

Atari ST
Amiga
CBM 64/128
Spectrum
Amstrad
+ more

ACE

ADVANCED • COMPUTER • ENTERTAINMENT

GAMES

DIPLOMACY

Micro megapolitics



OUT RUN

Low, high or neutral?



D&D DARE

Wakon mischief!



VIOLENCE TORTURE MUTILATION

An ACE investigation reveals that the game you're playing could be breaking the law

GRAPHICS

Great
new
DIY
series
begins



GAMES CREATORS

Programming power
to the people



CRASH LANDING!

Could a flight sim save your life?



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Buying a computer? Upgrading your system?
The ACE **Pink Pages** list everything you
need to know.



DIGITAL DRUMS

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rhythms





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NAMCO





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Bringing pixel power in *Top Speed*, and a spot of primitive conflict in *Time Tracker*, Andy Smith comes out with his hands inaking...



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Celebrate the New Year with *ACE* discount on each of the carefully selected titles below.

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To please their hot month, but still not hot, and the new *ACE* included peripherals is well. We like these pages give both the excitement and the full-time cover of the information they need, and we're not looking to admit it, either.

ACE COMMENT

Stop this horror now

ACE says enough is enough. Our children have been subjected for too long to the computer game nasties, corrupting their innocent minds and giving them the kind of bad dreams that would make Rambo wake up in a cold sweat. Something must be done. Quickly. Fast. Soon.

"We say the evil must behind this evil tide of crack should be stopped in their evil tracks before their evil games cause any more damage.

Ms. Thatcher should immediately re-introduce the death penalty for the computer nasty producers. But we say that hanging is too good for them. Can we not find a more painful punishment to fit the horrible crime?

Come off it, spoilsports!

Just who do these killjoys trying to stop us play our favourite games think they are? The know-alls and dogooders think they can tell us what we can and can't play. Well we say, get knotted!

Anyone in their right minds can see that computer games are just good, clean fun. OK, so you have to go round killing everything in sight. But that's life, isn't it? How could it possibly do any harm to our marvellous British kids?

No, all these so-called people want to do is stop honest folk enjoying a bit of harmless fun. But they're out of their tiny little minds if they think they can stop us enjoying ourselves. There's too little laughter in the world as it is. So don't let the wet blankets ban our games!

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For a more rational and better-informed view of the whole business of violence, sex and censorship in games, see the article on page 27 of this issue.

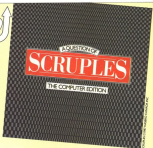
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YES? NO? ...DEPENDS.

Missie Bradley's compelling game is now available for computer. Anticipate your friend's responses to the provocative questions in Scruples. Think carefully before answering the moral dilemmas you are posed, or turn the tables and give an opposite reply to the one expected! Bluff and counter bluff will be needed, and beware, the other players (the jury) can challenge your honesty at any time.

The computer interpretation is ingenious and funny. Up to ten people can play: all human, all computer, or any combination. There is a minimum of 50 characters to choose from, each with simulated "intelligence". Real players must "adjust" their personalities and select their appearance from a gallery of faces provided. A minimum of 100 leading questions are built-in and no game will ever be the same.

Scruples, The Computer Edition, is available from all good software retailers or directly from Leisure Genius.

Spectrum 48128K+3+3 cost £9.95 disc £14.95

Commodore 64/128 cost £12.95 disc £14.95

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Acorn AT .. disc £18.95

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COMMODORE 64/128



AMSTRAD CPC



ACORN AT

Those of you who spent the year huddled over a monitor, debating ever-increasing waves of alerts, all agree: it marks one year and capable of simulating 5000 troops, may not have realized anything as special about 1987. It was a bit lacking in the spectacular events department. **Alan Sugar** didn't even attempt to buy out **Jack Trammell**, and while Commodore got rid of a good many of its senior staff, it never flirted with bankruptcy as it had done so fearfully in the past.

Beneath the scenes, however, there was plenty going on, which should mark a permanent change in the whole nature of the home computer industry: new and more advanced games, and software for them; a lot of talk about new data storage and retrieval media; the big guns getting an even bigger slice of the software sales than before.



Sir Clive Sinclair (seen by him) sold more a Commodore

Sir Clive Sinclair made a welcome return to the limelight with the launch in February of the **ESX**, the portable model which had begun life as Pandas in the Dark Ages of British Research. Sir Clive delivered the machine late - he would, wouldn't he? - and it was not really a memo for the Sinclair games-playing faithful, but most purchasers pronounced themselves well-satisfied with it.

In March, Commodore finally invited what so many people had been clamouring for: an affordable Amiga. And since home users had two 8000-based machines to choose from, with the Amiga 500 and the Amiga 512 PM left in the shops, the software companies took a deep breath and sunk development money into 30-bit games.

Finally, we haven't really seen the fruits of the development yet. But with S's disappearing from the streets' shelves, and sales at the 4000 picking up fast, the software houses had to sit, even if so far, it had largely heard rumours of Spectrum and Commodore titles, and rough 80000 code that can be put on other machines with the minimum of tinkering.

However, the prominence of ST/Amiga software on display at the **PCW Show** in September suggests well for the future. And in terms of what the machines are capable of, we can't see anything yet.

In June, the software industry had another advanced machine to consider, when Acorn launched Archimedes, a range of moves, offering Acorn's own Realtime Instruction Set Computer chip, and some truly advanced technology. Technically first, with serious sound and graphics potential, but who on earth was going to buy the beast? Its generally agreed that Acorn

1987 - the year in

Christina Erskine, erstwhile editor of Popular Computer Weekly, plays Janus - one face looking back at 1987, the other forward to 1988

is not going to make it as a home store (at once grounds if nothing else). Despite David Stokes of *ESX* (time knocking up a little number called *Zero* (ACE Rated at a staggering 87%.

All the other end of the scale, the veteran Spectrum got its full in this time in September. The software available so far on date is extensive, to say the least, but, after a cautious start, looks as though, yet again, the Spectrum is going to have a good Christmas.

Then there was the *Return of the Commodore*, which most people thought had been left for dead round about the time of the launch of the *Pro 25*. But *Sega*, *Nintendo*, and inevitably *Atari* (which didn't seem able to bear being left out of any corner of the market in 1987) all produced machines they believed would lead to a renaissance of the dedicated games machine. The appeal of the

power bases into fewer hands. *MS Gold* set up *Gold* a general purpose computer game, console, and by distribution which closed a *25M* deal with another publisher *Optima*. *Genesis* signed up *Gary London* and expanded into board games. *Boyer* announced the release of a board game where your video recorder (yes, video recorder) takes the place of throwing the dice (see separate lists). *Virgin* took *Manuful Games*. *Thornplate* republished as the subject of an interactive video program. *Masturbate* got Amiga boards in arcade machines, wrote games for them, and released a compilation *UP*. *Microsoft* got busy with *CGI* film technology.

Advanced Computer Entertainment

One of the major events of 1987 was - of course, history, it goes without saying but isn't it a pity - the launch of ACE, whose first issue appeared in September. The magazine was created in response to the growing demand for a more in-depth treatment of the whole phenomenon of games and related computer entertainment.

The response has proved that the hardware has grown more sophisticated, so has the software and so have the people using it. ACE was intended to be the magazine that would match these developments, and test the waters where the technology leads. Whether computer entertainment grew in 1988, *Advanced Computer Entertainment* will be there to let you know about it.

The big budget players also got aggressive. *Masturbate* (renamed up *Masturbate House* in February, eight months later, *Virgin* bought substantial minority interests in *Atari*com. The highly respected *Genesis* turned over its sales and marketing to *Genesis*, and then lost its two highest profile programmers, *Steve Turner* and *Andrew Brayshaw*, to *Telecomsoft*. *ESX Systems*



The ESX: not a game's enemy, but a hardware hero in its own right

desires to shed 'em up fans must be huge, and the price makes them almost machine boys. But with all-singing, all-dancing machines like the Amiga and ST around, the console look unlikely to find a niche market at second or third machines, or for younger members of the family.

Software

For the software houses, the year was one of diversification coupled with a concentration of the

Amiga 500 and Amiga 512 - its machines that are changing the face of home computer entertainment



arcade in focus

teught **Demol**, who withdrew from the business of games centers. **CRU**, and **Wanted** had teamed up with 16 game **Economic Arts**, which moved into Slough in March, and launched an extremely respectable range of games at the PCW show.

When any software companies found time to release computer games, it was Budget Software that dominated the charts. It now labels **Alternative** as the best attempt to break the **Mastermind/ProSiege/Code Masters** stranglehold — and claims the sea-named make such a massive leap about teaching **Envision/One!**



Top: Seaquest. Bottom: Seaquest. Both by **CRU**. (CRU is now owned by **EA**)

With all this extensive activity, it's perhaps not surprising that there was little in the way of mind-bending software. **Math Master**, more targeted boys, more spots, more aliens and a dash of **Street** stories were the order of the day. To balance this out, we did get the graphics in **Starfighter** of the **Crown** (alone out of the game), continued high standards from **Isoscan**, particularly with **Golden** and **Isoscan**, the controversy of **Batman**, and the disability of **Golden**. The boys **Prison** and **Drummers** done great with **Match Day 2**, and there were more coming to fly out in **Leatherhead**. **Adventures** with 5000 more releases than **Isoscan** came out that day were **World** can cope with, while **Level 1** kept going at a steady rate, and **The Power** kept, **Gold** of **Thames**, appeared. The quality of compilations rose markedly with the excellent **Gold** and the everything-out-the-house **Seaquest** (by **EA**).

Lastly, **Star Trek** finally appeared and despite its tardiness became the first ST game to make it into the Top Ten. **Star Trek** is now being placed for which of **Newsweek's** list will be a year later in '88.

Overall, though, 1987 marked a turning point in computer entertainment. The 68000-based machines took off, as did their associated software. The game companies are getting smaller in number and more diverse in their entertainment activities. The games themselves are becoming more and more good in what related top, cartoons, film, TV programmes, licensed titles, whatever — which makes it all the more gratifying to see what original and technically innovative games such as **Isoscan** and **Inception's** **Golden** TV and national press advertis-

ing, not to mention all these Commodore hopes, are at **Standard** Bridge, home computing is moving away from its cult status into the mainstream of leisure activity.

Crytal Balls

Technological developments which have begun to be seen today at this year should start to become real products in 1988. CD-ROM and interactive video, which have been much talked about for years, should finally hit the streets, with Atari's CD-ROM player coming out, and King's Transglade project reaching completion (BBC only for the time being). Let's hope Atari can organise some available software for its unit, although it doesn't do a bad job of driving conventional-computer users.

Next year should see the 16-bit market mature considerably, as the machines begin to overhaul the old 8-bit standards, both in sales and the quality of software. The wires on display at the 1988 PCW Show will be a fair test of how well programmers have got to grips with the power of the machines. Current rumours suggest that we should see Amstrad producing a machine in this area as well, which will certainly keep the interest high — and the prices down. But don't count on an Amstrad 16-bit micro; it has a reputation for confounding the best games...

Even the 16-bit machines will start to look a bit stale and cumbersome if Acorn makes a go and further developments to the **Technician**, and Atari's computer makes an impact like the STs when they were originally announced back in 1986, neither of these will have a presence in the home market, but some 1990, and 1990...

The author, who is not a member of the **EA** group, is a freelance writer.



Look out too, for more ambitions, as the software companies on the top of the heap take over more and more of the independents. In two or three years time, the game will be just about everybody, and that's when you'll start to see the one-person suits start up again — rather like the old record labels.

And of course the issue of certification, and indirectly, censorship, is dealt with elsewhere in this issue of ACE, but the implications are, staying, getting.

In the arcades

Tiger Hood

CLASSIC'S latest launch release, **Tiger Hood** features stunning graphics and great animation as Lee Wing (that's you) recovers Hong Kong from the wicked **Yip** for **On**. There are four stages, each with an end-of-level guardian to defeat.

What really makes the game special, however, is the animation and range of allowed hazards. Enemies either up and down, or down and ready to strike, huge piles of enemies, and enemies, surround your hero, but fearfully, however you up into their mouths, and numerous weapons by means of directions. Definitely one to save the Top 10 for in the New Year.

Heart attack

Meanwhile some of the more obscure arcade games are cutting into difficulties, it seems. **Capcom's** **Streetfighter** featured rather well when the player finally paired with his foe as he or she (or whoever) took the stuffing out of various street-wise foes. However, it's generally, that players who got up a little too involved for the risk of hurting themselves on the edges.

There's nothing compared to the **Succored** dangers of **Atari's** **Streetfighter**, whose game control system allows the player to vary punches at the other side of the ring by pressing and holding specially designed "switch" keys. Observers have suggested that this could bring about a form which is people with a history of similar illness. On the other hand, good people with a history of heart as illness can just die at any moment, this doesn't seem particularly significant.

Sniff-lem-up!

For a 30" tall, cane hydraulic cabinet, **Neo** **Capcom** president **George** **Nakayama**, is taking about a whole range of games with "sniff" by itself.

To that have been announced yet, were 40% because there is some difficulty in getting a "sniff". This is hardly surprising — most of the operators you meet in **Streetfighter**, for example, look as if they have serious problems in the personal business department. Fighting them one thing, but smoking them would surely be more than any reasonable man or woman could bear.

Streetfighter - some sniffs (perhaps you'll be sniffing it in the next issue of ACE)



Just to get things moving, however, we suggest the following tips:

Repeat **Atari** — battle your way to the top of the heap.

Sludge **Crash** — crash up the streets of **Mega** **City** **One**.

Abandon — explore the maze to find the "sniffed" way!

King **Pong** — catch the best-putting opponent you can find!

Players' suggestions in a second, please, but to second thoughts...

Where does it all come from... this high-tech gear which we take so much for granted these days? We all know that TV was invented by an Italian and computing by Sir Clive Sinclair (give or take a few years) – but nowadays, much of what the Englishman plugs into his domestic power supply comes from the Land of the Rising Sun. Mark Jenkins reports...

As guessed it, Japan is the subject of this roundup of news and tantalising hints from the world of computing, hi-fi, video and the rest. The newly-formed Yamatai Corporation of Europe was responsible for laying on the trip to the East, and for making it quite clear that Yamatai aren't just about synthesizers and motor-bikes – they're also into sports equipment, furniture, pens, pianos, etc etc, you name it, they make it.

Yamatai's Shibuya retail store in Tokyo has a huge range of printers and music computers including the C81 and C811, which aren't available in the UK since the MSX standard was a total flop here, despite being popular in Spain, Germany and France...

Slipping into the Tokyo electric jam experience is (well) lots of 'n' dollars, a kind of Tottenham Court Road gear business. Blacks after blacks of hi-fi, video, computing and electronic gear assault the senses, although much of it won't work in the UK (due to differing TV standards, for instance) and some of it is illegal (like that neat dual disc drive copying unit for protected software).

Comms & entertainment

Everything in Japan is interactive – TV shows the Captain Power feature tracking which you can



Personalised technology

"shoot at" with a "power gun" (available in all the department stores). You can plug in a keypad handset to your telephone and TV for interactive banking and shopping facilities, and carry an electronic phone number index which recalls the number you want and then beeps it into the phone for you (only possible on all-digital phones, unfortunately).

You can also buy a Panasonic fax machine with built-in telephone for about £1,500 (just what

ACE IN JAPAN

a bulker, but otherwise comparable unit costs over here) and send complete printed documents down the phone lines to other fax users.

Computers

MSX is still at the apex in Japan, with MSX2 models like the Sony HI 80 very common. You can build this up with a full keyboard or small numeric keypad into a complete business system with Comms and other options.

Lap-top computers are popular – many-



Sony's HI 80 computer includes everything on the desk and fits into a carrying case.

companies have models. Sony's Pradise 100 weighs just a few pounds but has a flip-up 440 character LCD display, a screen of Japanese and European fonts, an art package, and a clip-on 3200 dot printer which can produce business cards, Flexlas pages (the Japanese use Flexlas/cassette inserts and so on. But it uses non-standard 2" floppy disks and seems unlikely to turn up in the UK).

One of the most exciting computers available in Tokyo is the Fujitsu MB71, which looks more like a piece of hi-fi than a micro. It comes complete with a TV set/monitor and has a polyphonic music chip with hi-fi outputs, optional MIDI interface and music composition software, a 8000000, 3200 for hard disks and voice sampling circuitry.

TV & Radio

Pocket-sized LCD colour TVs are all the rage in Japan, with models available from Casio, Sharp, Panasonic and many others. One or two models working on the UK's PAL standard are now becoming available here. Casio's TV-4000 at around £180 stands up like a desktop clock and has auto signal lock to home in on any powerful

signal; the tiny TV-800 model, with 1.5 screen, is sold as the D60, and credit-card sized MB700 radios (sometimes with digital tuning and LCD readouts) are common.

Video

Most Japanese video machines are VHS HQ (High Quality with Hi-Fi sound) or Super Betamax with a claimed 20% improvement in picture quality and three tape speeds. But Video 8 is taking over from both standards with its digital sound and high picture quality; Sony's Video 8 camcorder range includes an underwater model and their Video 8 Pro (2000) has a programme dial just like professional U-Matic editing machines, duplicated on the back-sized infrared remote-control unit.

Picture-in-Picture TVs and videos, which superimpose a small picture showing another channel onto the main picture, are common as much in Japan and are just becoming available in the UK, but Sony also have a much more powerful digital frame store with picture-in-picture, post magnification and much more for just £900.

Hi-Fi

Hard-wired LCD colour TVs are available from Casio, Sharp, MSX, Panasonic and many others. Professional recording Reformer designs with built-in 60 Hz noise reduction, good meters and so on are popular, while the new-CD standard – not



Casio's video-ready Hi-Fi portable CD colour TV

yet launched in the UK but able to play conventional CDs. Laserdisc disks or 5" digital-picture-and-sound disks – is just becoming available. Yamatai make a nice CD-i player for around £800 (MTC standard only – laugh) and Digital Audio Tape players are common at around £300.

Gadgets

Sony's Record Clearing System, an interactive pager coding using CD-i, is actually a database search for magnetic tape-bearing cards which hold lessons such as "English for Beginners". But if you want a high-tech replacement for the old-fashioned pen and paper, Casio's V-note (2000) and many other companies make sound pens/pegs the size of credit cards and which can use to make a message for your loved

one on going out. "Your dinner is in the kitchen. I'm on the gas wire" springs to mind. The Japanese, being habitually short of space, are very fond of anything credit-card sized, and you can pack up pen and pencil sets, making sets, solar-powered calculators, word time cards, calculators, telephone diaries, English-to-Japanese translators (3,000 word vocabulary) and much more.

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OCEAN GO INTERACTIVE

Interactive video has become something of a buzzphrase among software-makers. Ocean is the latest company to move into the field with the support from the US of the ABC Sport Winter Olympic games, a content on the true interactive-video theme.



Winter Olympics: you get the best for your money, more to go

Ocean chairman David Ward described the game as a "flexible-Palmerston" way of approaching the interactive video format. The game is primarily a board game, with the video images continually selected to depict the game's progress.

It's a precursor to the eventual integration of computers and FaxVideo data - where the video will create backgrounds to a game and the computer will control the interaction, Ward said.

In Winter Olympics, a random series of numbers and game information, which changes every 15th or 30th of a second, is shown on-screen. Players press the power button to freeze one of these screens as the equivalent of a dice throw.

While the rest of the game works similarly to a conventional board game.

"It's really a halfway house," Ward admitted. "You can take the view that the TV is a prerequisite for family entertainment, but it's a one-way system - you get it there and look at it. Eventually you'll be able to interact fully with TV images - this is just the beginning." The Winter Olympics video-with-games costs £19.95 and should be on sale shortly.

Ocean is also hoping to move into the video market by buying distribution rights to movies, following on from their joint release with NBC/Columbia of the Vietnam War film, David Ward is, however, cautious about the company's prospects in this area.

"Yes, we're looking to build up a video library, and we're not up to speed to do that, it's just another way of entertaining people in the home," he said. He added that although Ocean wanted to continue licensing films for computer games, it would not necessarily top up video rights for films with a view to video conversion.



David Ward (left) took the game into the Blue UK. Daley (center) and wife, Don (right)

MAD add X

Madness II (MAD) single is to get a fourth and become the MAD X series. Ingredient X is an added X, one to the fact you'll now get two games for the price of one. Some of the X added will have been previously released in their own right, but it's hoped that they will be brand new games.

The first release of this video-industry-inspired range will be an January title for Spectrum, C64 and Amiga machines. The X will feature Energy Warrior, the 8-Ball (Shooting Man) - it has been around for some time, and you can alternatively read about its re-design features in the Games Creator article in this issue.

Second release will be Rowford, inspired by Roundabout with Back To Reality on the X side. It's also for Spectrum. The video makes an interesting move by Masterblaster, Rowford's one of the first titles out on their Super Screen movie system. And had not been so brought on to a \$100 budget with its marketing follow-up stage. It could promise some very good value games in '88.

Snippets...

Scrapies

Yipee
C64 £14.95 (UK)



The computer version of the board game that asked those brain-searching questions which you, or some, answer hastily, should be in the shops as you read this.

Catch 23

Master
Amiga £7 £19.95



The three-dimensional wireframe inside adventure is about to make its appearance on the 16-bit machines. Seal the plans from the UK 23 and developer's site before you take it, should be in the shops as you read this.

Winter Olympics '88

System
Spectrum £7.95
C64 £9.95
Amiga £19.95
Amiga £7.95
Amiga £19.95

The Olympic sports are combined with the galaxy strategy balanced between speed and control. The 16-bit versions should be out as you read this with the 16-bit versions following next week.

Norhstar

System
Spectrum £7.95
Amiga £9.95
C64 £9.95



The year is 2499 and, erode when it call the name of the game. Head for the project center, destroying the evil life forms and re-starting the life support systems of your newly ship.

Blood Valley

System
Spectrum £7.95
Amiga £9.95
C64 £9.95
Amiga £7.95
Amiga £9.95



The price may not yet be confirmed, but it looks as if Blood Valley will be Gamera's first Amiga product. The 8-bit versions should be here before that though. The game is based on family role-playing books and the player has a choice of character, each one with a specific objective (hidden sometimes within the central job of a mission).

Space Ace

Amiga
Amiga £19.95
C64 £9.95
C64 £9.95
Spectrum £7.95



The first of a new series of games introduced is, fans by the name of Lee (Bruce) (Bruce) family, and in the 32nd anniversary this first game is a shoot-em-up which sees Lee in a pack of a lot of trouble. The second in the series will be out in the 1988th Ages, but may not necessarily be another shoot-em-up, so watch this space. 16-bit versions-with-coming first (February) with 8-bit versions shortly after.

Blood Warrior

Amiga
C64 £9.95
C64 £14.95

The team who programmed Jet-Boys (reviewed this issue) are set to release another arcade style shoot-em-up. It's a part of Our Run mythology Hunter so you then you'll run through eight countries and try to assassinate the natives. Look out for it when the March winds are a blow. Also from CRL in February and March will be Amiga versions of Fox Car and Assault.

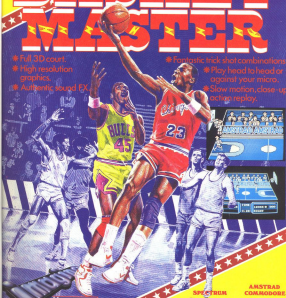
DYNAMIC

LACE UP FOR ACTION

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of the game

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ACTION FOR 88



Image: The Dagger Falls - get those pointers right and your opponent looks to die.



Which side did Howard? (You play as Dallas)

J. R. Diving
 Bobby Diving (OH) Barnes
 Captain Farlow

Image: The end-playing board. It's your turn, but you'll have to answer a question correctly before it's your turn.

POWER PLAY

Image

Out on the BBC video tape and soaping chicken on the wire is bit more subtle than this mythologically-inspired board game is really coming out on the 27-card Amigo. Earlier versions was a lot of tactics with free choice integration of trivia questions and strategy, but Amigo have speed things up quite a bit since then as you can see. The graphics aren't the only changes; the strategy element is more complex and important now, with factors like a piece's strength remaining just as much as trivia knowledge. Well, almost.

It's heads down and tin helmets on as the first shots in the 1988 software campaign start bursting overhead. Grab a look at the latest command intelligence here - all of these games are due for deployment in the next couple of months. We'll sort the duds from the live rounds next issue...

HALO JONES

Prosa

Unscripted life in New York may not sound like great material for a computer game, but we're taking here about the NY of the future where bits are



everyday occurrences and bitsy the pet pooch is a psychotic robot. Based on the award-winning 2000AD comic strip by Alan Moore and Ian Gibson, the game is all about buying groceries - not a game of wits in The Shop, a boxing ghetto where sluggers go cornered to the teeth.

Spectrum, CD4 and Amstrad users should get a chance to try to interact, but ST users will have to wait till May for this dose of future-stops.

XENON

Williams House

If you like the Super Select System in this month's repetition you'll get the one all tied up and ready to play, but even without a lucky streak you'll still be able to save yourself a whole load of 80p pieces if you buy the game instead. It's come-up standard on the Amiga of course and not for

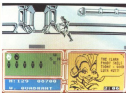
short on the SE, as you can see from these screenshots. You can trundle around blasting ground targets, wedge the pistons to fall into an orbital coil then fly around blasting on targets or the tops of buildings. Computers still end very good looking - watch out for the ACE review, coming soon!



ST: Above is level 1, and you're right in the thick of it. The slightly thing you're pushing about now is handy against those tanks you loathe.



ST: Look it's a mighty, with 3-dimensional style differences spreading from the walls. Don't getting the might's use that when you're busy!



Spectrum Halo's doing off to do for shopping, with ingredients Betty from (bottom right) map or up to do with spending time.



ST: Might's ready to do in pattern.

BLACK LAMP

Fogel

The classy-looking arcade adventure drops you into a backcountry no-man's-land of magic, mystery and (gasp) monsters. The gameplay leads you through the 3D-rendered interior of the cave and out into the scrolling woods as your outlay lens character is crooked from all sides. The



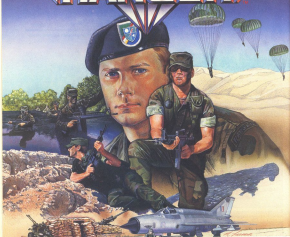
game probably won't be finished until March or so but it's looking great already, with marvellous attention to the main character and some great backgrounds too.



ST: The woods are no place to built your own strength for a better carry you off.

THE ACTION—SIMULATION

AIRBORNE RANGER



You are one of the elite... parachuting alone behind enemy lines. The enemy controls the terrain, hidden in bunkers and machine gun nests... you may be surrounded. The action is fierce as you control one soldier's battle against overwhelming odds. You'll need skill and strategy to out-manoeuvre your enemy, plus courage and nerve to make your escape. Airborne Ranger is an exciting fast-paced simulation with 12 desperate missions in 3 different regions of the world. The possibilities are endless!

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Joining the Elite

Firstly I would like to say how good your magazine is. It is packed with more information and software news about my computer than the magazine I get for my Atari 2600 \$76.

Now, I have just upgraded from a BBC computer to the Atari. I used to play Elite on the BBC and really enjoyed it, so I was wondering if there is some out for the Atari.

Gary Roberts
Borekdale

Since I got rid of my C64 and changed to an Amiga, I have missed the game Elite and wondered if you could tell me whether or not any of the software companies are in the process of making the game for the Amiga as, so far, I have not found a game with as much of a challenge.

Des Smith
Oxtedham

There's good news for both of you: Elite should be available for Amiga and AT by the middle of the year.

Not in One

Can you please answer the question: has anyone got a hole in one or better board yet? I've been trying for 1000.

Recently we're all computer hard-core here and think your magazine is the best in class and can't be beaten!

JP Lee
Borekdale

Recently round hasn't ever got a hole in one - but we wouldn't know if you got out from a crooked ball.

Controversy of months ago

I was looking through your letters page (issue 3) when I noticed a letter from a B. Pansy, writing a

REWARDS!

In recognition of outstanding editorial achievement ACE Letters will, from our next issue on, be awarding **FREE SOFTWARE** to 3 writers every month. One lucky correspondent will be receive our Letter of the Month award - software to the value of £20.

So please remember to add to your letter details of the items you'd like. And the games you would prefer to receive.



Artistic licence interpretation

debate on the alleged abuse of women in advertising. I became more interested when Miss 1986 turned back-cropped up. The Banister bit sprung up all kinds of arguments, but one fact everyone failed to mention is that there was a Miss in the 60s too, equally scantily clad. I might mention, though I don't read anything from anyone complaining, is it all right to see sexy men, but not right to see sexy women? I actually found the delivery degrading to men - what with the Miss having to wear that awful...

Anyway, the point of this letter is that women don't read clothes, especially ones like Miss Pansy, to look for them. In fact, most women I know would find his attitude very condescending. To credit women with a right to intelligence and back-bone if I were you

- women are far more cunning than men anyway, and they know what they're doing. So it's safe for us boys to shut up, and the girls to have their day.

188
Dorothy

I find you'll agree, Mr. B, that women's scantily-clad bodies feature rather more frequently in ads than men's. So women find G. Pansy's speaking up as 'in their behalf' condescending. It's hard to tell, because we haven't had any letters from women on the subject. If we do get any, we'll certainly print them.

Allergic to Sugar

More on the 16-bit computer (especially Amiga). Less on the 32-bit

The preoccupations of the festive season have not weakened your desire to air your views - the letters have continued to pour in. Most of them have been full of interesting comment - on censorship, piracy, arcade machine tweaking, and much more. But if we get any more letters from 18 year-olds asking if their score on Bubbie Bobbie is a record...there will be BIG TROUBLE.

Everyone else is welcome to send letters to
**ACE LETTERS 4 QUEEN STREET
BATH BA1 1EJ**

ACE
LETTERS

computers (especially Amstrad) excellent reviews but perhaps you could have recent opinions, included by the other reviewers including their general ratings.

The Piperno's goal for a happens result to good, and also larger pictures of the 16 bits and smaller ones of the 8 bits and pixels, some pictures have looked very dull especially the Tempest and Jinxer ones.

