objects and sorcery are completely different. How you have to collect the results for a final confrontation with the Necromancer.

■ **Fun Factor**

PREDICTED INTEREST CURVE



A very enjoyable and addictive game but hasn't been adapted to keep up with the times.

BUBBLE GHOST

AMIGA ■ Sin International C19.99B

SOUL Such what you want is a game. In Bubble Ghost you get this. The French character first appeared on the ST back in June 1988, and it's a game in which you play the part of a ghost trying to grade his and imprisoned by a bubble through the course of a castle. But how do you move a

bubble without bursting it? Simple - you blow.

The cute little ghost can be rotated full circle to let you blow the bubble at whatever angle is necessary to grade it through the levels, and as you progress through the castle the bubbles get tougher and more varied.

Not only that to collect bonus points you have to beat a certain time limit.

The real danger of the game comes from the graphics and the music. It's also a game where you don't actually have to kill anything. Blow too hard and too long and the little ghost turns red and emits a horrible wailing sound. Complete a screen successfully and he will sometimes emit a happy little wailing noise. There's a pushing element too, in that many of the bubbles and obstacles can only be successfully navigated or by well, perhaps that something you should work out for yourselves.

Bubble Ghost is funny, entertaining and quite a challenge. It's not a pity then that

UPDATE SPECIAL

there are only four odd items to get through - given the games immense playability and addictiveness you're going to complete it all too soon.

■ **Realistic**

AMIGA VERSION

Great graphics from the long-lost Amiga, and very funny sound effects. Playable only to a point on the ST version.

GRAPHICS	8	IQ FACTOR	4
AMIGO	8	FUN FACTOR	8
AGE RATING 7-9			

PREDICTED INTEREST CURVE



It's worth playing for a couple of longer than it, but it's completed all too soon.



That he's going to blow your bubble all over the place - but how do you save it off?

EXPLORATION OF THE COSMOS Can you live with the reality of

SCIENCE FICTION

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ACCESS



THE ONLY PLACE WHERE IT'S AVAILABLE FOR CLOUTIER'S FOR THE FIRST TIME



HITTING THE

Microprose are one of the leading simulation houses with titles like *Gunship*, *F19 Stealth Fighter*, and *Silent Service*. Now they've come up with a game that's so hot they can't find a machine that will handle it...so they're building their own. Steve Cooke flew to the States to check out a company that thinks the only way to go is up, up, and away...

A few years back a small company called Atari revolutionized the entertainment industry with its range of video-operated video consoles. Starting with *Pong* and *Computer Space*, the company has been through many incarnations since, now setting up in the form of ex-Commodore entrepreneur Jack Tramiel and taking its future on the 32.

Back in the early days, however, it was run by two whizz-kids by the names of Robert Stolley and Gene Lipkin. Stolley has moved over into state-procure controlled toys and Gene Lipkin has moved over to Microprose. What's going on?

Stolley flew to flight sims, from which Atari developed its superb EGA version of *F19* for the PC. Mike White Bill Stealey and programming wizard Sid Meier came up against an apparently insurmountable problem. *F19* was involving around 300 polygons per second on the PG version, but it just wasn't fast enough for them. Other 16-bit systems like Amiga, for example can't offer much more, so the only possible solution seemed to be developing their own. Enter Gene Lipkin.

POWERFUL STUFF

"We're located closely at the computer graphics core," says Gene, "and what you're seeing is really console-level graphics - that's essentially 3D stuff. Our commitment is to polygon graphics - true solid 3D - and long-term, plausibility to go with them."



The Secret: When the blue screen starts, you see "This display marks the beginning of Microprose's trademark entry into video game development in console 3D. A couple 320 resolution line-buffered graphics are seen off by a host of graphic elements. Apparently Sid Meier has a soft spot for screens."



Bill Stealey reveals that at Microprose, "we've always been worked up about the limitations of the hardware - we're very fond of the Commodore-64, for example - but it just doesn't enable us to produce the sort of game we're really looking for." Gene Lipkin cites *F19* as an example - "We're going far beyond that. Our system will have 400 colors on-screen at once and can handle 3000 polygons simultaneously on-screen, at 30 frames a second." You don't need to be a genius to work out that that adds up to 40,000 polygons a second - an extraordinary amount of power if it can really be produced.

Gene's is no doubt about that. "We've started test Comdex and the test prototype is an integral part of the end of the year. "What's in the process of building a computer test device to graphics capability. The first product will be a flight game and promises to be the most unique product the industry has seen for several years," he says confidently.

"The company have also looked carefully at dedicated microchannel consoles and again that there is a lot we can do in terms



Gene Lipkin, co-founder of Atari, talking with Sid Meier late at a recent Microprose press day. He's giving them great pointers on building something better than the state-of-the-art and home computer software development - and a possible future micro-console in 1989?

of configuration, but they're not letting any secrets out of the bag, apart from saying that "our cockpit will look like a cockpit. However, they are possibly drawing the line at attempting to create something totally realistic - "We can't get too carried away by reality," points out Gene, "because we're not selling reality, we're selling fun." As he explains, the company emphasize that although the hardware is of paramount importance, it will always be subordinated to game design and long-term interest.

THE HARD STUFF



Arrow Major "Red Storm" Rosenberg and Mike Monroney. Company employees are taken to verifying satellite spins across the "Chrysestra" this time and back to it in front of their offices and produce the ultimate flight sim. He wonder they want to see machine to work these on (best) The machine.

Left tip to the office when you're used to a real life thing like this one. It's not surprising that the computer has color and microprocessing almost quite before the past.

Right) Control console for Major Mike's beta. The Monroney control flight can be regarded to feature a full-size control display - but it's actually to have a many kinds of the old, mechanical and computer components. In the center of the this case and level of the console lower left of the display - maybe it will give you when you're getting on it the plane and the whole changing collapse in the center to the video-image output.



"We're going to do it the special Monroney way," says Major Bill, "with our kind of gameplay."

HOME MATCH

Monroney's last move is going to be into the company ones. Ever since the crash of 1983/4 says Gene, the market's been recovering. It's now worth around \$500 million dollars worldwide. A slice of that market is available to anyone who comes in with a hot product and we aim to be a driving force in the industry well into the 1990s. The story doesn't stop there, however.

Once you're got a working system capable of that sort of power, with software to run on it, what's to stop you putting it into the market? "Nothing at all," agrees the company. "There will be other business possibilities," in other words, a Monroney move? "We don't want to talk about those possibilities right now," they hedge, but the intention is obviously there.

A home move capable of that sort of performance, linked to the units in the console, could be a formidable machine. Furthermore, if it succeeded, it would be the first time in the entertainment industry that someone had come up with a hardware solution to a software entertainment problem.

Games development could end up driving machine production to once, instead of the other way round. Once that happens, and taking chip production prices start making dedicated hardware development a cheaper option, we'll really be entering a no limits game environment. ■

RED STORM RISING

Remember this month's ending. Here just received an advance of \$4 million for his latest book, and he doesn't even know what it's going to be about. His name's Tom Clancy and he's back, Red Storm Rising's the latest Monroney masterpiece. Could be well be seeing a Clancy game on the new Monroney console.

Meanwhile, Red Storm Rising is preparing for a pre-Christmas launch. The game closely follows the story line of the book, in which the Russians spark off a war in order to gain valuable oil fields following the destruction (by accident) of their own oil production facilities. Game-play features sub-sim sequences and some gritty fair play weapons as you strive to secure victory for NATO against the Russian bear. Politically a little dubious, perhaps, but stirring stuff and considerable strategic elements. Watch this space for the definitive review.



Before you ask, doesn't it feel off the mark with a software-driven hardware development? It's a bit soft, says Gene. But who cares? Here it is the days of Monroney can have the first quality, local Russian game home, in a true-blue British progression and one of a number of UK exports now waiting for Major Bill and the boys. Here too is a team of software experts, preparing to receive quality education for the part in the development of future products, including a performance - some of the new console experiments.

The odd-numbered game is not as unusual as most people think. While Basic games for the Spectrum or C64 are (commercially) unknown, the sheer power of the modern micro makes them a more practical proposition. As the output of STOS can now be printed out, a game like *Three* (pictured on page 16) can now be written in machine code. Meanwhile, games like *STU Club* (discussed left) prove that the higher-level language C is quite adequate for complex tasks. Truth is, you may be, you are, but Basic!

If you're going to write games in Basic, you've got certain fundamental problems to overcome. First of all is speed. The whole reason why the 100% machine-code movement caught on here is because of the vast speed increases now offered over the Basic of the early 8-bit home years.

SPEED

The power boost (achieved in by the ST and new, high-speed, PCs) meant that Basic was fast enough to carry game tasks. Things like high-score tables, option screens and game playtime (or, for sales, by which objects interact and scores could all be handled in Basic, the theory was, while machine code sub-routines looked after time-critical tasks like screen handling and colour detection.

The approach had problems however, problems so big that most programmers shied away completely. For one thing, the Basic interpreters caused attrition. The standard ST Basic was totally unsuitable for games, not least because of its heavy involvement with the hard-to-understand GEM operating system, while there was no CBasic standard enough to use it at all.

The only workable course on these machines, was to use a third-party Basic. In long as you have a compiled Basic - that is, one that turned you Basic listings into a machine-code program - it didn't actually matter whether any of the people buying the game actually had the same version, as any Basic of all came to that. (Some entries either in compiled Basic aren't unknown. Mandarini's ST arcade adventure *Super-8* was produced this way.)

There still remained the difficulty of actually creating the time-critical bits of machine code with the main Basic program. This is not helped by a simple fact: if you know enough code to write your own game and scrolling routines, you may very well be tempted to target Basic at the pain and code the whole thing. (See *Psychology* below.)

Mandarini's STOS wriggles out of the above problems very neatly. It's not actually a compiled Basic so you'd have to include a copy of STOS with any game written under it, but because STOS can be protected (loaded in other words the game-buyer won't actually be able to use it for their own purposes, bringing machine-code sub-routines, and a justification other because - in theory at any rate - you can't read them. Even the time-critical bits can be written in STOS Basic.

The idea is a simple one. Creating game graphics is slow as a conventional Basic, simply because it has never intended as a game language. Normally, you have to either plot points out down lines using special purpose graphics

AND HERE'S ONE I MADE EARLIER...

In the good old days, you could write a game in Basic and sell it. Then came the great micro boom, and suddenly games were unmarketable unless they were 100% machine code. Now Mandarini Software have come up with STOS, a new ST Basic designed specifically for writing games with. Are things coming full circle? Andy Wilton investigates.



A slightly weird space ship called a STOS space shuttle.



STU Club (Mandarini's) Well, not quite, but if you've got the bit, you'll know you've got the best.

sub-routines (very slow, due to PEEK/POKE graphics characters (data described in PEEK) used to screen memory (complex and not quite done).

Because STOS allows quite good scrolling capabilities (almost very specifically of games written, it doesn't suffer from these speed restrictions. In effect you have a lot of machine-code routines that you don't have to write out, because they take the task of Basic commands, can vary very easily with the main program.

COMPLEXITY

Speed and the only problems involved when you start using Basic for games. Things can get complicated too, prolonging the programming task and increasing the likelihood of mistakes - the precise problems most people hope to avoid when they turn to Basic.

For starters there's data handling to consider. While Basic arrays and DATA statements may be fine for game physics (as described below), they're far less suitable when it comes to graphics. Doing sprites in background into as a

AMIGA ASPECT

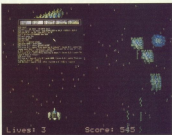
Write the ST and PC cases, AmigaBasic is really quite well suited to games - or at any rate, almost as well suited as Basic's going to get. Conventional graphics commands run at quite a healthy speed, while the built-in routines available could be very useful in arcade-style offerings. (A task, for those in the dark, is a little object - a kind of free-form sprite handled by the Amiga's custom hardware.) AmigaBasic games probably wouldn't sell even at budget, but for the hobbyist they're a pretty attractive prospect. Above all, they let you avoid the labyrinthine complexity of the Amiga's off-intrusive operating system!



view of numbers in BASIC statements not only takes up some of space but causes some readability problems. Quite simply, the BASIC statements don't look like anything at all, let alone the control graphics they represent, making the numbers not fit the form, especially on a terminal machine like the ST, which by the nature of a text. Make numbers or digits less conspicuous and you can't not write all this code.

The traditional answer is to use some kind of quote editor utility, and either load the results of the text edit when they're actually needed to dump them into the main program as BASIC statements (a commonly available facility). The STOS answer on the other hand is to provide you with a bundled quote editor (available from Basic, along with facilities to make the data automatically load and save alongside the program that's to use it. The system for doing this isn't explained too well in the ongoing STOS manual, but its powerful and a very good alternative to commercial products.