Play It! It is subtle and boring. Get rid of it, please. Though the sound and graphics specials are very interesting. Of strategic importance was unfortunately of very little importance, and nearly sent me to sleep. If there are others who do like it then, perhaps it could be made to comply with of strategic importance and PIP! using some. The article on the separate states was very good but could have gone further still, like would a memory (RAM) combination only be able to show the Amiga's 400 lines. Also if you are trying to set up a public market for the 16-bit machines you should emphasize they'll be around for a long time and that just in the future it will seem very old.

Now to the controversial bit, the Amiga issue. I have a feeling I

am in a minority but I don't find it that interesting, although I can understand that it does of it may show what is to come of the games from. On the whole congratulations. ACE is brilliant, although perhaps slightly overpriced? If I don't say that, after all, ACE is full of colour, full of info, and has tips, and expansions.

Don't worry, I don't expect this lot to be printed. After all, I have seen any great at English, it's just meant to give you some suggestions. As you can see I have a very strong dislike of Alan Sugar and his computers and what he did to the Spectrum, adding a floppy tape recorder, that a disk drive with not enough storage, and with his "Simon approved" games cartridges which normally turn out to be the worst programs. The computer market should be more independent with more small firms, making actions, that's what made the computer scene so exciting. And Alan Sugar these past purchasers badly remember the 486 and the way he treated the +3. Sorry but I can't stand the man, someone give me a machine, please...

Neil Wilson



The games and a computer journal

You're certainly a fellow with some strong opinions. PIP! and the strategy piece are both excellent rather than monthly - you might not be interested in them, but lots of other people are. Besides it, as you rightly suspect, one of the more popular writers in ACE, so we could hardly get rid of it just at your recommendation. As for Alan Sugar, love him or hate him, you just can't ignore him...

Get a job

I am writing to ask what qualifications I would need to apply for a position on your computer magazine. I would be very much to be a

computer journalist and I would be prepared to start as a junior.

I am 18 years old in January and I am taking GCSE exams in English, Maths, Chemistry, Physics, History, French and Design and Communication at Madras senior school, and Computer Studies as an extra subject at evening classes. I have already passed the Cambridge Information Technology work presenting exam earlier this year.

I have earned a Commodore 64 for the past four years and I now own an Amiga 107. I spend most of my time on the computer and I am currently working on my project for my computer exam with my Amiga 107.



CGA ARCADE ACTION



CGA, SPC, AYS, ADVENTURE

ARCAD

TOUGH GAMES FOR A TIGHT BUDGET

DON'T FORGET TO GET THE LATEST CRL POSTER FROM YOUR FAVOURITE GAME STORE

I would be grateful if you could send me any details of how to apply, or get matched on the Career 1 have chosen.

Lee Beth
Boydson

There's no hard and fast rule about the qualifications needed to become a computer journalist. Obviously an interest in and knowledge of computers is a big help, and the ability to write well (and quickly) doesn't go amiss. Of course, it's a matter of showing to people that you have those skills, which is where paper qualifications come in handy. Of any 4 levels in English and Computer Studies you be useful. As can professional qualifications from the universities or places such as the London College of Printing.

All that said, I have to admit that most of the people here (and in other magazines that we know of) come to computer journalism by non-routinised routes: an interest in computers and computer entertainment went hand in hand with the desire and ability to write about them. Your best way of getting in to the business is to start writing and sending in your work to magazines.

If editors think it's good, then they will keep you on file and possibly get in touch when a vacancy arises. In the meantime, keep studying and pursuing your computing interests.

☛ TOS troubles

I purchased an Atari 520 STE/M from TV 14 Smith on the 13th November 1987, with it they supplied eight discs. Of the eight, five do not work correctly, if at all. An additional five, Beat Furber, does not work.

Atari have said that the new machines being shipped have the latest TOS revision 1.26 and this is the reason the discs do not work. How do you find out what version your TOS is?

Please would you and your readers help to compile a list of working titles for version 1.06 TOS? Perhaps this will encourage the software houses to move. Star Trek has appeared on the shop shelves with a sticker saying that it is for 1.06 TOS and below only.

Mr G C Haines
Bambrook

Atari have only ever had two ver-

sions of the operating system, and any ST bought today is likely to be the latest one. TOS 1.00 (like a few leading titles do not run under

☛ Diary? What diary?

I have bought your magazine for issue 200 and think it is superb helped by its superior quality printing and more feature articles than other computer magazines I could mention.

After purchasing issue four, I got home and then realised that the free diary mentioned was meant to be on the front cover of my magazine (which this wasn't). I went back to the shop where I purchased it but they said that they don't know where it was or if there was one. Naturally, I was disappointed and wonder if I could obtain one from you even if it means buying one.

John Baxar
Kilworth Beauchamp

Yesterday (Friday 4th December) I told my Mum to go to the magazine and see if ACE was in it. It wasn't. I repeated the instruction on Saturday. 'Hello?' It was in. She had bought it!

this, and your only solution is to take them back to the shops or send them back to the suppliers. Most software houses are planning

I looked at the cover - 'free diary'. I couldn't see it. Asked my mum - she doesn't know anything, I checked the car - no luck. I went down to the newsagents and asked if I could have one, as the other one must have been stolen from my shop in the shop. The newsagents refused if it was mine (mine), so I do not have my 'free' diary. Could you perhaps send me a copy please?

David Hood
Glasgow

Quite a few people have been experiencing difficulties with the diaries - largely due to them not being on the front of the magazine. Either they fell off or - more likely - were ripped off by unscrupulous non-purchasers. If you bought a copy and don't get your diary send a stamped addressed envelope to ACE, BURN, ADE, 4 DURN STREET, 24 THE BAR, 247

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to upgrade the more popular, incompatible titles. However, given the number of files which do not work with your machine it could be that you have a faulty disk drive. Check that out first.

Quilliver's Travails

I would like to express my views about type-in listings. I think that they are very entertaining and I've often stayed with your post of view for two simple reasons. Firstly, it generally doesn't take more than two hours to type in a BASIC prog of respectable length. Secondly, many of them are not as amazingly substandard as you seem to think. Recently I spent 1.75 hours typing in a listing for my Spectrum and was too rather surprised for words at the quality. It was approaching that of a professional game of a year or two back. It also only took 0.5 (prevalent and valuable) paper in quite large print.

I would also like to make one more point. How many people quit from you have written against listing?

Angus Quilliver Lathesforth

Since we don't have listings, and we've repeatedly said that we won't be having them, who on earth is going to go to the trouble of writing a letter asking us not to list them? (BTW: There is only one letter about 500 letters we've had asking for listings to be introduced.)

0.5 pages either one or another is at least 1.75 hours of typing the program in. I repeat: we will not be printing program listings.

Is this a problem?

Congratulations on an interesting and appealing magazine. As usual, I've had it give a good insight into home computers and software. But I don't write into praise your magazine with accolades. I have what I consider to be a big dilemma. I have £200 or thereabouts to spend on a

home computer, either an Atari 1040ST or an Amiga 500. For some this may not seem like a problem, but my reasons for purchasing a computer may contradict my problem.

I am presently studying for 4 levels in Accounts, Geography, Business Studies and a powerful wordprocessor is a must. Also I am studying for GCSE computer studies and it would be useful if I could use a database, spreadsheets, and a drawing package for extra help at home. The first point I don't really like to admit, but I am an old Spectrum user and would appreciate some good games.

Please don't repeat the specifications of other machines, give me your opinion of which would meet suit my needs.

A Churchill London

There's a glint of the serious software you mention for both ST and Amiga, whatever one you get, you should find something that will suit you. If you are going to do lots of spreadsheeting and databaseing, you may want to spend some money on a hard disk. Your only real problem, as far as we can see, is deciding which machine will get more support as the games front. At the moment the Atari ST has the edge, but that is not to say that the Amiga will not catch up in all. But we haven't really got a clearer idea than you at the moment...

Desperate Deal

I am writing on behalf of my 13 year old son, Neil, who is desperate to obtain the computer game Journey's End for his Sinclair Spectrum.

We have tried endless stores but to no avail. Please could you inform us on how to obtain it.

Ms & B's Telford

First of all, by getting in touch with the publishers, (Blackburne) (01-277 6880) if they no longer produce it and have it all stock, by putting a small ad for the game in our PinkPages, somebody out there is bound to have one.

Taken to task

I feel I must take you to task over your article in the Pink Pages stating that the Spectrum is a 'games machine and should be bought only

for that!'

While I freely admit that we will see half the title spent on my Spectrum 128 its games oriented (hence the such an avid reader of your excellent mag), I also make use of it for a host of 'serious' applications. These include some pretty involved spreadsheets for my farm team's statistics and home accounts (using 16-bit, masses of word processing (Word6), learning new programming languages (BASIC and Logo), musical composition (Musique) and Disktop synthesiser etc, all of which my Spectrum handles admirably.

I realise of course that the Spectrum cannot realistically compete with its machines in terms of either serious software or games (although the 1280 version of Starfighter comes mighty close), however, I do maintain that, amongst the 8 bit rigs, the Spectrum compares quite favourably due to its good sound processing (the game ship as the ST smacking the obsolete 800 Spectrums), fast graphics capability (50K games from song in comparison) user friend and software availability (you rightly note it is better in name and less but not best), the low cost of the machine itself and its peripherals and software (I picked up all of the software packages I mention above for under a five-sheep - and the sheep for a letter).

Sure, I'll love an Amiga or ST, but after breaking the bank to purchase one and then being charged around £25 a slot for software, I certainly couldn't afford to own a software library a tenth of the size I currently enjoy.

So please don't write the Spectrum off as a games only machine (I suspect the rather positive content of some Spectrum mags has something to do with this idea). Remember it was originally designed as a serious machine and being such a superior all-rounder, still represents an ideal choice for those of us who like to combine business and pleasure and aren't made of money.

Gavin Fanchard Aldershot

You have a fair point, David, and you're made it very clearly. Not all people have 'made it' with Spectrums for serious purposes. But making it is what it's all about: if you were going out now to buy a new mic, bearing in

mind all the work, processing, edit and master you wanted to do, could you seriously consider a Spectrum? The short way to be ready is the Spectrum - it's done starting sooner over the years - but it isn't really a machine you could run your business with.

Arcade rip-off

I do not know if people who visit arcade machines just how much they can be ripped off, not just by over-pricing, but by the game's level of play. Most of the modern arcade machines today include a change that allows the owner to define the main aspects of the game. For instance - how per credit player hits levels, bonus offers, display histograms, it scores results, etc.

Many small arcades get greedy, and make the game very pricey and so hard as it will go. Two examples of this, a 500 Degree machine that gives you no bonus at the start of the game, and a notoriously hard Alien Blaster that makes it almost impossible to dodge the enemy missiles.

Should the makers not be stopped from making games this hard? I would like to know what other readers think.

Craig Fennor Worcester

We do not wish to hear from other readers who know of this sort of thing going on. And we'll look to it ourselves.



THE ULTIMATE AERIAL EXPERIENCE! NOW AVAILABLE FOR YOUR COMPUTER

All the thrills and skills of real skateboarding in this unique challenge to become champion of the skating world. Starting out from "Skate City" test your abilities amongst the numerous skateparks, improving your techniques both in freestyle and competitive action as you attempt to complete

the ultimate maneuver — the 720 degree bail while soaring through the air.

"720" is the epitome of a classic. It's got every element of a great game, U.S. Golf's "Sweet Home." — *Skate City* November 1992

720°

"720" is a classic and addictive. One of the most addictive games ever made for your PC." — *Skate City* November 1992

"Fans of the arcade original and vintage titles should love this playable and addictive game." — *Skate City* November 1992



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Andy Smith cranks his engine up to *Top Speed* with the help of a little Nitrous Oxide, then knocks off a couple of dinosaurs in *Time Soldier*.



TOP SPEED On a dirt road headed for the mountains. And the wrong use of the joystick will get you lost in a lot of miles in your journey.

ARCADE

● **TOP SPEED**

Two-
lapper game

If you've been burning rubber in Out Run or Le Mans then put this one on your list. Top Speed may look a familiar scenery, but it delivers it with a dose of massive torque that should bring a smile to the face of even the most fastidious speed fiend.

The game's initial appearance in the simulator is two games, the upright cabinet model and the all in cabinet version tested here. Controls in the one use all you'd expect from this sort of game: steering wheel, accelerator, brake and gear stick (lighting is either on RL or LD) which together take you through

a total of five stages, each with a varying time limit.

There's also a little extra in the shape of a Nitrous Oxide switch which is situated on top of the gear stick. Actuating this switch results in the car surging forward at best-inward speed, wheels smoking and engine whining in true Blue Max fashion. Distastefully the power is limited to just three bursts of 1000 per stage - this might not be such a bad thing because should you happen to hit a tight bend at 400+ kmh it can prove difficult to retain control of the car. These extra bursts of speed, however, do come over to the next stage.

Like most other out-of-car driving games, the joystick here is the action is from a position behind and slightly above the car

and the ever changing roadways swirl toward you. Besides having to stay on the road and avoid crashing into roadside obstacles, the player has other road users to contend with, including other fairly common and some rather large lorries.

At a point some way into the stage the player comes at a fork in the road and must quickly decide which route to take. Both routes converge again some distance further on, but selecting the wrong route can leave the player covering unnecessary ground and losing valuable seconds.

The animation and graphics of the game are superb, at the start of the first stage the player is driving through a city complete with skyscrapers and lampposts, and every section thereafter has different scenery -



TOP SPEED The futuristic car's interior. Road will show in the rearview mirror and into the windshield.



TOP SPEED Center lane and the city's in the distance - beware of gas and three bursts of Nitro before all the world's watching.



TOP SPEED Smashing through the city with the Nitro burner. Crashing out through and back's only way home for motorists.

don't expect much fun to derive it, though.

The drive cabinet is a pretty fancy experience — every time you fall off the road is copied by the rising and falling cabinet and each corner will force you leaning to one side or other. Climbing is an experience to be created by those with taste buds, unless you want to see them and up is your top. All in all, *For Speed* is a terrific game and if you find that there is a lot of out, climb in and that again...



FOR SPEED Handling with a twist at a turn is one of those fun things. Adding in your health, stability system and various bits of changing tracks.

FREE SOFTWARE!

Get those muscles flexing, get those scores soaring, and get your hands on some red-hot software for your machine absolutely free. Every month we're awarding juicy prizes for the best arcade tips printed in the magazine — last month it was Will Downing of Coventry who copped the trumpet — next month it could be YOU! Send in your tips, stating which machine you own, to: **Arcade Tips, ACE, 4 Queen Street, Bath, BA1 1EJ.**



THE LEGEND OF KOOLHAI With a little extra help, you'll see the character joined with your own in the third through.



THE LEGEND OF KOOLHAI Get the best of these partner sets and you'll have all the best.



THE LEGEND OF KOOLHAI - These 32 levels have earned one of your tips. Send us right for going for the number you - you know it was dangerous, but you didn't die.

ACE

● TIME SOLDIERS

SNK

3D-type game

This vertically scrolling shoot-'em-up has you in charge of an air-strike plane swooping in to hit targets, scattered through three time periods by the end of *Time Soldiers* — whenever for the most part you find yourself in *The Machine Gun* complete with alien-like and stone-like-looking creatures. The screen is full of alien-like (resembling) and *The World War* in both of American-looking (alien-like).

Control of the character involves first setting a priority to strike your character from one of eight possible directions, then panning to move in that direction. For example, if you character is facing north and you want him to turn east you have to turn the stick two times to the right before moving. This is a fairly simple to get to grips with and can become your hand converted into some uncomfortable positions.



The fire buttons are located inside the joystick and at the end of the game the player has only a level-firing gun. Extra weapons can be picked up by shooting and

if the enemies released red that appear frequently (and are brighter to kill.) These extra weapons include a scatter gun that has in three different forward directions of size and high-powered laser. These are activated by pressing the second fire button. Of course the weapons don't last forever so you have to keep shooting the red choppers for the extra.

At the end of the game the player is told in which time period one of his clues is to be found and is then transported to another time zone where he has to survive until he can find a transportation zone. These transport zones are time capsules that look like large broken eggs stuck on end, but lead you player into it and has transported to another time capsule plane, and with only luck the right spot he landing your dust.

Again the player has brought his way through the swarms of attacking enemies he will be confronted by the end-of-level guardians and in keeping with the theme of the level, the guardian takes the shape of a dinosaur, a tank or an animal-headed god. Destroy the guardian and one of your items will be saved, at which point you're told which time period the next ship is in and so on...

What really makes *Time Soldiers* so enjoyable is its addictiveness and its atmosphere. That and the constant action makes for one very playable game that will make your legs ache faster than you realize. ■

SUPER SELECT... ...SUPER



Win Arcadia's fabulous Super Select machine – complete with FOUR stunning games!

No more trips down to the coin-gobbling coin-ops; in this amazing competition ACE and Mastertronic are giving you the chance to become the proud owner of the brand new, revolutionary Super Select system from Arcadia.

This is no ordinary arcade machine. With the Super Select system we're offering you can take your pick of FOUR superb coin-op games – and you won't have to cough up a single, solitary 10p piece.

What You Have To Do

To the right you will find four screen shot sections. Each one is taken from a different Arcadia Super Select game, as shown elsewhere on these pages. All you have to do is match up the section with game it was taken from, write your answers on the cover-card and then send that in to us. So, for example, if you think section A was taken from World Darts, just write World Darts in the space on the card.

The prize

This is what the lucky winner will receive: a state-of-the-art stand-up Super Select System, equipped with joysticks and controllers for one or two player action – and most Super Select games allow two players to compete.

Super Select hardware

The innovative design Arcadia have come up with means that the Super Select System is able to store up to 10 games. How on earth, you may well ask, can they do it?

It's simple - when you know how, Super Select is constructed around an Amiga Printed Circuit Board. Attached to this at a right angle is a 'pizza back board', with 10 slots for miniature PCBs. The actual games you can play on a Super Select machine are to be found in here on PCBs - cartridges, which a new Super Select manages to provide up to 10 games on the one machine.

Super Select Software

If you think the hardware's pretty amazing, wait till you see the software. The prize machine comes complete with four Arcadia cassettes, plugged in and ready to go. Each one of them is the real thing that is going to have less fortunate mortals enjoying their pockets to play down in the arcade.



WORLD DARTS

No prizes for guessing what this game's all about: yes, it's on the dots and aim for double top. What will surprise you, though, are the superb graphics.

You play 501 in an international tournament against a series of increasingly skillful opponents. Each player has a distinct style of play, and if you are to make it through to the top levels you'll need to develop your own.



SIDEWINDER

Fly your ship in to the bowels of the evil alien space cruiser 'Star Killer' and destroy it before it destroys the sun. You must negotiate five different levels of 3D mazes before reaching Star Killer's command level and getting a chance to put an end to the craft that wants to put us all in the dark.

R PRIZE



XENON

A truly jaw-dropping vertically-scrolling shoot-'em-up with wickedly classy graphics as you - the lone liberation ship in these parts - battle through the four sectors of 16 zones. You can twist your craft between a ground orbit and a plane, depending on which you think is more appropriate for destroying the installations and ground-based aliens. Pick up items along the way to add firepower and manoeuvrability to your ship.

At the start of each stage you will be stunned by the detailed graphics and sound as your task is announced. At the end of each level you will be notified by the ominous guardian you must destroy before making any further progress.

Remember a game that any action fan would regard as a bit of 'big game' (big to be)!

BLASTA BALL

Even in the distant future - and with taking 30 to 40 years - competition is alive and well, especially in Blasta Ball. The object of the game is to score goals by firing the laser of your spacecraft so that the ball ends up at our opponent's end of the field - ideally, in the net.

The action is viewed from above the playing field and is centred on a meter-style showing the whole of the pitch. There are learners on both sides of the pitch, so the ball always in play and the action is always intense.



Rules

1. The losing player's winner is February 14th 1988.
2. Employment of Microsoft Ltd. Future Publishing Ltd. and the families you struggle to win.
3. The winner of the competition shall be the first correct entry drawn at random from entries from required prior to the closing date. No correspondence shall be entered into.
4. The winner writes notified by post within 14 days of the name published in the April issue of ACE.



A



B



C



D

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ARE THESE GAMES ILLEGAL?



Barbarian
Heep, he's got to be dead again. Excuse me, but he's the rest of your blood!

BARBARIAN - hack off the head, **RENEGADE** - kick, punch and stomp until the punk's blood flows, **DEATH WISH** - use pistol, pump-action shotgun and bazooka to massacre the scum (or the police, depending on how you feel), **INTERNATIONAL KARATE** - chop and punch your opponent in to submission, **GREEN BERT** - knife the fur-hatted foe, or flame-thrower them if you can.

We've played them all; but should we be able to play them at all? An ACE investigation reveals that all the games above may be breaking the law, simply because they do not carry a certificate from the British Board of Film Certification - the people who decide whether a film or video gets an 18, 15 or PG classification.



Green Beret
This browser cuts it off, why not this time...



Death Wish

Spit! You've got to shoot just into the middle of people you can kill!

The Video Recordings Act 1984

So what's all this law about? The law - in 1983 and 84 public debate erupted about the so-called 'video nasties', films of a violent or sexually explicit nature. It was widely believed that with the growth in ownership of video machines children could be exposed to films which, it was suggested, might have serious psychological effects.

The result was the Video Recordings Act, which sought to bring videos under the same kind of control as films. What it got to do was 'game' what might you see.

The act contains 'video nasty' and 'video recordings'. The first of these is defined as 'any series of visual images (with or without sound) -

not produced electronically by the use of microfilm contained on any disc or magnetic tape, and its shows as a moving picture.'

The second term means 'any disc or magnetic tape containing information by the use of which the whole or the part of a video work may be produced'.

So games should have been submitted for classification all along, but like video film, not quite. A game is specifically excluded from the act - unless (and here comes the interesting bit) 'any significant bit of very significant violence, depicted human sexual activity or acts of force or gross restraint associated with such activity, its restriction or torture of, or other acts of gross violence towards, humans or animals, (2) human genital organs or human anatomy or necessary functions;

or is designed to any significant extent to stimulate or encourage anything falling within paragraph (a) or, in the case of anything falling within paragraph (a), is designed to any extent to do so.

So, pretty clearly, all those games we've mentioned on this page should have been

is pretty clearly, all those games were mentioned on this page should have been submitted to the BPC for certification before they got on to the shelves of the shops.

Does it all mean that the games ratings run-off in its whole long offices of the law? How many games might get those 15 certificate which would cut them off from their largest audience? And - farthest of horrors - will we now hear calls for censorship of games? For a full discussion of these issues and how they will affect you, read on. ■

West Germany

While here in the UK we're only talking about the possibility of certificates and censorship, in West Germany the whole business has been in full swing for several years. (Yes, Quasiborn, Beach Head 2 and, most recently, Gunguis are just some of the games which have been banned by the Bundesprüfstelle Für Jugendschutz - Bundesprüfstelle für Jugendschutz.)

This august body transmits its to England as the Federal Office for the Examination of Harmful Publications, set up in the 1950s to protect German youth from morally corrupting publications in a variety of media. Works likely to corrupt are defined as 'inciting or instigating acts or those which incite violence, crime or racial hatred or glorify war'. So far it's the war games which have suffered, in particular those from Microgrape - who are now vigorously fighting the ban on Gunguis.

The final, less clear situation exists about some of the adventures which can occur when censorship bites. Any product which is put on the list of prohibited publications, cannot be advertised anywhere and must not be sold to anyone under 18. It can still be sold, but only in shops specifically designed to exclude youth - which means 'Sex Shops'. So if you want to buy a copy of Silent Service or Gunguis in West Germany, you could find yourself among some interesting reading matter...



The Helicopter Simulator

THE CERTIFICATORS

the business of granting certificates to film, videotaped computer games is outlined in the British Code of Film Classification, they first you go to the cinema you see their certificate before the film starts. ACE want to see the BPC Secretary, James Fennell and Deputy Director Jim Perry, with a selection of recent games with video-tape. We wanted their views on whether the games should have been submitted to the BPC, and - if they had been submitted - what kind of certificate they would have got.

That of was Police but wasn't Robinson, on the IT 'Should the classification apply here?' He says it was mainly 'horror-like violence'. James Fennell said, 'No, he added, it probably should have been submitted before release, as one could argue that it contains scenes of gross violence'. But it would probably have received a PG certificate, which means that although parents might not wish their children to see it, those children would not be prevented from buying the game in a shop. A similar opinion

was expressed about Genshins Death Wish 2.

'The thing is, as to another problem, just what is 'gross violence'? The Video Recordings Act does not define it, nor does the BPC. It's a matter for the courts', says James Fennell. And, presumably, it's neither that producers of a game have to determine for themselves before deciding whether they ought, or ought not, to submit games to the BPC.

The BPC has only ever been called upon to classify three games - all from CRL - and they are not really expected to deal with a flood of programs. As yet, they do not even have a home computer, let alone the whole range of popular machines. CRL have submitted their games on videotape, with a printed off the text (all home box graphics adventures). Such a form of scrutiny will do to adventures, but for an arcade or arcade-adventure it's hard to see how you could really tape the whole thing. Expert evaluation would be needed - but they'd have to be

THE SOFTWARE HOUSES HAVE THEIR SAY

Police

Pete Stone of Police, producer of Barbarian, is under fire of the Act, but says that all the time Barbarian was released it didn't cause our minds. But I honestly don't feel that Barbarian's a case where the Act applies. Pete Stone believes that Barbarian is very much in the world of fantasy, cartoon-style action. If I strongly felt that Barbarian would incite violence, I wouldn't release it. But I don't believe it does.

'We'll submit games to the BPC if a future 15 is become the accepted thing.'

CRL

Clare Heath of Chambers of CRL is the most of the centre of the storm, she vigorously denies allegations that Jack the Ripper was submitted to the BPC merely as a publicity stunt.

'Indeed, in fact, before he takes the high road ground, we were concerned that certain categories of people should be protected,' he says. 'It had to be a very specific procedure to get a certificate and have been fixed it down rigorously.'



He goes on to claim that Jack is a breakthrough in computer entertainment, bringing ratings undreamed of cinema and television to the consumer. 'The better the offer, Chambers maintains the greater the effect it has.'

He also feels that he has, below the surface of a headline from other figures in the software industry, because Jack the Ripper has brought attention to people breaking the law.

And what about the fact that the game they not have needed a certificate after all? He's not a scientist, says Clare Heath.

Activision

Clare Heath says that Activision is aware of the implications of the VCA, but that company policy is to avoid games of a particularly gruesome nature. She'd like to think we'd have to submit a game like Gunguis. It's so mindless. Computer images, she feels, are so much less realistic than video that the same procedure should not apply.

The game on to make the point - voted by many other people, software houses included - that a game without a message substance is seen as you say it out for them.

She also points to the potential problems in software houses is getting certificates it's too time-consuming matter where it's essential to get

a game out as quickly as possible when its completed.

US Gold

US Gold is another company whose list the console list is "What Game?" The latest game to fall out of the lineup...

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Electronic Arts

The EA game board is established too long in the UK, but they're well ahead of the law, not least because they use CD-ROMs.

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...is a *Express*...

Write in the business of home computing - and that means for Morn and Dad out the back!

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Microprose

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What now?

None of the software houses we spoke to seemed ready to take the plunge and start submitting games to the BBFC for classification. As long as they genuinely believe that their products do not contain gross violence or any of the other factors the act mentions that they have a very strong case for not submitting programs.

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VIOLENT GAMES - VIOLENT PEOPLE?

Is there any persuasive evidence to suggest that the games you play can influence your behavior? Could you become a violent psychopath through playing *Mad Max*?

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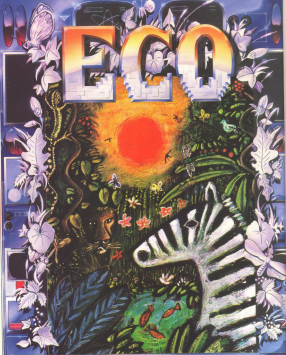
Jack the Ripper - why it doesn't need a certificate

Many of horror - it seems that the game that's caused the fuss, *Jack the Ripper*, doesn't need a certificate after all. The game is an adventure with graphics. The pictures - which caused the problems - are all still, like the frozen floodings. And unless a 'video work' or 'video work' of visual images (with or without sound) is produced electronically by the use of information contained on magnetic disc or tape, and

...is a *Express*...
...is a *Express*...
...is a *Express*...



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GET IN TO GRAPHICS

Part 1
in our new
series on
graphics
techniques

So, you want to brush up your pixel power? With the arrival of sophisticated art software for nearly all 8 and 16 bit machines it seems like a good time for us to provide a guide to advanced computer paintbox technique.

Over the next few months some of the secrets of achieving professional-quality pictures on a whole range of machines will be revealed by our resident dauber Brian Larkman.



BLUE SPACECRAFT

Left: After the rain. Centre: Single white object with high light source in shadow. Right: Multiple objects behind each other with light source behind them. All with solid black body and simple lines. The image is 100% digital, generated in a few hours after a simple guide, then to real (and easily edited) Photo-Image after the first General Frame - printed on a high resolution printer.

The software

When it comes to stepping those gaps of pixel around on the old electronic canvas the sophistication of several recent arrivals on the domestic computer graphics scene has blown up the rest of the software available as woefully inadequate, especially in 16 bit machines.

The whole point of using an electronic medium as opposed to dirty old paint and pencil, paper and canvas is to make every use of the wide range of tools of manipulation that a modern micro can provide.

There make up for the inadequacy of most computer images (no resolution, few controllable colours) by providing the ability to transform the screen in unique ways. So for the moment avoidable means of doing this, as with an Amiga and Deluxe Paint II or DPaint (described in our last issue).

On lower machines than the Amiga, Deskins' Advanced Art Studio seems best in the field. That is not to say that other programs on other machines do so good of what AAS can do, just that AAS can do more, and more easily, on most machines. It provides what should now be seen as a de facto standard or benchmark for graphics packages.

Nevertheless, AAS is by no means perfect on any machines. Although it would be a pity to leave that continental drift on an 8-bit machine is no reason for not including more sophisticated manipulation features within the program. Who would not give a hand to be able to rotate an object by just a few degrees at some occasion, or bend it, or give it perspective? Most software writers seem to think that speed is essential but, as the long word lists required by my tracing show, sometimes it's worth the wait. The 2D version of AAS does provide some of these more complex tools working at a reasonable speed (but still the usual facilities, but it seems so very different to the 16 bit versions as to be a

different package. A shame the same 'best' could not have been kept to ensure ease of upgrading.

Assuming that its facilities are the minimum tools to demonstrate the more advanced techniques of 'postbox' style on-screen painting, we will use AAS on an Amstrad CPC to produce most of the 8-bit pictures for this series. Each tool will be explained in turn to see what it is capable of.



TEXTURE GRID

The 2D version of Deluxe Paint for the Amiga version of Advanced Art Studio. (Amiga version of the software.)

few you can best use it and, in some cases, how it might be improved. Wherever possible the equivalent tool in Deluxe Paint II will also be described for comparison, and it is a particular pleasure to have some unique ability exclusive to that tool it will also be covered.

Textured fills and dithering

AAS has some very novel texture-filled fills and dithering, the latter being my favourite innovation. On these pages are several pictures of a spreadsheet, one drawn in 4 colour mode (1 on CPC, another using its colour in DPaint on an Amiga, although it could as easily have been done on an 8-bit and the other a very good 4000 colour picture from Super 3D-Intensity as an Amiga). What's interesting about this is the way that the colour variations can be rendered in each picture. The way

that concern us most are those using only 4 or 16 colours.

Normally the best thing to consider is drawing a picture in shades—this way the path of an object being together and it is left with only other surrounding objects. We shall delve more deeply into structure next month, but in the meantime the structure is relatively simple; it is the light that is most interesting.

To give the effect of three dimensional space in a picture the position of the light source and the amount of light that you use in shading the surface is vital. The four colour CPC drawing uses the local amount of shading. More could have been used to model the surface but with so few colours this would tend to be messy and compromise the image. Initially the sphere relies on two simple tricks to make it look spherical—curved lines on the surface and a spot of specular reflection in the right place.

Specular reflections

Everything we can see is visible because of the light reflected from it into our eyes. If it is a particular colour because the surface absorbs the wavelengths of light of that colour. If the surface is flat then we will see the object in a range of tones of that colour. If it is reflective we will see the surrounding environment (the light source reflected)—usually with a bit of distortion—but tinted to its colour. If the object is at some degree along the horizontal eye will see equally reflected but the light source is. This reflection is called specular reflection or highlights. Adding the highlights is the most important final touch you can give to a drawing to make it look realistic. They need to be carefully observed. The shading that has been used in the form of actual shading positioned to show that the sphere has bits that is getting in the way of the light. To position this (and the highlighting) correctly it is necessary to decide exactly where the light source is. In deep space there is usually only one major source, making lighting much simpler (which is why this subject was chosen to illustrate light and shading).

When a reasonable number of colours are available—say 16—it is possible to select those that will give the effect of modelling it 'locally' in an object. Darker shades are placed away from the highlight, lighter shades close to it, the edges of each colour blend nicely together using a technique called *dithering*. The four colour picture demonstrates this form of shading perfectly. Some of the software allows automatic dithered bits—the range of colours used is changed progressively along each line of the bit.

The CPC is capable of mixed dithering in three mode using the grey. So in theory we the Spectrum and Co., but attribute problems make this difficult in all but the simplest pictures. It is here that A11 Studio comes to our rescue with *Wash Feature*.

Washing your features

The full colour of features that the CPC version of A11 provides using just four colours is

shown in the illustration of the *Wash Feature*. Other means here is a certain range. These can all be used to fill an area of the screen or they can be sprayed, painted or drawn on, using any drawing tool in conjunction with *Wash Feature*. On the right of the grid is a column of larger boxes showing the range of shades that are available from the CPC of the feature by swapping the background and background colours. All of the pseudo-colour shades can be used on screen of

Optical mix

Although the human eye is an amazingly sensitive organ the brain has the ability to be selective about the way it interprets what it sees, especially when viewing a fine grid of dots. Provided the dots are small enough the eye can mix two adjacent colours into a third. This is called optical mixing.

even as only four real colours are used, with the extra tones produced by optical mixing.

You will find it very useful if you produce a similar grid to help in the selection of features as the range is so large—real ones are gradually enlarged between the features one was desirable and one to be used. When using the IT version of A11 the screen grid could be kept immediately available as a separate screen in memory.

In some ways the most versatile use of features is as spray-on shadows with *Wash Features*. By defining the background colour of a feature as transparent and the background colour as the shadow colour, any area that you wish to be in shadow regardless of its colour can be sprayed over and



SPACE
Wash Feature. Wash is performed on the selected body—dark pixels (background) are left with white grid with varying speed. Experiment this first. Then use grid with green/highlight. Wash—spread over that feature.

then converted to the defined feature by selecting *Wash Feature*. All colours show through the transparent bits but the darker grid evenly gives the impression of shadow. This technique is extremely effective and can save lots of time. It works best if the picture background is without detail and the same colour as the shadows, in the case of the CPC picture above, black.

Amazingly *Define Paint* if does not have a wash feature (which the only serious competitors in the program) but a similar effect can be obtained by defining a fill pattern in alternative background and shadow areas with any colour, filling with the defined feature, picking up the textured area, leaving the background also painting



YELLOW SPACECRAFT

Each section was made separately and then assembled. In right of space if legend was chosen to create shading patterns. Colours used: white/light grey with blue edge and a few white spots in the hands. (Spectrum) background the first feature's own actual size. Wash/Space—after that order. Use to can be washed. Wash feature the sphere, center area, low down system, mainly shading, feature space, finally.

the texture. In a lot of contexts, but it usually can be seen in the 'viewer' (spacecraft) picture.

Colours

Such a strategy is only necessary when the number of colours available is limited. With 16 or 32 shades from a range of 512 or 4096 more realistic shading and surface modelling can be achieved with careful choice of colour and dithering. The most sophisticated software even lets the artist specify on the screen by calculating the best shade made available for each pixel in the view-camera.

With Sapphir using 4800 colours on screen this can result in some very realistic effects. Similar results can be produced from 16-bit-based pictures. Exercise the shading and colour modelling of curved surfaces in the picture 'Blue Moon'. The degree of smoothness is not possible in any other way; it gradually represents the ultimate in surface modelling on a current home-computer - a suitable image to serve you contemplating the real moon. In true Master of the Universe fashion the image has words to:

"...if you are going to get up to steady practice make sure you wear seatbelts!"



Blue Moon
By David King of House

ARTWORKS

It's here at last! The section you've all been waiting for, where you can display to the rest of the graphics world the work you've created.

Artworks will appear in every second or third issues of ACE - provided, of course, that you keep on sending the pictures in. Please try to give a few details about how you did them, as well as any tips you might have for other readers. The address to write to is:

Artworks
ACE
4, Queen Street
Bath
BA1 1EJ

HAND

Steve Hill, London
Shown here and on the CDG using Artid 64.



CARTOON

Simon Lucas
This version of a cartoon by ACE's own Steve Spier was drawn on the ST using Neochrome.



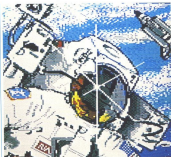
HUMPHREY BOGART

Reynolds Kiser, Los Angeles
The great movie actor makes a return appearance on the ST.



DRAGONSLAYER

David Hardy, Nottingham
Drawn on the Amiga, using Deluxe Paint. Not even as tall for someone who's only had the computer for a month.



SPACEMAN

David Hill, London
Another of Spawr's detailed pics, produced once again with Brital 84 on the C64.

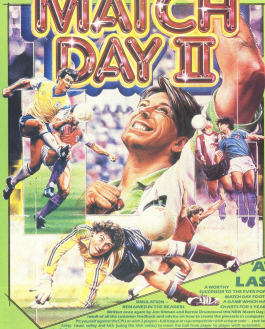


THE GOOD, THE BAD AND THE UGLY

Frank Toul, Torquay
Produced on an Amiga using Deluxe Paint. Single items were created, picked up with brushes, saved and then overlaid.

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SCREEN TEST

Road racing games have gone in to overdrive this month; we give the head-to-head judgement on *Out Run* and *Super Hang On*. In a slightly different vein, EA want to take you for a *Test Drive* in some very upmarket motors..

Old favourites have been jazzed up; check out bouncing balls in *Gremlin's Cosmic Causeway* and Ocean's *Match Day 2*.

Most surprising 900+ programs of this month are the board game *Diplomacy* and the Mirrosoft puzzle *Tetris* (first Russian game that we've ever seen - keep 'em coming Ivan).

And, of course, the arcades. Some good conversions this month, including Konami's *Salamander*, Firebird's *Flying Shark*, Ocean's *Gryzor* and *Combat School*.

Most long-awaited game award goes to *Star Trek*; yes, it really has beamed down this time. Also interesting is

Microleague Wrestling, with nifty digitised pics of the monstrous grappler Hulk Hogan. Eat your heart out, Big Daddy.

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As long-awaited games go, the software-buying world really has been holding its breath over the one. Did US Gold seriously intend to blow them out an enormous, mind-boggling test game into a bunch of home mitts? More to the point, could they do it?

Not so much. Getting the fast thrills of an auto-racing title is, in all versions of the game just squeaked onto the market in time

You have to drive a bright red Ferrari from a start to one of five finishing lines, consisting of high speed and dodging other vehicles you come across. You drive against the clock, with time bonuses along the way to exceed your game. Run the clock down to zero, by driving too slow or wasting time reversing (yes, really), and it's game over.

That's all standard-set, cut-up racing

and suspense.

The latter is probably the most apt description you'll find before each time challenge let you choose not only which finishing line to go for but also the route you want to take there. The usual is the heart of the Out Run experience. Our race strategy tips will be disappointed to learn that, but that's really not so surprising is it or all. You just choose one of five possible routes (compared to the average six

OUTRUN

Pedal to the metal with US GOLD.



Top Gun - Ferrari Road - is common to all roads, except that here Ferrari leads us.

for Sega. The only finished version available for review at time of going to press was for the CD-i, but US Gold were considered of getting Spectrum and Amstrad versions into Britain's gates.

If you were in the PCW show this year, bought a copy of ACE issue 2 or just took a look in the stores recently you'll already know what Out Run is all about, but for anybody who still is in the dark, here's a quick rundown.

game still, but a number of features lift the simple Out Run into a class of its own. On the graphics side, large (and ingeniously solid) pieces of roadside scenery burst past very convincingly. In fact, and you can well go tumbling and over and in, one of the game worlds all time great cut-sequences. It's got to be a nice your cup of tea, what with convincing - take it slow and low time accelerating, or get your wheels and steer -

RELEASE BOX

DATE	PRICE	TI. NO.	OUT. NO.
SPEC	£19.95	MMAND	
AMSTRAD	£19.95	MMAND	
MSX	£19.95	MMAND	

TIRED of always hitting top speed and still not going fast enough? So were Sega apparently, because they tried the Ring-Dr bit with a subsequence for cut such moments. The result was the surprising discovery that CD's new streamlined road scene is based on.

Starting in Africa you soon to race around the globe, hitting in Asia, America and finally Europe in a desperate bid to beat the clock. Bonus time at the end of each section - there are 45 of these in all - helps keep you going, but the odds are stacked against you.

As with CD's Out Run, this is not an game but a level. Each of the four main levels leads, respectively, and even an Amstrad disk you'll have to watch the machine off to move on to the next one. In

Amstrad Version

Amazingly the game actually does occur on its way over from the Spectrum, leaving the screen dark and empty moments. The sound bytes (truncated) still, if your conversion failed that does not really say much.

REARVICE	5	RD FACTOR	3
AUDIO	1	PLN FACTOR	5
ACE RATING 472			

Sega Beavers

Superficially these two car/race licenses have a great deal in common, both in the Sega originals they're based on and in the compromises made during conversion. If anything these games are more similar to each other than the originals were, what with the CD-i's memory problems doing off the main choices that made Out Run so popular in the arcade.

Oddly enough, the main problems the two games have aren't those that most pundits foresee. While the main sequences in Out Run haven't turned out to be terribly impressive, the large roadside features and highway traffic are surprisingly fun and the impression of speed is good.

Equally, the notorious colour problems of the Spectrum have done relatively little to spoil the look of Super Hang-On. True, the turbo glow is nothing to write home about, but the lack of painful colour clash is a delight and again the simulation of speed comes across well. (The Amstrad on the other hand, a far more colourful machine, is given a dash a game stops as the Spectrum ever had to put up with.)

Ironically, both games suffer from gameplay problems which could put you off more than a little. Super Hang-On's initial difficulty is infuriating, but as so often happens the frustration goes hand in hand with attention. Out Run has its difficulty problems too of course, but seeing on the resulting way as it does it'll have a rather harder job putting through.

PREDICTED INTEREST CURVE



Refer graphs on the Spectrum given the edge on the way, for both versions rather than scores difficult in the long run.

C64 Version

A good impression of speed and some exciting driving features may be the better advertisement, but they can't cover over glaring faults in the graphics, sound, graphics, and controls. It's hard to get the fun out of it.

GRAPHICS	8	IQ FACTOR	2
SOUND	8	PLAY FACTOR	5
ACE RATING 4/10			

kind of feel free, and if your fancy turns to a different route after half an hour you'll have to turn it off and reboot from scratch.

There are the only major departures from the core-op: the balance of gameplay is completely different; the C64 version has such phenomenal acceleration that level periods of testing have very little effect on

your overall time, so what with the absence of any really steep corners there's no real need to risk crashing over an obstacle you aren't familiar with. This is all the more noticeable being as the C64 version has better the wide varieties of scenery and the challenge of the course.

Instead your main problem is weaving through traffic, but even here there's nothing like a real challenge. The sheer volume of traffic is absurd - finding your way completely blocked is not uncommon - but since all vehicle patterns are fixed and predictable you'll soon be creating any obstacles it's actually possible to avoid. Mastering very close of the line courses is a matter of hours rather than days under the circumstances, and that's not good enough.

The level may still be in the old on the Spectrum and Amstrad, but the C64 version is definitely disappointing. Though especially not too far off the core-op - Play hard

PREDICTED INTEREST CURVE



Surprising good value will get you a lot, but the performance may be held your interest.

boxes and costly bridgework to our side - it tests the possibility and challenge you're entitled to expect. As a game it does have a lot to say, but only getting through the stages is hard, your interest for any length of time, so it's best to see both ways.

• Andy Miller

SUPER HANG-ON

Get a grip on ELECTRIC DREAMS.

Survey the comments are graded in order with those the easiest and Europe the hardest, but in practice this is only halfway the case.

You start each continent with 30 seconds on the clock and get another 30 seconds bonus at the end of each section. You'll rarely take a profit on a section by completing it in under 30 seconds, so your time will tend to get with down as you progress across a continent. Thus, in a sense, the 15-section Europe route is much harder to complete than, since it's shorter or Asia U.S. The opening section of the longest run, one of at least as

difficult which engages that all important turbo - provided you're going fast enough, that is. You can jump to all your work, but the turbo won't kick in until you're up to 200kph. When it finally does fire up however, things really start getting interesting. The extra 40-50kph the turbo gives you is essential if you're to stay on schedule, but it makes it substantially harder staying on the road and dodging other cars.

Keeping your eyes on the horizon is pretty important - falling outside obstacles costs you precious seconds - but dodging other cars is absolutely vital. Collisions can cut your speed in half, and that'll see you a good deal more than that turbo cost. Unlike Out Run, you see, the opponents come from behind as well as appearing in the distance. Once you fall below the average speed of the pack you're liable to be cancelled by taking lying in overtake you.

It's a vicious circle: low speed and you really never get back again, being removed faster than you can steer or otherwise. Some-time men feel kept cutting you back to a crawl, but it can also block you from getting the low line you need round a curve or out you of the road entirely. If you suffer some such pressure problems, the closest simulation punished here will do you no good at all. It's not just the close cut-throat of it all - so near to who wins who, you're the only one who loses speed - but the inherent difficulty of avoiding collisions as well. Without it not you ever, you've just got to guess where other will appear from. Get it wrong once and it could put you out of the race. Additive stuff to be sure, but you'll be using the

other facility - and a few well-chosen explosives - more than a good ought to require.

• Andy Miller



Super Hang-On driving fast with some extra turbo's turbo only.

RELEASE BOX

C64/8	£19.95/14.95	MSRP/ST
SPEC	£19.95	£17.95/ST
AMS	£19.95/14.95	£17.95/ST
ATARI ST	£19.95/14.95	£17.95/ST

Spectrum Version

Good impression of speed, well-imitated ideas and good colour with remarkably little crash. Sound effects are of the real side, but overall it's a bit dull on the presentation front.

GRAPHICS	8	IQ FACTOR	8
SOUND	4	PLAY FACTOR	8
ACE RATING 7/10			



Super Hang-On's electric, you'll have to race through the pack. The turbo engine (top left) gives you a boost along the course with the turbo engine making that point.

hard as anything in Europe or America however, and the one lap on the Amstrad route is nothing short of ridiculous. The easiest a section, but don't let us suggest to boost the control side.

As well as the usual steering, throttle and brake you have a key that makes the engine

FIRETRAP

Douse flames with ELECTRIC DREAMS

FIRE fighting is best left to the experts, especially when there are fire-fighting robots available. Still, all the experts are reluctant as it's up to you to save the day.

You start the game on the bottom corner of the first lower block and have to reach the top of the building within a time limit. First

you can proceed to the next building irrespective of how many others you've scored on the way. As it's usual with learning buildings, the rescue operation is hampered by falling televisions, tables, bottles or pots -

RELEASE BOX		
CD-ROM	CD-ROM, CD-ROM	IMPACT
SPEC	CD-ROM	OUT NOW
AMG	CD-ROM, CD-ROM	IMPACT

look out from the windows constantly and you have to use your water cannon strapped to your back to extinguish them. The trapped people send digital pleas coming in text and this is obtained by reaching whatever window they happen to be hanging out of. They then guarantee to safety and you can go rescue the next victim.

But playing tenor for everyone is a secondary consideration, for at the top of the building is a special lobby Rescue bar and



You're being shot every second here, so perhaps you should not dabble with these ladders.

the usual sort of thing, and ended with very few (including the best) results in you losing most of your free lives.

Firetrap suffers in the playability stakes in that once you've lost your cannon your score can't move until the stat has disapp-

Spectrum Version

The working is easy and the screen isn't very colorful, but though the colours do change for each building it's tough to play, and you may feel a bit stressed when you get hit by an object coming out of a window. More luck than teamwork is needed and the collection seems of pretty soon.

GRAPHICS	8	HD FACTOR	3
AUDIO	4	FUN FACTOR	4
ACE RATING 4/47			

PREDICTED INTEREST CURVE



peared on scores or has lost something, it's not the usual rearranging of table-top numbers and all but the hardened experts will score low on this.

Andy Bell

MASK 2

More Venom from GREMLIN

BOULDER still, the home of dog-pooles M.A.S.E. is the starting point for another attack against the loathsome VENOM. That Venom, Ed, Network Of Mayhem, have spent everily by kidnapping the president and it's down to you to save him.

The game is played over a split-screen scrolling terrain full of flying, crawling, swimming and diving VENOM-agents with the player controlling one of three MASE vehicles. Usually the player has to make his choice of vehicle late in a selection of free play.



Amstrad Version

Splits an unfortunate and has a likely loss, but they are colorful. Plays well, with plenty of speed and precision for us on the Spectrum.

GRAPHICS	7	HD FACTOR	3
AUDIO	5	FUN FACTOR	5
ACE RATING 5/15			

Spectrum Version

Large battles with colorful background make this a gripping game. Its straightforward being good for a first run it makes the later one a a really interesting to be played.

GRAPHICS	7	HD FACTOR	3
AUDIO	5	FUN FACTOR	5
ACE RATING 5/13			

ships. Each one has possible characteristics which have to be considered before selection, e.g. Thunderhawk's cost can transfer into an airborne attack craft at will, whereas Gator turns into a high speed power boat on

RELEASE BOX		
CD-ROM	CD-ROM, CD-ROM	IMPACT
SPEC	CD-ROM	OUT NOW
AMG	CD-ROM, CD-ROM	IMPACT
WSE	CD-ROM	IMPACT

switch with water. Switching between vehicles is easily controlled all the time of a key, and is necessary in order to complete the three different missions in the game.

If you're into the toys or you enjoyed the first MASK game, then you will find MASK2 just as much fun.

Andy Bell



Amstrad version - Thunderhawk - those - get what you need to destroy the gremlins.

DAN DARE II

Can VIRGIN do it again?

GREAT Scott. Enjoy the Mission up to the old tricks again. We prefer to celebrate the decades Superheroes on Earth in the new Gang of Five age, with only the Plot of the Future to stop the Seminal classes. Can you do Scott's apostasy and save the day?

On each of the games four side-on view levels, your mission on Dan is to kill the Superheroes by wrecking their life-support

Amiga4 Version

Ten's Gang of Five comes with the real test to test it, and usually stream graphics capture the digital comic-strip feel precisely.

GRAPHICS 4 IQ FACTOR 4
AUDIO 4 FUN 100/100 4

ACE RATING 838

Spectrum Version

High-tech dash-free colours make this a great-looking game, but tough controls will cause you some problems at first.

GRAPHICS 4 IQ FACTOR 5
AUDIO 5 FUN 100/100 4

ACE RATING 814

RELEASE BOX

CD/D5	D18a, D18b	MANOIT
SPEC	D18a, D18b	DJ/PCB
MS	D18a, D18b	DJ/PCB

systems five full ends, quite quick from the amount of pre-set-created exposition each level adds to. The main story is bare as soon as you start blasting Superhero's you trigger a destruct sequence which will blow the entire level apart. Start at the remaining computers and reach the controls in the next



Superhero. Get to work in the control room and you'll be control room into the garage computer later (top)

PREDICTED INTEREST CURVE



The game probably won't sell as much as Dan Dare, but it may still be worth a look.

level before the countdown reaches zero, and you'll survive to continue coasted at tougher exploration and wrecking time for long and it's game over.

But there's plenty to stop you from being bored: your path, unlike Superman, does away at pre-set levels until you're more (possibly to your doom). Gun fun, giant postage components and conversion also mean problems. Most levels top your scoring level - when the reaches zero your dead - but things like components save you one of your six lives straight off.

Lack of being the New Guy? Well it's tougher challenge? This play the Mission instead Dan's already suggested the destruct sequence, the idea goes, so you're got to take his explanation or enemies (dash round, switch all the Superheroes' mission on and then get in that attack before the level blows. Manage that and the next levels from there immediately, so you really have to know your way round.

Andy Holden

PSYCHO SOLDIER

Athena again? IMAGINE!

HAVING enjoyed the studies of the Dark Overlord, Athena once again gives her spirit in the sequel to Imagine's game of the same name. Again it's a

levels one related with demons, contact with whom costs Athena one of her four lives.

At the base of the screen is displayed an energy bar and red icons showing how many bombs are left. The energy bar scales to the strength of the bombs and of various places throughout the levels extra bombs and energy can be gained by destroying large bombs. These bombs can take some unpleasant icons that drain energy on contact, so you have to be careful to avoid them. Make it to the end of the level and you'll do a landing guided by a

Spectrum Version

The 128k program (with level 4.48k) has well-annotated colourful graphics but these can no longer see the subtleties of the game. It's not for buying and has few if any additional qualities. The frequent death problem that plagued Athena has been retained, but only by over-riding a game with restart option.

GRAPHICS 7 IQ FACTOR 8
AUDIO 4 FUN 100/100 5

ACE RATING 508

limited colour conversion, which sees the player controlling Athena as she battles through six levels of winding platforms steadily.

Armed with a breathing gun and four bombs that float around her, Athena must make it to the end of each level's 30 seconds (but constantly scroll from right to left. The

PREDICTED INTEREST CURVE



The Athena of quality.



monster that has to be destroyed by a combination of bombs can last five - if you use a life, you can lose any bombs and energy you picked up on the way, making the difficult if you happen to come up against the monster with only your lives.

Psycho Soldier may have been an addictive and playable coin-op, but as a computer game it soon becomes tedious and boring in play.

Andy Holden

RELEASE BOX

CD/D5	D18a, D18b	MANOIT
MS	D18a, D18b	MANOIT
SPEC 486	D18a	DJ/PCB
SPEC 40	D18b	MANOIT

FLYING SHARK

Is it a FIREBIRD? No, it's a bi-plane...

BI-PLANES With all deadly shots of the air, aerial lightning bolts and certainly not the stormy clouds to contend against the overwhelming odds, level 10 features second coin-up co-workers Flying Shark.

It's a vertically scrolling shoot-'em-up in which you must fly your trusty 2-colored bi-plane through five levels of clouded terrain bottomed with other bi-planes as well as tanks and boats. Every so often more leather opponents will team-up behind you and you



Level 10 gets even hot like this. As the 8-biters are blasted a 10000 score comes through the screen, but, as long as you're still alive, don't be party of death-ly before it returns you to life.

RELEASE BOX		
DATE	2.8.84	2.8.84
PRICE	£7.95	£12.95
MS	2.8.84	2.8.84

must destroy these before they reach the top of the screen, otherwise they go into "blow-up mode" and really give you trouble.

The enemy attacks in waves and as your only career with a level firing gun, their attack bundles can prove overwhelming. Misses give up hope though because extra lives are available if you manage to shoot a wave of enemies and collect the resulting firing square. Manage this resource and your firepower is increased, eventually making your job slightly easier. You also have those short bursts (usually) but you have to go only on them if you want to survive to the end of the level.

Admittedly, at the end of it, some, you may be lucky enough to get an extra thousand points, or even a bonus life to add to the lives you start off with.

Spectrum/Version

1000 to 2000 ground level it can be a little difficult to see the enemies' bullets - sometimes you're left wondering what hit you. Sound is limited to spot effects (only) and the odd tone (good) but that doesn't detract from the game's sheer playability.

GRAPHICS	5	HB FACTOR	4
AUDIO	5	HB FACTOR	5
ACE RATING 893			

Take some elements from Moonbase (score is a bit of 1982), add a pinch of Light-Force and you'll have some idea of *Flying Shark* - inevitably frustrating, playable and addictive.

Andy Smith

PREDICTED INTEREST CURVE



SALAMANDER

KONAMI'S flying lizard

CYNICS Thought Salamander was one of those high class arcade games that could never be converted to CB it did make well when any of the company used adaptation of the coin-op classic. Was they right?

For from it - Salamander has made the transition and has survived outstanding as one you're tired of. The horizontally scrolling shoot-'em-up has the player flying in space (top) through a series of alien tunnels, trying to survive harassment from both ground-based and flying installations. Huge tentacles (and) from the ceilings and floor of



Salamander has a great set of weapons which shoot these you choose if they're too weak or too bright.

the tunnels and try to guide your ship - these have to be shot at the right place to destroy them.

The almost obligatory video weapons are available to the player who manages to shoot a wave of the flying aliens and these weapons include the legendary Intrepid - egg shaped structure that follow you out and when you die, effectively increasing and spreading your firepower. You get three lives to do the business - and if you're lucky you might pick up a few hundred and

to help you on your way.

The first 8-bit version is well into the game and until you've mastered the dual fire abilities, you'll find being sent back to the beginning extremely frustrating. If you like your shoot-'em-up tough, you'll not be disappointed with Salamander, it's very easy to pick up and play and inevitably difficult to master. The Konami menu computer has never proved the wimpler wrong word-ably.

Andy Smith

RELEASE BOX

DATE	2.8.84	2.8.84	JAN 84
PRICE	£7.95	£12.95	
MS	2.8.84	2.8.84	2.8.84

PREDICTED INTEREST CURVE



It's almost perfect in its own way - because it's not even made even going to play it.

Spectrum/Version

Though the tunnel walls are red green and coloured the installations are not all in monochrome. Sound effects are OK, but nothing to write home about. The game's playability and addictive quality of how you coming back for a long time to come.

GRAPHICS	5	HB FACTOR	4
AUDIO	5	HB FACTOR	5
ACE RATING 891			

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RAMPAGE

ACTIVISION'S smash-grab-n-guzzler

SMASH and grab raids take on a whole new meaning when you're a city-rod band, trampling up cities and grabbing people in anything else you like. If you think tanks are only good for tanking, you can be a wild and hairy goblin in an equally wild and hairy world.

These monster creations from Japanese developer One to ten and increased funniness who have had one too many if you've ever decided to eat civilization as we know it. For fun trying to stop them with a pocket

of sherry sauce. Check, you are in fact one of the monsters, having a whole lot of time leading wheel chains of rubble out of every building, vehicle or human you can find.

All three originally preserved, colored and featured tanks can be under player control, making for the best simultaneous three-player arcade game on a home video. If you don't have play the computer takes control of the other monsters, but it's not that helpful.

There are 150 different city scenes to go rampaging through. In each, the tank is the



Gang Buggie



Lionel Foot



Big B. Wilton

C64 Version

The monsters are well animated and colorful and the buildings have plenty of detail. The tank moves and sound effects are also nice and attract the player's eye. But the tank's job is quite difficult to survive for long when playing a one player game. **A-Grade conversion.**

GRAPHICS 4 IQ FACTOR 2
AUDIO 7 FUN FACTOR 4

ACE RATING 887

game. You climb up the sides of the buildings and knock big holes in them until they collapse. While you're up there you can punch all around you, making a mess of everything nearby. You need to jump all buildings before they collapse, otherwise you do yourself harm when it falls.

The difficulties—who don't give up stand by and watch you party—send tanks, airplanes, tanks, cars and buses to mess up your fun. They are all infatigable but one

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RAMPARTS

Knights on the files from GO!

COINCIDENCE cannot explain a game so close in name and content to Rampage. It is of course Goh's attempt to cash in on the success

of the arcade game with their own copy.

Here you can control two knights as they lay waste to towers and castles. The basic idea is exactly the same as Rampage, but the game has been implemented differently in some places.

For a start you can only have a maximum of two players and if you only play with one the computer does not control a second player.

Clanking up the castle is more rewarding on this version and you have less money than ever to be performed. The buildings are knocked down in the same manner,



AKI Good looking knights on the go again

invoking food and other items as you punch holes in them.