The other big complexity problem is that some programs like Brain games are almost without exception, huge. Even with STOS's directory commands you'll end up with a real lumbering giant—so letting a try to write anything comparable to commercial games. If users without prices need not apply!



Editor - one of the three word games supplied with STOS. The text of the screen, indeed, is arbitrary (and so up, it has at least show what STOS can do. (Screenshot of a few of the many many lines of Basic needed to obtain even a single game from the Editor.

ARCHIE ANGLE

The Atari Acornmate really is a special case in all this, because commercial Acorn games are as often as not, written in Basic. The machine's design - Basic V - isn't particularly aimed at games writers, but the sheer blinding speed of it more than makes up for this. Benchmarking would suggest that Basic V on the Acorn is at least comparable to machine code on fast IBM items, in fact. Of course, shelling out £200 for a machine and getting 3-bit games performance may not represent the best value ever!



QUALITY

By definition, machine code is the fastest and most compact way of doing any computer task. When you use Basic - or any other high-level language for that matter - you are trading off quality against programming time. When you're dealing with a simple idea like Tetris, Asteroids or Tetris the quality drop needn't be noticeable, but you'll never write Mines or Clones Command in STOS. They wouldn't run fast enough!

You probably won't write Tetris either, given limitations being what they are. Though STOS can load data from disk and use straight data-comparison techniques, you're still limited to a single 500K file for normal distribution purposes - and you've got a lot to fit in there!

Fortunately the tagged STOS quality doesn't look a right in its favoured handling about-though its collision detection, is its genius. In the main, STOS relies on testing entries - drawing rectangles from around sprites - to determine whether objects have collided. If the entries aren't key, there's no collision. If they don't, there isn't one.

This leaves the programmer with an uncer-

tainty: when does her/his

code make sense? (a) give Basic visual feedback (b) give them visual feedback? Clearly (b) is going to look ugly, but (a) will be a great much less often. In case (b) you see get collisions even when objects aren't touching, you'd be able to) you can fall to get collisions when they definitely are. The result is almost bound to be unsatisfactory, unless you discard the built-in detection and write your own system.

PERFORMANCE

As far as professional acceptance goes, STOS chances in the UK hit-zone market are also mixed. The reason for this isn't by no means all protocol cases, but how to do with attitudes.

Like professional programmers for other, keyboard-oriented don't like high-level languages in a job, and would rather program in code even when neither speed nor compatibility is crucial. They expect to be in total control of their target machine, and don't even like dealing with operating systems when they can avoid doing so. A system like STOS, which gives from

only a vague idea what's happening at all, is highly unlikely to succeed.

As for its software license (see commented STOS games would have a hard time of it. Many better software is appropriate with the big house, and even with the flexibility that STOS offers is likely to be viewed as technically limited. These new generations or production costs, the house will also quite readily be wary of porting STOS games because of public reaction. STOS games are fairly substantial, but they cost very a price exceeding their value. They cost well, in an industry that's so in love with feature not performance, but potential buyers will.

THE BOTTOM LINE

As this says about it, STOS has a lot to offer the hobbyist who knows and loves Basic. It might do better a few people learn history writing (it'd be better, indeed, but unless you know anything about logging, don't know). The remaining question is how far it does them an awful lot there to your money - it could keep you out of trouble for months - but STOS is unlikely to make you happy.

As for non-hobbyists, those on the whole, it remains doubtful that Basic will ever be a very useful language to work in. Indeed, the comment STOS may have written a knockout-style game or a key using the system, but a competent programmer could probably manage much. Be come fast in machine code. What takes the time in producing the truly novel sort of product people will shell out £15 or £20 for, and if anything that's going to be harder rather than easier in any form of Basic. ■

HOW MUCH AND WHEN?

STOS is currently available for the ST only at £29.95. Though an Amiga version is a possibility some time in the New Year.



HOSTAGES



A urgent phone call. Terrorists have overrun an Embassy, taking hostages. As head of the Terrorist Intervention Central Team it's up to you to regain control. Under cover of darkness, place crack marksmen around the Embassy; get your Paratroopers onto the roof ready to assault down the building, entering the Embassy through the windows. Now comes the tricky bit.

How do you get what it takes to win in a life or death crisis? Can you effectively co-ordinate six Commandos? Can you second-guess a desperate group of terrorists and get the hostages, and your troops, safely out of the Embassy? There's only one way to find out.

NFO GRAMES 



THE DEVASTATORS

This month Andy Smith leaves a trail of devastation on his way to the chops and ends up in court. A quick game of footie, then it's off for a stint as a vigilante duck.

DEVASTATORS Konami 30p

At the 30p suggests, the gamers get of intense violence. It's an shoot 'em up/stealth style game, but your character's viewed from behind instead of above. You've got seven missions to complete, all of which involve infiltrating enemy bases and wiping out the enemy guards that come rushing towards you from background to foreground.

You start the game with a functioning gun and a limit of grenades, but by slaying the enemy soldiers that are dressed in yellow, you can pick up extra weapons like rocket launchers which come in handy for destroying towers that house enemy machine guns. And the bonus, you'll meet all the extra weapons you can get as you progress in the game, because helicopters, planes and tanks all make an appearance and your steady progress won't get up to the job of destroying them.

The graphics are nothing outstanding, but the perspectives good (it takes a while to get used to the range of your gun, though) and it's fun to play. Devastators has plenty of action, but it's not as hectic -- or as satisfying to play -- as, say, Operation Wolf.

Shoot 'em up (controlling a robot attack on a personal car). Shoot that enemy robot and you'll get another robot.

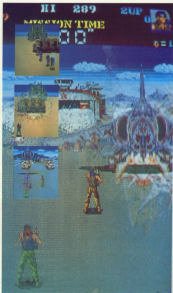
Shoot 'em up (steep) (see how low fell)

Shoot 'em up (in two player mode). That player's injured and ready to be destroyed.

Shoot 'em up (steep)



Shoot 'em up. You've just destroyed that machine gun and now you'll get to go in to make those soldiers.



TATION GAME

EXTENDED PLAY

■ Brief glimpses of some of the latest games

CENTER COURT

Sega 50p

The viewed from above tennis game can accommodate up to four players and gives you the chance to play either men's or women's singles or doubles. You've got three basic shots to use, including slice and lob. The overhead view makes it tricky to judge when to make your shot, and unless you're a real tennis fan you're probably better off finding something a little more exciting.

POWER DRIFT

Sega £1.00

This one really is exciting. You drive a large cab and land faster yourself in with the safety belt and prepare for a thrilling high speed race in a futuristic car-cum-to-Kart. Power-Drift combines all the best bits in Out Run and Bugge City and comes up with a terrific driving game that looks set to be a winner.

HEAVY BARREL

Data East 30p

The one or two player time-shifter like wheel on it gives you all the usual trimmings - extra weapons, huge enemies etc etc. Good stuff, but it's not outstanding.

KICK OFF

Jaleco 30p

Football games are ever popular, and in this one you control a full-strength international team, that off-ways to the old sideways on view as opposed to the current trend of overhead views for football games. The most outstanding feature of the game is the football that looks about 100ft in diameter!

FORMATION ARMED

Pillars/Fichtelbush 30p

The vertically scrolling shoot-em-up has some good looking backgrounds and Selenarion-style battles. You're firing a spaceship, then, and you can pick up loads of extra weapons like bombs etc. It's good, an original, best.

DYNAMITE DUX

Sega 30p

This one has got to be in the running for the entry-level game of the year title. You control a bloody Woodpecker-like character

who's wandering around the streets looking at skulls from a host of cartoon-style adversaries. To dispatch the baddies (which include dog and mouse heads) you simply punch them, they then fly across the screen with their tongues hanging out.

The graphics are all very good, and if you thought Ball and Kick were dull - you ain't seen nothing yet. The Hi Score table gives you an idea of just how subtly varied this game is - most games say things like 'Today's Best Winner' or 'The Hall of Honour', Dynamite Dux's high score table lists them 'Best Friends', 'You're'!

SUPER RANGER

Sumo £1 = 3 plays

You start the game above ground at an air force base and you have to work your way through several stages that take you further and further underground. It's a left-right shooter that gives you a character to control and facilities to shoot. If you've ever played Flaming Thunder, you can't fail to notice the similarities in the way the character moves (jumping up into and off balloons for example). Super Ranger's great fun, but again it hasn't got any star quality.

P47

Jaleco 30p

The famous WWII American plane makes an appearance in the left-right horizontally scrolling shoot-em-up. You've got airborne and ground-based foes to contend with, including some non-evil forest tanks and battleships. Again, the game's fun but it's not going to get your heart racing too much.



On the first level you're in the thick of the action.



You're just about to go into battle with the first of the new and unusual enemies.

KURI KINTON

Taito 30p

The lefty version of an old favourite based continues in the crooked Selenarion-like old Kureki Champ game in which you controlled an on-screen Karate expert who had to kick and chop his way past hundreds of temple guards? Well, Kuri Kinton's very similar. You're travelling into an underground base and there it dispatches loads of enemy guards, by looking at pushing them (more out it moves successfully and a Selenarion-style POW or 'Oh' bubble appears). Kuri Kinton's a classic viewed similar, with the background changing as you progress further down through the base. The guards also become harder to kill as you get further into the game, and end-of-level guardians turn out to be tough control city experts, who can punish you if very quickly indeed if you're not careful. You only get one life in the game and your strength is shown at the top of the screen in the form of a meter that goes from full to empty as you take hits.

Kuri Kinton's a dull game, but graphics aren't anything special and the game styles very old but by today's standards. ■



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THE NAME BEHIND THE GREAT GAMES



INGRID'S BACK

...and are LEVEL 9 back on top?

INGRID'S Back is the latest in Level 9's series of attempts to win some would say get back! This position on the major retail-adventure publisher. Regardless of the outcome will know that in the fight against the company have been struggling since since they ditched Knight City - the last program using their new system, and also something of a disappointment. *Game Ranger* followed, but this has received a rather lukewarm reception, though undoubtedly better than its predecessor.

In the light of releases such as *Conquest* and *From the Hip* (coming later), the Level 9 reputation has been badly slipping. Can *Ingrid's Back* and *Conquest* to the full and put them back in the driver's seat?

As for *Ingrid's Back* is concerned, the answer is a tentative yes. It's not the most exciting game on earth, but it does make one very important point: level 9 are beginning to get in sync with the use of characters in their games and to program them very effectively.

The plot goes like this: Young Ingrid has returned home, to find that her fellow gamers are not anxious to reveal her when you're possible and his father's account of her life but they are all about to be invaded by alien forces (and/or Jager's return).

Ingrid decides to take action and does so in three separate books. The first game sees her attempting to get signatures for her petition against the invasion. The second sees a domestic battleground scenario as the games attempt to defeat the forces against the invading dragons. In the final game, Ingrid attempts to turn the tables on Quarkback and escape his monster stronghold.

PRETTY PRETTY

Is the thing you notice about the game are the graphics. They may not be as technically sophisticated as the big-name brands, but they are leagues ahead of *Level 9* titles and are heading with respect. They



will be great deal to enjoyment of the game and, because of limited multi-tasking, do not hold up the action too much while they're loading.

The next thing you notice is the implementation of the characters. In *Knight City*, there were people everywhere, causing general confusion and seriously detracting from the enjoyment of the game. In *Game Ranger*, things were better, but the characters - although generally implemented well - were still rather dull. *Ingrid's Back* puts all that to rights.

First, in the game the characters are well depicted and full of well character. Secondly, they have excellent programmed behaviour patterns that can easily be observed and add to the atmosphere of the game without being a burden on the player. Finally where they are involved in puzzles, the solutions are logical and satisfying.

The dual MPC (multi-player character) is your dog Popsy - a very useful friend who can carry out some surprisingly complex tasks of command. However, if you bother to read the scenario that comes with the game you'll also get a lot of enjoyment out of the other games, most of whom have interesting personalities of their own. In this respect the game has moved away from the rather vacuous tenets of *Game Ranger* and the meaningless gangsters in *Knight City*.

There's no doubt that the *Big* is just a fancy-schmancy bit trimmed all with gloss, and the like that well, this

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game succeeds better than most in putting them in a contemporary and engaging scenario. I can't wait to get my hands on *Conquest*...

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THE PILG'S GUIDE TO ULTIMA V

If you haven't played Ultima, check out this guide for an idea of what you're missing. If you have played it, check out this guide and stay alive!



GETTING THE PICTURE

There are three main areas of the game: the land of Britannia, the Underworld, and the Dungeons. Tackle Britannia first, then the Underworld, and put off exploring the Dungeons until you've save your character won't as you do.

Although the plot is devoted to the accompanying characterisation, it may take you some time to discover what your early objectives are. Concentrate on building up your character and you'll find the quests are revealed to you by (a) meditation in the letters and (b) other characters. In the latter case, characters won't actually tell you to do anything, but they will give you information which is likely to open up the next level.

GETTING STARTED

Your main objective at the beginning of the game is to build up your party and equip it properly. Create a single character from the main menu, and then enter the game, where you will find yourself in the company of Britannia and Isis. Do you feel to keep both alive until you find Lord British's castle, which is to the East of Isis but where you enter the game.

If your party die, you get resurrected but at a heavy cost in hit points and character levels. Don't worry too much about being killed off while you're still exploring the game, but at a later stage make a point of building up a party from scratch without having to be resurrected at any time.

Ultima is a rather annoying game in the way it SAVES the state of play. You can only keep one game position on each copy of your Britannia disk, and DOS/MS-DOS overwrites any previous save on that disk. For a number of complicated reasons related to gameplay which you will inevitably discover - the one cause problems coming from accessories.

TROLL BASHING

One of the most useful skills to practice, since it's a quick way of getting lots of cash and (useable) weapons. Stand your party on a bridge and hold down the spacebar. Soon the trolls will appear. Give them a beating, take their treasure, then hold up beside the bridge to restore your hit points.

At later stages of the game, when your characters are level 3 and above, this is an almost fool-proof way of getting vital resources. However at early stages you should be careful not to underestimate trolls.

Once you're stocked up with weapons, equip your characters with any particularly useful ones (especially armour) and carry the rest of the booty off to the nearest armourer to sell it. You can easily run up around 1000gp this way with a little perseverance and a bit of troll!



to the loss of your entire party. For example, you can SAVE your position on an island which you have reached by sea, only to find that just out of sight, while you were sailing, four white dragons of gale-like speed descend upon you. The result — a lot of inconvenience and possible death.

The only way to get around this is to make multiple back-ups and to be absolutely sure the following regime is recommended. Make two copies of your Britannia disk. Keep one in a safe wherever you use the other two for back-up by writing your position regularly as the following system:

1. Play with back-up disk 1 as the drive card back up frequently by typing `BACK` then `1` to save into back-up disk 1.
2. Back up every hour on disk 1 and do the previous twice — saving once into back-up disk 1 and once into back-up disk 2 (preparing BUD 1 is the drive when you've done it) — contin-

ing, of course, that your status has not deteriorated since you last saved to disk 2. If it has, reload the game and load up from disk 2, insert disk 1, and hope you have better luck! For more information on building your party and gathering cash and weapons, see elsewhere on these pages.

TRAVEL

ON FOOT

Simple, but takes longer. Time can be a crucial factor if you're short of food on the essential resource is used on a daily basis. Sorcery is one of the quickest and most depressing ways of losing an entire party, its also-possible.

ON HORSEBACK

There's a stable in East Britain, north of the

South-East wing of ground level. Just stand over a horse and hit `B`. You can gallop around Britain, you know. Note that horses tend to wander off if left unattended and may well disappear over a cliff by one of the following

POWER PALS

Check out the to recruit Jaana, New Magician (by marriage) to recruit Katrina, a powerful level 5 fighter, and Succubus. One for Geoffery, Swarms can be found in Britain, and later, Bows.

A useful line-up after a few sessions of play would be your own Avatar character in the lead, followed by Katrina, Joly, Swarms, Geoffery, and Jaana. Png Shaming is the first in Britain if you need him.

paths found near the entrance to towers etc. You can try looking in houses - you never know.

IN A HURRY

There are a number of important locations that can only be reached by crossing water. A skill in a suitably useful area and very cheap if you buy one in East Britain. Other sources (e.g. Captain Blyth at Mallow) are more expensive. Expect to pay around 100gp.

VIA MOUNTAINS

Essential for reaching a number of locations without the benefit of a mounted horse, and for quickly moving from place to place when you're in need of magical ingredients or food. The mountains are marked on the map supplied. They appear after dark and can be easily located by the pool of light they cast around themselves. Simply move over one when it appears.

BY SHIP

Expensive and hazardous, but essential for reaching Southwestern and other important locations. Make sure your party's WIS will be governed with open sails; mast and including lots of AM MCB to combat the effects of squall attacks as well as long-range weapons - see weapons and the like used to bring back out of sailing distance, preparing you with spells. Watch out for pirates! Legend to pay around 1000gp in East Britain for your vessel, and much more elsewhere.

BY MAGIC

Costing 25 PGB is an occasional useful means to get you over obstacles, providing there's a somewhere nice to land!

HOLING UP

Hold up whenever your characters are weak! In addition to the benefits of sleep, there are the chance that the land British appear may appear, making your hit points completely and even granting you a level if you deserve it. Don't hold up just to waste it, please!

INSIDE TOWNS

When you're exploring inside houses and buildings, here are some things to look out for:

Secret doors: these are indicated by a single illuminated panel showing in the cracks between bricks in the wall. Search in the required direction. They are usually locked.

Portals: you get found if you move outside of them, but sometimes it is very well worth it. Secret passages, stores of treasure and other items may sometimes be found on the other side.

Windows: always look through these to see what's outside. In some cases, you may get something (e.g. a hollow tree outside the village walls) which you wouldn't see otherwise. This could be important. In fact, one of the most useful weapons in the game is magic cast through by this method.

Traps: search them, especially the hollow ones.

Stairs: search them not once but twice - once

of each end. If someone's asleep in bed, you can find out what sort of character they are by looking at them.

Traps: the list of these grows likely to find it in time. Fall through it, but make sure you have some keys with you first. It could lead to finding a level.

As a general policy, always buy what you can afford from apothecaries and restaurants. Food and magical ingredients are hard to come, and you simply can't have enough of them. If you spend all your money, go out and hunting (see food) to replenish your resources.

TAKING CARE OF YOUR CHARACTERS

Full-level characters (up to 20 hit points) are very valuable so always put them at the back of the party. After playing the game a few times, however, you should be able to build a party consisting entirely of Level 1 characters or above (see food).

Weak characters can be protected using yellow potions but these don't always reduce many hit points and can in any case lead to that best-to-keep-them-and-the-MAGE spell for use in emergency during battles. Put a small fee-based (50gp) you can restore a character to full strength in Britain by looking him/her into the sea and then immediately taking him/her out again. (Not, eh?)

When single characters die, you can restore them by paying (expensive - 200gp) gold or by using a RESURRECT spell (identified by the music character MCI). Resurrection spells will actually bring a character back to life after a short period.

If the unthinkable happens and your party is entirely wiped out, then the party will be resurrected in a land British castle. You'll note that the ratings of the characters have been reduced along with their hit points. This is done according to a character's karma rating, related to previous behaviour during the game - so make sure you do lots of good things. The higher your karma, the less you'll have lagged off your ratings.

By and large, however, death to two or more characters should be avoided on an irreparable object - unless there's your last few hours and night of agony.

MAGIC

There are four simple spells that you really should make sure you have in abundance. These are AM MCB for cure poisoning - it's required and otherwise equally vital accessories. MAGE for boosting hit points when in trouble. AM SANCT for debuffing traps in chests but defined by unrequited aggression and AM DEM CURB. The latter is a useful but essential when attacked by dozens of skeletons, which can be either hard for low-level characters to defeat otherwise.

Make sure you don't waste a spell by getting it recharged unless it's vital. If you've got a fighter attached to the active character it's all too easy to make the mistake.

COMBAT

When you start off, the most useful line-up is to equip your rear-guard with slings, which you

POTIONS

Here are some quick potion pointers:

YELLOW - restores hit points by a variable amount.

PURPLE - during combat has a rather better effect!

BLACK - during combat, renders the user invisible.

RED - cure poisoning.

Don't use to pepper the enemy until their in range of your recharged hand-to-hand lights. Always make the most efficient possible use of the weapons you have by consulting the reference card and distributing arms efficiently.

At later stages of the game, concentrate on creating that weight distribution where maximum damage take-up through characters. A moving one with a short sword makes a good combination in a strong character. Equip your recharged with crossbows and use the slings for emergencies when you run out of magical firepower (oh).

Traps are a good source of shields and arrows which are otherwise rather difficult to obtain.

Make use that wizards are given to the stronger characters, who will make best use of them. It's worth paying for magic weapons - they really do make a difference - especially magic staves, which always retain to the fullest. Spiked shields and helms can be useful in containing defensive and offensive capabilities.

Things should always be used to be useful - they make a big difference but, alas, they pass after a while.

Finally, don't be ashamed of running away if you have to - especially in the Underworld where the opposition comes fast and hot. If you run away from an encounter the opposition disappears.

SHADOWLORDS

If a lone sound on entering a town or village, accompanied by a message relating to traps, holes, or obstacles, that there's a new, polymorphic Shadowlord somewhere to your North (and waiting to devour your entire party).

Shadowlords are there and do nothing unless you get too close, then they close in quickly. Once in combat, your party is more or less doomed. As a point of interest, you can destroy Shadowlords using conventional weapons, but this simply remembers later. The secret of getting rid of them is held by the Shards - but you've got to find them first. Characters in the game will help you here.

Don't enter a house under the influence of a hole - the occupants will trade hit points of your characters at every opportunity.

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SOUNDWARS

Mark Jenkins checks out three new affordable sound machines...the Kawai K1M (£395), Cheetah M56 (£299) and Roland D-110 (£550)

Synth modules are getting cheaper, smaller and better all the time. Now all you have to do is decide whether you prefer owning FM or LA synths, whether you want built-in drum sounds, whether you need multiple output, whether built-in memory is vital to you, and so on and so on.

In order to settle some of these questions, we've lined up three of the most recent affordable MIDI synths, modules, and we've taken a look at their feature-to-feature. The feature you have in common, all three are multi-timed, programmable synth modules, all need a 60-note or keyboard, none is expensive to buy them to be.

SYNTHESIS

Cheetah's M56 is the most traditional of the three synths, although it's the most recently released. It's an analog and based on the same Data Storage-Memory chips used in the Roland 5 and other classic keyboards. So you can prove what it sounds like - trumpet, brass, smooth or fat as desired. An oscillator mix knob lets you create metallic harmonic sweeps, and the Cheetah's specifications are smooth string chords, megabass tone sets, cutting melody lines or fast brass stabs.

Kawai's D-110 is the professional version of the MIDI module and stores its method of LA Synthesis. Annotated systems, dual wave sets create the start of each sound (the start of breath on the start of a flute or the snap of a snare) and a relatively simple synth section lets the human ear into thinking it's hearing a lot more of the same. Filter, built-in mixing modulation and envelope allow great flexibility, so the D-110 may sound like a complete analog synth in digital synth with speed 99.

Roland's K1 takes the LA system one step up to offer 256 sound samples, harmonically coded synth sounds and more layering possibilities, but doesn't offer the familiar filter. However, at the time, it offers the most impressive presets - huge wedges of sound with notes like Two Men, Sky and Transistor (rather very difficult to dig up with).

PERFORMANCE

The Cheetah is a more multistep, with each wave independently assignable in an array of performance programs. You can assign one wave to a bass sound responding only to the bottom octave of a keyboard, two waves to a string sound responding to the next two octaves, one wave to a lead line responding to the next two octaves, and



Kawai's D-110 - smooth, big sounds.

the cut voice to a silly sound effect responding only to the top note. Slide the cut of timing in a performance memory together with velocities and MIDI channels and you'll be the boss of the buffer.

The D-110's performance setup is rather flexible - a hot 32 presets which contains 64 waveforms, but sounds using any one of two ports can be either trim and most of the factory sounds use two. Potentially you have 32-note polyphony, but in practice you'll have eight to sixteen notes available, assignment a fiddler, although you can use Patch Reserve to make sure a certain part of your music always has enough patches available to sound properly. Again, every MIDI channel, sound and volume for up to eight Parts can go into a performance memory for instant recall. The D-110 is the only one of the three to have multiple audio outputs, and you can assign a wave to an output as well.

On the K1 there is a similar number of waves available and no multiple outputs, but you can assign waves to different stereo pan

positions and again with a white patch reserve memory with split points, layers and so on for up to eight voices or more.

SOUND EDITING

All three synths can be edited without external help. The Kawai's replacement of sound samples and envelopes (in files, remember?) is fairly straightforward to edit using the top panel crystal switch double-as-a mix control for up to four elements per sound. Although the Standard K1 editor for the D1 does speed things up and offers loads of new sounds as well, the Cheetah does it by edit using two pairs of buttons to select parameters such as their cutoff, attack time and so on, and to store the value.

The D-110 is basically supplied with loads and loads of unedited sounds - guitars, organs, winds, brass, wood, and so on. The synth may take a good bit but there are loads and loads of variations on the string, brass and synth settings frame. The Kawai's sounds are in many cases TOO powerful (you don't want to create a whole file soundtrack with one finger all the time, but it's nice to able to do so.) Although brass like guitars, strings and brass chords are all there.