The colorful towers are less interesting and much more infatigable, comparing with the white towers of Rampage and a couple of

Amstrad Version

The graphics are much better than the C64 version, brighter and more colorful. The graphics is virtually the same except that you can't see punch objects. Amstrad games are best advised to wait and see how Rampage works first.

GRAPHICS 7 IQ FACTOR 2
AUDIO 4 FUN FACTOR 5

ACE RATING 577

C64 Version

The graphics aren't very good and much of the time look muddy. The coloring of the towers is also muddy. The music and the sound effect are average. Control is the main problem—it's difficult to climb the castle because you have to be exactly placed. There are few features to interest you and the process of dropping towers isn't because very boring, even with two players.

GRAPHICS 5 IQ FACTOR 2
AUDIO 5 FUN FACTOR 3

ACE RATING 567



Can any PC mouse and still only fails at your mercy.

Page vs Parts

In direct comparison, there's only one winner between these two arcade clones.

IMPACT

It has simultaneous three-player action. ✓
It has all the punches and controls, including backflippers. ✓

You can't fight the other players if you want to. ✓
There are vehicles going by to crash. ✓

There are 100 different screens to destroy. ✓

IMPACT

- You can only have two players at a time.
- You can't do backflippers at all, or the Amstrad even punch up.
- You can't fight the other player.
- You only get two guys who can be crushed but decrease your earnings.
- There are less than 100 levels.



Oh, to have the double 28-pin video inputs.

so much to a city-based, raging, junk-food world. You can take them all out with a punch in the right direction. The most exciting aspect is the papers, who appear in windows and make a noise if clearly annoyed.

Food also appears in windows to repair damage suffered, but be careful not to eat objects like rock-and-TV sets which do nothing to help your digestion. Conserving energy is most important, and without too often the other considers one also try to punch your lights out.

Building banking is immensely enjoyable, particularly when you can have three players going at it at the same time. It looks messy in the long run, but it's hardly worth its shyness who wants to play the bad guy and indulge in toy cars and decorations on a grand scale.

■ **50 Note**



Predicted three-player for you who looked, but really look only.

characters who travel along the bottom of the screen.

In every department the game is superior to *Page vs Parts*. This is all the more ironic when you realize that the time and time the tables were reversed with *El Gold* having *Double*, an excellent arcade conversion, copied by *Double Dreams* with a game called *Dandy*, which was inferior.

■ **50 Note**

RELEASE BOX

CM12B	01.995, 01.995	021.500
SPCC	01.995	021.500
MS	01.995, 01.995	021.500



Control problems and lack of primary features make this difficult choice.

PLAY

TO WIN

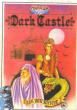
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MIRROR
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MIRROR
Soft

MIRROR
Soft

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High-speed balls from GREMLIN

BLAZING A ball is the size of the game. Because this is *Tron*—a 2-D title, you also have beam reflectors and directional landscapes in its quest for speed and reflexive gameplay.

Tron is made of a big bouncing ball, viewed from behind on the landscape scrolls beneath you. In the original it was just a ball of light, but now it's the whole screen, with. The original also had a split-screen display for two-player action, and that too has been dropped with.

The landscape is broken into 24 stages, looking alike as they are. Each stage has to be completed within a time limit and at the end of every section there is climactic battle with a firing dragon.

The routes are made up of eight different colored tiles, each of which has a different effect on the ball. Most of the squares will be familiar from *Tron* and include: side squares, inside squares, speed-ups, slow-



From space, an orbital satellite scans the ball with an optical scanner to notice its status.

downs, obys, circular reverse and bounce boundaries. They aren't as particularly reflexive layouts, but they're not so bad.

When you pause, you'll see a flag when you can switch and if you lose enough health. On some levels you will suddenly find a

RELEASE BOX

CM12B \$3.995. C4296b \$3.750.00

No other versions planned

C64 Version

The scoring system is excellent, rising by 4 at high speed. The graphics have been optimized from the original and have quite a few in for its obstacles and dragons. This makes it look better and gives a real impression of speed. The music too is pleasant and drives along well. The controls are responsive and well thought out, to make the gameplay a joy.

GRAPHICS 9 REFLECTOR 5
MUSIC 7 FUN FACTOR 9

ACE RATING 900

PREDICTED INTEREST CURVE



If the speed starts, you'll notice, and it's a really fast to expect a good game.

whole stream of objects heading straight at you. These show you of course if they hit you. Some can be shot just by moving straight ahead, but others are obstructive and you need sharp reflexes to avoid them.

While you can stop you in your tracks unless you whiz through the dragons, it all that wasn't enough there are the dragons, which are a case between something from *Space Invaders* and a caterpillar in a *Monty Python* cartoon. These take multiple shots to kill and have the unorthodox curve to shoot back.

On each stage there is a white dot which gives you between one and three credits when you hit it. Credits can be used to buy one of eight bonuses, testing for one stage only. Handy cheap-balls are more well-timed by three, adding to the rating, decreasing overall difficulty and decreasing bonus-reward system. The more expensive ones can give you turbo-speed, a shield, allow you to roll over holes and even slow the time in ball speed.

The credits add on extra bonuses to the action. Once you start surviving the fast fire stages you can concentrate on credits to get you over further into the game. That credit can be 'batted', with the credits comes when you see the dragon. Here you need at the time you can get.

The action is extremely fast, bewildering at first. Once you start to know the rules it is incredibly addictive and easy to play. It is technically demanding, too. Practise for much more fun and with tremendous variety.

• **Bob Webb**

DOMINOES might be steep for up-and-comers, but when the Russians really want to stretch their tactics they stack straight for the rotations. These handy little things — flat slopes made up by joining four squares together — may not sound terribly exciting, but as the boss of this intricately addictive little game they stand a fair chance of helping you boss over completely.

If you'll probably have guessed, we're talking about abstract stuff here — and the pricing isn't all that cheap to let up. The playing area is a tall, narrow rectangle into which these dominoes fall. Your job is to stack them down, rotating them as necessary, so that they pack together as tightly as possible. It's the slopes together so snugly that you form a solid row across, then set to right and that row will disappear, the slopes above falling down into the space this makes.

Stack them up and getting rid of them isn't that essential, because the slopes keep on coming. As soon as you get one ready to place the next one appears at the top of the screen, and the whole time that you're clearing it wherever left or right on joystick is moving it (the buttons turn it clockwise or counter turn it counter-clockwise). If the top of slopes reaches the top of the screen it's game over, so watch below you if a slope comes to rest before you've got it into position.

It's a gradual like you could keep this up indefinitely, but there's rockiness without the easy-down, restlessness of the game. Often the slopes you have to deal with simply won't pack neatly into the layout you've got, leaving either an air pocket or at least an overhang. As you top empty space in the way you make it impossible to then keep ones down the layout, and when the overall level of the heap.

As the pile of slopes approaches the top of the screen, you start to get knock-on problems. Because slopes have a stored database to find below they come to rest, you've got less time to move them into position.

C64 Version

Good ideas and tight graphics make this very attractive stuff, though it's the kind of software you get the best out of on a slower machine.

GRAPHICS 7 HD FAC 100 10
AUDIO 9 RUN 14 CTR 8

ACE RATING 956

PREDICTED INTEREST CURVE



Note: To get the most out of this software, the best way is to play it on a C64.

TETRIS

ACE
956
RATED

Can MIRRORSOFT pack them in?

Rotation is particular because, very different, higher up the screen and only for a great deal of density, so-called walls are needed at well-defined points.

The game's not just a storage limitation exercise — hard walls can open pockets up where you clear the layout back down to ground level — but the player is really only ever delaying the inevitable. The game will always beat you partially because it's very strong on thinking steps of you at any, but

mostly because it speeds up as your score increases. There's a pause menu accessed from the joystick that will save your next move — a false, but you'll find the speed factor rises in proportion after a while. Clearer lines with the number of leftover slopes, you have to keep stacking space too, and you have a terrible clipping game you won't be able to get out of your head.

— Andy Miller

RELEASE BOX			
C64/128	00 No. 01/004	IMPACT	
AMS	00 No. 01/004	IMPACT	
SPIC	00 No. 01/004	IMPACT	
ST	01/004	IMPACT	
AMIGA	01/004	IMPACT	
IBM PC	01/004	IMPACT	



The layout in the far left, and the last in a heap, the last step before a full-screen of slopes — control situations.



They're here, get ready for the next one, as there's only 100 lines to go with the tricky L-shape — and there's another one in the air.

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ONE five-year mission coming up with the Enterprise looking to rid the galaxy of a new biological weapon. There are four Federation (good guy) strategies on offer: to the Klingon (bad guy) side in their climes under the weapon's influence, and with the Romulans on the weapons you aren't expect too much help from the two-troublemaker.

You control Kirk and his crew as they swap team systems to systems, leading off enemy attacks and bringing down to without fancy lines. Landing parties will win or lose the game for you - all the possible Klingon-busting strategies depend on people or equipment limited or time-supporting planets - but you'll need to find advanced systems first, and they often feature hostile ships before destroying you.

The game starts with the Enterprise in deep-space, so you start with a to-by-to star system. Use all game-operations, ship navigation is controlled by an unusual and not always helpful icon system, getting to grips with this is essential.

Along the bottom and right edges of the main screen are small windows showing different members of the Enterprise crew. Click on one of these with the pointer to Star Trek bugs controlled using the mouse) and the

RELEASE BOX

START	CD ROM	CD ROM
DATE	UNDEVELOPED	EARLY '88
PRICE	UNDEVELOPED	EARLY '88
PRICE ON	UNDEVELOPED	EARLY '88

ST Version

The digital portraits and sampled sound are not the best, but the combat and navigation graphics make good use of the ST's processing power. These icons are amazing when you're in a mission - is which the ST features the best?

GRAPHICS	8	RE FACTOR	3
VIDEO	8	PER FACTOR	4

ACE RATING 7.64

new member appears enlarged on the main screen, along with information on some status to that his or her duties. The most useful people are Spock (plans on planets, systems, and ship status), Chekov (from sending Enterprise weapons) and Sulu (navigation icon). Spock, Scotty and McCoy also offer on incoming messages, engine status and crew health while Kirk is in charge of stars and the computers.

Often the icons call up further screens of icons rather than clicking things directly. The Chekov icon, for example, call up the console screen, weapons selection screen and targeting computer. Controlling the ship is largely a matter of getting the right icon in front - and from now you're not from involves little skill - and this can get increasingly tedious. Combat a particularly dull - during a direct strategy du-

Intertellar navigation made easy

Want to track out the facts of ST? Then follow these four simple steps to find the way you want to know where you're going and what you're facing.



STAR TREK

Are FIREBIRD'S phasers set to stun?

mission - and you can end up feeling even like a chess piece in a strategy computer.

As for those all-important landing parties, these rarely win or disappointments. There is no exploration as such - the only directions you can move in are straight ahead or back to the ship - and no pictures or descriptions of the planet surface (all messages telling you of objects or obstacles). Actions here are decided by a clumsy form of multiple choice, and these sequences soon become mindless by repetition.

If you're in top Star Trek fan, you'll be bowled over by the graphics and sound as soon as you see the game, but your time is unlikely to last. As with *Defender of the Crown* on the Amiga the biggest presentation makes tremendous gameplay, and even with the substantial sound proof score that survival and exploration for the easy. With a

well-equipped star system as a base you can keep going as long as your interest lasts, but unless you're a mapping enthusiast with a low boredom threshold, that probably won't be very long.

by John

PREDICTED INTEREST CURVE



Graphs and more have a good feel for them, but they're not the best.

MATCHDAY has returned out this time — can Matchday 2 improve on what many still consider to be the definitive football game?

All last games, the game seems very similar to its predecessor. The player takes charge of a six-man football team and has to play matches against either the computer or a friend in an attempt to win the League



Old habits — use the best version of the game you can get outside an emulator.

MATCHDAY II

OCEAN make it 2-0

AGE 906 RATED



The quantity of the virtual water is only twice that of the previous version.

in a week from one to three with five being the best we look. To use this easily properly, the player has to keep his eye on the meter to decide when to make the best shot. Thankfully the meter can be set to flash at a set strength throughout the game.

Goalkeepers can now also be controlled by the player, though you only have a minute or so to attack or defend. One feature removed from the game is the ability to play a full 45 minutes per half.

Controlplay has been improved to allow players to make headers, kickball, the old

C64 Version

Unfortunately, something seems to have been lost in the transition to the C64 — the game is not as playable as the other versions. Though it is as smooth as the Amiga and more so than the Spectrum version, it's still a very competent soccer game and interested C64 owners need not be disappointed.

GRAPHICS 3 HD FAC 3/5
AUDIO 4 FUN FACTOR 5

ACE RATING 838

Amiga Version

The graphics are excellent. The gameplay is slow to learn but pretty fast enough when it comes to playing. All in all, the new edition looks slightly better to us than the original but get the hang of the 'Kickometer' and you'll soon be taken by the footballing bug. Thankfully the computer's skill level can be raised to level 6 so you'll have a more balanced game.

GRAPHICS 5 HD FACTOR 4
AUDIO 5 FUN FACTOR 6

ACE RATING 906

in the Cup. This is where the first opportunity becomes obvious. Not only can you play via console the computer but you and a friend can gang up on it, both playing on the same side in it depends on what you've chosen to do. During a solo game you control the on-screen player who needs to be in the best position to reach the ball and when playing in pairs you get a player each.

The second major improvement to the game is the addition of the Kickometer. This is a kick strength indicator which affects the distance of each shot. The Kickometer ranges, usually,

GARY LINEKER'S

GREMLIN'S own goal?

FANTASIES

On the face of it, this job is a tough division. You're in control forward and will pressure to the last moment. Not only does Gary Lineker's Superstar Soccer give you the chance to participate in the games but it also allows you to play manager (level 6) and make all the really important decisions. Unfortunately Lineker's program is not the stuff of which dreams are made.

There are two basic sections to the game: on-screen playing and the tactical decision-making.

'Lineker Gremlin have headed this one in with both feet.'

RELEASE BOX

CGA128	259s, 124.99s	CUT NOW
SPAC	259s	CUT NOW
AMS	259s, 124.99s	MARKET
ATARI ST	124.99s	MARKET

During the game you were the person to watch but now the computer handles the rest of the players. The trick is to calculate the movements of the ball or the team and to put yourself in the best possible attacking position.

Whenever the ball goes out of play (throw ins, free kicks etc.) the screen changes and gives the player the chance to make the all-important tactical decisions. E.g. the player can choose to shoot. Pass or Mix. SHOOT means that all the players on your side in a position to hit the ball will have a shot at goal. PASS means the end of the present will try and pass the ball to the centre forward (you) and MIX, as the name suggests, is a mixture of both. There are also defensive decisions to be made involving cover 1 which is a concerted effort by your team members to regain possession of the ball and defend attack which is the player staying back and clearing up the defence.

For each match a line-up predictor is included, where the



and some opposing team members. Accuracy improvement is the realm of perfection. In fact the ball's degree of deflection is checked not only by its original flight path but also by the moment of deflection: the ball was deflected at 150 feet per second (ball's velocity).

All of the above refinements (and others too numerous to mention in this limited



The Spectrum version highlights the other change when which is a regular goal (50 complete sets of hours).

RELEASE BOX

CMDR	2.000.0000	OUT NOW
SPEC	2.000.0000	OUT NOW
AMG	2.000.0000	OUT NOW

Spectrum Version

Despite the lack of colour, the Spectrum version of the game is easy to compare, featuring and enjoyable as the other versions. The strategy now moves around the pitch slightly faster on Spectrum but than on Amstrad but, and this makes for a marginally better game. It might be the fact that it is sometimes difficult to spot your player when there are several others, leading to the ball. Even for an exciting and so pleasurable strategy other version.

GRAPHICS	8	IQ FACTOR	4
AUDIO	5	FM FACTOR	4

ACE RATING 801

space make for one too football game and even if you own the original games, the sequel has enough enhancements to make it worthy of purchase.

Andy Smith

PREDICTED INTEREST CURVE



The C64 version doesn't quite match the Spectrum or Amstrad version in playability, but even so, among the best for game's genre. Overall it is an improvement on its predecessor and is one of the best football strategy games there.

R'S SUPERSTAR SOCCER

player can speed up the game, it can't speed water with the manual manual but it can be set to run at 10 times normal speed on all versions. This is only handy if you don't want to sit through the full 90 minutes game.

To add all the fun and games on the field, though these things aren't strategic decisions have to be made - should you try to start a new player? Should you try to trade one of your existing players? Should you use some of your valuable trade points at the start of the season to get strategy to improve the general performance of your team?

Only Soccer Manager Superstar Soccer is a valid effort to combine the highly computerised strategy elements - the football game simulation and the football strategy game. Unfortunately it is impossible to do a completely both types of game and consequently leaves the player feeling a little left out of it.

Andy Smith



Soccer Manager Superstar Soccer has the C64 version of the game. New graphics and graphics make it one of the best on the Spectrum.



C64 version - graphics appear and a lot better to play, it is more than the Amstrad version's graphics.

C64 Version

Generally a much better game on the C64, though it lacks the Amstrad version's graphics. The graphics, for example, if you're playing a cup match and at the end of every play the match is a draw, the team gets to play overtime (and extra time) and the first team to score during the overtime wins. Generally the play is fast and involving and it's nice to see the players performing well. Extra are included in the shape of all the ball incidents which add atmosphere to the game. Even if you're playing only one player, however, the action gets rapidly. There is a slight improvement on the strategy side with a couple of extra options, but even so, gameplay now becomes tedious and only the most dedicated fans will stick with it for any great length of time.

GRAPHICS	7	IQ FACTOR	4
AUDIO	6	FM FACTOR	4

ACE RATING 739



Spectrum version - although it lacks the extra of the C64 version.

Spectrum Version

The characters are well drawn but poorly animated, the play is fast and it's almost impossible to distinguish which is your character from the rest of the players. There are some terrific graphics in the game - a game of three halves would you believe? It's also perfectly legal to punch the ball from the opposition just before they kick off and run it into the back of their net for another goal, or each would score in Guy Linstead's Superstar Soccer.

The strategy side of things is OK as far as it goes and can be quite involving - for a while. The player gets trade points depending on his level of success during the 7 match season and has to spend them effectively in order to further his aim. Unfortunately the player gets paid even less because of the limited space for data on-screen.

GRAPHICS	4	IQ FACTOR	5
AUDIO	4	FM FACTOR	5

ACE RATING 419

APOLLO 18 TEST DRIVE

FIRST..... TRY TO DECIDE WHETHER APOLLO 18 IS BETTER THAN THE OTHER. BET YOU CAN'T. THEY BOTH HAVE GREAT ACTING



DRIVEBACK TO A CHIPPED SURVILLANCE SATELITE. JORDI GRANTY AND DAVID MARSH (30) (30/30)



ARE THEY CRASHING OR BOULDERING DOWN? YOU NEED TO BE COOL TO TAKE MANUAL CONTROL OF THE APOLLO LANDER DURING DESCENT.



THE DETAILED SPEC SHEET FOR THE JAGUAR XJ6. DRIVEBACK TO 100 MPH AND 0-60 IN JUST 5.2 SECONDS!



DAVE SET ROUTES WITHIN SPEED TIME LIMITS. LOOK OUT FOR SLOW TRUCKS, OTHER TRAFFIC, MEN AT WORK AND BE CAREFUL TO USE YOUR BRAKE DIRECTOR TO LOCATE SPEED TRAPS.

THEN..... GO OUT AND BUY THEM BOTH. BET YOU WILL BECAUSE THEY'RE THE BEST AROUND.

Which country...



ACE
94
RATE

DIPLOMACY

Break off relations with LEISURE GENIUS

DEVIOUS tactics, cunning backstabbers of the world, your time has come! The grand old man of nasty neogames, LeisureGenius has finally made it onto home computers, and international politics has never been so much fun.

It's the last year of the 20th century, and Europe is on the verge of a massive land war too. The seven major powers - Britain, France, Germany, Russia, Italy, Turkey and Austria-Hungary - are each set to conquer the continent. It's time to struggle to survive

while in the other half still keeping up its end of the bargain. This game isn't just one turn in world history, and that's a long time in Diplomacy.

The game is played on a grand scale, with each turn equivalent to six months of war. The last two turns, 1939 and 1941, are normally spent involving small, detailed nations in preparation for the final event, but don't get the idea that this is simply a cakewalk. Territory is the key to the game, but not just any old territory of the 75 acres or so map, only 24 are directly useful in the game. These crucial supply centres leave the computer and talented muscle you need to maintain your war effort; occupying other areas, and in level, is useful only on a basis of gaining or keeping control of centres.

Military might and control of supply centres are directly related, broadly speaking, a country has as many units as it controls. So, if your friend loses a major supply-centred centre you can win the game in a flash, even with basic tactics, but if you start losing centres to the opposition you'll have to defend units desperately. The system means that there can never be more than 24 units on the map at any one time, so country's goals being better the smaller success (how many) available to you.

Even with the upper limit on total forces, the map can get pretty crowded in places. Diplomacy's rules only allow one unit in any one region, and the games unusual con-

dition means that units are very rarely destroyed in battle. A defeat normally just loses you ground - but of course you can only lose so much ground before your supply centres start falling!

It's hard to show the good side of Diplomacy enough - the solid mechanics and gleeful keywords that seem to go hand in hand - but there's a bigger mental challenge to win. Though the rules are much simpler than in most games, the fact that everything happens at once and the absence of random events give you an intricate circuit to consider when writing orders, an engineering, mostly objective task whatever level you play it at. It can even offer simple levels for single-player games with an computer opponent, if you want an easy victory!

• Andy Miller

RELEASE BOX

CD-ROM	CD-ROM (2 disks)	PC 3.5"
IBM PC	CD-ROM	Reviewed

All other versions planned

orders (and each other) between the seven players will continuously trade and back-stab. There can only be one winner - the victory conditions ensure this - so cynical officials will often see not only permanent but inevitable.

Techniques moves are called by the game's system of commands. Players take turns of the keyboard entering secret movement orders for each of their armies or fleets, but all units move simultaneously - and only once all the orders are in. Thus you might order your tanks to move on your domestic city

PC Version

With a massive starting map in CD-ROM and mappings, a handy control system offers a lot of experimenting and a built-in timer, this version is a joy to use. The computer player may not be the strongest thing ever, but they're at least halfway smart and really give up their or last player games a treat.

GRAPHICS	A	SOUND	B
ADD-ON	1	FUNCTION	F

ACE RATING 94%



1 **England** With no allies to the north or east, you'll have plenty of time to build up your coast guard. You'll eventually be invaded on the mainland and the sea coasts, but you'll have plenty of time for both on the first.

2 **Scandinavia** Surrounded by enemies, you'll find it tough going just to stay your ground. Besides, with only England or other neighbors capable of capturing you, it's simply England's greatest hope of success. You're not all Turkey in the land.

3 **Denmark** Ireland and Iceland make way-jacking easy, but you may well have problems holding them if the English fleet can't find a safe route in the presence of, for example, a Baltic sea with French war ships patrolling.

4 **Spain** The closest get-together you can manage with a piece of the balance sheet is, but it's not worth getting any further. Invading France is risky, but a successful Austria-Hungary would make a good target.

5 **Italy** A very powerful country, though a good deal of the balance may go to you probably only in the Austro-Hungary, and maybe Russia, but the targets. It's France that will cut through you, so you probably need a deal with one or the other.



6 **Spain** Starting with the supply without any coastal guard, everyone else starts on time—but the danger is of Russia attacking you from the rear. Invasions of France, Italy, and Scandinavia (Austria-Hungary) are also a field, but it's not taken advantage.



7 **France** Spain and Portugal are both easy to start with, and you should get help from the sea. You may have problems with the Baltic and English seas, but in fact you should be able to hold your own.

Why computers?

With many languages it's hard to see how computer versions improve on the standard original. Very few computer opponents are in the same league as average human players— chess programs are a notable exception here—and in cases like *Diplomacy* the computer isn't even playing on the same terms.

Computer *Diplomacy* is something of a special case however. Despite the admitted weakness of the computer opponents it offers, the game can make up the numbers and that's notoriously difficult.

Good friends struggling for a few points don't know how easy they've got it. Finding a full complement of power for *Diplomacy* requires phenomenal planning, especially with games often lasting a day or two. It's clearly an easy matter finding over five or six players, so most casual games begin with at least one country in "the desert"—a state of chaos where units have no orders, and will abandon if attacked in force.

If that's the alternative, computer opponents are a gift from heaven. They play a relentless game in defense, and can get reasonable attacking strategies together too. They'll even form subsidiary alliances with each other where appropriate—on-screen messages keep you posted on these—though unfortunately there's no attempt at human-computer negotiation. Now that would have been interesting.

Predicted Interest Curve



Opposite: players in and the fun for our last installment.

80 - \$130,000 in 2 seconds



Lombardi's Dashboard will bleed hot fire, so they say.

Close Commodore's steering and steering indicators, and you'll be able to drive a boat again, don't you think?

TEST DRIVE

ACCOLADE torque you in to the driving seat

RELIANT Robots will not be found alongside the Porsche, the Porsche and the Lotus in this street version of the drive-a-boat game, so there.

Driving inside rather than out is a heavy task for your software company—the various gears you've decided to spread out and how you will or won't be in a keeping with your new level status. So off you're toddled to the level dealer (who can smell money) to take off and he's agreed to let you take any car control to test-drive.

You've got five cars to choose from: Porsche 911, Ferrari Testarossa, Lamborghini Countach, Lotus Turbo Sport and a Chevy Corvette. When you've made your decision you're placed behind the wheel and have to drive the car through five stages along a winding mountainous road.

Your view of the game is as if you were

in the driving seat of the car looking through the windscreen. The road has a steep dip on the left and a steep bank on the right - remember they drive on the right in the States, so you drive with the steering wheel on the left.

Not only are you trying to keep your car on the road and in the right lane, but you also have to contend with on-coming traffic, slower drivers and the police. The road police are well aware that some people use this particular road to test out cars and so they're always waiting with their radar guns to trap the speedy speedsters (you). Should you get caught in a police speed trap (a handy device attached to your car, more flashes and siren is beep) when it pops up a red/orange signal, you have to decide whether to try and outrun the siren(s) or pull over and pick up a speeding ticket.

Control of the car involves pushing the joystick left or right forward to accelerate, back to brake and left-right for lateral movement. Pressing the normally changes gear, but an optional shift pattern can be enabled and here you have to move the joystick as if it were the gear stick - use is needed here on slipping into the wrong gear at 140mph can have you in an awful lot of trouble.

If you manage to survive each stage without crashing more than four times per

stage, and manage an average speed of about 60 mph in each stage, then you'll complete the course and have the chance to register your score. An average speed of below 50 or 60 will have the dealer accusing the car because he sees you as an incompetent driver.

It's exhilarating stuff, and each car performs differently - so once you've become familiar with one car, you can try each one in its element.

■ Andy Smith

Amiga Version

The graphics are generally of a high quality, with each car's design being particularly well drawn. Driving is a bit on the gear side, though as the steering helps tends to make rather tricky. The sound is tremendous with powerful and driving engines throughout. Just one bit the better and about the game's main drawback.

OVERALLS ■ 10 FACTOR ■
AUDIO ■ FUN FACTOR ■

ACE RATING 82%

PREDICTED INTEREST CURVE



The unexplained predicted curve on the side the left from a computer all over you to maintain the interest and become better with the game.

RELEASE BOX

OS/2	OS/2a	DOS	DECUS
AMIGA	OS/2a	OS/2a	DECUS
ATARI ST	OS/2a	OS/2a	DECUS
IBM PC	OS/2a	OS/2a	DECUS

STAR WARS

DOMARK force their way in

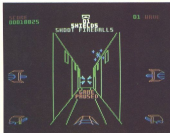
IMPERIAL oppression isn't its ugly head once again, and this time the bad guys have got a battleship the size of a planet. Thrillingly, the secret mission is to send you out in a jet-streak fighter to take on the massive forces of Darth Vader or his sinister henchmen. All you've

got to do is trash some enemy TIE fighters, blast the tops of a whole bunch of towers, fly the length of a heavily defended trench at top speed and hit a tiny duct at the far end. Piece-of-cake, right?

Well, yes it is, actually, since you can't do anything if, in fact, for a full-page game it

I still released across all major formats it almost amazingly easy to see everything that was too good to lose. Turns out to say that it's a bad conversion from the old video graphics thingy - the fact is, it isn't - but rather that the original is, in my mind, just it.

For a start, there are only three stages in the game. Once you've shot the TIE fighters, towers and that final duct it's round again for more of the same. You're meant to keep trying to score higher scores - blasting the top off all the towers, aiming that duct hit time every time, and scores of surviving stages - but whenever the victory is "keep you playing" increasing difficulty levels might have cut the material four years ago when the original hit the shelves, but nowadays you'd still feel to expect a little more.



Jet flying down a trench (right), with the rest of the galaxy way off.

AFTER a very successful run in the arcade, Combat School has finally made it onto the home scene. The arcade version of the game was heavily controlled but now it wiggles the joystick, exchanging joystick hands from stepping the balls to adding warts as you undergo seven grueling tests of aptitude, strength and reflexes.

Combat School can be played by one or two players who compete simultaneously.



The game's top-down arena (right) doesn't really get you hot.

against either the computer or a friend. The last stage is an unusual course that has you jumping over walls of various heights and swinging on monkey bars before reaching the finishing line within the time limit. Not to mention the fact of how rare to the long range - targets appear at regular intervals as you control a light with the joystick and try to hit as many as possible in the time allowed. Then it's wiggling again, for the last time - in a final course full of boss characters, mines and puzzles to trip and slow your progress.

C64 Version

The C64 isn't a great 3D machine by any means on the disc, albeit with frame graphics - especially on the screen sequences - were top to be expected. The floppy interface definition is harder to access, seriously hampering playability.

GRAPHICS 7 HD FACTOR 1
AUDIO 5 FUN FACTOR 7
ACE RATING 475

Amstrad Version

Given the obvious competition is with Star Wars and again Domark's body does not. I thought better defined, its graphics look nice and resources compared to Real Time's gaudy, over-the-top side-by-side. My, isn't the game industry come on in leaps and bounds.