CONCLUSIONS

Each synth has some unique features denied to all the others. On the D-110 there's a huge list of sampled brass sounds which makes up a sixth rhythm. Part Part 30 when you're composing with it separates. Many professional musicians have abandoned using drum machines now, and for very good reasons. If you love your drums as all part of the



Roland's D-110 - using samples as waveforms to create some stunning sounds.

music they get stored away when you save the rest of the music, they get edited seamlessly if you cut a few bars out, and they deal with one problem in synchronizing drum machines and other gear. The D-110 and its stereo outputs let drums allow you to work out just this way, composing drum parts on your sequencer just as you compose musical parts. Very good—and it couldn't agree you the cost of a drum machine. This means the built-in mixer, which can be assigned to any of the instruments or drum voices, and some built-in stereo output despite the D-110's not having its own built-in sequencer reflects just a rapid view of what the things capable of they're intended.

The Cheater's sequencer (usually not at its worst) Most of the modern digital synths have one remarkably intelligent good old analog storage, items and filter settings, as if you're not the kind of sound, the M-10, as well as you. Its notes may seem a limitation—but you can always buy another M-10 and use its MIDI sequencer feature to pass them up. The Sound, as well as sequencer, seems to operate in happens. If you want to make an excellent sequencing, mixing, and editing sound with one target and one stereo output, this is the one for you.

CONCLUSIONS

Now you decide: your choice, but remember that going to the more expensive D-110 may save you the cost of a drum machine as well. If you like the D-110 but don't prefer it, the earlier MT-12 offers much the same features but no separate outputs and no sequencer editing (sequencer, however, and other useful gear is included).

If you prefer a more relaxing to read, you may like to visit a month or so for the D-10 which has ELM or JV beyond especially with out the external power supply of the D-10. And if you prefer digital to analog sounds, you may like to visit to Cheater's new release, a single-unit synthesizer-digital synth.



And if you can't stand it any longer... You probably need the new budget keyboard stand distributed by John-Morley Steves and available through any of our music shop dealers. Combined K08001 is a single keyboard stand with height and adjustable from 70cm to 100cm, plus an extension for a second keyboard numbered K08002. For use 024-95.

BOOK REVIEWS

Learning about MIDI can be a real headache. You can always check out the MIDI Makefile article in the early issues of ACE, but the more extensive material you can try your hands on the better. Over the next couple of months we're going to take a look at some books which could prove a mine of useful information for anyone interested in applying MIDI to his or her use by Ed Leonard Publishing who may be contacted on 01-456-0500 for the name of your nearest stockist or ordering information.

THE SAMPLING BOOK

■ £11.95—Steve de Furuzze Scacciatelli

An ideal introduction to the theory and basic nature of sound sampling. Not too machine-specific, it explains sampling terms and goes on to give experiments illustrating various sampling techniques such as looping and truncation (chopping bits off to you, mate).

I also deal with mapping between MIDI notes channels onto different samples and then goes on to more advanced topics such as stereo sampling, multi-options types and techniques for producing 30+ channel sampling units, understanding of sampler specifications and so on. Overall, highly recommended if you're puzzled about sampling at home but brought your first sampler and find the handbook not so helpful.

CASIO FZ-1/FZ-10M APPLICATIONS

■ £10.95—Jill Scacciatelli Steve de Furuzze

A bright and easy-to-understand guide to Casio's powerful 10-bit samplers. The book starts with basics of sampling technique, then sets the long FZ-1 menu display before your very eyes. This goes on to give a series of experiments to help you get into the machine. Simple editing, digital synthesis, various advanced sample looping techniques, playing with LFO modulation and recording, split and layers are all covered, and if you're spent over £1000 on the machine, the book can be regarded as an essential reference.

THE MIDI RESOURCE BOOK

■ £14.95—Steve de Furuzze Scacciatelli

An 44-column softback volume in a guide through the MIDI world and basically regarding all the MIDI standard functions as published by the International MIDI User Association.

Every MIDI connected a hard and its equivalent is handwritten given. In addition, typical solutions to system-exclusive dumps and sample dumps are given, and there's a complete directory of all the standard MIDI notes including Manufacturer's ID numbers (do you know that 49H stands for 'Manufacturer's ID for 'Manufacturer'? What do they mean? I think you should be told).

System Exclusive references for companies, including names and addresses are included.

and there are tables of how to interpret the MIDI implementation charts, you'll find it most user's manuals. There's also an index helping you find information by reference to other books and video in the series.

Lastly, there's a list of MIDI manufacturers. American electronic music studios, studios, books and so on. The books, which is able to get them the new MIDI specifications but a by no means straightforward enough in implementation—its really a MIDI designer's reference work.

THE MIDI IMPLEMENTATION BOOK

■ £19.95—Steve de Furuzze Scacciatelli

A valuable volume to the above collecting the MIDI implementation charts from scores of synthesizers, mixers, samplers, drum machines, software packages, and so on. Includes notes and more. Not exactly light reading, but, if you're in need to know whether the Roland MPU-401 MIDI Channel Filter Converter for the Arranger Synthesizer (it doesn't) or the King 1001 is playing up when it does or doesn't connect after a month's use, it's worth it.

THE SYSTEM EXCLUSIVE BOOK

■ £19.95—Steve de Furuzze Scacciatelli

Another valuable volume—doing very much the same for System Exclusive notes. If you're trying to write a program to record a MIDI sample dump from a Prophet 2000 into an Access Architecture, then the data you need to create can you're getting it all.

ROLAND MC-505 DRUM MACHINE SET-UPS

■ £1.95—Tony Fryer

Better expensive to a 14-page thin book, but basically a really simple, low-cost-oriented and immediately accessible version of the Roland Hit Manual. If you have more money to spend than you have time to waste learning a new machine, this could be the one for you. The same can mainly apply to the YAMAHA DX7 (MIDI SYNTHESIZER) SET-UPS and ROLAND MC-100 (SEQUENCER) SET-UPS. The latter however runs to a big 46 pages (the time thought that the MC-100 does not have more than, most books that time.

MIDI PANEL OF EXPERTS

You've got a micro, you've got a MIDI interface, you've got a synth... So you've got music, right? Er, well not necessarily...as your letters to Music Doctor Mark Jenkins make clear.

This month's advice and guitar concentrate on the Atari ST level on the Casio range of MIDI synths and some keyboards. Keep in mind, though, that while there is still help and advice for at least a decade to try-out for those willing to run computer music on the Commodore, Spectrum, Amstrad or any other variety of well.

I ran an Atari 5050TTM and Casio F7000 and recently bought Motters's Super Conductor software. Unfortunately I found that the Casio, purchased at great expense, only transmits and receives messages in MIDI mode 3 while Super Conductor only receives and transmits in Mode 1. Is there a way I can get round this? If not, can you suggest any alternative packages that would work in Mode 3?

JAMES WAINMAN, Edinburgh

MIDI modes have always proved a little baffling and less since the way they're defined was changed shortly after the MIDI standard was launched. MIDI modes don't have too much to do with MIDI channels in fact, whether it's used or gated, and in some cases the mode can only be changed by a signal coming in from outside the unit in question - you'd seldom find a tap button marked 'Change Mode' on a synth, and often just a line towards the back of the unit's manual tells you what mode it can dip into.

There are four true MIDI modes, defined as follows: MODE 1: Mono on / PolyMODE 2: Mono on / MonoMODE 3: Mono off / PolyMODE 4: Mono off / Mono on which Mode 2 is seldom used.

Let's look at Atari's Casio first. In fact the works on any of Models 1, 2 and 4, which are more simple known as Omni. Poly and Mono. In Omni mode the Casio will receive and play notes sent to it on any and all of the 16 MIDI channels, up to the limitation of its 16-note polyphonic capability. All the notes will use the same sound, and if you try to send notes from eight notes of one note, only the single next sound.

In Mono on the synth can only receive in Poly Mode 3 and can use the synth in poly attention to only use MIDI channel 1 (and 2, in 80, again playing polyphonically. So if you send a monophonic line from the MIDI channel 2 in Poly mode, you'll only have the channel.

While the Casio's eight-note polyphonic in Mode 3, you'll find in Mode 4 (Mono) that you can only play up to four notes at once, but they can all be controlled by different MIDI channels and can use different sounds. To get into this mode (never very clearly explained in Casio literature, but the

sole button, and then, the MIDI button, use the cursor to assign a different MIDI channel to each of the four available voices, and if you change the sound selected each time, you'll find notes, and if you change the sound selected each time, you'll find that sound stops taking on to each voice and MIDI channel as well.

So to get to the solution of James' problem, he could either get into and play back the bank of eight-note polyphonic information with the Casio, or buy lots of monophonic information on different channels with different sounds if desired. Any instructions aren't in fact in the software Super Conductor is every bit as good as 6400 - plus packages such as D-Sub-Motors in the latter programming area, allowing you to change recorded information to any MIDI channel as desired on all down the left-hand side of the display.

BRIAN WALLIS of London has similar problems, having set up his Super Conductor and Casio C2100 and only obtained sound on the computer's internal sound chip. What's the problem here? No stores (especially games on the same again unfortunately) but one thing for sure - if the computer's internal sound chip is playing every-

thing, that means none of the musical parts are assigned to its outgoing MIDI channels.

Make sure a couple of tracks with active data information are assigned to a couple of tracks with active data information are assigned to suitable MIDI channels (say 1 and 2, again down the left-hand side of the display) and then choose a suitable sound on the synth, make sure it's in Omni mode (which will allow it to play all channels) or in Omni on Poly Mode channel 1 or 2, and poly cheap. If it still doesn't work, you may have a dual MIDI line (perhaps even the divided cross-wired type) or even a dual MIDI output on your main (you are connected from MIDI OUT to MIDI IN, aren't you?)

NECK STOCKS of Woodbridge has handed Flight ACE 101 and come up with the following alternatives: the identity of 11 on ST requires with longer order 5100 (2) adding software for the Casio C2000, (3) a sound sampler with MIDI that's cheaper than a whole new synth, (4) a company marketing D001/07 notes on disk, (5) a low-cost high-quality MIDI chain machine, and (6) information on how video data transfer for the DX synth work.

Choosing a hardware bit of used brass, wired for sound and fed up on its sub-machine gain in our underparts, we depend as follows: 1) Midstate Super Conductor 2) CT Analog from Synthesizer Music, 01-464-4123, 3) Sabers' Pro Sound Designer with Pro MIDI adapter, or Microsoft's ST display in its 14 MIDI version attached to the second PC (line or display) Detail with higher quality and added editing/protection features to be handled at Christmas, although neither of these would match up to a commercial sampler module. 4) by MIDI music, 50 Bonnington Close, Liden, Stroud, G10 5BB, tel: 0783 45877, 5) Chassis's model now on its way, or the Roland TR05 now at second-hand, or a Erwin Portage, 6) you plug any console player into the synth, get it



Casio's C2100 - a popular MIDI performer in the budget class.

neely to accept data, play the tape, and WORK, now sounds.

JOHN WOODCOCK of Woodbridge wants to know, among other things, about MIDI modules under £200 of which there isn't a good selection. You can of course get several excellent MIDI keyboards below that price, but expanders options tend to offer more features and come at a higher price. Apart from those in the market today, however, of the sorts include Roland MT-10 (5400) or so) which will offer limited multitrack playing plus banks of sampled drum sounds, or the more professional D-110 (2500) which has wide programmability and multiple audio output.

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Sold 80? - old hat. Scrolling about on-age? - thing of the past. Put them games? - dead as a doan. If you want to know which selling the software stores might have all you need see these letters - RPG Role Playing Games are experiencing a surge in popularity that looks set to establish a whole new field in computer games.

So why the boom in RPGs? Computer games have always been a source of mystery and magic and has always been to one time absorbing and involved electronic worlds. Role Playing Games offered the ideal opportunity to create and control a character of your own. You could take them through adventures alongside other worlds and unpredictable waypoints. If you could get hold-to-beam touch together for the best games then why not have computer RPGs you can play on your own. This the option began, but can you really put down an RPG on a computer?

The single answer is no. Mainly because it is the RPG you have complete freedom to do what you want. If you want to read your character for a reason is tangled in the middle of a game you can - you make up the rules. Clearly computer games can't cope with that sort of thing because they require rules that have to be defined to strictly - you can't make them up as you go along.

Role playing isn't anything new, computer is gained here always been about assuming a role - be it a hero, boss, commander, king, magician or pilot. What's new is the ability to choose the character you want to be, create define, their abilities, and control more than one character at once. Before you had to do what the character game structure wanted you, to recent developments allow you to use characters to do what YOU want you to do. However, these advanced computer RPGs are still a long way from the real thing, so to create any realism, we'll call them CRPGs from now on, and leave the term RPG to denote a genuine role-playing game.