GRAPHICS 6 HD FACTOR 1
AUDIO 2 FUN FACTOR 7
ACE RATING 440

ST Version

Like significant upgrades and graphics graphics make this the best effective version of the game, but it usually outshines the ST's power. With solid 3D games like the Classic Cybernetic's offering, we have on the ST is starting to take seriously here.

GRAPHICS 6 HD FACTOR 1
AUDIO 5 FUN FACTOR 7
ACE RATING 475

Spectrum Version

With Real Time's arrival, 3D Star Wars for comparison, the Spectrum version will have to do a lot better than this. The absence of sound effects on the machines is tedious, and the graphics on the screen appear the three-year-old Star Wars.

GRAPHICS 4 HD FACTOR 1
AUDIO 0 FUN FACTOR 7
ACE RATING 438

RELEASE BOX

C64/ST	13.95	12.95	12.95
SPEC	17.95		16.95
AMS	13.95	12.95	12.95

The last two challenges take the form of wire-cutting (wiggles for insights) and a hand-to-hand fight with your instructor. The

In all ways presentable shall you understand - the although been slavishly copied right down to the video-frame interface, and the ST version even has the original's complete speech - but the biggest selling point must surely be the low-bit. If you really want a game called Star Wars then this has to be the one for you. If you'd prefer a game



It's not even an ST of a game - and how you think!

you'll still be playing in a week time on the other hand, try looking elsewhere.

Andy Miller

RELEASE BOX

CD/CD	19.95 (14.95)	017 NOV
ABS	19.95 (14.95)	017 NOV
ATARI ST	19.95	017 NOV
SPEC	0.00	017 NOV



COMBAT SCHOOL

OCEAN wanna be your drill instructor

Ten - shun II

Amstrad version - On the training and trying to using weapons, strategy, etc.



Transfer view to the rifle range. How are you fit enough before you'd have transfer to the ops.

Instructors very hard to beat, but you'll play plus the button, give various combinations of holding, pushing, jumping, and dodging to help you are out here.

Should you fail to complete an event, you need if you were very close to completion get a chance to continue by performing a set number of draw-ups without a time

limit - fail the need the game over, succeed and it's straight into the next event.

Summe all seven events the last event is a hand-to-hand fight against your instructor - while no push over and you may be selected for a special mission to make a some footage from the Amstrad Gateway. The

mission is not against the clock but you'll have to use all of your new found skills in order to complete it.

Combat School is a very competent, unashamed conversion that is tough enough to make your arms ache and addictive enough to keep you coming back for the same punishment time-and-again.

Andy Gault

C&A Version

While the most of the features between sagging from by learning to the essential music that's played throughout. The graphics are colorful and well drawn and animated. Though it's basically just an athletic game of the Ocean variety, the controls is different and the controls menu split screen two-player option adds another dimension, making this one of the more worthy sports conversions.

GRAPHICS 8 IQ FACTOR 6
AUDIO 9 FUN FACTOR 4

ACE RATING 850

Amstrad Version

Editorial and extremely playable, just as much fun on the Amstrad as on the Commodore. The multi-level poses no problems (you'll probably be glad of the rest) or get a training to a through enjoyable game.

GRAPHICS 8 IQ FACTOR 6
AUDIO 4 FUN FACTOR 4

ACE RATING 820

PREDICTED INTEREST CURVE



But doesn't lose any earlier greatly, though the multimed on the Amstrad may be your interest saving slightly before the Commodore version.

HUNT FOR RED OCTOBER

Will ARGUS bring on their sub?

SOMET submarine-captains do not, as a rule, defect. You're an exception, it seems, because you're trying to kill your best. Red October to the States. It's a pity you had to let your commanding officer know about this early, because here the entire Soviet Maritime Fleet can see your feat.

You start the game in Arctic waters east of Iceland. You have to sneak or fight your way to the US coast. Using an icon system to control the sub's five main systems—prop, periscopes, engines, weapons and so on—is a pretty decent set of steering and hydroplane controls, but you have to navigate over underwater ridges and evade your enemy computers.

Atari ST Version

Sound effects are good—especially the constant noise of the propellers—and the periscope view is impressive. There's good use of colour on the sea/lines/ice and ice, but the pointer control is unreliable and clumsy at times.

GRAPHICS 7 IQ FACTOR 7
 AUDIO 8 FUN FACTOR 2
ACE RATING 697

As well as getting to grips with the point-to-point system—a really business-green low-contrast palette the controls can be—you'll have to decide on a general fight-or-flight strategy. Attack is risky: making your periscope or emitting an active sonar pulse will pinpoint your target for you, but it may also betray your own position.

The traditional stealthstep approach has its problems too. Your boat's equipped with a special low-scale transducer system (it's just the kind of tactic, but it means moving very slowly—kind of ironic, your pursuers can already see you if the top secret machines).

The game task is certainly big enough, and the plotting area comprises the entire Atlantic Ocean, but getting involved in the action is hard and often tedious work. Less cool pointer systems were never meant to

RELEASE BOX

ATARI ST	£24.95	OUT NOW
IBM PC	£24.95	IMMINENT
AMIGA	£24.95	IMMINENT



use its real-time games and this program, even more than they did, shows why they're such a cool idea. Delays as you navigate to switch between scopes, sonar and weapons have to counteract its real submarine warner, and don't really add to game threat either.

Andy Wilson

PREDICTED INTEREST CURVE



From Software Weekly

MICROLEAGUE WRESTLING

MICROLEAGUE twist your arm

STRAP your boots on and step into the ring—it's time for some serious violence! The official World Wrestling Federation computer game is here, and giving people an elbow smash will never be quite the same again.

The WWF may not be a household name on the side of the Atlantic, but over in the States wrestling has WWF champion Hulk Hogan have huge star turnings. With its unusual gameplay and emphasis on presentation the new legend aims to sweep you away in a flash of Mollerstein.

After intensive pre-match interviews and speeches, the contestants enter the arena and the best begins. Taking the role of either the flash-lighting Hulk himself or one of his more ruthless real-life opponents, you control your wrestler's strategy over 10 30-sec to punching opportunities in the ring.

Your role in the bout consists simply of picking the best move. There's no combination involved on your part, just choose a move from the on-screen menu and watch the results. Depending on various factors either you move or your opponents will succeed—and then the fun really starts.

All action in the game consists of dig-



ging shots from various wrestling matches. When it moves onwards you'll see a rough recap of the subsequent action, with computer sound effects for good measure. It's pretty brutal stuff in a cartoon violence sort of way, but great fun too. The computer doesn't put up a tremendous fight and you may well find it too tame, but you'll need the wrestling: the show's the thing. Plus it's for Hulk to appeal to the crowd! Plus it's for Savage to put a daily name while the rest sit looking like could eat for more?

Andy Wilson

Atari ST Version

Great use of digitised graphics, a witty commentary line and some lively crowd-thrash sound effects all go down a treat, but ST drive capacity means you'll have to switch disks to get back in. You'll be Wonderful! Goodish.

GRAPHICS 5 IQ FACTOR 1
 AUDIO 7 FUN FACTOR 8
ACE RATING 740

RELEASE BOX

ATARI ST	£19.95	OUT NOW
IBM	UNDISC	IMMINENT

PREDICTED INTEREST CURVE



From Software Weekly

JUST THINK

FRANKIE



What if you could buy all these hit games in a special pack for the price of one...
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WESTERN GAMES

MAGIC BYTES go west

WILDING cow-bait and dancing on stage are odd events for a warg-gaming genre to have at all, but when the participants are cowboys rather than athletes you just assume someone's trying to be funny. There are no silly (and laughable) events in this (good) simulator, but with beat-slicing and bean-shooting on the list things don't get much crazier.

The graphics are packed with comic touches and there's plenty to laugh at: first-time thoughts, but the sports parody's too accurate for the fun to last. Average period movement patterns and levels of wiggling

really won't pose for gameplay any more - can they?

• Andy Bell

RELEASE BOX

CD-ROM £19.95 (UK) £17.95 (US)
MS-DOS £19.95 (UK) £17.95 (US)

PREDICTED INTEREST CURVE



INSANITY FIGHT

MICRODEAL scroll vertically

VERTICALLY scrolling shoot-em-ups are fairly plentiful as these machines, but not on the Amiga - especially shoot-em-ups. But one is possible as well as pretty.

The player takes charge of a spaceship (viewed from above) and has to fly over a planet, visiting landscapes and defeating the various installations.

Insanity Fight was so good, for simplicity but its very good

looking and sounds superb. Moderately addictive and tough enough to keep you going for some while.

• Andy Bell

RELEASE BOX

MS-DOS £19.95 £17.95

PREDICTED INTEREST CURVE



CHAMONIX CHALLENGE

INFOGRAMS climb peaks

RELEASE BOX

MS-DOS £19.95 £17.95
MS-DOS £19.95 (UK) £17.95 (US)
CD £19.95 (UK) £17.95 (US)

INFO Scotland, the world's second most mountainous, has looked for ways to improve its tourist appeal. One of its 'truggles' (the word) is climb the mountain game which requires precise timing and concentration to manipulate your climber down from some craggy old rock.

You have to prepare your climber properly before you start the descent (otherwise he'll crash down to death), get accustomed to catch winds, Chamonix Challenge has a lovely atmosphere and some colourful and well-rendered graphics but it has poor gameplay and unless you're a real fan of the sport you could well find the fun wanting of quality.

• Andy Bell

PREDICTED INTEREST CURVE



CHOPPER X

Rotating with MASTERTRONIC

PERIOD the same flying or hovering 3D Amiga Bell-simulators, the game - or so the label wraps up the game genre.

It's a vertically scrolling shoot-em-up, viewed from above, that has the player controlling a helicopter in an attempt to destroy huge numbers of tanks, boats and other establishments. Bell's poor and the landscapes are some-

what bare, but it's an enjoyable game with a moderate amount of addiction.

• Andy Bell

RELEASE BOX

MS-DOS £19.95 £17.95

PREDICTED INTEREST CURVE



GALACTIC GAMES

Heads fly at ACTIVISION

HERE'S a novel variation on an old theme: It's a sports simulation broken down into five events including 100m sprints, space hockey, boat racing, psychic joust, and the telegraphic marathon.

It's a nice idea that unfortunately just doesn't work too well; the games are simple, unexcit-



ing and tedious to play. Graphics are very straightforward with some detail and the sound is certainly nothing to write about. Try before you buy.

• Andy Gault

RELEASE BOX			
OS/2	3.5in. FDD	640000	
MS-DOS	3.5in.	512 Kbytes	
AGE	10+	640000	



FRANTIC FREDDIE

TOP TEN go up the pole

GREENLAND are what drive your Frantic Freddie up the pole as he greedily tries to grab all the coins of gold in the magical telephone system. He has telepathically summoned some...

Like its ancestor, Frantic Freddie is a pretty hard game. There's a maximum of 100 to be had as you scramble up and down the ladders to avoid the orange Geordies, but at least it's not an old platform game in budget shape.

• Paul Carter

RELEASE BOX		
OS/2	3.5in.	512 Kbytes



JET BOYS

CRL send the jet boys round



SPACE age suggests one launch as others, who joined the racing quadrants on the moon at Saturn. But the System Council booted by selling one of the moons to a crook, who threatens to blow the moon up and to destroy all the other moons as well. Yes, it's down to you to stop him.

The one or two player game has the player(s) flying over a prebuilt existing landscape through four levels. Each level is swimming with aliens, but

RELEASE BOX			
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aliens is comical, and has a guaranteed winner at the end.

The one player option is not particularly good but its simulation of a crook is enjoyable for a while.

• Andy Gault

BAD CAT

Street cred cats from GIGI

TAKE your average furry feline, dress him in a casual cat-out-prod, level-headed and give him some shades to wear and you'll have some idea of the hero street Cat.

The game consists of five levels and can be played by a maximum of two people (three otherwise). It's a positioning game for some of the levels as you try to cross an obstacle course and a timing game for the rest as you try to knock your opponent over with bowling balls or leap from perch to perch.

RELEASE BOX			
OS/2	3.5in.	512 Kbytes	
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in a swimming pool to hit over-sized symbols. Cute graphics, adequate sound and moderately addictive gameplay make for a game with a higher novelty value than comparable titles.

• Andy Gault



AMIGA

MOEBIUS

Origin systems/Mitsubishi C64 Walk
C64 version reviewed Issue 2 - ACE Rating
65B

The Oriental role-playing game finally makes it to the Amiga. It's very similar to the one on the C64 version, and plays identically. Superior graphics and sound and improved gameplay make this a slightly better game on the Amiga however, and the increased screen-objects that



● ACE RATING 65B

EAGLE'S NEST

Panthers £19.95/Atari £19.95/ST £19.95/486

One of the better Gauntlet clones for 16-bit machines is just as playable on 32-bit machines. Both versions are colourful and play identically to each other. The Amiga's graphics are not significantly better than the ST's but the sound certainly is. If you like the Gauntlet-style games, then you won't be disappointed with Eagle's Nest.

● ACE RATING 90D (AMIGA)

● ACE RATING 90A (ATARI ST)

AMSTRAD

PHANTOM CLUB

Green £4.95/Atari £14.95/486
Spectrum version reviewed Issue 4 - ACE Rating
64B

The Amstrad version of the Mirror sequel is as playable and as colourful as not even 40% as the Spectrum version. Gameplay is identical and the missions are just as tough to complete. We'd bring the stars, adventure fans, for a long time.

● ACE RATING 64B

YOGI BEAR

Promo £9.95/Atari £14.95/486
C64 version reviewed Issue 3 - ACE Rating
72

A mixed but tasty bag of version updates this month. The real biggy is, of course, *Bubble Bobble* on the ST. Its massive rating is justified by its awesome playability and very pretty graphics. Should keep ST owners busy on these long winter nights.

Worth looking out for, too, on the 16-bit side is the Gauntlet-ish *Eagle's Nest*, weighing in with over 900 on both ST and Amiga.

And big news on the C64 front is the arrival of the infuriatingly addictive *Deflektor*. Not a bad old month, is it?

Jellystone Park is just as colourful on the Amstrad as it is on the C64 and that that happen has still got hold of its 16-bit-look. With instant appeal to younger games players representing, we were wrong. It was rating.

● ACE RATING 75D

ATARI ST

BUBBLE BOBBLE

Promoted £19.95/486
C64 version reviewed Issue 1 - ACE Rating 95B

A very lively game taking advantage of the Atari ST's smooth movement and speed making the game pleasant to play and the best conversion of the 16-bit. The animation of the ST compensates the colourful sprites and the 128 screens each with their own pattern of play. The music is simple to the ST, but lively - lively, being the key word in describing the soundtrack.



● ACE RATING 95B

LIVINGSTONE, I PRESUME?

Algor £14.95/486

This witty jungle adventure has the player struggling through swamps, leeches in the attempt to locate the lost explorer. Colour graphics that are well-animated add flavour to the game, and if you like your adventures in the Jack the Ripper 2 mould, then you'll

get a lot of enjoyment from the game.

● ACE RATING 83D

C64

DEFLEKTOR

Green £9.99/Atari £14.99/486
Spectrum version reviewed ACE Issue 4 - ACE Rating 90B

Well, they've closed up the curve problem, as reported in ACE 40 and the game is a treat to look at and listen to. As compelling as ever, the C64 version is just as addictive and fun as watching as the other versions.



● ACE Rating 90B

SPECTRUM

ACE 2

Comrade £2.95/Atari £4.95/486 £12.95/486
C64 version reviewed ACE Issue 3 - ACE Rating
99B

The gameplay hasn't improved one and the graphics are worse making ACE 2 a very avoidable game on the Spectrum. Again the lack of opponents and the limited output were fail to compensate for the lack of realistic controls.

● ACE RATING 93D

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A flight sim can be the most frustrating purchase you'll ever make in your computer life. The promise is tremendous: one of all, for all, is the disappointment — a program that either so-complicates it's impossible to use, or so rudimentary that you fall asleep at the keyboard. If you really want to compare the stars, you've got a shot at tomorrow flying as we found a few of the contenders you can't.

Despite the promise of flight, one of the main problems with a flight simulator is poor controls. Imagine a driving simulator that allowed you to drive a Ferrari. Once you've scoured the gears, the brakes, and the steering, you're going to want to do more than just sit and look at the country scene. Tennis-playing games give you more in a clean, efficient way, from the swing sequence of Out

program, you should also give some thought to what you want to fly. Typically, programs available come with light aircraft, and full-planes. Let us see the extent to fly and unless there is a great deal of added interest you may feel things a bit dull after a while. Light aircraft, on the other hand, can be very exciting at the air but do give you a great sense of achievement when you can control them properly. Usually, full-vehicle simulators tend to concentrate very much on the attack and destroy scenarios, since the aircraft themselves do not offer much in the way of aerobically challenge or landing/takeoff disciplines.

The very best games combine varied flight options, combat positions, realism coupled with control failure, and a pretty landscape to fly over. Find a game like that and you've found one of the most



The 3D window (display) as you control it and, however, control systems include the ability to enable you down engines or to fly, control the wing system, and so on. You'll find many more, among your controls. They are different scenarios and include your extended opportunity for controlling your aircraft.

CRASH LANDING!

Rise to the chase and glory of Sky Hunter.

It is plain, however, things are a little different. First, you're not getting more than jets, tanks, and steering is very slow and there's a change of loss of interest during the lengthy learning curve. Secondly, once you're up in the air, what do you do? Answer: nothing but sky, unless you look down at the ground and producing convincing aerial views of landscape is a really very hard task on a screen.

The way in which flight simulators have evolved these problems determines what sort of program you get and whether you're going to buy it and fly it, or buy it and not fly it.

First, there are the added challenge games. These offer plenty of other varied flying assignments, plus different controls to test out (and to be used in combat situations) to see what is going to be the most interesting. Then there are games that try to overcome the learning problem, either by keeping it simple or by trying to make a mix of it making things more complex and confusing. Finally, and more recently, there are the programs that have tackled the most vexing problem and attempted to enhance the appearance of the ground beneath you, thereby giving you something to land, to look at, and to avoid crashing into. In addition to the style of the

existing entertainment programs, you're likely to buy.

FLIGHT SIMULATOR 2

Softlogic

April 87 \$49.95
IBM PC \$49.95

■ Games (10 hours, Game Library)

Well, there's no doubt about it. When it comes to serious flying, as opposed to combat, this program is deemed the standard by which all other flight simulators are judged. The latest version offers a solid 3D landscape together with 120 separate fly-offer and area-ranging from San Francisco to New York, plus a whole host of other features that any experienced pilot would like to see but not expect to find in a home sim.

The choice of game is important. An simulator tend to be rather similar to fly for the beginner and in addition they obviously move quite a bit faster. The Cosmos, by contrast, is a



The 3D window (display) as you control it and, however, control systems include the ability to enable you down engines or to fly, control the wing system, and so on. You'll find many more, among your controls. They are different scenarios and include your extended opportunity for controlling your aircraft.

So you wanna earn your wings, eh, buddy? Feel the urge to climb into the cockpit and roar off into the empty skies? Then you're in good company — flight sims are amongst the most popular micro applications, but sometimes they'll let you down with a bump. ACE spots the aces...

somebody better believe that the is more than compensated for by the excellent control which allows top-down rates and makes either a more adjustment or a normal control adjustment to the elevator position according to how fast you're up the lugs. This is much closer to the feel of actually flying a small plane than the normal, very coarse control offered by other programs.

The jet is extremely easy to fly, and also rather boring, but you can pull some nice stunts with it without worrying about your life insurance. Best option of all, however, is the flight Bar 1 jet simulation. This is really just the Cosmos with a gun or so, but it's still very enjoyable as you confront the "enemy" on a small, intense landscape. Game points by landing the factories and shooting down the no pilots, each of whom shows different tactics. Don't expect to come out victorious, however, and you're really mastered control of your aircraft.

And that's really what this program is all about — mastering every aspect of flying, from navigation (there are extensive maps and aerial navigation opportunities) in a more environment that includes almost every conceivable variable from cloud height through turbulence to wing flaps. You can even fly under the Golden Gate Bridge, but unless you're a pilot, the program will leave those who perceive and master it with an unmitigated sense of achievement.

Display quality	5
Sound	4
Installation	10
Documentation	7
ACE Rating	9

FALCON

Spaceman Multimedia/Microsoft

Apple Mac \$29.95
IBM PC \$29.95

■ General Dynamics/1-10

This game falls squarely into the 'top-

entirement category of flight sim and comes close to doing for combat simulation what *Flight Simulator 2* does for light aircraft training. The 140-page manual has some coverage of flying techniques but is positively bursting with authoritative details of weapons, air combat maneuvers, and the various military ranks and decorations which rest upon your shoulders in full-armor flight.

What's impressive, however, is that this has not detracted too much from the simulation side of things. There are 12 missions available, pitting you against both airborne and surface opponents, but before you can master these you will have

at hand, which allow you to record the achievements of up to ten players on disk. Success on missions is rewarded by decoration and confirmation of higher rank. Rank is more than just status, however, since it also determines certain flying characteristics and enemy behavior. At 1st Lieutenant level, for example, you get unlimited weapons without having to bother about weight, and the opposition just pits those waiting to be shot at. If you're a Colonel, you'll be awestruck about being captured, stalling, missile attacks, overlanding, blinking out due to high G forces, and a dozen other factors that lesser ranks don't have to contemplate.

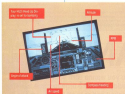
Simulated CRC £24.95 on £14.99 (b)
IBM PC £24.95 (b)
 ■ Hardware simulated: Hughes A1-444, Apache

Helicopters have come a long way since the old days when *Realand* ruled the roosts. Although the British company came up with the excellent *Cyclo* (before did you last see a helicopter leap the last?), the Americans have been hard at it and the Apache shows just what modern 3D technology can stuff under a rotor blade when it sets its mind to it.

Digital Integration leap to fame with their *Figure 1st* simulation, which was the first flight sim to 3-D

interns to give a no-compromise combination of control challenge and simulation authority. It's still an excellent buy but misses out somewhat in the ground detail stakes. Tomahawk, on the other hand, does — and improves — on the tradition established by Durell's venerable *Combat Cycle*, which gave improved wire-frame landscape features and a reasonable degree of light control realism.

And, the instrument display is excellent. Clear, sensible read-out gives all essential information. The landscape is slightly crude but still ambitious and effective in 3-D machines. It would be nice to see the



Tomahawk (left) might also straighten out the 3-D, but, unless the software is good, the 3-D may be more of a hindrance to you as you being misled.

spent at least a couple of days just learning to handle the aircraft. Keeping in the air is a definite in-game, but proper alignment for landing and practice is quite another matter.

The manual approaches training from the practical, rather than the theoretical side, giving you some easy flying tasks to accomplish and also setting up the flight characteristics to make both training and slating impossible for the beginner. Although rather daunting at first, this approach works well and makes the learning process far more immediate.

The display is very attractive. Instrumentation includes most essentials, plus a Threat Warning System (just the MCI) and a detector of HUDs, or Threat Display. These give essential flight and target information by reflecting it off the anti-screen, thereby enabling the pilot to keep an eye on altitude, speed, course and so on without taking his eyes off the action.

There are different HUD's for use when various weapons systems are activated, including guns, various missile types, and bombs. Mastering how use is essential for success in even the simplest missions.

There's a duty roster and a full

"The best thing about this game, however, is the extensive nature of the gameplay. When you start, you'll just be concerned about getting into the air. By the time you finish if you ever do) you're confronted with a very wide range of decisions, many of which have to be made instinctively and immediately, both in the air and on the ground. Should you tail that head-seeking missile with a laser? Should you use the AIM-9, or the AIM-14 missile on that elusive MCI? And, if the unthinkable happens, should you land and risk capture (or even death) or should you try to land your plane back home? Certainly the nearest thing to joining the USAF currently available in a computer flight-sim environment, but more a military than a flying challenge.

- Display quality 4
- Sound 7
- Instrumentation 7
- Documentation 6
- ACE Rating 6

TOMAHAWK

Digital Integration

Apple II-III £24.95 on £14.99 (b)
 Spectrum £24.95 (b)
 C64/128 £24.95 on £14.99 (b)

What the experts said...

ACE visited the British and Western Area Club to see how flight sims measured up in a professional environment. Byron Gales, Operations Manager at the Club and himself an experienced pilot, put SubLogic's *Flight Simulator 2* through its paces and had a lot to say about simulators in general.

"First", he pointed out, "there's a huge difference between simulation flying and the real thing. The difference is down to the method of control. Using keys and joysticks is a far cry from handling an aircraft in the air, so master how you'll be using the simulation."

To prove this point, Byron showed us the Club's own simulator (see separate test) and pointed out how "realistic" it was in performance. "If you can fly the thing accurately," he said, "you can fly anything."

Other "real-world" hazards that a pilot has to cope with include turbulence (not often properly implemented in simulators) and other weather conditions. Tomahawk and *Flight Simulator 2* both include certain weather features but yours' utility to run into a full-scale hurricane while sitting in your armchair.



Byron Gales (left) and Steve Gales (right) flying a Tiger through a thunderstorm. Steve Gales' test runs for our test and discussion report 2 (right column).

your life in real time. And in this respect they are also helpful for instrument flying practice." But what's really needed is a greater degree of visual feedback outside the cockpit. "Your flight suits are an embarrassment of flying," says the professional, and it seems that until we get more ambitious about what into a simulator they will remain a little bit like the driving you can without seeing the birds in the road.

Tomahawk (left) version. There's a really target 3-D view and we're doing really. The terrain gets a little better as you enter the 3-D and the flight will even be taking you into a 3-D view.

game running on an ST or an Amiga, but for time being this will do nicely. Landing paths, pylons, tanks, guns, telescopes, trees, and mountains all come and go with simple but effective rigidity (at its smooth-but-agricultural C2M4 target) on a large map. There are four measures of increasing difficulty and complexity, culminating in an almost impossible game of heights and crosses with the enemy as you each seek to support your ground forces and occupy whole rows of the grid, thereby taking them out of the game while you proceed to the next.

You have guns, missiles, and rockets to fight with and flying options include variable climb (never high),

Racing, and Flight Instructor - a wide range of activities, but it's the training side that really stands out.

The system works by giving you a HUD (Head Up Display) with two rectangles. The movements of the smaller rectangle reflect the aircraft and elevation movement of the player, the larger rectangle shows you what the instructor would do if he were flying the plane instead of you. This means that to find the correct flight path and attitude you simply have to keep your rectangle nested within the instructor's - and provided you're also adjusted your other controls (throttle, flaps etc) correctly all should be well. There's help there too, however, since



Just Flight's own take on a bit of aerodynamics is a nice touch, although the latter requires to be set to a real one. There's a good store option in the cockpit, it is, and it sometimes also includes simulating taking out ground objectives.

day-night flying, instruments and followers. There are four pilot ratings with enemy attack and skill doubling with each increase in player status. Flight options vary to the extent of fog and you may find the space limited by comparison in some departments, but push the machine to its limits and you'll be surprised what you can get out of it. A treat for chopper sharpshooters and a strong contender for the rest of us, though simply watching on-line and using it as an aircraft quiz compares well with coming down the runway.

Display quality	7
Sound	4
Instrumentation	8
Documentation	4
ACE Rating	7

CHUCK YLAGEY'S ADVANCED FLIGHT TRAINER

Electronic Arts

CD-ROM £3.99 on CD-ROM only
IBM PC £24.99 only

■ A production and experimental project, ranging from Superkit-Casualty (with a Madrigal experimental aircraft).

Single file, how nobody's done it before, but this is the first flight sim to make a serious attempt at flight training. AFT offers four modes of operation, AFT Flight, Formation Flying, Airplane

and instructor, while control adjustments are given via text messages at the bottom of the screen.

There are a number of different training options and in each case you can choose either to observe the lesson, or actually to carry it out. The small but informative manual gives essential back-up information, including recovery from stalls, land-outs, landings, and other basic aerial manoeuvres.

Once you've mastered the techniques, you're ready to try Test Flight, putting various planes through their paces and exploring the scenery in the process. Most enjoyment to be had here is from locating one of the seven obstacles scattered scattered round the terrain, presenting obstacles to fly along, options to fly between, and so on.

Rigidity challenges are the aerobically-minded in the Formation Flying section - there are six pre-recorded routines and you can choose and tailor your own. However all these pale into insignificance beside the Race section, which has you tearing along a few feet above the ground, passing through gates in correct sequence. You won't get far in this until you really know your aircraft.

The graphics on AFT aren't best of all for an AFT flight sim, though PC owners may be disappointed by what they get compared to other PC pro-

Could a flight sim save your life?

There's a starting block only in every aircraft pilot's imagination... the plane he (or she) is entering or exiting gets hit by a steep dive. The pilot has a heart attack... Joe (or Joanne) Doe leaps from the seat, clutching their Strike Force Fighter manual and yells "Don't panic! It's not over!" A short while later you're landing safely at Kennedy Airport.

Heh... Supposing Joe Doe really did leap up in front of you like that, starting to be able to save the day, should you get hit on or with it, is what you get out of the game and start seeing your progress?

Well, when Joe dies (or even if the pilot's dead, this gives you see something like the screenshot in front of him, he'll probably recognize the critical location, airspeed indicator, and tachometer. He'll probably have some idea of what he ought to do to get the plane out of a stall (if he has occurred, but whether he can put this into practice is quite another matter.

To start with, he probably won't be that used to watching sudden control and dealing with you (when the plane dives from side to side).

The altitude may be wrongly set, showing height above sea level, which means that if you're crossing a mountain Joe may be landing sooner than he'd like to. If the engines have actually died for some reason he'd likely unlikely to be able to restart them (that sort of thing is always done for you in a flight sim).

Of course, the plane may well be following quite happily. Like cars, planes don't immediately go haywire the moment you take your hand off the steering wheel and at 20000 feet you've got a lot more leeway than you have in a country lane. But even if it is, and even if Joe gets it under control, there remains the problem of what to do next. Most flight sims have you poring around a limited map with lots of visual clues and an easy-to-understand map display. Joe may not have the faintest idea where he is, and even less idea of how to get to where he wants to go... do better start saying your prayers after all, because when it comes to flying, a little knowledge isn't just a dangerous thing, it's fatal!