There are three basic elements that define CRPG:

- A complex world with many different locations, objects and exploration possibilities.
- Individual character attributes, personality attributes.
- Multiple characters under your control, each with different characteristics.

In fact, those principles have influenced more past games that haven't actually been considered as CRPGs. Take Dungeons &



ROLE UP!

Those of us who prefer a laser, a ship, and a screenful of aliens may turn up our noses at role-playing games. Arcade freaks Andy Smith and Bob Wade certainly did - but now they're changing their minds. Check out the laser-freaks introduction to RPGs and find out what's on offer...

WHAT IS RPG?

Role playing started a long time ago, but the release of the Dungeons and Dragons system in the early seventies is widely regarded as the real birth of role playing in the U.K.

What does playing an RPG involve? For a start, you need at least two people, and preferably about seven or eight. You sit round at the same time, and the game starts. One of the players is elected to be the Games Master - also known as Dungeon Master, The Keeper, or a hundred other titles - and the other players each create a character to control during the game. The GM's basic job is to describe situations in the game world and the players then decide on an appropriate course of action. The GM also plays various parts during the game, and his decision is usually final. Depending on how flexible the rules are (most are very flexible), you can decide to do almost anything with your character in the game that you wish. The game world is initially created by the GM, usually after reading the rule book (which is just about all you need to play a RPG) - and a few pencils and character sheets. Monsters and generally nasty things are often hidden in the game - as well as treasure and other goodies - for the adventurers to find, and often also are rolled and tables consulted to resolve combat situations. The dice are meant to represent the 'luck' element in the game. The game continues in this fashion, with game sessions lasting from a half an hour once a week, to all weekend benders (but everyone's either bored or decides they can't develop their character any further). The development of your character is a crucial part of an RPG, reacting to a given situation in a certain way can increase (or decrease) any one of your character's attributes, and as the game progresses, you find more and more options open to your character which are hidden in the game.

Scenarios or modules for RPGs vary greatly, but break down into two main groups - magical games and non-magical games. Magical games are often called FRPGs (Fantasy Role Playing Games) and are often set in strange worlds in time periods comparable to our Dark Ages. As the name suggests, magic often plays a big part in the game, with spells for fire and spells for ice being used at the time. Non-magical games are often set in the future or in the present day and magic is to be avoided.

All RPGs vary greatly in their make up and playing style and some people even use miniature figures, but the general idea is the same for each, and all you need to do to get into the RPG scene is either pick an existing game, or round up some friends and get your own game going.



It is in fact one of the closest attempts at a CRPG that is an arcade form. Its complexity goes a complete game world with many levels, traps, puzzles, enemies and objects. It has two player modes with different weapons, powers and characteristics. And importantly it has the idea of cooperation or competition between players.



Going still further back you have *Ultima* which, the fan-driven game fans beyond it if you control a team of characters trying to rescue someone (at least a group). *Ultima* conventional attempts of creating RPGs have come with *Wizard* and *Ultima* from *MS-DOS* and *Ultima* from *MS-DOS*. Both games contained the element of character control and a complex world. However, they've been criticized as being like reporting an NPC on a post. The two main problems are that only one player takes part and has to follow the tight path to solve it—there's little freedom in the way you go about playing and completing the game.



The all-consuming *Ultima* from Microsoft.

Despite the limitations that computers place on role playing, it's already guaranteed as a growth area. The likely results are much longer testing and complicated games, which mean the final split from arcade games. You won't ever see a role playing game on a coin-op because the two are incompatible. The development work required on such titles is also likely to drive the price up. The effects of role playing will also continue to filter through to the whole games market, increasing the interactivity and complexity on characteristics of all games. ■

WORLDS ON-SCREEN

One of the main reasons for implementing the RPG concept is to make use of your micro's processing power to manipulate the environment, the objects it contains, and the characters you meet there. However, when it comes to actually displaying it on screen, problems arise. We're still a long way away from being able to present a realistic 3D world on your monitor, so a compromise has to be made. The difficulty arises in any game where the fantasy element demands a high level of detail relating to the world you play in. Programmers have tackled the problem in a number of different, distinctive ways, of which the following two are the best known examples.

METHOD 1 - THE ULTIMA APPROACH

Ultima has taken you to the dangers of the *Ultima* Method 1's world. *Ultima* games use a top-down view on the world. An early example of this was *Wizard* or *King of Dragons*. The drawback with this method is that it can look very clumsy and unattractive unless the system can handle a large amount of detail. However, although a problem with other machines, the *Ultima* approach proves to



create locations that are a low-detail representation of the real thing. Here, objects are seen from behind and below. The single frame represents your party and the floor and you can never see characters from any direction—unless killed by water, enemies, or other obstacles.



Interior locations use a higher-detail representation of the real world, confined to show objects and other computer-generated characters. However, your party is still represented by a single figure.



During combat, the display changes to reveal the members of your party as separate figures, enabling you to issue separate commands to each member.

deliver some exceptional results on 16-bit monitors. The screenshots here are from an IBM with EGA.

METHOD 2 - THE BARRIS TALE APPROACH

The *Baris Tale* series takes a different approach—entirely from *Ultima*, using a front-on display that reacts as you move around. In this mode, you see only landscapes—no objects or other characters. During combat, you see a representation of your opponents. This approach was further refined to 3D bit maps from Method 1 because it doesn't require so



in *Baris Tale*, there's nothing about the street and all such scenes you create, the buildings used by you. Features make you to turn left or right and to move through them.



in combat. The goal is a direct representation of the enemy, not including the. During other parts of the game a similar display is used to show you individual members of your party.

much detail or graphics RAM. However, if hardware is becoming self-limiting - you would have to redesign the display to introduce greater variety in the format, unlike Ultima which simply requires to have such scenes defined in greater detail.

THE BIG BUCKS

The two most popular role-playing adventure games have to be *The Lord of the Rings* and *Ultima* since these titles to date and the *Ultima* series three titles to date. In addition, it's a pity it's very popular in the US but has not found opportunity here as Britain due to distribution and pricing problems. Produced by Origin Games it cost £85.00 (the same design reason it didn't end of the price and was withdrawn. All well.

The *Lord of the Rings* are programmed by Gregarious Productions, who have recently produced *Masterdard* and *Legacy of the Ancients* (see this month's adventure section) released through Electronic Arts, the same has been extremely successful. Inside *Ultima*, the principle interest a look, they and most as you encounter opponent after opponent. There are literally dozens of goals for combat purposes, some of which are direct indicators in their power to destroy the enemy.

One point about *Ultima* like it that you create characters in a manner similar to some real role-playing games - by the

AN ARCADE PLAYER PLAYS ULTIMA

Have you ever declared a dollar for a certain feat, and then admitted that you'd never actually lost at it? This kind of attitude is very negative and also very common. ACE's staff writer, Andy Smith, just CAN'T let it never like a serious computer R.P.G. So we made him play *Ultima V* - for long periods of time.

The result? 'I'd never really paid too much attention to the R.P.G. scene, thinking it was some extremely complicated business that looked like a lot of effort for little return. The fact that I'd never played a role-playing game before just shows how crazy it is to dismiss something once you've stuck a label on it and decided 'that's not for me'. It didn't take too long however before I started to enjoy playing the game, the characters became more and more believable, as did the game itself. The ability to do such a variety of things, and to wander off on little quests that aren't strictly part of your prime directive was wonderful. Now I know what he been raving, it made sure I don't mess out any more.'

framing of 'lose'. In other words, the computer assigns a random value to each of the character attributes in turn. If you're not happy with the results, you can 'throw again'. You can therefore deliberately set out to create, for example, an ideal-type character with high scores to dexterity and intelligence. *Ultima V* uses a completely different and rather unusual form of character generation, in which you answer various ethical questions on behalf of your character, who then receives various attributes accord-ingly. It isn't quite so easy to define, for

example, an ideal fighter character using this system, but it is certainly very satisfying all for itself.

We still hadn't received, at the time of going to press, a complete version of *Ultima V* (and *Ultima* Focus of *Ultimania* based on the original *Advanced Dungeons and Dragons* with a storyline taken from the *Forgotten Realms* scenario. It looks, however, to be in the *Lord of the Rings* - which means emphasis on fun and action rather than the intricate creation of a game-world with lots of character interaction and objects.

A REAL ROLE-PLAYERS VIEW

In the computer industry there is a lot of confusion as to what an R.P.G. is and what isn't. Most reviewers tend to assume that all role players are sword-wielding homicidal maniacs whose sole purpose is life is to rack up as big a body count as possible. What's often overlooked is the fact that there are many different types of R.P.G. and although some people prefer the hack-and-slay scenarios, wielding power hungry characters that kill first and ask questions later, they're in a minority. Most R.P.G.s would either develop the character's personality and act out that role.

CRPGs have so far only concerned themselves with the fantasy genre, probably because that's the most popular. *Dungeons and Dragons* and its successor *Advanced Dungeons and Dragons* are the most famous of the CRPGs, partly because they were the first and partly because the system is relatively simple. Some other CRPGs are *Middle Earth Role Playing*, *Warhammer Fantasy Role Playing*, *Advanced Dungeons and Dragons* and the list goes on. Some are more complex than others, but complexity doesn't make a good game, it's having fun that counts.

You don't have to restrict yourself to fantasy though, there's science fiction, horror, supernatural and silly R.P.G.s. Of the science fiction R.P.G.s *Star Trek* is probably the best known system. *Star Trek* is set in the far future when men are real men, women are real women and small furry creatures from Alpha Centauri are small furry creatures from Alpha Centauri. Other SF/RPGs

include *Star Wars*, *Star Wars*, *Star Frontiers* and *Flintstone*, although *Flintstone* falls somewhere between silly and SF.

There's only one horror R.P.G., *Call of Cthulhu*, and if you want a game with a better atmosphere this is it. *Wastons in Cthulhu* isn't the noble *Onyx* or *Tales* that you get in CRPGs, but it's sort of things that need only a nightmare, or the imagination of H.P. Lovecraft, whose novels are used as a basis for the game.

Games like *Marvel Super Heroes* and *D.C. Heroes* allow you to take on the persona of heroic people like Superman, Spiderman, Wonderwoman and any other super beings dreamt up in your own imagination. They have the usual looking for super villains to defeat, people to save and maybe a tiny bit of glory if they can get it.

Last, but by no means least are the silly R.P.G.s like *Burnin' and Burnin'*, *Burnage*, *Mutant Ninja Turtles* and *Boon*. *Boon* is cartoon based, *Burnin' and Burnin'* is about, *Burnin' and Burnin'* and *Burnage* *Mutant Ninja Turtles* concerns young children with mental odd-experiences.

Computer games are generally played by individual and so CRPGs are also designed with a single player in mind. R.P.G.s on the other hand are played by a group of people with one or two

characters each and there's far more interaction between the characters. Parties of CRPG also seem tend to be very colorful, don't argue and have no memory of what other characters do to them. If one of the characters in a R.P.G. started talking to other, or there was some in-party fighting, it had would break down and that character would find things going badly for him. Similarly in the *Lord of the Rings* you can fight other members of the party if you want to, but it's pointless and they won't attack back unless you specifically tell them.

CRPGs have started to move towards 'real' role playing games, but they're still got a very long way to go before they come close to even the most complex R.P.G.

Not all R.P.G.s are epic tales - this handsome young lad is just from *Ultima V* (see *Ultimania* for more details).





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ADVANCED COMPUTER ENTERTAINMENT

It's been a tough old month for letters, thanks to all that industrial aggro down at the Post Office. Still, the mail got flowing again just in time to liberate these choice missives, and what a bunch they are!

Judge for yourself on the issues of the moment. Is the Amiga 1000 a deeply wonderful machine? Are 16-bit games far superior to 8-bit ones - or possibly vice versa? And just why is it so tough to be an ACE fan down-under? Readers prosecute, Andy Wilton defends and ACE awards substantial damages. (Well, prices actually.)

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REBEL STAR ON THE BRAIN



For about two years now I have been considering just what the future holds for the computer games, in particular the refinements and improvements that could be made to the old means.

I mean, what would Elite be like with 3D sets that colour graphics and interactive communication with aliens, tanks and occasional etc. Think of the hours of fun playing *Utopia Murder* with all the sound and graphics of the

Amiga or the ST. It could probably be better than the arcade version in the hands of a good programmer.

Though all this may sound fanciful and maybe a little unnecessary there is one game I am dying to see in an upgraded format - *Rebelstar Raiders* - when I had my good old Spectrum two years ago myself and a friend would spend hours, after playing early into the morning looked in mental combat, plotting and taking vital moves, all to reach the ultimate goal of killing of the opposition. The game was quite simply brilliant in its subtle complexity. Now imagine if I could see it re-created on the Amiga with all the speed, sound and graphical precision of something like *Carrier Command* or *Blade*. I'm sure, no positive, that the game would be an absolute smash.