Caught at a low altitude, Joe may identify the different instruments? There will be very little to do anything but you won't find a flight instructor? In fact, you may not even know what Joe's doing? Just saying you're supposed to do it isn't the same as it is.

grams available. There's a lot to be done in the program, making a good value for money and an excellent starter to those keen to progress to more sophisticated simulators, when hardware is available permits.

Display quality	7
Sound	3
Instrumentation	6
Documentation	4
ACE Rating	7

GLITCHER

Microprose

IBM ST	£24.99 only
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Amiga	£24.99 only

■ Flight instructor

Major '90s UK flight sim has survived quite a reputation for himself in the UK games industry. His company Micro-



Glitcher's distinctive screen titles (shown), actually give you free display options for your cockpit. However, the training might stand, but the more the graphics and what you can do is better training.

press to have a knack for tuning out impressive products with quality packaging and a good dose of healthy gung-ho aggression. However, even as Wild Bill rants you off an mission after mission with the promise of jail time in Colonel and the reward of the Congressional Medal of Honor.

Comanche makes an interesting comparison with Tomcatwark from Digital Integration. The former has all the hallmarks of an American up-market product, with an excellent manual and a lot of feedback throughout the game that helps keep interest from flagging. The versions have a flair of charm, and the structure of the program is cleverly designed with every recognition test, training mission, radio transmissions from base, armament screens and so on. Some screens even have a cassette tape featuring a live tutorial from Major Bill himself. You can!

By contrast, Tomcatwark seems a rather restrained affair, but once you've put down the flight manual and started flying, Comanche shows definite disadvantages over its UK rival. It's easier to fly, but somehow less convincing, and the landscape (although more colourful) is less effective. Instrumentation is as complete but not as neatly laid out and as a result rather more tiring to look at after a long time in the air. There's still a rather clumsy screen shot that regularly flickers across the screen as the Comanche arrives.

These things apart, this program still represents reasonable value for money - but Major Bill has some tough competition in Tomcatwark.

Display quality	5
Sound	4
Instrumentation	5
Documentation	4
ACE Rating	4

STRIKE FORCE HARRIER

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■ Review 0/2/1

The Harrier has been a highly successful aircraft, combining agility with VSTOL capability. It does this by having engines that can be tilted through just under 90 degrees, and although Microsoft's program only allows three tilt positions (horizontal, 45 degrees, and vertical) this feature still makes for some interesting flying techniques.

On the ST this program is a winner for those who want an easy-to-fly, but highly manoeuvrable aircraft with a very large map and straightforward shoot-to-kill, bomb-to-kill combat opportunities. Even the 8-bit versions come out looking pretty good, but obviously they can't match the ST's solid graphics and extremely smooth operation.

There's only one mission - beating the enemy HQ 120 miles from your start position. The map is divided into grid squares and you are provided with four ground sites where you can locate and attack.

To capture the enemy base, you must strike into enemy territory and identify grid squares with normal low-to-high activity. These rights are suitable for use as ground sites, and by landing and setting up ground support you can usually move one of your sites to the new location. By doing this you can make your resources across the map which is far too large for you to traverse without fuel and armament resupplying rules.

There is therefore a certain

strategic element to the game, as well as the fun of flying an agile plane and the challenge of developing tactics to defeat the opposition. Three-up against you are Surface to Air Missiles, Anti-Aircraft Artillery, ground-to-air enemy troops, and enemy aircraft (which are a lot faster than you are). Cliffs and hills are provided to help you feel safer guided and interesting missions.

Although instrumentation is limited,

the sheer playability of this flight sim makes it a good buy for search-and-seizure buffs - particularly on the ST - but don't expect bulky training manuals, total authenticity, or dozens of screenshot-style screens.

Display quality	7
Sound	4
Instrumentation	4
Documentation	4
ACE Rating	6

Simulated Soaring

Nowadays commercial simulators have become so sophisticated that Great Airways, for example, can train people on the ground and then put them straight into a cockpit. Naturally these benefits are just a little beyond the purview of those of us over the average information, but even amateur simulators have a role to play in flight training.

At the Bristol and Weymouth they use a dedicated simulator to practice instrument flying. The model you can see here has all the instrumentation required to simulate flight including navigational data and a system to determine your course. As you can see it has a number of instruments that would be familiar to any home micro-enthusiast who's put in a few flying hours on a good simulator.

For those without simulator experience, the ones to look for in particular are your Artificial Horizon (or Attitude Indicator) which will give you a good idea of whether your banked left or right angle should be worth it, or backwards - essential information if you want to know whether you're heading for the gods or the ground.

Your Airspeed Indicator is just as important - every aircraft has a certain stalling speed which will leave you heading earthwards with alarming rapidity. Chuck Yeager's Advanced Flight Simulator was the only program to give advice on how to get out of stalls, a technique which involves releasing an flow past the wing and therefore lift) to re-establish lift pressure on the stick.

Your 100 or Vertical Speed Indicator will tell you how fast you are gaining or losing height. This is especially important when landing - used in conjunction with speed you can ensure that your landings are smooth as possible. And of course you'll need a map to show you the physical layout of the terrain, it will show flight routes to help you.

Finally, there's your altimeter which, of course, tells you what way you're going, but not if you are one of the complexities of real life, opposed to simulated flying you would know that even instruments are straightforward as your compass and your altimeter would be inaccurate unless properly calibrated to take atmospheric pressure, vibration, and magnetic variations into account. Flight-Gen 2 takes simulators some of these variations, but no other simulator we tested did.

To get yourself a real pilot's license nowadays would cost you about £2000, including at least 30 hours flying time. A good simulator can give you a reasonable idea of the different elements involved in flying, though the actual feel of flying a plane is obviously just a tertiary worry for others.



A Cessna 172 - not a flying hero in planes and wings. Chuck Yeager's Advanced Flight Simulator 2 (right) is a good start. Microsoft's Flight-Gen 2 (left) is a good start. Microsoft's Flight-Gen 2 (left) is a good start. Microsoft's Flight-Gen 2 (left) is a good start.



Strike Force Harrier: ST version. There's a 300-mile radius air simulation round here. Microsoft's Flight-Gen 2 (left) you can see the fuel gauge. You're looking really, really aggressive. One use of instrumentation possibilities, but display options and instrument features are still limited.



Flight-Gen 2: ST version. This is a good start. Microsoft's Flight-Gen 2 (left) is a good start. Microsoft's Flight-Gen 2 (left) is a good start.

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What have Airball, Boulderdash, Mastertronic's £1.99 oldie Molecule Man and the as yet unreleased ST version of Thrust all got in common? Construction sets, that's what. All of them can be redesigned using utilities either given away with the game or sold separately. You want to reposition objects or reshape tunnels? No problem.

If you're feeling more ambitious, systems like Outlaw's Shoot-Em-Up Construction Kit or CRL's 3D Game-Maker aim to give you game creation power without the need for any programming knowledge. Can an affordable system really turn you into a red hot games author overnight?



DIY GAMES?

Construction sets of yore

The idea of taking an existing game and editing room layouts, moving landscape features around and so on and so forth probably went one (in the early days of home computers) was simply no need for this kind of thing. You could create a state-of-the-art game using your machine's built-in basic kits, or the floppy disks, or the tapes of machine-code ROMs in some early systems.

The emergence of an organised software industry and the extensive use in programming standards soon changed all this. By the boom years of 1984 when games like *Ultimate Clash*, *Eight's Law* hit the streets, the cutting edge of games writing went far beyond the average computer user's programming expertise.

Main to illustrate about it however, people no longer to get involved in professionalising games, even a few decent other people games. For the professionals, the growing complexity of commercial games made them frustrating things to explore and fiddle with - and so the games jobs was born. The vast majority of users simply

didn't know how to go it alone like this, but the class was not completely closed. Since *Eight's Law* (which started to appear in the computer press at the height of the Spectrum world's ill-fated heyday, promising the power to completely redesign the game board, retaining into it rather than just a copyright law to boot).

With such an obvious demand from computer users to redesignable games it seems surprising that there should have been so few and so far between. In the States, where the idea of continuing support for games is much stronger, construction sets have long been standard follow-ups to successful arcade titles. In Britain the idea is only just starting to catch on in any sort of a big way, but with the increase in disk ownership and the big emphasis on adding extra value to game (a construction set boots could be set around the corner. Wouldn't you rather have a game redesign tool or two? Why a T-shirt every time a little metal badge?

Real programmers don't use S.E.U.C.K.

It really did look for a while, three years ago

or so, like game creation utilities would soon get professional-quality home-borne programs within everybody's reach. Developers in the adventure world seemed to point the way. *Ultima*, the *Quest* family offered enabling *Quest Adventure* and *Quest* machine games without a byte of code in sight, and the lightning series of programming utilities from *Code* (now defunct) offered hopes of similar decade game tools.



Another *Ultima* (left) badge inventory with a modified editor screen for *Ultima Adventure* (right) and *Code* (right) showing the *Eight's Law* game set in a 3-D wireframe 3-D space.



General Beardslee: see how life-long you can make progress for the classic arch-enemy laser destroyer.

SHOOT-EM-UP CONSTRUCTION KIT

Outlaw Productions, C24 11 6 95 01 8 71 9532

Although styled a construction kit, the utility is a good deal more than that. This game would normally suggest it assumes the barest bones of simple 2D shoot-em-ups and lets you redesign the rest. You can draw your own sprites (animated or not), design game backgrounds and maps, your own sound effects, enemy attack patterns and generally set a whole host of game parameters the way you want them.

The system is nothing if not flexible. It allows for game sections that scroll vertically or horizontally, either at a fixed speed or using a "push scroll" system where the player's ship forces the scroll by trying to move off screen. You can pin sprites to make the large end-of-level enemies so popular in coin-ops. These days, or link a sprite's animation to its direction of movement.

Surprisingly for such a recent product

there's no way of implementing smart bombs, collectible weapons or extra bonuses, nor can you have alternating two-player action. You can't send the player right back to the start of the intelligence when he dies either, though perhaps that's something to be applauded.

These clearly aren't minor omissions given the sort of shoot-em-up most people will want to create, but they shouldn't be allowed to obscure the system's many good points. It's got a consistent feel to use, it's very flexible within the limitations mentioned above, but most important of all it can produce excellent finished products. It would be perfectly possible to produce good budget-standard games on the system, though it remains to be seen how long they'll be marketable as such once all these SFSO's buyers come on stream.



SECC: The classic game Ship and Tank shows what the system's capable of - and makes quite definite use of its advantage.

Was it all pie in the sky? SECC and SECC would have been tested on work-off-tweaking games back in those early days, but neither of them offers the kind of tweakers and scope for ingenuity you need to make your programs stand out these days. Even if everyone else didn't have access to the same utilities too, no SECC or SECC game could really impress with its ingenuity.

The problem has a lot to do with the way the games industry has progressed over the intervening years. The 8-bit games of today drive their host machines harder than ever before, straining against memory and speed limitations. None of the 486 games are truly developed on the machines they're intended to three days. Typically the programmer writes the game code on an 87 or Amiga, transferring it to the target machine (Spectrum, C24 or whatever) only to test new sections or debug old ones. The reason for this approach is simple: modern game-and-modern programming tools won't both fit in your average machine simultaneously.

Furthermore, simply because a game's technicaly adequate doesn't guarantee it's a piece in the shops anymore. When the programmer can't produce a finished file to deliver, he usually has to rely on having an original idea to sell his product. By then very often those games creators aren't implementing really original ideas. The whole point of them is that they turn out games like the ones the professionals are already writing.

To a certain extent any success game creators have can only come to underline how stagnant the market has already become. Even at SECC you can hope to compare with the likes of Jim Stanton's *Snail of Britain* and *Head over Heels* - his game system is technically the superior, and it shows in the end products - but if SECC could handle extra weapons and alternating two-player action you could close on metal set of full-price C24 games quite acceptably still.

Games are moving on, of course. Software prices and potential, scaling one increasing increasingly concerns on the C24, the recent *Dragon Lore* is now a budget title on the Spectrum, and both machines are getting a little over the hill now anyway.

With 16-bit machines the story could be very different, however - at least to a while. 87 and Amiga programs don't necessarily fill the machines' memory, and even if they do there's a quad-bit disk drive handy for storage. While the courts do good software to the new machines it often seems like blood anything that new will sell, and with budget prices starting at around the C24 mark who needs to fill the full-price bucket?

It there isn't an explosion of Amiga or 87 games creators - and there probably won't be - the reason won't be too weak. Quite simply, when the point is selling your system to everyone else once, if you can keep it to yourself and sell three products of the system first and time again?

It that sounds cynical, in general, here is what that programmer has a living to make the same way anyone else has. All programmers and up: recycling that old program to some extent, whether it's sold high



It didn't take construction set for Bethesda's *System Shock* editor, but would you be able to do it having the least experience?

space table and software space (unless of real chunks of game code). Many developers own general-purpose tools like *BlasTech's* *Advanced Air Studio* (ages 16) as a space and game background design utility, and still has strong game-levelling to it. If game-writers don't actually go the whole hog and create their own super-3D/GX systems, it's probably because they can work the way the set-up they're got and still keep the flexibility they want.

Budget builders

Surprisingly enough, construction set have

proved most popular in the country with the big budget houses. Not selling the fruits of the program to you - *Milestone's* work even set utility-produced adventures, and the other major time-saver compressed with the possibilities of arcade game creation - but actually giving game editors away with the game themselves.

Recent examples that spring immediately to mind are *Milestone's* highly playable *Space and Freedom* (\$2.99 release *Nine Cars Construction Set*). It's not hard to see why games like these appeal to budget houses in particular: tells their narrow profit margins

those companies simply aren't asked to give away fancy extras or game materials, but the flip side of the price is more or less free.

As to the programmer time spent making the editor, that too can prove very cheap - for large commercial games the game's editor will probably have to create some kind of level editor to use in designing the built-in scenes, and the editor work involved in making the game itself should well pay off in the extra days of use for the developer.

There's more in the pipeline in the way of editable budget games. *Milestone's* classic 3D acoustic title *Molecule Man* was the first ever such game to have a built-in editor, and is about to get a new lease of life on the flip side of the last *3DAX* game. Also on the horizon is *IT* (there's no release date has been finalized) for the long-awaited conversion, but the current writing remains contains a full-size general editor. CD's tunnels, here we come! ■



IT Shows a great version of a great game within the editing. *Milestone's* *Freedom* built by those in the planet editor, as well as it's worth making it.

3D GAME MAKER (3DGM)

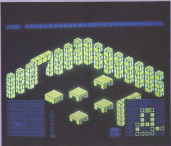
CDL Spectrum \$9.95

More than a construction set but only just, this CDL offering would have been an ancestor to many people's prayers a few years back. Ironically it's an somewhat 3D room-by-room game of the *Right Line* or *Barnes* school - not in the same league, mind you - only redesigned.

The redesigner extends to the object and room background graphics as well as room layout and map, but not to the way objects work in the game behind. You're stuck with the problems rather limited repertoire of killing blocks, bouncing mazes and the like. Giving them a new look is easy, but it'll take more than that to disguise where your finished product came from.

The object of a 3DGM game is always to reach a fixed finishing point area, which limits gameplay to put it mildly. Even compared to *Right Line* the puzzles you can reasonably construct are on the weak side and the screen darkness in a full room is a way behind the state-of-the-art.

None of this is to say that you can't have a lot of fun with 3DGM, but don't expect the finished product to measure up to budget titles like *Chimera* or *Molecule Man*. As for *Freedom* - well, forget it.



3DGM Managing objects in one room of its demo game.

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...Control lets you enter the first room.



...But where is north?



...Who or what is lurking behind these cars?



...Can you access the next tower?



...Destroy that P.I.S. number before!



...Running into here trouble!



...Why is the robot guarding the robot?



...A message on the tape recorder?



...Duke! Escape from here!

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Magnetic Scrolls' *Jinxter* – does it uphold this premier company's reputation as Britain's answer to Infocom, who are fighting back with *Border Zone*? Plus *Deja Vu* on the Commodore 64, a glimpse of games to come with *Shadowgate*, and of games that were with *Suspect*. Forget those pesky aliens and check out some game-worlds where YOU call the tune...

JINXTER

Charming little number from MAGNETIC SCROLLS

JINXTER is only Magnetic Scrolls' third adventure, but it shows you how little variety there is in the adventure genre and the professional end of the market when you realise that they are already representing the number one slot in the UK.

The game boasts the same excellent production as its two predecessors, *Guild of Thieves* and *The Pawn*. It also boasts the usual excellent parsing we've come to expect from Mag Scrolls, but interestingly the designers have removed the GO TO command which allowed you to move to a named location. A pity, but perhaps the map layout in *Jinxter* (which includes several areas of water and other hazards) would have made the command too difficult to implement.

One thing it doesn't have is a LANGUAGE

facility, so if you've got a single disk machine you'll have to swap disks every time you want to **RESTORE** or **SAVE**, which becomes slightly tedious as you'll need to go through the process repeatedly.

The storyline about an imprisoned ex-magic goblin is weak. The *Pawn* was altogether too obscure to be really enjoyable as an adventure. *Guild of Thieves* was much better – a simple treasure hunt with some excellent locations. *Jinxter* has caught the balance just right – it's a treasure hunt again, but with only six items to collect you'll find a lot of lateral thinking and exploration required. You must find five objects and a levered which you then assemble to recover the *Booklet of Tunes*, thereby defeating the power of the wicked Queen Witcha who are draining the tank from

ACE
916
RATED

Complex parsing must come...

There are some rather annoying moments in *Jinxter*, which you only notice because the parser is so good in almost every other respect. These moments involve what you might call 'complex actions'. A typical example of a complex action would be **LIGHT THE CANDLE** in *Jinxter* (the reader:

- 1) Opening the matches,
- 2) Taking the match,
- 3) Striking the match,
- 4) Lighting the candle with the match.

i.e. Four distinct commands. Each of these stages is necessary, as you'll discover if you try **GET MATCH** before you've opened the matches – the program will reply **YOU CANT SEE ANY MATCH HERE**, despite the fact that any sensible person would know where it was.

Another example from *Jinxter* involves opening the car of a motor. You are holding the car open, so you type **OPEN CAR** to which the program replies: **SHOULDNT BE BE HOLDING OUR LITTLE TOOL, IN OUR LITTLE HARD HENRY?** You are holding it, but you have to type **OPEN CAR** with **CAR OPEN**.

Even more annoying is the fuss involving walking through doors. Suppose there is a door in the east. You type **GO EAST** and the program replies **THE DOOR IS CLOSED**, or worse in that effect. So you must type **OPEN DOOR** first.

What we need is a parser that:

– answers **LIGHT THE CANDLE** with **INTA A MATCH!**, and if you reply **YES!** responds with **HOLD-OPEN THE MATCH-BOX, TAKE A MATCH, STRIKE IT, AND LIGHT THE CANDLE.**

– if you want to go east (for example), and all there is a closed-door in the way, opens it for you, unless you through it, and closes it again after you. Come on Mag Scrolls. We know you can do it...

P
I
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R
I
M

Arguments

The design of the game (as mentioned in an earlier ACE article) is innovative in that death is not possible. The hero is a Guardian who opposes whom needed to save your skin and let you carry on with the game, but you won't score maximum points that way. This allows some pretty tough puzzles to challenge the expert without putting off less experienced players and such-in-common to the enjoyment of the game. Getting around *Jinxter* isn't so problem, and as before there are some large numbers of encrypted clues in the accompanying documentation, if you get stuck.

Really there are a couple of minor bugs in the production version – if you've got Windows 1.00 check by typing **VERSION** you'll check

the game by going south to the bar in the pub. You will also have difficulty lighting the candle in the Pigeon. However, neither of these two actions are necessary to complete the game - if you think you need the candle to illuminate darkness, you should find



It's no gift shop for a while, but not even the thought of a candle can help lighting either. (Left) - if you don't get to work, however - for a while at least.

again - as neither of these things is the candle.

There's a rugged, sleek, white, the game that includes a new dimension of puzzle solving. Each of the five characters has magical properties, including the ability to change the weather (which plays a significant role in the game), lower objects, and tag team so that they always return to you if clipped or otherwise removed from your inventory.

Magnetic Scroller and style improve with every game and *Border Zone* has excellent location descriptions and responses. Even third objects sometimes carry a carefully crafted description, as in the bone grinder.

When you do sit on the bench and drink a bit of beer and then you fall off the bench, obviously, you're not in.

Just as evidence Magnetic Scroller reputation, still further and confirms their position as one of the country's leading adventure

houses. If you fancy a bit of Old Mose-bottle in the pub, a swim in the looper, a spot of housecleaning and some superb graffiti into the bargain, then splash out without fear of regret.

SYSTEM: 91 ENCOUNTERS: 88
CHALLENGE: 88 LANDSCAPE: 72
VERDICT: 914

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INFOCOM are really branching out now, so what's the scoop?

Well, about 24, 30, 35. For we had success, passion, and games in *Flamished* (about 50 copies sold). I'd say, because the game was really rather too scary, but definitely a recommendation for opening up a

American businessman, given a document by a wrapped secret agent while on a train journey across the border from Prague. The agent charges you with delivering the document to the contact at the next station. Do this, and the mission will be over.

Chapter Two gives you the control of the

Chapter One is a bit of a double and Chapter Three about average. It's very strange anyway that I didn't think the game was of Johnson's original intention. The real time element doesn't add much to the game - all it means is that when your time runs out, you get caught by dogs or guards or what-

BORDER ZONE

Three-part thrills from INFOCOM/ACTMISION

new game. Then come *Med and Red*. One good thing is hitting the puzzle market, although, additional adventures would doubtless call for. That's indeed shown in as many months - that by a record was beyond that, which definitely gets the ball through the net in all departments - fun, different, and challenging.

And note the company are telling *Border Zone* the new design on the site there has to be a new angle as every *Border Zone* game (these days) is "well" time. In other words, from the moment you start playing there's a little clock in the top right hand corner ticking away. You can PAUSE the action, but as soon as you start up again it ticks into the zone with out further time, even if you don't do a single step.

Border Zone presents the role of an assassination, or at least an attempted one. Whether it succeeds or not is up to you. There are three key characters involved, an American businessman, an American spy, and an American double agent, posing as a top COE executive. Each character lives out their allotted span in one of three game chapters and you can choose of the beginning of the game which chapter you want to play.

Chapter One gives you control of the

same American agent team, Chapter One who keeps from the train after handling over the document and must then manage across the border on foot. In Chapter Three you're the double-agent of the scene of the assassination which you must, quite naturally, try to stop without compromising your personal security or the identity.

You can tackle the chapters in any order. Chapter Two is undoubtedly the best - set in the Right option, storyline, whereas



Who's Number One?

There's a lot of competition between adventure houses to see who can lay claim to the 'Number One Star'. That job is still, in my opinion, occupied by Level 9, but only the Level 9 reputation with largely on their own games. Their insistence on solving with puzzles, graphics, and other fancy ornaments no longer holds them in good stead as games like *Gold of Thrones*, *Beyond Zork*, and *Witchblade* gain up new realms of interactive fiction for larger audiences. Let's hope Level 9's planned game based on the Arthurian legends brings their catalogue up-to-date.

Magnetic Scrolls obviously think they're in the top UK slot. They too rub with Infocom and have winning included one of Infocom's writers (Dave Lanning) as a character in *Shadow*. Their games are certainly improving, but I reckon we need to see a couple more titles and a twenty-twenty improvement in the game design before we can give them top honors.

Infocom don't count, because they're American. But I still wonder how it's that three out of every four Infocom titles are leagues better than anything we've come up with in Britain. The Infocom game is not much better than either Level 9's or Magnetic Scrolls. Their games don't have large worlds either. They certainly don't have graphics. What they do have, though, is superb game design and excellent atmospheres (having said that, though, I was a bit disappointed with *Border Zone*...).

SHADOWGATE

State-of-the-art spooky safari from MIRRORSOFT

THIS is the third game in a series produced by ROOM Software in the UK or Mirrorsoft, and located on the CD by Mirrosoft. The games are good examples of how the increased computing power of a 16-bit machine can take one's Mac to new levels to introduce new gameplay styles.

The game is entirely mouse-controlled. The screen has four main windows displaying inventory screens, current location, available exits, and text messages. This is itself a not entirely revolutionary, but the way the game is played certainly is. For example, if you see something you fancy in the current location - a jewel, perhaps - you don't type GET JEWEL, instead you just click up with the mouse pointer and drag it into

your inventory.

Moving around is controlled in a similarly visual manner - just place your mouse pointer on the door you want to go through, click the button, and you're off. No need either to [BLANK] objects, since placing the pointer on them and double-clicking as the mouse will get you a description in the text window.

For anyone who hasn't played the rest of games before, the visual nature is starting. Not only can you get and drop objects etc by moving them round the display, but you can even lift them up and see if there's anything underneath.

In addition to the visual messages, there is also extensive use of sound. Doors creak open, spectra laugh and glisten at you, dragons burst into flames with a deafening roar - all sampled sounds that add enormously to the enjoyment of playing.

That's the good news, but I'd be misleading you if I left you with the impression that everything's perfect. First, there are very few control options. You can BLANK, GO, SPEAK, OPEN, CLOSE, HIT, COMMAND and OPERATE - and that's all. In some cases the limitation is overcome by the OPERATE command which in effect provides a whole host of different functions, depending on the object to which it is applied. Thus you can use OPERATE to open a lock, lift a weight, pull a lever and so on.

In practice, this means you use OPERATE

more than you RESPOND and by again.

Once you've worked out what to do, doing it is time to no problem. To help you, however, you can select FAST or SLOW (both speed depending on your self-confidence). The puzzles are as ingenious as ever, but the first two chapters feel a certain disappointment to me. In the first, the atmosphere was good, but the link is very. In the second, although there's quite an exciting dog chase to keep you busy to start with, the puzzles were rather dull.

The third chapter is by far the best. It's the bustling city in which the assassination is to take place is a real beauty, it rather liked, letting both the two previous scenarios bleed. The time factor seems better implemented in this section as the seconds tick away before the start rings out, rather like the climax of the scene in the film Top of the Jazz.

Aside from the all Mirrosoft games, a suddenly executed as far as the posing well programming is concerned, but I didn't give me as much as their other releases. I would have preferred a single scenario with more locations and more puzzles. As it is, the implementation of the plot (although original) seems to dilute both the atmosphere, a feeling not adequately compensated for by the good soundtrack of real time.

RELEASE BOX

OS/16 04/86 04/86

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Apple Mac Type announced FEB 88

Other versions to be decided

SYSTEM 70 ENCOUNTERS 42

CHALLENGE 75 LANDSCAPE 75

VERDICT 8/8

RELEASE BOX

Apple Mac 03/86 04/86

OS/16 - single - Apr 87 recorded 166

and everything in sight, which doesn't help gameplay one bit. Naturally the starting visual display and some of screen commands for this, but it's a pity they're not.

Now speed in Shadowgate isn't something original - stop the tracks from unrolling for a moment or the unsuspecting world by grabbing a few magical objects. There is using the OPERATE command alternative in all sorts, such as SAVE or OPEN or, possibly. But with a game system like this to build on, expect some engineering stuff in future.



SHADOWGATE on the Mac. There's a lock hanging in your way, so it's a slight pity you can't see it.

SYSTEM 70 ENCOUNTERS 42
CHALLENGE 80 LANDSCAPE 75
VERDICT 8/8

DEJA VU

MINDSCAPE squeeze 16-bit system into 8-bit.

DEJA VU was the first ROOM game to appear on the Mac and is the crux of the Atari and CD (the which machine it is highly recommended). It's also the first to be played down only on 8-bit machine. How does it look?

The system is the same as first used in Shadowgate (mentioned on this page) and has been designed especially well into the CD. Involving conversations in a house with a unique update you feel proud of a game subject for me. Can you escape and find the hidden in those who have found you?

The screen layout is very similar to the Macintosh version, though the popular window is larger to accommodate the character's lower resolution. The program makes frequent use of screens as you click your way through the house and out into the streets which drive gameplay clean, somewhat, but doesn't use separate quick and the plot is to-down this, why on Mirrosoft game.



DEJA VU on the Mac. It's also the first when the screen is not visible - there's a lot in the way of plot.

More control and quite as interesting as it is on the Mac because of screen, there being a physical keyboard. Furthermore, the manipulation of objects is not as prohibitive.

SYSTEM 80 ENCOUNTERS 42
CHALLENGE 75 LANDSCAPE 62
VERDICT 8/8

was the last ROM game to appear on the Microsoft e-shop available on the Amiga and ST (the other machines it is highly recommended). We also the best to be ported down into an old machine. How does it look?

The system is the same as that used in *Shadowgate* (overseen on the screen and via translated, supposedly well-used) the Cast Recording consciousness in a house with a merge-updates you had passed a prime support in enables. Can you escape out from the hollows there who have forced you?

RELEASE BOX		
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The screen layout is very similar to the Microsoft version, though the graphics window is larger to accommodate the Commodore

tile-based resolution. The program moves beyond the screen as you click your way through the scene and out onto the streets which show gameplay down somewhat, but crosses are surprisingly quiet and the pace is no slower than any Amiga-based game.

Mouse control is quite as clunky as it is on the Mac because of course you're using a joystick instead. Furthermore the manipulation of objects is not as graphically engaging because of the lower resolution and some smaller objects can barely remain visible when they have been double-clicked

Pat's Patch

This month Pat looks at Gilesoft's Professional Adventure Writer.

PAA has already appeared in the Spectrum range of computers and it has recently been converted to the Amstrad machines. There are slight differences in implementation on the two systems, with the Amstrad version running under CP/M. The Amstrad PAA also offers an incredible 65K of space for your adventure - and that's before the 40% file compression obviating the possibility of disk space for more data.

PAA has the helpscreen for new users, set-up to the significance of the player's command capabilities of being individually recognised. The first five letters of each word are scanned and these letters must all be typed unless the programme has automatically detected a certain synonym.

All the real-time commands are built in, but you can create your own, and in addition a file of commands is provided which allows you to create your own automatic routines to recognise and act upon commands such as "throw everything except the bucket down the well". Objects can be normal characters, or containers and those flagged as containers can be carried around and even put inside other containers.