Raiders still rates as number 1 in strategy charts for the Spectrum. Though I have now convinced myself that it will never hold that honoured position in the 16 bit charts. So as my Amiga gathers dust my hand and I shall go on playing Raiders on his humble Speccy until the software houses see sense and release this or a more powerful machine.

John Garner
Widley



Good old **ACE** has something of a following in the ACE office actually. Jan, battle-hardened strategist Andy Smith reviews the best tactical magazine ever released for the Speccy, and quite remarkable value for money at £1.99. On a more general point, strategy games - and especially "tug-a-war" ones with loads of neat 78 bit graphics - are a common sense way of using your money, and ought to be a big boom area over the next year or so. Software houses take note!

Now from the editors of Rebelstar 2, Target's *Laser Squad* check out this issue's Review Section for wild news.

GAMES SHRETTGIST

Since you feel that your magazine should review both 8- and 16-bit games, how about a different review section for each? Your present system seems very unfair to the 8 bit games. How can you possibly expect a Spectrum game to compete with the far superior games now being produced for the ST and Amiga? I think your rating system should take into account the different capabilities of each machine. And I think you should have a "ten months" page on your PC games. Surely this is the time when a lot of games lose their interest.

Enough criticism, I am about to upgrade from my Spectrum to an Amiga 5000. I was wondering whether it is possible to port ST games to the same way as Spectrum games as the often asked for and forgotten. If this is possible, why do you not print them in your magazine?

Finally I think many games would benefit from screen scales so that more advanced levels could be reached easily and without having to travel through the rather tedious early screens. Such a system was often seen on early games like the *Blade* on the Spectrum format, but now seems to be obscure.

Burton Tom

Melkman

PS How about including *Deluxe* as a cover game? It looks fun.

A separate section for that game? I don't think that'll be necessary at all. *Deluxe* can wait the 16 bit machines new games like *STP*, *Rebels* or *Darkside* can stand up against such worthy 16 bit efforts as *Kawabata* or *Screaming Wing*. Machine power makes for superior games available, but most games still fail for short of the best. If anything 8-bit machines come out of the dust comparison rather well. Arts Happ

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SAVED AGAIN?



I think that your magazine is the best around and it is very enjoyable to read. To make it just that little bit more interesting how about adding to the reviews for Star 57 games by saying whether or not they will save the high-score tables?

One of the most depressing things about a good game like *Arms* is to get a very good high-score, type it in but it will not save. I personally would prefer to buy a game that saves a high score to one that doesn't, because this will help you to keep playing and look up those extra games.

Really, it can't be too hard for a programmer to make the scores save.

Take *The Great Game Masters* and *Osiris* for example, both completely different games but yet both save the high-score table. The really odd bit to the game, *How Many of You Have Written Down Those High Scores and Then Lost the Paper?* You wouldn't have lost the disk!

I'm sure many of you agree with me. How about a vote?

Colin Long
Miles

On the whole I'd agree with you, Colin, but saved high-score tables have their problems around the ACE office. In particular they tend to launch *Arms*, *Smith and Bob*, *Robot*, into *Arms*'s high-score tables which seriously damage their work rate and obscure their language. To make matters worse when somebody else in your club wants a quiet non-competitive title game of something, even a really expensive effort fails to get recorded because the high-score tables full of messages like 'AA AA! 8844! YOU BOBBIN' or 'WEE! SMITH IS A DARE!' Really, what ever happened to the spirit of sportsmanship and rivalry between gentlemen?

It encourages the software industry to put their backs up a bit.

We review the six-month and year values of a game, and you can't even make the same if you buy a game in Spring and play it all playing it in the Autumn, you can make it if you that spend some thing that'll see it through well over the year limit.

It's games certainly are possible, and we've been known to print the odd one in that being now unfortunately we're not often sent them, and even when we are they tend to be very cumbersome things. One problem is when you take a lot of getting round and 8000 machine code is bulky stuff anyway so the code listings are often too large to be worth typing in.

As for access codes, they're unfortunately a great idea in certain types of game. Who'd play *Star Sentinel* if it didn't have codes? Unfortunately they can actually detract from a game in the same way that easily accessible cheat codes do. Take *The Wanderer* for example, a game I played a great deal of this year. Once you've got the access code for Section 2 which could take you from a dip on the Q&A version you'll never need to go back to Section 1. There's a bit of a game in the fact it's a problem, and it

Details on a new game?

Mission isn't it's for a night, but of the utterly lovely, hardly addictive variety. If we gave it away our whole readership would be so hooked they probably wouldn't be able to stop themselves away from the keyboard when to buy the next issue of ACE? No, I think we'll stick to giving away mainly brilliant games like *Impossible Mission* and *Speedway*. Thank you very much.

GET DOWN AND LOG ON

It's up to the letter concerning the limited social life of the ACE'ers, I have the answer to the problem, or rather Computer fun.

We called *Playline*. Just grab a couple of cots, stick on some late music preferably the *Hot Shop* beats and log onto *Playline*, and there you have it, your best disco in your bedroom, bathroom, in underground cinema. You can have your party anywhere you want, even in a bathtub, monochromy in which you can't happen to be being, at the time your friend is taken prisoner by enemy forces, and you are called in to get him out... (censor, now what was that like really).

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gaffer, day in, day out. So go on, log onto the line now!

Michael Armstrong
Preston

Were not normally keen on going through pages to things here on the ACE letters pages unless we can touch for whatever's being plugged ourselves, and in this case we can't. But enough of *Arms*! What about *Playline*? (Obviously I reckon online chat services have their problems - they're certainly no substitute for a pub, in the best sounding - but if the alternative is yet another night watching help or making plans, they've got a lot going for them).

507-HIGH PRICES

In recent issues of ACE, there has been a lot of attention to the 'new generation' of computer games in multi-player games. In issue 57 in the section based on this theme, it says that the best and most practical method of linking computers together is with a satellite network. To me this suggestion is totally ludicrous. Who on Earth can afford a light to pick up the signal and who is going to put the obnoxious thing in their garden? The price of a modem is through, and beyond most people's financial capabilities including my own.

With the above taken into consideration, it is not surprising that the idea hasn't caught on. What software in hardware company is going to produce games and peripheral for the few who can afford it?

James Ball
Chichester

Our *Global Conflict* feature in issue 57 was dealing with games playing a lot better on the PC. It's true, James, but satellite TV is already a growing area of entertainment in the daily output before you can't fit your ball into just around the corner. Why could afford a video recorder or some computer five years ago? As for software or hardware companies supporting products for the few there's already a fair amount of it. The amount the Online game for modern systems started when modems were very cheap bits of kit wasn't they aren't exactly the cheap new come to that, but there's plenty of companies equipped with software around.

UNEMPLOYABLE

I find it bizarre the way some 16-bit computer systems boast about how technically superior their computers are to 8-bit machines. As right they are in some aspects such

as the graphics handling, sound, etc, but what about user friendliness? I own an *Arms* and find it a nightmare to program and informal chess. The idea of a brilliant drawing of *Garfield* on *Delta Park* it has been saved, but damn sure it will load into the computer. Coming back to the 8-bit situation, I remember how low you installed it on and thereafter anything extra you want to do had to be coded in programmed in. None of this getting lost in sub-directions or not being able to shut down unwanted windows.

Another aspect which makes the 16-bit version to the 8-bit computer is the possibility of a game. Many games designers are so concerned with the beautiful graphics and sound that they totally forget about the essential part of the game, the PLAYABILITY. Most you can't expect to be used for all games.

I feel that the *Arms* is pointed at a games machine is not being reached. How many times do you hear of an ST game being released with the *Arms* version to follow in the near future? The near future meaning the time it takes to download the program from the ST to the *Arms*. So I am delighted to see a superb game for the *Arms* by EA, namely *Interceptor*. For once the tables are turned and it is ST users that have to download a game that cannot have.

Nelis Campbell
Dunbartonshire

I know just how you feel after a couple of stating the *Arms* do simple downgrading. Well, The machine's a pig if you get it down it, and can be pretty annoying even since you have! It does seem a shame that sporting systems should have become so very complex when all that extra power and all those years of experience should have made them so much simpler. Maybe the next generation of modems will be easier to handle the *Arms* is at any rate!

I think you're being a bit mean about *Interceptor*. It's not the ST version! Well that they get so many other games too?

ARCHER ARSEN

When I ran the hardware upgrade guide in issue 56, I was considerably surprised and annoyed. It's not that the hardware section is wrong, it's that it's basically correct. It's the wrong sections that had me laughing the loudest in anger. More specifically the *Arms* machines column. Only two major games for the *Arms*! *Arms*! *Arms*! Do you know that *Arms* software only do *Arms*! *Arms*! have produced



thing to do is to get in touch with our Darwin branch. Either write to: **The Subscription Department, Future Publishing, The Old Barn, Great Pasture, Swanton, Somerset, United Kingdom, TA11 5BN** phone them on 0481 74091, or faxed if all else fails on a fax on 0450 54078, and they'll send you details of the rate you'll have to pay. For Australian readers though, I can give you the info right here. Send £24.00 to the address above and they'll put you on the subscription with us. Do make sure you get your money order, banker's draft or whatever it made out in pounds Sterling.)

Space Adventure Game which is set in Novaria and features mood-to-music and fast 3D solid graphics. It's called that pretty major! That's not the only one either and a steady flow is coming out. Taking over is a full-time look at the Intermedia 100 catalogue and prepare to eat your words! BBC Soft, Computer Concepts, Daves and many other companies which may only be known to Best owners are producing software in great numbers for the Amiga. There's plenty of art packages around and great keyboard/emulators!

I would like to say that the Intermedia discs have a very bright blue but because the machine is a new software company are shipping in black only maps. So to lookspage, look there.

Andrew Williams
New

Since you wrote that you should have seen our cover (Issue 32) feature, Andrew will tell that he has called you down a little bit though it's still worth allowing some of your points. Space

Adventure Game was a new one on us I must say, but we're aware of several other Amiga games. For the most part they're far from top-notch though, and don't even start to use the Amiga's enormous power - which is presumably what you'd buy the thing for in the first place.

By the standards of the other machines an offer to email to magazines, the Amiga is only selling over 50k copies like the ST, Amiga and 68k are swimming in software comparatively. That doesn't mean the Amiga game isn't suddenly loved, but there's no sign of it happening yet.

HEAVY METAL

I think your magazine is great except for one annoying problem: by the time it reaches the store in Australia, all the offers have expired. The current issue on sale is the June 1988 edition of ACE. Even your magazine subscriber offer expired over two months ago. You do not quote a price for an overseas subscription.

I cannot think of anything more galling than if I were to see my ACE card number in an issue which had expired two months before.

The monthly issues of other mags arrive on time in the first week of the month. Why does your magazine lag two months behind?

Do you use about your readers outside Europe? It would be a terrible pity if you did not, as I find ACE is very informative and always entertaining. Your high quality design and content would ensure your success in the world if you didn't treat everyone else as being unimportant.

Even two months late, ACE is always a pleasure to read. I wait eagerly for the July issue to arrive.

Sam Fung
Australia

BTW two months before you read this I'm about 40kth but we positively welcome overseas subscriptions. The problem is, we have so many different rates for assorted countries across the globe that we just don't have the space to print them all. In general, the best

AMIGA INDIGNATION

I own a Commodore Amiga and if I might say so, am a loyal ACE reader and I do admire your mag. However, several errors were printed in your hardware upgrade guide concerning the Amiga.

Personally I do believe that right here accurate information is essential since you point out what makes a computer different from its rivals. But lets go specific:

Models: Only the 4000 is supplied as a keyboard unit with built in diskdrive, the 6000, 4000, 4000B and 4000S are supplied as a PC-like structure, with separate keyboards. A note on the 4000B, which is an updated 4000, designed to incorporate new videopipes, giving the 4000B a resolution of 1024x1024 pixels in 4 colours, this of course without making use of the interleave mode and the use of a special monitor.

Displays and Sound

Resolution:

Lowest:

Normal

Up to 262x262 pixels 32 colours out of 4096
Interface up to 322x262 pixels 32 colours out of 4096

EMM (Extra-Multimedia Mode)

Up to 262x262 pixels 64 colours out of 4096
Interface up to 322x262 pixels 64 colours out of 4096

EMM

Up to 320x262 pixels 6096 colours on screen
Interface up to 322x262 pixels 6096 colours on screen
(note not every pixel can be a random colour)

Bit-ns:

Normal

up to 704x512 pixels 16 colours out of 4096

High-res:

Normal

up to 704x564 pixels 16 colours out of 4096

English flags do not have a good name concerning hardware. If I might say so, if you want to know something about that you'll have to consult for example a German magazine. But of course when getting into the games world there are the English flags as soon.

Oh I hope you will get hardware's chance, I loved the Flare-Disc article.

as a matter of fact.

Rob Tolman The Netherlands

I don't know whether you're referring to the old or new-book Hardware Upgrade Guides. Well, but I've got last issue in front of me and I can't really see any mighty Amiga inaccuracies in it (except for a slight mix up over the number of sound channels it has - we've fixed this one). The resolutions are quite OK, we list the best compromise we can make between drawing screens in figures on the one hand and being precise on the other. The figures don't reflect the absolute theoretical limits of the hardware, but rather the practical limits worked to by software and imposed by monitor capabilities. They cover the modes normal people can actually use, rather than the ones that take C or 68000 programming knowledge to get at. German magazines do indeed cover the latter very well, but I don't really think this benefits anyone greatly - not when they're making buying decisions, at any rate.

AMIGA INDIGNATION REVISITED

The people that made up the last Hardware Upgrade Guide must have got a few screen modes, calling an Amiga 1000 'crash OK'. It isn't an Amiga and the screen is based the 'Miracle of the Eighties' (The Atari ST, one has to believe, if it reads your mag regularly) easily when I come to graphics and sound. I think it is even better than the 6000, with the separate keyboard and the 'brightly test up together' with the disc into me, Robert! I I don't without problems. It is a mistake for Commodore not to continue the 4000B series, if they would like the reader to modify it, it would fill the gap that exists between the 4000 and the 4000B. I thought mine almost two years ago with a 'party' memory of 512K (the same as the 5000TPM, I thought?) and it still is sufficient for the majority of software on the market.

L. Snyman Belgium

Having used both an 41000 and an 4800 extensively, I have to say I find the 41000 distinctly cruder. The separate keyboard is a fair of course, but the memory as standard is only 256K (you, party) and the extra 256K doesn't even get in play to get it really. The ability to use other, more-crash-proof versions of the operating system is hardly enough to make up for this as far as I can see. And in things like the lack of Extra-High-Resolution mode and you've got a machine to put below, not above an 4800.

● If a particular game's driving you up the wall and you don't think you'll be able to retain your sanity unless you can beat it — here's the place to look. Cheating's what it's all about sometimes, so don't feel bad consulting the *Draconus* and *Marauder* maps. Don't get hit by a guilt attack as you type in the *Alien Syndrome* poke. Just do it! And show the computer who's REALLY boss!

OVERLANDER

■ Playing tips for the ST version of this destructive driving game.

LEVEL 1

1. Select counterfeit money.
2. Fuel up to 14 matches on fuel gauge.
3. Get fuel, 4 batteries, 2 cars and 2 flare bombs.
4. After the first takes have passed, stay close as the gnomes will kill you.
5. Destroy trucks from air for easy as possible.
6. Slow to 100-150mph to negotiate barriers.
7. If you stay in the middle lane when you come to the wrecks, you will not be damaged.

LEVEL 2

1. Select smuggled official.
2. Fuel up to full tank.
3. Buy flamethrower, a few cars and bullet proof cars and flare bombs.
4. After 100 miles there's a nasty surprise in the valley below.

LEVEL 3: OVERLANDS

1. Select plutonium.
2. Fuel up to half full (if you have flamethrower + 2 you don't then fuel up to max).
3. Buy cars, bulletproofs, flare bombs (as many as you need them).
4. The toughest part of the course is early on, so don't be afraid to go back with the flare bombs.

LEVEL 4: THE GUTTER RUN

1. Select illegal chemicals. Fill up to max level.
2. Buy maximum cars, bullet proof, as many cars as you can afford and flare and smart bomb (depending on your bank balance).
3. The barriers are everywhere on this level and you will need to be at 90-100mph to avoid them all. Try to save your cars until later in the level.
4. So you didn't like the "gutter" play? In levels 1, 2 and 3? The plays in level 4 are real mean. Smart bombs and bulletproofing are your best chances of survival.

LEVEL 5: GRAVEYARD

1. Choose the President. Fill up to maximum fuel.
2. Buy everything, \$40,000 option plus whatever you feel left from the



last level should be enough. Lives should be on the top of your shopping list followed by cars, proof, (bribe, armour and weapons — don't bother with the wheelblocks)

3. Do the same as for the last level. Because your car's at maximum everything, the level shouldn't prove to be too difficult.

J. Marshall, Devon.

THE GREAT GIANA SISTERS

■ A short and sweet tip for the C64.

Press the keys **A**, **R**, **N** and **M** all together during the game to advance a level.

A R N M

Jo Potts, Ailingham.

ARKANOID II

■ A little tip for Amstrad but 'n' ball fans.

Once the game has loaded, press the keys **n**, **s**, **d** and **f** all at once. There should now be a border around the screen. Now start playing the game, and press **ESCAPE** once at any time during the game and the walls will appear. This should work on every level.



Jason Gair, Wakefield.

CAPTAIN BLOOD

■ Having trouble finding the clones?

Here's a couple of tips that should make your life easier.

1. As soon as the canyon is spotted, immediately go left and up, then flying over the canyon will do the trick to avoid a crash. You will then be in another canyon that's usually wide enough for you to fly at top speed without worry.

2. To find the first clone, load the game again and again until you are at the planet Bow-lee (John's planet). Ask Hako about Moon. He says "No". Ask Hako about-clone of Crows-Ute. Repeat Hako. Ask Hako on an unvisited planet. Go to Crows-Ute.



Start a conversation about Crooks-16 and he will tell you the co-ordinates of four of the Crooks-16 planets so you can destroy them. Kill the Crooks-16 (you may be able to extract information about the other Crooks this time). Go back to Crooks-16. Ask for the co-ordinates of Sines. Go to Sines. When asked what answer "Impossible not Sines". Now say "1010" and he will give you the co-ordinates of planet 256 (the next Sines planet). Go to planet 256. Talk about Antenna and get the co-ordinates. Go to one of the other planets then get inside the Antenna to unlock. Drop the Antenna of an uncontrolled planet. Repeat for all Antenna. Go to planet 256. Sines will give you the co-ordinates of where Mike has gone to. Go to one of the Red-head planets and ask him the co-ordinates of Mason. Go to Mason. When asked identify say "Yes". Before he goes he will say "Larger planet rendezvous 01 forbidden". Go to the new Red-head planet. When asked the identity of Mason's planet say "Larger planet rendezvous 01 forbidden". He then tells you the co-ordinates of Number 1 (Sines's first class). Go there!



Kevin Hig, Barcelona

ALIEN SYNDROME

With these four ST cheats you'll now have no excuse not to do really well.

Type the listing into ST base, insert a blank disk and RUN the program. If the "ALSYND-01100" will be saved to the disk. RUN the program and wait for the disk drive to stop. Now insert the Alien Syndrome disk 1 into the drive and press a key. The game should now load normally with whatever cheat(s) you selected.

There are four cheats in the program; each has its own list of data (lines 0 to 548). Simply omit the lines of cheats you don't want but keep a copy of the basic program so you can experiment with different combinations. You can include all the cheats if you wish but you may find that a little too easy!

- 10 run the great Alien Syndrome cheat
- 20 run by Mark Richardson
- 30 run 8% extra if you key this in in medium play
- 40 run Don't use all the cheats at once
- 50 run "That would be too easy"
- 60 add +427800
- 70 add exp-0 (only 1989 version of base)
- 80 for 1-4 to 201 step 2
- 90 read +81000000+100000000
- 100 read 1
- 110 00000000+10
- 120 00000000+0.00000
- 130 00000000+4.00000
- 140 base "abcrch100"0000000

DRACONUS

Ian Thomson, Dairide



- 100 and
- 101
- 110 data 00110.0.00.0.0.0.0.0
- 120 data 0.0.0.0.0.0.0.0.0.0.0.0
- 130 data 4.0000+0.0000 70.0000 70.000
- 140 data 0.000.0.000.0.000.0.01.00.00.0.0.0
- 150 data 300.0000.0.001.000.00.0.01.0.0.0.0
- 160 data 0.000.0.000.0.000.0.000.0.000.0
- 170 data 70.000.00.001.0.000.0.000.0.000.0.000
- 180 data 0.70.000.0.000.0.000.0.000.0.000
- 190 data 0.70.0000.0.000.0.0.000.0.0.0.0.0.0.0
- 200 data 300.0000.104.0000.0.000.0.0.0.0.0.0.0
- 210 data 0.00.0.000.0.000.0.000.0.000.0.000
- 220
- 230 "Yes on the optional cheats
- 240
- 250 data 21.0.0071.0071.0000 "Invulnerable to aliens
- 260
- 270 data 21.0.0071.0071.0000 "Invulnerable to aliens
- 280 data 21.0.0071.0071.0000 "Invulnerable to aliens
- 290 data 21.0.0071.0071.0000 "Permanent map
- 300 data 21.0.0071.0071.0000 "Invulnerable to aliens"
- 310
- 320 data 0071.0.0000.0.0000.0.0000.0.0000

CHEAT DETAIL

1. Invulnerable - Simply walk right through all aliens and guardians and anything they throw at you.
2. Unlimited time - Stops the time clock counting down.
3. Permanent map - Put the map up and it stays there (this slows the game down somewhat).
4. 1 console to rule - The end will open and

allow you to leave after you have rescued just one of your comrades. The others will be there for you to collect and you will only score bonus points for those you rescue.

Mark Richardson, Preston

MARAUDER

Want to disable the spelle collision detection on the CEAT?

Simply hold down the Commodore key, C, 2 all the spelle bar and the words "Check On" will appear at the bottom of the screen - and there you have it.

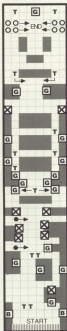


The Wu Kid, London

MARAUDER MAP

Gareth Barker, Harwich

LEVEL 1 - LEVEL 2



THE EMPIRE STRIKES BACK

■ A neat GT cheat

When playing the game, hold down the TAB key and type VECTOR-SMART (including spaces). This will enable the cheat mode giving invulnerability. Also the following keys have the following effects:

- T- tally chest mode (looks like you're playing but you're not really)
- L- Picture of Luke Skywalker
- D- Picture of Darth Vader
- O- Picture of EPOD
- ENTER- Returns to normal play



Markie Calvert, Bannockburn, Illinois

1 ENLIGHTENMENT - DRUID II

■ A slick poke for infinite energy for the Spectrum version.

- 1) REM DRUID II POKS
- 10 FOR F48004 TO 8000
- 15 READ A POKS J.A
- 20 NEXT J
- 30 PRINT AT 10,5,"START DRUID II TAP"
- 40 LOAD "DICE"
- 45 POKS 84000,254
- 50 FOR D=0 TO 254: USR 4400
- 55 DATA 40334,50334,117
- 70 DATA 195,2,11

2 FRUIT MACHINE SIMULATOR

■ If you want unlimited money on the Spectrum version of the popular game, all you need do is type in this listing.

- 1) REM FRUIT MC SIM POKS
- 2) SCREEN 1
- 3) PRINT AT 10,1,"START FRUIT MC SIM TAP"
- 30) LOAD "SPEXRES.ME"
- 35) FOR P=20000 TO 25000
- 40) READ A POKS J.A
- 50) NEXT J
- 60) RANDOMISE USR 20000
- 70) DATA 207,20,33,95,17
- 80) DATA 100,100,80,100,50
- 90) DATA 200,80,1,17,50
- 100) DATA 204,100,200,27,207

1.6.2. Matthew Houghton, Rotherham

ACE PINK PAGES

Upgrading to a more powerful computer? Check the facts. Buying a new game? Check the ratings. Bored with life? Check the puzzles. All in ACE's premier, pinkest, pages.

NIGEL™ *by* **RIGEL**
the Game Builders

Our thanks go to Dave Braden of London for his superb Nigel from Nigel cartoon strip.



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● **Mr Gar Throbbs** threatens the populace of Grimethorpedale when he invades the sewage disposal plant...

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RECOMMENDED GAMES



REACH FOR THE STARS

Electronic Arts • PC £24.95

This terrific game of space exploration and conquest may not be the best-looking PC game around, but it's certainly one of the most fun. You start the game with a planet around a star and have to fend off (and eventually conquer) attacks from the other three players. It's not easy to get into, but once you do you'll be well and truly hooked.



UMS

Namco • Atari ST £24.95 • IBM PC £24.95 • Macintosh £24.95 • Amiga £26.95

Namco's Universal Military Simulator is designed to simulate a conflict between two forces on a user-definable terrain that can be viewed in three dimensions from any one of eight directions. The program features a new era in 3D computer wargaming. The ST version is available now with the other versions following shortly.