Up to 255 locations can be defined and the descriptions for these can be entered as you type while around 450 messages are available in addition to the 65,000 words. Again the messages can be of any length, only restrictions are the usual memory limitations of your system. Using the Editor's editor it is possible to create random events but this is not to be used to create greater variety, but it should be possible to use most of the PAA space for conditions items.

If you have any experience of the Quill you'll find PAA simple and easy to use. The same basic layout and coding techniques. PAA is much more flexible than Quill and will store commands but you needn't use all the extra it offers.

One major difference between PAA and Quill is the way you feed information to the database. The Professional PAA consists of two parts, a compiler, and an interpreter. Quill put together using a word processor in single MS-DOS files, then passing the compiler which checks input and creates a database. Then the interpreter's scans both the database and creates a runnable game.

Unfortunately, while building it was using your favourite word processor for the simple text editor (supported on the disk), compilation takes ages when files start to get large. It is currently working on a game which occupies 20K unexpanded and it takes several minutes to compile. On the other hand the speed of coding more than makes up for this. It would suggest that you tackle the coding first before writing parts of text. That way the file can be kept fairly short during the coding stages.

As for coding, conditions are split into several tables. Personal which sets on the player's legal wear and general tables, two of which table entries after "Please use" but before the "What now?" prompt, and several non-which are used as substitutes. These allow you to "talk" both within any other table and related up to building. The most obvious use is in creating interactive characters and conversations but

the best is the first one you put your thinking cap on.

Complex event supercedes text, although problem is made for you to patch in your own tables using the Editor - but with all this machinery for text, who needs pictures? At least it's a professional-looking and non-programmer's code needed, in-depth adventures to feel being kept! Big if

the flag.

Almost all the story characters in the game can be addressed as you question them about each other. Sometimes, that love love and that twisted obsession. You will spend time talking in scenes, talking to indicate conversations and entering dialog in personal documents or text as having the usual token-based and unreasonable level-based puzzles.

The stage of the game lies in the complex movements and actions of the different characters, all of which you must keep track of and check out during your investigation. A small map, lots of conversations, must come work, and an excellent atmospheric movie for one of the all-time adventure classics, and drawing of a water following, the PAA has some reasons for all the usual dialogue formats, including Amstrad CPC, but check with Amstrad for compatibility and pricing.

The Pilgrim's Players' Guide to Hitchhikers

Ye Third and Final Parts

Well, you had completed the *Screening Door*, eh? If you've done the *Mass*, then you'll have another common sense to *Get on the*. By same door, on seeing both the *see* and *see* is going to have a fit, but don't go away until you've got a fair share as possible, having a drink of the stage might help.

Now you can repair the *hitch* and of course you did remember the *ball* at *pointed* in the last issue, didn't you?

Well, you're nearly there. Can you bear it? Can you bear the fact that you have almost finished a program for real now... Yes, well, we said the better, eh? Take your holy belongings, wear your gear, and descend through the rain into a brave new dump... or word.

Next month: the last instalment of the *Pilgrim's Players' Guide* to... *The Wars*.

A Pilgrim Retrospective...

Suspect by Infocom

Never based at it, said on Amstrad, spokeswoman when the PAA going to check the price of one of his favourite Infocom games. There just about sure up his treatment the little boy from last issue is available. This is mostly because the game came out at the same time as *Hitchhikers* and was equally helped by its more famous companion.

There's good why because it really isn't excellent example of interactive character programming. There is a large Amstrad Country house, offering to help them last, you discover the ropes of your society last, occupied by the last from your last issue. The police are on the way, the view has unconsciously towards midnight and if you can't find out who did it, then you're for

Next month...

Support's *Shades* Diary returns with more whoppers from the outrageous Microsoft multi-title game, and the *White Wizard* makes another guest appearance with a survey of non-playing games. Don't miss it!

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MORE BANGS FOR LESS BUCKS

Choosing a drum machine involves first assessing your needs, then checking out what's available, and finally trying to get the most 'beats per buck'. It can be a nightmare. *Keith Ansell* raises the tempo and rounds up the competition...

Are you sitting comfortably? Here it begins...

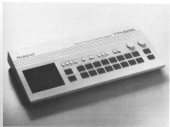
Once upon a time, bands of large, hairy creatures roamed the earth. Those dinosaurs, as they were known, were subject to fits of unbridled violence and rage, and required frequent dosage of hot and spicy tomatoes. The good, beautiful

days of the time were greatly aided by the drummers, and followed them only because they craved tunes which were strongly attractive to the people, and which so other creatures could make.

Then someone had a revolutionary idea: "What if we made a machine that could generate all the notes made by the drummers, but without taking up so much space, without requiring constant proprietary locations, and without the same tendency to run off with our wives and daughters ideas were not looking?" And so was born the concept of the drum machine, or as it is more readily called these days, the Digital Synthesizer Programmer.

The first automatic drum devices were music-driven tape-based organs, which had real instruments controlled by piano-type keys. Their uses followed by the great Willie Nelson organ organs of the thirties, and then, in the sixties, home organs featuring preset rhythm arrangements. Gradually manufacturers realized there was a market for the rhythm units by themselves. *King* and *Roller* were among the first to produce self-contained preset machines featuring, for example, Fostex sounds and lively rhythms.

The first digital machines were developed by *Roger Linn*, sometimes referred to as the 'inventor of the drum machine'. Some of his machines offered remarkably sophisticated features for the time including features such as touch sensitivity, which are still not commonly found in today's machines. Then *Sequential Circuits* introduced the ability to change each note's pitch and level as well as foot with their Drumsticks machine, and B-



Roland TR-602 — 20

Let's avoid devices that are to play yourself, plus 10 great digital guitar and 100 for 40, programmable MIDI synthesizer is available. Including being online, programmable trigger input and a tape auto function.

the **Systems** were one of the leaders in developing compelling drum machines with their SP-12 Drum Computer. Most of today's advances lie in terms of increasing affordability, and the features offered by recent introductions like the **Blocks** would have been viewed by major recording studios a few short years ago.

Who needs a drum?

If you are a drummer, then clearly you can't do without a drum machine at all, although a rhythm programmer can still offer you a lot, particularly if linked to an electronic kit - a wide range of sounds to play with, the ability to create rhythms that would be physically impossible to play, the opportunity to practice in the dead of night without the neighborly coming in, the possibility, above all, perhaps, of huge relaxation to the creative possibilities of your medium. And you no longer need to be concerned about it

maintain checking you to its tempo: a device like the **Cable Music Clock** enables you to debate the tempo of the programmed rhythms from your live playing.

If you are a non-drummer who requires some sort of percussion capability, then there are several possibilities. You may not want some rhythm to lock up your keyboard playing, in which case a preset-only drum machine or a home organ with rhythm parts would be enough. These range from inexpensive to vast, and generally you get what you pay for.

Alternatively, you may want to use rhythm creatively in some recording or performance, and here things get more complex. Dedicated rhythm programmers are well out of some people's price, but other terrific value for money. They have their individual strengths and weaknesses, but all of them suffer from the restriction of a single use display for programming, and all of

them tend to some extent the sounds you can play. If you want to use all the drum voices you are programming at the same time, and have some flexibility in the way you programme them, then you will need a computer and sequencing software; and if you are programming your rhythms in a sequencer then you must depend with the drum machine and opt for a multi-sampling keyboard or sounds to play with. You pay for money on the case of samples, rather a lot of it and take your choice.

Facilities

Most of the obstacles involved of drum machines in the past have been angrier in the word "musical" - affordability, software and memorisable accuracy, lack of feel, etc. (Perhaps that a why manufacturers now seem to crowd the word in their product names. However, many of these criteria are becoming outdated as the technology

MIDI Panel of Experts

Dear ACE MIDI Panel,

First, I think the idea of a panel is a great idea and wish you the best of luck, but do questions have to be about MIDI? What about computers and music in general? For example, I like MIDI quite a bit, but I'd still like to use my computer (a Commodore 64) to make music. What are my options?

James Johnston, Sunny

Howard Ingram replies:

The problem with any new technology is that it is always going to be expensive. Advertising wants will try to get you into believing that you need MIDI but never forget that advertisers are trying to seduce you into buying MIDI in advertising parlance, the word "seduce" can always be substituted for "brainwashing".

To answer your question, I would agree that MIDI is expensive, but if you wait two or three years the second-hand market in MIDI will have expanded, and it will be possible to buy equipment at more affordable prices. In the meantime, it suggests that you consider buying some non-MIDI musical software because, although these may have limitations, they are often excellent introductions to computational music-making.

It's all too easy to believe that if you aren't using the best available equipment then your music will, in some way, be second-rate. That's nonsense. I firmly believe that you create music to the best of your ability with the equipment available to you. Buy what you can afford and explore every possibility of that software.

You are fortunate in owning a **Commodore** because it is probably the best computer to own as regards music-making on a budget. This is due almost entirely to **SD** (the Sound Interface Device chip), which is dedicated solely to musical applications. It is possible to create complex pieces of music using no more than the **Commodore-MIDI** user manual and a series of **POME** instructions. More importantly, the introduction

We throw your questions at the panel - this month Harold Ingram tells you how NOT to get into MIDI!



Here's the man who answered your question, James. He made it to the panel and got some, so here it is for the record.

of **SD** means that there were soon a plethora of software packages for your time and money.

Probably the best non-MIDI software available for the **Com** is **The Music Studio** by Activision. This program requires you to use the joystick to place notes on a musical staff, and then by pressing the "fire" button on the joystick you can hear back to your composition. There are excellent editing facilities which allow you to repeat sections, change entire sections, change keys, and change sounds. The sounds them-

selves are a bit questionable, and so usual the "bater" pre-set sounds nothing like a guitar, but you can even change the pre-sets, adding and subtracting filters, **ADSR** and all of the other parameters. But wait, it gets better: having written your first work, you can print it, complete with a set of lyrics if required.

The only drawback is that **The Music Studio** does require some knowledge of musical notation to begin with, but don't be put off if you don't know a note from a minot, the extensive booklet which accompanies the software will make life easy for you, and you'll be surprised at how quickly you actually pick up the intricacies of musical notation. I recommend **The Music Studio** highly.

I also took the opportunity to visit some local software emporiums, just to see what was really available at the shelves. Two software packages predominated, these being **Music Maker** and **Music Rhythms** - (both from Planet), priced at £1.99 and £2.99. At these prices it's unfair to expect anything special, but I was surprised at the quality of the sound. The **Music Maker** program supposedly turns your computer into a synthesizer (after that we heard that before!) but the main drawback is it using the **Com** keyboard. The sounds are good, but it's difficult to play. **Music Rhythms** is equally limited in versatility, but it's easy to play and some very interesting rhythms can be achieved. I recommend it and at these pocket money prices you can't go for wrong. To help you on your way I've listed the editor's name (**Com** Ed.), and he has agreed that **ACE** will send you both **Music Maker** and **Music Rhythm** - to get you started. Good luck and have fun! ■

Oh no Howard! I'm sure your aim, in future, however, will be giving some free software to everyone who has a letter printed in the **MIDI Panel** section - so if you've got a problem, get it solved, and get some software into the bargain!

admitted it is now possible to obtain reasonable variety of percussion from a drum machine, and the sounds themselves have come a long way from the tinny and overworked effect of the early models.

The facilities offered by modern drum machines vary enormously, but most will allow you to choose between selecting preset patterns or programming your own, and have a number of buttons which can be tapped to play the drum sounds in real-time. Although it used to be thought that these will not respond to velocity it nowadays will now even be played during programmed via a MIDI cable that, say, is triggered or a sequencer. In which case most machines will respond to velocity information if your controlling instrument transmits it.

You could, if you had enough good-motors, pay \$2,000 for a superb machine—something like the M4M SP 1200, for example—but we will assume that that is not on our list. At the other end of the scale, it is now possible to buy good quality solid but less developed machines such as the Yamaha RG21, for around £160 in most shops or even less both the standard version if music magazines. Such machines are still used effectively by many people on night clubs, and it may be worth noting who makes its way to the club.

All the machines mentioned in the boxes give good value for money in one way or another, and other recommendations to facilities will be found on other machines.

The improved way to produce rhythm means these days is by the sequencer/interpreter option. But as the cheapest suitable sequencer cost as much as the used expensive drum machines, you have to be taking it very seriously to follow their path. If you are already into computers, then a software sequencer driving a drum machine is probably the most cost-effective way to produce good quality rhythm sounds, and gives you good flexibility over control. Whatever route you choose, you're sure to find a rhythm programmer who respects conventional that over well depth and drive to your music.

Yamaha RG21

The RG21 is a fairly basic machine, with a standard set of snare, bass, three cymb, open and closed hi-hats, sylvate and tom-toms. It has 44 preset patterns, ranging from standard 16 beat patterns for jazz or rock, to reggae, disco, and Latin American rhythms, and including a selection of fill and rest patterns. As is often the case with presets, these do tend to have a rather inflexible, mechanical feel, and they are best regarded as a basis on which to build, using the fill user-programmable pattern memories.

Programming, either in real or step-time, is somewhat easier than on many machines as the 16 instrument-voice buttons are not required to perform any other function, such as pattern selection. In fact, the usual trade-off between touch and ease of use has been fairly well managed here, with multiple key-presses used to a minimum. The sounds produced by the RG21 are dry and really need treatment via an external reverb unit to be acceptable by the latest stan-

dards. Bear in mind, though, that you can only level off the sounds, or more, as the machine only has stereo outputs. However, some flexibility is provided by the ability to programme different volume and boost levels for each instrument, and if your needs are not too elaborate, and your budget is tight, then the RG21 or its Latin equivalent, the RG2 L, may be worth looking about.

Roland TR826

Moving up a notch in the price scale enables us to consider Roland's latest machine in a long line of successors, the TR826 for £285. A lot of extra facilities become available. The first thing to notice is that we now have thirty on-board sounds to play with, enough to give us a choice of different beat sets and a wide selection of Latin sounds. Up to eight of the voices can be sounded simultaneously, with some fairly severe limitations on grouping, and the sounds themselves are excellent—clear, believable, and with

these features continue to produce great flexibility, limited only by your programming talents.

Patience is a necessary virtue, however, since the key-press sequences required to programme the TR826 are quite difficult to memorise, although the learning curve is shortened considerably by the operation chart supplied with the machine. The beautifully produced but poorly translated manual is decidedly hard going.

What else do you get for the extra outlay? Tape sync capability, programmable effects and form effects which actually work, MIDI output as well as receive (great for programming beat-lines for your synth), and quite a lot more that space does not permit...ah. There is even a section in the manual headed Writing Patterns—how things are lovely!

Alesis HD-16

HD16 brings you what may be the best specification package for under that a grand. It may not be absolutely great as we have been waiting for several months for Alesis' first drum machine, the HD15, to reach the shops. It's quite true before you have given up and bought something else, expect it to have 40 high-quality percussion sounds, 674 16 of which can be assigned to the velocity-sensitive pads and played simultaneously, including the same sound 16 times if you like. Four fully-segregable outputs/100 pattern memories, which can also be used to store instruments, mixing, and panning data for real-time sequencing, tape sync, and 100 song memories are among the other goodies the machine will offer - when it eventually makes its appearance.

Cherish MD6

At a similar price level to the Yamaha, £179.95 to be precise, Cherish MD6 should be arriving in the shops before too long, although it has proved impossible to get hold of one for review. I understand that it will include features not found on many more expensive machines, such as the ability to load ten-cost libraries of alternative sounds into its eight voices, and an integral pad four to enable the MD6

Put The Beat

Some drum machines allow you to play their sounds from external controllers, such as drum pads or electronic drum kits (EDKs). Even for a non-drummer, this can offer great improvement in the dynamic feel imparted to rhythms—stabs sounding on a particular note a very different response in the player than fingers tapping into buttons, and even more so from the installation of a number of programming patterns in step-time. The Chorus SP1 is likely to be the most affordable EDK you could use, at £159.95, including cymbals—and what any the most expensive sampling systems can offer convincing cymbals. Other more established, names include Roland and Simmons, and these products usually consist of the kit itself and a 'brain' which actually produces the sounds, allowing you to synthesise the sound of each instrument.



Chorus SP1... at £159.95

Just the right amount of snare.

Any of the main drum sounds can be routed either through the stereo outputs or through one of the eight separate outputs for individual effects treatment, and all the sounds can be turned up or down by seven semitones, the timing can be programmed to change within patterns, as can the accent level and overall level for each instrument,



Cherish MD6

to be dynamically controlled from Chorus's CPU, and sounds from its illustrated elsewhere in the article.

Add to this its 16-song capacity (the HD16 has four) and separate sound outputs and things look very promising for the MD6. The crucial factor, of course, will be how good its sounds, but as long as the sound is acceptable, the ability to escape from the tyranny of built-in instrument voices should make it a winner at that price. ■



FREDDY HARDEST

Get tough with the Android version

- Access code - 00100
- More sounders can be killed, punched or pushed.
- Robots can be kicked or shot.
- Aliens can be kicked or punched.
- The 88s are dark blue squares and are activated by standing on them and pressing up or down.
- Hanging bars are above gaps that are more than two blocks wide. Press up when on these to lock the robot sounders and robots.
- You can't fall off ledges without dying, so don't do it.
- The red squares are nuclear fuel for the ships. Kick them up.
- Drop the fuel on the squares marked with an 'X', then go to the computer terminal to see which one is being used.

- It is not essential to get the captain code, but you do have to programme the ship to figure again.
- The holes in the passage ways are useful for moving around the base.
- Always check each terminal.
- The four captain codes are: PENIX, ANOAR, ANEXX, BOMAX.
- If you get the captain code wrong when boarding a ship you can try again using a different code.

MARTIN COLES, Derbyshire.



TRICKS 'N' TACTICS

BOBSLEIGH

Bob Sleighem! Wozza plays it ice cool on the slopes...

First, equip yourself with an amateur two-man team. For the first three races make sure you get fitness training for the team until they are super-human. Then train them every other race to keep them at that level.

When you are choosing your turns you should follow these rules: if both an and bc temperatures are below -3 then use type 4; if the air is above zero then use type 1; to between these levels you should use type 2 or 3. 2 will give you more control but there isn't much to choose between their effect.

Crucial starting

The start and early part of the run are the crucial time. Failure to get a maximum straight push start or clipping the ice wall on one of the early corners will cost you a time.

The wobble start is easy enough, but don't get carried away and forget to jump in the bob, because one crash can ruin a whole session. This is particularly true in the first few races when cash is tight and if you don't do well you'll soon be leaving.

On the first few corners you pick up speed quickly and must avoid the wall because at this stage you can literally tie records off your time.

Right on track!

Try to keep to the bottom of the track on berms, using the vertical inner wall as a guide. Don't ride high on the berms

because you risk a crash coming out of them. More likely is that you will set up a pendulum effect that will make control extremely difficult on the following two or three turns.

The medium length turns are the easiest to deal with. The hardest are the very short bobs and long curves. The bobs can throw you off at a crucial moment either entering or leaving a turn, while it's easy to lose concentration on the long turns and let the bob drift just too far up or down.

Winning through

You'll need to win consistently to get enough sponsor's cash to buy the expensive bobs. There appears to be little difference between the two and



four-man varieties, so go for two-man at first because it's cheaper. Once you have an Olympic bob you just need a top three race and break to get into the Olympics at Calgary.

Achieve hi-score mastery with this month's selection of expert hints and tips. *Nebulus*, *Bobsleigh*, *Drifter* and other recent releases yield up their secrets...

THUNDERCATS

Miss out for ever with the infinite lives probe on the C64

Type in and RUN the following:
 100 GAB
 100,0,141,26,4,144,268,241,
 27,4,74,144,261,144,173
 230 GABR,141,26,277,74,23,4
 234 HX (10000) TO 32000: 8888 &
 8888 L,4: 8887

Now enter:

NEW (return)

LOAD (return)

When READY appears, enter:

POKE 1001260 (return)

POKE 1001267 (return)

RUN (return)

The game will now load.

THE HARDER, London.

DRILLER

General tips

1. Activating telephones reduces your travel time around the moon and is advised when you should initially head west to **Topaz**. Once over the hill, activate the lift by firing at the operators watch under the suspended complex and from the rock-turret. Follow the tunnel to complex K4. Destroy the four **blades** to reactivate the telephones.

2. The **jet** is in use of the burglar in the Aquamarine section and the best way to get to the sector is to go west to **Topaz**, over the wall and west again to **Beryl**. Cover the **patrolmen** to disable the vicious **dozers** pointing laser-beams and then set the symbols of **to squares** (including the buildings). Now the doorway to Aquamarine will be revealed.

If you've lost your way on the vast moon of Nitral, these non-machine-specific tips are just what you're looking for. Incentive's very own IAN ANDREW gives us the low down....

3. To gain access to the **Diamond** sector (see map) first set all the large switches in the **Rhodolite**, **Alabaster**, **Opal** and **Quartz** sectors to **down** as the four lights are illuminated. This destroys

the southern wall in **Opal**, allowing access to the moon.

4. To **pass** the game - call up the information screen as this stops the clock.



Drilling

Gameplay

► **Blade** (East of Topaz) - Destroyed by firing at the **blade** 4 times to get a hole to provide the fuel when mining. The system does it for you.

► **Open water** - Use the **jet** to get to the **jet** and then to get to the **jet** to get to the **jet** in **Opal**.

► **Blade** (West of Drilling) - Destroy the **blade** by firing at the **blade** 4 times to get a hole to provide the fuel when mining. The system does it for you.

► **Opal** - There is a **jet** on the large hill.

► **Topaz** - The **jet** is on the hill to the south of the hill.

► **Topaz** (East of Alabaster) - Destroy the **blade** to get a hole to provide the fuel when mining. The system does it for you.

► **Alabaster** - The **jet** is on the ground level.

► **Alabaster** (East of Drilling) - Destroy the **blade** by firing at the **blade** 4 times to get a hole to provide the fuel when mining. The system does it for you.

► **Blade** (East of Alabaster) - Destroy the **blade** by firing at the **blade** 4 times to get a hole to provide the fuel when mining. The system does it for you.

► **Alabaster** - Destroy the **blade** by firing at the **blade** 4 times to get a hole to provide the fuel when mining. The system does it for you.

► **Alabaster** - Destroy the **blade** by firing at the **blade** 4 times to get a hole to provide the fuel when mining. The system does it for you.

TERRORPODS

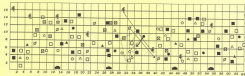
The map and the tips – brought to you by **CHARLEY ALLAN** of Ipswich. Nice one, Charley.

1. Always use your downer on the downer (as up) but, you can then trade your remaining fuel. Park for 05V at 3-0.

2. Going round to the right, trade to enemy satellites, making them identifiable (MIDI) until you reach your start again (3-04:00).

3. While moving around, collect all bits of post-up points. Collect for as much distance as possible.

- | | | | |
|------------------------|-------------------|-------------|------------------------|
| ▲ REMOVED CONTROL | ■ FULL WING | ○ FULL WING | ○ MANIPULATING CONTROL |
| ○ REMOVED CONTROL | ■ REMOVED WING | ○ FULL WING | ○ REMOVED CONTROL |
| ■ FULL WING | ○ REMOVED WING | ○ FULL WING | ○ REMOVED CONTROL |
| ▲ MANIPULATING CONTROL | ○ REMOVED CONTROL | ○ FULL WING | ○ REMOVED CONTROL |



Manufacturing centres

Coordinate	Amount needed to complete	
	Build	Trade
34, 500	300	300
42, 440	300	300
48, 300	400	400
44, 320	500	500
44, 37	300	100
16, 312	300	300

satellites, single modules and mobile TerrorPods.

6. When you finally build the TerrorPod (level 1, this takes about an hour) you will have to create 10 TerrorPods in 8 minutes. Luckily you will be given 10 modules. They probably won't all be in the same screen – use your traps to find them.

NEBULUS

Tower Tumbling with Bob Wade in Hewson's instant classic

To start with you have to learn some general rules. Patience is vital and panic is fatal.

The spinning spiral that enters at intervals can arrive at the most inconvenient of times. Get used to the intervals at which it arrives and wait a distance, lift or stairs where you can easily avoid it. It may seem like you're waiting time but getting knocked off after being ahead will cost you time.

Disappearing blocks are a nuisance. You can guess where some are hidden but the only way to be sure is to find out the hard way and then take care you remember where they are.

When you come through a door always be ready to shoot a ball, but don't panic or you'll end up jumping straight into it. Also try to stay cool if you do get knocked down. It doesn't necessarily

mean you're out and there's usually enough time to re-enter on the Spectrum version, but less time on the 64.

If you are gripping on to a lift by just your feet, don't turn around or you'll slip off. Just use the lift and it will catch you on it.

Tower 1 - Tower of Eyes

There's only one really feature here and that's near the top. You take a lift past a black ball and then appear to have an easy route to a door. Beware, because the first block disappears plunging you straight down to the platform where the ball is waiting to bounce you down.

Tower 3 - Realm of Robots

Go off at the start. For the first time you have to jump over robots as they cycle through their patterns. The first one is at the bottom of the tower and the second one halfway up. You have to jump over the second one and on to a waiting lift.

At the top of the lift there's another robot to

watch under its control of the timing here because the blocks underneath it are convoluted and can take you by surprise.

At the top of the tower are two long spiral walkways. On the first one go through the door at the bottom to take a short cut to the 64. On the second don't use the door as it plunges you downwards on the other side.

At the top of the second spiral, after avoiding the robots, there's a disappearing block that drops you onto a lift. Pause before doing this because otherwise the timing is such that you'll needles straight into a robot.

Tower 3 - Trap of Tricks

A very nasty trap at the start. Go left, shoot the ball, through the door, up the lift, walk right and wait. The game will appear and knock you down in the next level, which was bypassed by the lift. Walk right, block disappears and you can take the lift up.

WIN! WIN! WIN!

Yes, every month Tricks 'N' Tactics gives you the chance to win a load of lovely software. How? Simply by writing in tips, jokes and maps for the games we all enjoy to beat.

This month's biggest prize goes to Charles Alan for his "Tempted Map and Tips, Charley got 568 games for his Amiga, including the monthly classics Beauty Fight, Test Drive, Sappers, Mean and Western Games. But here's not the only winner. Mike

Coster, Praddy Haxford got 60 from Masterkey 2 for his Amiga and the Humdrum for his IBM. The master a copy of Rampage for his IBM.

But look... you only win if you send in tips.

So write to:
TRICKS 'N' TACTICS, ACE
4, CATHEDRAL STREET
BS34 8AF 1 EU

Tower 4 - Slippery Slide

Start right from the wall and jump the few inches as fast as possible before the spinner arrives. Hit the lift and shoot the flashing block to your right. Then proceed to the left, shooting the blocks in your path.

There's a tidy carbon hallway up where the flashing blocks have to be removed. The first is easy but to get the second you proceed to the left, then shooting the first block, shoot the ball and on the far left of the same platform you can shoot the block around the corner.

After the next long lift ride, wait for the lift to go down and then jump the gap to the door. Make sure you jump early or you will land your head on the block above and fall back down onto the lift.

Last heavy trick is at the top. Don't go down the large column of disappearing blocks, jump over them and walk to the far right. Allow the spinner to knock you down and then take the lift to the top.

Tower 5 - Border Path

Take the first lift up to the second platform, the first is outside if you get off. Walk left and shoot the ball. Edge forward until you can shoot the

flashing block round the tower. Then walk forward over the disappearing block and take the lift.

After the next spin, jump to the left, fall onto the first lift, shoot the ball flashing blocks. Take the lift up - you will get knocked off but it doesn't matter to get the height to remove the ceiling gap. Backwards activate the second lift.

Jump left, over the first gap, shoot block to the left, jump back over gap, walk right and down onto the lift. Take the lift up and jump left.

Try to cope with the next platform. Higher up you'll meet the last door in the first spin of stairs and the first door in the second spin. Walk out for two steps that appear just when you're about to deal with a ball.

Tower 6 - Swimmer's Delight

Not much to say about this one, except that there are no disappearing blocks at the bottom, so try anything and everything. And as for the double-spin spin at the top - better it as fast as possible over the blocks and spinning.

Tower 7 - Nasty One

Assessing help for this!

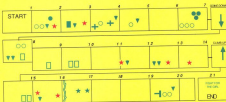
IN THE ARCADES

No contest this month for the arcade tip prize; PATRICK CADONA's beautiful map and detailed tips for DOUBLE DRAGON beat the field by a mile. Match this sort of standard and you could win yourself some real nice software.

1. Simply keep going left.
2. Hit the bottom screen, all the bullets then roll up to the top and the game continues. Don't let the water on the left get away.
3. Use the ladder in all your past games to three levels of your climbing skills.
4. Reverse the jumping systems. This is up to how tall you are, with a standard fit.
5. Don't forget to deal with flying drop ball.
6. Keep going, being sure not to fall onto the sea.

7. Don't touch the door to bubbles in case and then hit them with the ball. Use it to hit them on the platform when the door is up - instantly.
8. Hit the door from under the water. Use the walking to position. Walk out for the flying drop ball.
9. Jump down on to the ledge with all the blocks hit.
10. Hit the water.
11. Jump to the top of your screen!
12. Hit the ground with the ball.
13. Watch out for jumping from the top.
14. Only bother after killing game.

15. Don't touch the door to edge. Put up bubbles to three and 60 levels down.
16. Put up bubbles on the game, another gun generally beat there is dead.
17. Walk out for the game shooting out the wall. All then.
18. Watch out for the space floating in air. Use your regular way.
19. Walk out to the door shooting to the top.
20. To use the gun, hit the sea - instantly the one with the machine gun.
21. Use you and your partner from right to get the sea with.



- NORMAL MAN
- NORMAL + WSP
- ▽ MAN - BASEBALL BAT
- MAN - MACHINE GUN
- ISHABE MAN
- ★ BIG CLAM MAN
- BOSS - KOFU
- ★ GREEN GIANT
- ⊕ MAN - HYDRAULIC

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ACE PINK PAGES

Welcome to the ACE Pink Pages - our regular Buyers' Guides to home computer hardware, software and peripherals. The software and peripherals guides are featured alternately, with the peripherals taking their turn this month. Watch this space in the next issue for the lowdown on 50 games we recommend.