VULCAN

Electronic Arts • Spectrum £9.95 • Amstrad £9.95

An elegant, simple and ingenious wargame, Vulcan covers the Tannian campaign of 1942-45. A huge playing area and an attack phase make the game an improvement over the same author's earlier works, *Amber* and *Desert Plate*. Vulcan's fast, efficient and simple to play, and its well-respecting wargamer should be without it.

SIMULATIONS

Games that put you at the controls. Whether you're flying helicopters or aeroplanes, or steering bobsliegs, simulation games can become very involving.



BOBSLEIGH

Digital Integration • Spectrum £9.95 • Amstrad £9.95 • £14.95

Bobleigh is a thrilling game with enough strategy involved to add another dimension to a highly competent and addictive simulation. How do you get the bobsle to win your way into one of the top three positions by the end of the season? Remember, opponents don't back down. Unfortunately though, *Bobleigh* is available for the C64, it's a pair game compared to the Amstrad and Spectrum versions and a therefore not recommended.



CHUCK YEAGER'S ADVANCED FLIGHT TRAINER

Electronic Arts • C64 £9.95 • £14.95 • PC £24.95

Chuck Yeager's flight trainer takes the flight simulator genre a step further by including a training option. Chuck will guide the novice through such difficult moves as stallion loops and rolls. With so much in one package it will save many hours of instructive fun to master all the available options.

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HARDWARE UPGRADE GUIDE

	ACORN ARCHIMEDES	APPLE MACINTOSH																								
THE RANGE	The 410 and 510 are home machines, while the 410 and 440 are only really of educational use.	The Mac IIx series is a subcompact, upright workstation that will built-in drive, while the Mac IIx series (the Mac IIx) includes floppy drive expansion. Both have separate keyboard and mouse.																								
MEMORY & CHIPS	The 410 has 1.5M of memory while the 510 has 1M, but both are expandable (up to 16M) by a single-chip processor.	Though both machines have 1M of memory, the IIx only has a Memory Manager chip. I understand that you can use the main board (but you need ROM).																								
PRICES	Recommended retail prices start at \$399.95 for the 410 and \$499.95 for the 510. There's a range of accessories that makes a lot.	Recommended retail prices start at \$299.95 for the IIx and \$399.95 for the Mac IIx. Macintoshes are not value well, so second-hand ones aren't really cheap. Customized machines can be far, far cheaper than you can be personally program your Macintosh. It's a fair bet, buy a Mac and bring it back with you.																								
GRAPHICS	Screen resolution is variable (up to 640x480 or 800x600 or 1024x768) in 16-bit color - with an optional multi-pin monitor - an expansion (640x480) option is available. There's an on-board graphics chip - the Super II - but with high quality video chip to power the Archimedes' graphics in software.	The more any IIx has a screen resolution of 1024x768 while the Mac IIx has a 1024x768 screen in 16-bit color. There's a pixel of resolution in color.																								
MONITORS	One - computer video color - RGB - color TV monitor.	As well as the built-in (50) x subcompact flat (single unit), there's a separate 1024x768 monitor offering different screen sizes and prices. (Also the thing Mac IIx, then get expensive).																								
SOUND	The Archimedes has sound features. It channels in 16 stereo pairs and storage of 16 stereo. It has through a particularly internal system.	The Mac IIx has a sound card (2x) can produce only one stereo pair (stereo) - stereo in the Mac IIx. You can't find a stereo card (2x) but you can find a stereo card (2x).																								
DRIVES, MICE & JOYSTICKS	The built-in floppy drive and hard, and packs a healthy 40MB onto 1.44MB. The Archimedes comes with a mouse (a mouse - built-in joystick port).	The floppy drive built-in drive pack 40MB onto a 1.44MB. The Archimedes has high-quality stuff, as in the on-board mouse.																								
SOFTWARE	Games for the Archimedes are one thing called Super and Grand than as built-in software supporting the machine, but for now the software Mac IIx Archimedes for the 510 series. Computer built ROM (and games), there's still a lot of software that really can't be added to anything like this. The Archimedes graphics packages available should be worth trying, some require a good mouse. Other applications areas are waiting for the Archimedes to be ready for use.	Games software is not really plentiful on the Mac, though other software is well-served. There's a huge amount of graphics and desktop publishing software - most of which runs - and a few applications for the business user. There's also plenty of good software for the Macintosh. For a Macintosh user.																								
PROSPECTS	The Archimedes' educational learning mode for a year gives education's range of support from any of the top major brands - and the Mac IIx is a capable, and desirable. The graphics software base should mature in about another year, but the thing that will be the Archimedes.	The future for the Mac IIx is unclear, but only in the sense that it's cheap.																								
OVERALL	The Archimedes is good enough in time, and ready more power before the competition. It will be a good value machine in an educational or business machine, but you can't seem to be interested. It'll be a good value machine for computer users and people with money to burn, but there's about it.	The Mac IIx is a very expensive machine, and a good example of a good example for 1988 users. It's a good example of a good example for 1988 users.																								
RATINGS	<table border="1"> <tr> <td>Graphics</td> <td>4</td> </tr> <tr> <td>Sound</td> <td>4</td> </tr> <tr> <td>SOFTWARE</td> <td>4</td> </tr> <tr> <td>Range</td> <td>4</td> </tr> <tr> <td>Quality</td> <td>4</td> </tr> <tr> <td>Prospects</td> <td>4</td> </tr> </table> 	Graphics	4	Sound	4	SOFTWARE	4	Range	4	Quality	4	Prospects	4	<table border="1"> <tr> <td>Graphics (IIx)</td> <td>4</td> </tr> <tr> <td>Sound</td> <td>4</td> </tr> <tr> <td>SOFTWARE</td> <td>4</td> </tr> <tr> <td>Range</td> <td>4</td> </tr> <tr> <td>Quality</td> <td>4</td> </tr> <tr> <td>Prospects</td> <td>4</td> </tr> </table> 	Graphics (IIx)	4	Sound	4	SOFTWARE	4	Range	4	Quality	4	Prospects	4
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RANDOM ACCESS

Ah! The joys of sewage! This month N'Gar Thrombobo checks out the internal logic of his local effluent treatment centre, the ACE Team compile another set of TPLs (otherwise known as Totally Pointless Lists) and invite you to submit your own. Next year, we plan to do a list of your favourite lists...PLUS, of course, the ACE Crossword, the ACE Puzzle, and the solutions to previous posers.

THE ACE SERIAL

The Git In The Machine: Part 3

N'Gar Thrombobo was not an ambitious sports fan, he did not seek fame, glory, personal wealth or even a nice cottage in the country he just wanted total and absolute domination of the entire universe. And in penetrating the computer network at North Grimthorpeedale Municipal Sewerage Flaccidating Plant he was convinced that at last he had achieved his aim.

It was Fred Muldoon, Assistant Debris Disposal Officer, who made the fatal mistake. In attempting to download a copy of Sewerage Flow Simulator from Head Office by modem, he stalled the Diagnostics number instead. (Seven seconds later he perished beneath a deluge of oily semi-treated material simultaneously released from wastegates L, S and R). By the time the rest of the Plant personnel had cleared the offices of the backlog, N'Gar Thrombobo had enthroned himself unnoticed in the central memory banks of the North Grimthorpeedale Municipal Sewerage Flaccidating Plant before anyone could smell a rat.

To N'Gar Thrombobo's consternation, alas, it proved impossible to dominate the universe from a Sewerage Flaccidating Plant. It was possible, however, to reverse the polarity on the sewerage pumping motors and pressurise the entire sewer network from East Skelpleigh to Grimthorpeedale.

THE ACE PUZZLE NO8

By Gary Andrew Meades

CHASE THE ACE

Last night I had a strange dream I was seated facing the Magician. Between us was a table on which lay four packs of playing cards, each containing the standard 52 cards. First each of these packs the Magician removed the ace of spades, placing these four cards face upwards on the table. Putting the remainder of each of the packs towards me he instructed me to shuffle them together to make one large pack of 204 cards. This I placed face down on the table.

Taking each of the four aces in turn, he pushed each of them separately into the pack and, squaring up the cards, he placed them up and dealt them as follows:

He moved the top card to the bottom of the pack and then discarded the card that was now at the top. This procedure - top card to bottom, discard top card - he repeated over and over, for what seemed like eternity until just four cards were left in his hand. The remaining cards lay scattered around us. From somewhere out in the darkness came a rill on the drums as he stretched out his hand to lay over these four remaining cards, which proved to be...

As the poem I quoted here, I have no doubt that these four cards would have each been an ace of spades. If this was so, can you say in which positions, counting from the top, these aces were originally inserted?

I note the Aces were at the following positions:

The _____ card, the _____ card, the _____ card and the _____ card

NAME _____

ADDRESS _____

COMPUTER OWNED _____

SEND YOUR ANSWERS TO PEEB PUZZLE 8, BOX 4 QUEEN STREET, BATH BA1 1EQ.
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LASER SQUAD



TARGET GAMES
19 The Rows
The High, Harlow
Essex, CM30 1BZ

A tactical warfare simulation

Available on Spectrum 48k/128k from August 1988
price: £9.95 (cassette only)

Available on CBM64 and Amstrad CPCs from October 1988
price: £9.95 (cassette) or £14.95 (disk)

GAME FEATURES:

■ Directional scrolling window shows detailed 3D maps (80 by 50 spaces)
■ One or two player options in each scenario with multiple difficulty levels for one player ■ Individual level combat with varied unit characteristics ■ Eight directional facing of units and hidden movement according to line of sight
■ Ranged combat includes aimed shots, snap shots, automatic fire, opportunity fire, grenades, thrown weapons and explosive ammunition ■ Strategic scanner shows detailed plan of entire map area ■ User friendly joystick or keyboard controlled menu system ■ Units carry up to ten objects which can be dropped, picked up, thrown, used to open doors etc. ■ Weapons and equipment can be chosen from a wide variety before each game starts ■ Highly developed artificial intelligence for one player option ■ THREE scenarios provided with game ■ Expansion kits to follow.

Target Games will ensure that Laser Squad is fully supported with new expansion kits. Each expansion kit will contain two fully documented scenarios available by mail order for £3.95 (inc. p&hp). The first expansion kit will be available in September 1988 for the Spectrum.

Mail order (Laser Squad, Spectrum 48k/128k): send cheque or postal order payable to 'Target Games Limited' for £9.95 (postage and packing included).

THIS MONTH'S LISTS...

Look, we can't go on like this. Why doesn't someone out there send us a list of their own? Here's a list of ten things we look for in a list:

1. It must have more than one entry
2. It mustn't have more than twenty entries.
3. It must be in English.
4. It must be your own, original list.
5. It must be accompanied by your name and address.
6. It must be decent, honest, and truthful.
7. It must be legal.
8. It must be legible.
9. It must be on paper.
10. It must be sent to ACE, Ltd., 4 Queen Street, BATH, BA1 1EL.

FIVE GOOD REASONS FOR BUYING A TANDY 102 PORTABLE

1. They don't often fail at all your work.
2. They have a handy 20K of user RAM (expandable to a massive 20K).
3. They only occasionally send your prints up.
4. Their screen is almost large enough for Deltas.
5. They only cost £50 more than an ST.

TEN FAVOURITE BOOKS AROUND THE ACE OFFICE

- 1 - Pissed As A Goat (Loren D Estleman)
- 2 - The Little Sister (Raymond Chandler)
- 3 - Porn (Mark Richard Stark)

- 4 - The Run-Gone Score (Stark again)
- 5 - Lady Wednesday (Estleman again)
- 6 - Glass Highway (another Estleman)
- 7 - Invasion of the Space Invaders (Martin Amis)
- 8 - Teach Yourself Nineteen (Richard Mann & Kit Summerfield)
- 9 - Every Brilliant Eye (yet another Estleman)
- 10 - The Friends of Eddie Coyle (George V Higgins)

Also 'tubbing under' was Another Load of B (Steve Bell), the Ultra V manual (Lord British), several other Richard (Stark books and) Scott's ARM Assembly Manual. Steve Cooke also put in a strong vote for The Secret Garden.

TOP 5 PHRASES HEARD AT THE PC SHOW

1. Where's thearf?
2. Where's the latest?
3. Are you producing Afterburner for the 2048?
4. No, you can't have a free Steamroller T shirt.
5. Never again.

THE 10 MOST LIKELY PLACES TO FIND A MEMBER OF THE ACE TEAM AFTER OFFICE HOURS.

1. In the Pub next door (Hatchette).
2. In the Pub down the road (The Crystal Palace).
3. In Schwarz's Buns hamburger restaurant.
4. In the Seafoods Fish Restaurant.
5. In Payers nightclub.
6. Round at Angie's (Angie being ACE's assistant editor).
7. In Waterston's late night book store (buying Loren D Estleman books).
8. At a cash-dispenser.
9. Whopping in Steamroller's.
10. At home (a bit of a long shot, this one).

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
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