This month's guide is intended to give you the information you need to buy the right hardware and peripherals at the right price. We've listed details of 12 basic machines and their various models, plus consoles; and in the peripherals section we've given the lowdown on peripherals we recommend. Each month we'll be updating the information to keep you informed of the swings and roundabouts of prices and availability.

We've also got the first of our Reader to Reader pages; in here you're able to place your own small ads - free, gratis and for nothing. Is there a better place to sell your machine when you want to upgrade? In Reader to Reader you'll also find Adventure Helpline (a boon to all those stuck in a dark room with a goblin), Pen Pals, and much more.

The Pink Pages are a valuable reference guide to anyone making a computer hardware, software or peripheral purchase, and to those seeking help from or contact with other readers. They're your pages; so use the form on pages 120-121 and get yourself into print.

The ACE buyer's guide is essential reading for anyone who is considering buying a new computer, whether it will be your first ever foray into the micro market, or you hope to upgrade your current system. We've compiled a list of features and specifications for all the models suitable for home use in the shops. Graphics, sound, software availability, prices, bargains... it's all there.

Before buying

Even if a new computer is only a dream at the moment, the Buyer's Guide will make it clear just what's on offer, and help you decide which system is best for you. But before you rush out to the shops there are two things you need to consider carefully.

Firstly, how much you can afford to spend, whether it is cash, hire purchase, or plastic money. Remember to leave yourself a bit of headroom over for software, and if possible, for peripherals. It may only be a couple of months before

you decide you can't afford any longer without a size 0/10, or a motor.

Secondly - and just as important - what do you want to use the computer for? Are you really going to learn to program? Do you simply want to put your home accounts on a computer, or produce the company newsletter? Do you want a 'serious' micro, a games micro, or something that combines a bit of both? Think carefully about these points before you buy, there's nothing worse than being lured into a machine that being lured into suit your purposes.

The ACE Buyer's Guide can't take your mind up for you, but we can give you the facts that will allow you to make a sensible decision.

Where to buy

Basically, you have four choices:

- the high street chain store - (Sears, Currys, Boots, etc.)
- the independent computer specialist shop

- a mail order company
- second hand.

In the high street stores you should get a fair price for your machine, you should also be able to take it away with you immediately. Furthermore, many stores offer attractive 'bundles', giving you lots of extra goodies with the basic machine. But the salesperson behind the counter won't necessarily be very knowledgeable about the systems you wish to choose between. Also, it is not always possible to have an in-depth demonstration of the various machines on display.

In an independent specialist shop, the salesperson could well know the machines better and be able to demonstrate them more fully, but you might have to pay slightly more for the system.

If you buy on mail order, you can't, of course, have the machine immediately and you can't have a demo of it, but you might come

across a cheaper price. If you order your micro through the post, make sure you know exactly what components you are getting before you send off your money, send a covering letter with any money and keep copies of those letters, and keep a note of the cheque/PO number. If possible, stick to a mail order company you know and trust.

Buying a more second hand has advantages other than price. Frequently, the previous owner will be selling software and possibly some peripherals with the machine, so you can start up with a more complete system. Obviously, however, software and addons being sold with the machine will bring up the asking price, so check the price of the individual components too - they may not be the bargain they seem! Second hand micros can be found on offer in the specialist computer magazines, usually in a classified advertising section towards the back. It's a good idea to try to buy from someone who lives reasonably

near you, so that you can see the machine before you part with your money and have a demonstration. Again, before you pay, check what you're getting for your money, and even if you're buying from your best friend, it would be no bad thing to put down in writing what you've paid for what. Remember that you can't come back buying second-hand computers as second-hand cars; you may end up with a dud.

Setting up

Apart from the computer itself, there will be plenty of other things you need to buy in order to get your system up and running. These can all be easily bought together in the excitement of buying the computer, or go through this checklist now - you don't want to spend all Christmas waiting for the shop to open before you can load up your favourite game.

- **Plugs** - most items don't come complete with them. Buy six six-pin, three-lead, four-lead, monitor.
- **Power** - check that the plug has the right fuse in it (normally 3 amp) before you get it home.
- **Leads** - yes, the mono may well work with the television, but it is the correct lead in the packaging, or do you need to buy it separately?
- **Adaptability tested** - if the number of plugs needed comes to

more than six, are you sure that your power points can cope? An adapter will almost certainly be essential, and a listing section (see with three or four plug sockets on it) is a good idea, because there is a Murphy's Law of computing which states that a more will always use more power sockets than you expect.

● **TV splitter** - jolly handy if you're going to use the micro with the television. A TV splitter is a box which fits into the TV socket on the TV itself and will take both the TV input lead and the computer lead. You can then switch between one and the other fairly easily, rather than fumbling blindly behind the television for half an hour when you want to watch EastEnders.

Where to sell up

Custom-made monogamy-based computer desks are for the university affluent only. Basically, don't set the machine up so that the screen faces a window (you won't get it as much if you do). Remember that cables between keyboards/monitors/game controllers/mice are usually too often to be more than six inches away from each other, and that if the keyboard ends up sitting on the floor the cat will decide it as ideal sleeping spot. Don't opt out for (or indeed, anything stronger)

over any of the units, particularly not the keyboard. Don't wave magnets near your data or the drive, and if you choose, don't drop-on-over any of it.

Categories

We've tried to include details of all the salient features of the micros on the market, divided into particular categories.

- **Memory** - this refers to the total amount of Random Access Memory (RAM), not the amount left free to the user.
- **Packaging** - it's worth checking the details here against the price. A more full appears expensive may come really packaged with a monitor, tape deck or disk drive.
- **Disks** - does the machine use data? If so, how much do they hold and how much do they cost? Is the disk drive built-in or external? Are add-on drives available? Is much software available in disk?
- **EEP** - all recommended retail prices we've quoted include VAT.
- **Display** - many monogamy-based more are easily hooked up to a television, and this can be the most convenient and least expensive option. However, all computers (except the games-console) can be connected to a dedicated monitor, which will give you a better picture, and save household arguments if

you plan to use the family TV.

- **Graphics** - Resolution indicates the quality of screen display possible (the higher the figures the better). Pixels size refers to the total number of colours available on the machine. Colours is the number that can be used on screen at any one time. Sprites and Scrolling refer to built-in hardware features (particularly useful for games) rather than effects that can be programmed.
- **Sound** - lets you what kind of chip the computer uses to produce sound, what the speaker quality is like, and whether it can be used with the MDI standard for linking computers and musical instruments.
- **Hardware** - lets you know what the keyboard is like - can you use it for serious purposes?; lets you if it's possible to use a joystick or a mouse; and lists the ports it to which expansion devices can be plugged.
- **Software** - gives you the best idea on the amount and quality of software available for the machine at the moment in the various categories, and also makes a prediction about the level of future support.
- **Buying tips** - guidelines on what the bargains might be and where they might be picked up. Plus information on your rights under guarantee and what to do if the machine breaks down (see below).

Hardware

Acom Archimedes

Models: Archimedes 200, 210 and 210M	Price: 200 no monitor £282.140 200 mono monitor £359.110 200 colour monitor £1031.140 210 no monitor £280.000 210 mono monitor £346.500 210 colour monitor £1170.000 210M no monitor £350.000 210M mono £1070.500 210M colour £1180.000
Package: Keyboard, mouse and drive; keyboard, mouse, drive plus monitor (colour or mono). 210M - M1 denotes inclusion of PC emulator.	
Memory: 200 512K 210 1Mb	
Processor: Acom A10M	
Recommended Retail	

Disks

Format 2.88 mb

Price
Capacity
Software
Add-on drives
Approx 2000
8000 formatted
M on 30-sec
70%

Build:	Yes
Performance: Score/number	
Graphics	
Resolution:	either 640x400 or 640x350 or 640x480 (with optional monitor)
Ports:	4/10
Features:	RAM memory 0-250, 0700-0700 or 10 0700-0710
Display:	No
Monitor output:	Yes - composite video
Monitor supplied:	colour - RGB - yes depends on package (though see below)
Options:	Acom dedicated colour, medium resolution, colour, 10 inch high res, mono
Performance: Score/Scoring/Speed	1 No Yes

Sound

Sound chip:	Custom chip
Speaker quality:	Good
MDI:	Yes
Sound output:	Yes
Channels:	10 or stereo pairs

● **Performance:** 100 best, programme able sound chip. Keyboard/mouse compatibility cheap but poor quality of

Hardware

KEYBOARD: 100 best, programme able sound chip. Keyboard/mouse compatibility cheap but poor quality of

In brief...

The Archimedes is at the cutting edge of micro technology. As such it is not cheap, but does it have the software base of larger-standing machines. It's very exciting, but one to leave to the real enthusiasts for the time being.

BBC Master series

Models: Master 128,
Master Compact

Package:

128 - keyboard plus monitor.
Compact - available in four packages:

- (1) Complete system including keyboard (with integral disk drives, monitor and printer).
- (2) Keyboard/drive only
- (3) Keyboard/drive plus mono monitor
- (4) Keyboard/drive plus colour monitor.

Memory: 64K main RAM
64K always RAM

Processor: 65C12
(6502 compatible)

Recommended Retail

Price	
128	£457.95
Compact	
Entry system	£299.95
Mono system	£457.95
Colour system	£629.95
with printer	£709.45

Disks

Format	
128	5 1/4 inch
Compact	5 1/4 inch

Prices

JOYSTICKS: Double mouse supplied; joystick not supplied

PORTS: 30 401 serial; 4 Centronics compatible parallel; 8 pin mouse; 10 pin 2.5mm stereo jack; 8 pin ear

Capacity	5.25K formatted
128	5.25K formatted
Performance	more available on disc
Price of Blank Discs	£1.00 50 (3) 99
	5000 4 99
5.25 inch drives	yes
Performance	good
Built-in	
128	no
Compact	yes

Graphics

Resolution	640x200 mode 0, 320x200 mode 1 and 0 320x200 mode 2 and 0
Points	16

Colours	modes 0, 1, 3, 4 and 0 have 2-colours modes 1 and 2: 4-colours modes 2 and 3: 8-colours
---------	--

Mode 7 is a "hidden" text and block graphics mode. Modes 0 and 1 are text only.

Performance	none
Graphics	no
Scrolling	no
Display	
TV	yes

Monitor output: Composite video.
Monitor supplied: 128, no.
Compact: yes (see Package above).
Monitor option/cable: dedicated models.

Speakers/facet	no
Compact	average
	low

Sound

Speaker quality	good
Sound output	no
MIDI: 8-pin party interface available	
Channels	4
Performance	good

50-pin FPC expansion port: 128, 0; 401; 402; 4; 5; Centronics-DSC compatible

Software

EXCELING GAME: One game, 2-disc.



Hardware

KEYBOARD: 84 keys plus 10 function keys and 18 key numeric keypad. Standard numeric keys with auto-rotate function.

JOYSTICKS: Two-lead standard interface to digital ports not the usual for joystick. Takes most third party mice.

In brief...

Master series intended at educational/scientific level, with these two machines at the "bottom" end of the range. Games/entertainment not recommended as main use, as leisure software is not always converted to BBC format.

PORTS

128: 3 enhanced Acorn cartridge slots; 4 disk interfaces; 4 Centronics; 4 Centronics-compatible parallel printer; 10440 serial; 4 phone

sockets; 4 50-pin FPC (5-pin MicroVME); 40-pin Centronics under development

CURRENT RELEASES: See above

GAME: One available (ACE Total 675) and an exciting more on the way. Ample if extensive in development.

GRAPHICS: Primitive is enormous, currently a couple of packages in the pipeline.

MIDI: Again, enormous potential. Very little ability as yet, however.

SOFTWARE FORMAT: Disk only

PROMISES: Very good, but not necessarily to games market.

Buylines

BEST BUY PRICE: As 100*

SECOND HAND AVAILABILITY: Not yet

MAINTENANCE: One year's guarantee. Fully-machine - return to dealer.

Compact: disk interface; 4 Centronics-compatible parallel printer; 4 50-pin edge connector expansion phone socket; 4 Centronics video; 4 FPC; 128, 4 parallel/serial

Compact: disk interface; 4 Centronics-compatible parallel printer; 4 50-pin edge connector expansion phone socket; 4 Centronics video; 4 FPC; 128, 4 parallel/serial

Software

EXCELING GAME: good but into business of BBC compatibility

CURRENT RELEASES: steady flow, but not too numerous

PROSPECTS: good for education and science, poor for games

Main profile: in educational/scientific arena; games tend to be either BBC 0 games (and thus configured into ZX Spectrum) or high-end (and necessarily better) versions of BBC 0 titles.

GAME: The Master avoids openly's pace, with much staying back to get back days. The title (good) for educational, but missing situations of BBC's ever-more apparent pace.

GRAPHICS: a few one or two of them outstanding

MIDI: for selection

Console loading: supported only on 128

Buylines

MAINTENANCE: within one year's guarantee, return faulty machines to dealer

BEST BUY PRICE: As 100*

SECOND HAND AVAILABILITY: Limited. Try education magazines as well as computer press.

Both machines are apparently BBC 0 compatible. Compact has built-in disk drive (not on keyboard). Dominates BBC 0 town and mean styling.



■ Sound

Sound chip: none on built-in
Sound output: no
Channels: two
 + **Performance:** basic only. Some third-party sound enhancement modules available.

In brief...

The PCW range was designed as a word processing machine rather than a general purpose computer. Non-word processing software was produced after sales rocketed. Not recommended as a games machine.

■ Hardware

KEYBOARD: includes extra keys for built-in processing functions. Reusable in MS-DOS a substantially improved version.
JOYSTICK/MOUSE: Not supported. Joysticks and mice can be attached



via a separately-bought interface.

PORTS: One expansion port (takes internal serial and Centronics Parallel interfaces) & raster port for bundled printer.
SHARED/FX FACTOR: Low. Only one plug needed. Cables from keyboard to monitor, two cables from monitor to bundled printer.

Disk drives are not "vertically" in monitor casing to right of screen. Short monitor to printer cable means printer must be placed to

left of monitor. Monitor to keyboard cable means keyboard sits naturally 6 inches to a foot in front of monitor.

■ Software

EXISTING BASE: not made for general programs of good quality. Apparent to specialist niche markets.

CURRENT RELEASES: very few.

PROMISES: would be good but to launch in MS-DOS. Future will depend on machine's popularity.

GAMES: Arcade titles are very scarce and, of course, non-existent only. Adventures are slightly more numerous, but again the range is small. A number of business titles available under CP/M, but subject to future release uncertainty.

GRAPHICS: very low but some text- and CAD-type software available.

MUSIC: none — machines not designed to work.

SOFTWARE FORMAT: Disk only. Good for small business applications.

■ Buylines

RECOMMEND: One year's guarantee. Family machines return to dealer.

BEST BUY PRICE: As above. Generally not set below \$1000.

SECOND-HAND AVAILABILITY: **PROMISES:** to MS-DOS and MS-DOS 2.00. MS-DOS has been for several hours (listed as yet).

Apple Macintosh

Models: Macintosh SE
 Macintosh II

Package: Monitor with built-in ego and disk drive, separate keyboard

Memory: 1MB

Processor

SE: Motorola 68000
II: Motorola 68010

Recommended Retail Price
SE: £2,294.25 upwards
II: £4,320.75 upwards

■ Disks

Format: 1.25in
Area: Around 12.50
Capacity: 800K
Software: 40 or 45
Apple disks: Yes
Soft II: Yes

Performance: Fast and reliable. Not made out for OS software that hasn't been thoroughly vetted.

■ Graphics

Resolution:
SE: 512x384
II: 640x480

Palette:
SE: Black and white with color monitor — 16 million
Colors with color monitor: — 4 to 16M

Monitor:
TV: No
Monitor output: integral monitor
Monitor supplied: Built-in
Options:
SE: color-inkjet ready-only
 Apple II-like monochrome or AppleColor II via PDS
II:

Performance:
Series: None
Scrolling: None
Speed: Reasonably fast

■ Sound

Sound chip: Apple (ASIC)
Sound quality: Good
Sound output: Good

MSI: First party interfaces available.
Channels: 2

Performance: Good

■ Hardware

Keyboard: Supplied. SE keys include eg function keys and numeric keypad. Options were a Apple Extended Key Board, with 128 keys.

JOYSTICK/MOUSE: Joystick not supported. High quality mouse/trackball supplied with machine.

Ports:

SE 2: Apple Color II via expansion II II
RECOMMEND: word II External disk drive II 80 pin Easy-Set expansion slot
SE: — 96 pin connector II External sub-assembly
SE RECOMMEND: serial 08.04 0001

■ Software

EXISTING BASE: Wide range of software exists in variety of fields except games.

CURRENT RELEASES: adequate range of OS origin and in the business, or DTP field.

GAMES: very few arcade games, but adventures are more plentiful.

GRAPHICS: lots of interesting software for those involved in DTP publishing.

MUSIC: Very well supported for MS-DOS software — but TV-resolution stuff.

SOFTWARE FORMAT: All software up there on disk.

SOFTWARE LOADING: Disk and soft disk.

PROMISES: Excellent especially in business and DTP.

■ Buylines

BEST BUY PRICE: There isn't much of a discounted market in these, you generally have to pay the list price.

In brief...

A very expensive up-market machine for those keen on desk-top publishing, word systems, and up-market software. If you can afford it, great — but remember that software is very expensive. Games are mostly linked to SE2-drive's adventures (the arcade action software available). Good for MS-DOS music, but be prepared to pay through the nose.

SECOND-HAND AVAILABILITY: Reasonable, but not scarce. Cheap. Check out with a specialist magazine.

RECOMMEND: One year's guarantee. Apple often upgrades — this may also take out to cover cost of repairs after guarantee has expired.



Atari ST

Models: Atari 3205TFM, 1040STF, Mega STs

Package: 3205TFM and 1040STF keyboard with built-in disk drive

Memory:
3205TFM 512K
1040STF 1Mb
Mega ST 2 or 4Mb

Processor:
Motorola 68000

Recommended Retail Price
3205TFM £299.99
1040STF £499.99

Disks

Format 5 1/4 inch
Capacity 500K formatted
(110 Kb drive)
700K (1Mb drive)

Software: only supplied on disk
Price of Ware Disks: about £3.00
Add-on drives: yes
Built-in: yes

Performance: Fast and reliable

Graphics

Resolution: High res 640x400
Medium res 640x200
Low res 320x200

Palette: 256
Colours: monochrome or high res,
4 colours or medium res,
16 colours or

Speaker: Yes
FM: 3205TFM yes
Other models: via T3 module
Monitor output: 30pin monochrome
Monitor supplied: no
Options: dedicated start monitors, 17
inches or 19in, SMPN high
res mono, SC100A, medium res,
colour

Performance: **Graphics:**
Scrolling: **Font:**
good overall
good horizontal

High resolution is only available
on those monitors, medium and
low resolution are only available
on colour monitors or T3s.

Sound

Sound chip: AY-3-8912
Sound output: no
Speakers: yes
Options: 3
Performance: Excellent, enjoyable playing.

Hardware

KEYBOARD: 83 keys including 10
function keys. Full sized keyboard
with numeric dials.

JOYSTICK/MOUSE: Joystick ports
are standard. Two-button mouse
supplied with machine.

In brief...

Excellent as a general
purpose home machine for
games, small business,
and productivity —
it's also the number one
choice for MIDI musicians.
The ST's price could still
give it the edge for artists
over the Amiga.

PORTS: 800 and 5 pin DIN 4
MIDI in 8 pin DIN 4. Audio out 4
Audio in 4. SCSI monitor 4. Video
monitor 4. Commodore port 4. Parallel
disk in hard disk 4. Modem/serial
disk 4. printer 4. cartridge 4 TV

Software

EXISTING BASE: Though on the
low side by 8-bit or PC standards,
the number of ST titles means it's
best supported of the new machines.

CURRENT RELEASES: Most major
software houses cover their range
to ST title and several smaller house-
hold operations in-CD titles.

PROSPECTS: Very bright indeed.
Could soon rival Spectrum and C64
for number of new releases.

GAME: Range of arcade titles will
test and entertain. Though titles
are generally of very high quality.

GRAPHICS: Impressive, with several
first-rate packages on the market.

MUSIC: excellent library companies
producing sound editors, composers,
synths, etc.

SOFTWARE FORMAT: Disk only.

SOFTWARE LOADING: A new
disk can't hold a really large ST program,
so low disk sizes are becoming
increasingly common. The disk-
changing these require you get
reluctant, especially where you've got
to swap disks frequently.

Buylines

WARNING: One year's guarantee.
Return to dealer if faulty.

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Name

Address

Phone (if post)

Computer

Method of payment: ACCESS VISA CHEQUE P.O.

Cred. card no.

Exp. date

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Commodore 64/128

Models: C64, 128, 128D

Package: C64 and 128 keyboard plus C24 tape recorder, plus accessories (according to individual dealers) C128D keyboard plus disk drive.

Memory: C64, C64: C128, 128B, C128D, 128C.

Processor: C64, 6510; 128/128D, 6502 plus 280 for use in CPM mode.

Recommended Retail Price: C64, £159.99; C128, £179.99; C128D £199.99; stand alone, C225.99 with C24, £249.99 with C24 + software C128D £269.99 † according to individual dealers' packages.

Disks

The disk drives are commonly available in the front and the most recent 5.25".
Format: 1.2Mbit
Price: £1.20 (less in bulk)
Capacity: 128K formatted
128K 320K formatted
128K
Software: Securities available on disk
Add-on drives: Yes, including first party units with improved performance
1.2Mbit
A Performance Commodore 128 disk is substantially slow and noisy, 128K means adequate improvement.

Graphics

Resolution: C64 320x200
C128/128D (in 64 or 64 mode), plus 480x320 in 128 mode (80 columns 480 rows)
Palette: 16
Colors: 15
New 480x320 system places more colors, less on number of colors available in any 64 bit screen
Sprites: 17
Monitor output: Yes
Monitor output: 64
Composite video

128/128D: 6502 in 64 column display
Monitor output: 64
Monitor output: 128
C128D: 64
C128: 64
C128D: 64
or suitable 80-column monitor

Performance: 4
Series: 4
Handling: vertical horizontal
Speed: Good for writing and editing, poor otherwise
Workload: writes and editing files proceed well in editing and a normal file manipulation package. This table version table games tend to be programming or spreadsheet oriented and most other titles tend to be oriented towards basic study (i.e. 64).

In brief...

The 64 is an excellent games machine. The 128 and 128D can be configured for business use using the CP/M standard and giving access to a vast range of business and utility software. 64 is a particularly difficult machine to learn programming on due to outdated BASIC.

Sound

Sound chip: 6581 (soundless chip)
Speaker quality: Superior (none)

Monitor output: 64
Monitor output: 128
128D: 64
No, but many third party monitors available

Performance: Yes, particularly for the price. The Commodore is used to be most popular budget mouse computer for both 64 and 128 programming in software.

Hardware

KEYBOARD: Special plastic keys with widely tactile feedback, plus function keys. Control keys arranged very awkward.

KEYBOARD: Precision for the standard package. Mouse not supplied. Commodore 128 mouse available, plus first party manufactured models.

MONITOR: 3 pin/4 pin expansion 4 pin cable 4 pin standard serial 4 connector video C24H 128H 128D 128C 128E 128F 128G 128H 128I 128J 128K 128L 128M 128N 128O 128P 128Q 128R 128S 128T 128U 128V 128W 128X 128Y 128Z 128AA 128AB 128AC 128AD 128AE 128AF 128AG 128AH 128AI 128AJ 128AK 128AL 128AM 128AN 128AO 128AP 128AQ 128AR 128AS 128AT 128AU 128AV 128AW 128AX 128AY 128AZ 128BA 128BB 128BC 128BD 128BE 128BF 128BG 128BH 128BI 128BJ 128BK 128BL 128BM 128BN 128BO 128BP 128BQ 128BR 128BS 128BT 128BU 128BV 128BW 128BX 128BY 128BZ 128CA 128CB 128CC 128CD 128CE 128CF 128CG 128CH 128CI 128CJ 128CK 128CL 128CM 128CN 128CO 128CP 128CQ 128CR 128CS 128CT 128CU 128CV 128CW 128CX 128CY 128CZ 128DA 128DB 128DC 128DD 128DE 128DF 128DG 128DH 128DI 128DJ 128DK 128DL 128DM 128DN 128DO 128DP 128DQ 128DR 128DS 128DT 128DU 128DV 128DW 128DX 128DY 128DZ 128EA 128EB 128EC 128ED 128EE 128EF 128EG 128EH 128EI 128EJ 128EK 128EL 128EM 128EN 128EO 128EP 128EQ 128ER 128ES 128ET 128EU 128EV 128EW 128EX 128EY 128EZ 128FA 128FB 128FC 128FD 128FE 128FF 128FG 128FH 128FI 128FJ 128FK 128FL 128FM 128FN 128FO 128FP 128FQ 128FR 128FS 128FT 128FU 128FV 128FW 128FX 128FY 128FZ 128GA 128GB 128GC 128GD 128GE 128GF 128GG 128GH 128GI 128GJ 128GK 128GL 128GM 128GN 128GO 128GP 128GQ 128GR 128GS 128GT 128GU 128GV 128GW 128GX 128GY 128GZ 128HA 128HB 128HC 128HD 128HE 128HF 128HG 128HH 128HI 128HJ 128HK 128HL 128HM 128HN 128HO 128HP 128HQ 128HR 128HS 128HT 128HU 128HV 128HW 128HX 128HY 128HZ 128IA 128IB 128IC 128ID 128IE 128IF 128IG 128IH 128II 128IJ 128IK 128IL 128IM 128IN 128IO 128IP 128IQ 128IR 128IS 128IT 128IU 128IV 128IW 128IX 128IY 128IZ 128JA 128JB 128JC 128JD 128JE 128JF 128JG 128JH 128JI 128JJ 128JK 128JL 128JM 128JN 128JO 128JP 128JQ 128JR 128JS 128JT 128JU 128JV 128JW 128JX 128JY 128JZ 128KA 128KB 128KC 128KD 128KE 128KF 128KG 128KH 128KI 128KJ 128KK 128KL 128KM 128KN 128KO 128KP 128KQ 128KR 128KS 128KT 128KU 128KV 128KW 128KX 128KY 128KZ 128LA 128LB 128LC 128LD 128LE 128LF 128LG 128LH 128LI 128LJ 128LK 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128RV 128RW 128RX 128RY 128RZ 128SA 128SB 128SC 128SD 128SE 128SF 128SG 128SH 128SI 128SJ 128SK 128SL 128SM 128SN 128SO 128SP 128SQ 128SR 128SS 128ST 128SU 128SV 128SW 128SX 128SY 128SZ 128TA 128TB 128TC 128TD 128TE 128TF 128TG 128TH 128TI 128TJ 128TK 128TL 128TM 128TN 128TO 128TP 128TQ 128TR 128TS 128TT 128TU 128TV 128TW 128TX 128TY 128TZ 128UA 128UB 128UC 128UD 128UE 128UF 128UG 128UH 128UI 128UJ 128UK 128UL 128UM 128UN 128UO 128UP 128UQ 128UR 128US 128UT 128UU 128UV 128UW 128UX 128UY 128UZ 128VA 128VB 128VC 128VD 128VE 128VF 128VG 128VH 128VI 128VJ 128VK 128VL 128VM 128VN 128VO 128VP 128VQ 128VR 128VS 128VT 128VU 128VV 128VW 128VX 128VY 128VZ 128WA 128WB 128WC 128WD 128WE 128WF 128WG 128WH 128WI 128WJ 128WK 128WL 128WM 128WN 128WO 128WP 128WQ 128WR 128WS 128WT 128WU 128WV 128WW 128WX 128WY 128WZ 128XA 128XB 128XC 128XD 128XE 128XF 128XG 128XH 128XI 128XJ 128XK 128XL 128XM 128XN 128XO 128XP 128XQ 128XR 128XS 128XT 128XU 128XV 128XW 128XX 128XY 128XZ 128YA 128YB 128YC 128YD 128YE 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Software bundles £12 for 10 tapes

graphics means that programs can be reasonably sophisticated.

RAM: Good wide range of options are OK, some computers have 800K address available.

SOFTWARE FORMATS: CD-ROM — tape or disk from external dedicated tape deck (CD) or disk drive. CD-ROM — tape from CD or disk from dedicated disk drive.

All Commodore computers require the Commodore File Range from the existing operating software. Some third party software may require its own or a separate format to be used with the computers but this requirement may not be so critical.

SOFTWARE QUALITY: How an object or picture and the resulting text or text as it should be due to observation of the object. Most software produced with full feature routines.

PERSPECTIVE: Supply will certainly

exist, but Commodore games may well not be longer than Spectrum due to direct probability of games from UK.

Buylines

BEST BUY PRICE: 100 days CD-ROM, dating back to before the package can be ordered up for around £1000-£1200. Otherwise, with Commodore's policy of letting the dealer decide their own "best price", it's a case of getting the one you like best.

SECOND HAND AVAILABILITY: Good lot of models. Check small ads in various magazines.

WARRANTIES: Trade guarantee — see machine back to dealer should get straight replacement within 90 days of purchase (at dealer's discretion). No guarantee — see independent repair company.

IBM & compatibles

Disks

Format: Most use 5.25 inch

some very rare models use 3.5 inch

Price: Most under £1.00 to £1.25

around £1.00 to £1.5

Capacity: Almost always 500K formatted

Software: All in disk

Add-in drive: Yes

Built-in: Yes

A programme failure commonly has the disks of course, are interchangeable

Graphics

Graphics are not provided for standard as PC machines, although increasingly most of machines are sold with the necessary add-on boards already installed. There are three common standards, CGA, VGA, and Hercules.

CGA (Color Graphics Adapter)
Resolution: 320x200 low res

Palette: 16x3x32 medium res
some as standard three different colour schemes

Colours: 4 or 16 low res, 16x3x32 high res
CGA is the most common PC graphics standard to colour screens.

EGA (Enhanced Graphics Adapter)
Built-USA graphics modes, plus high resolution frames

Resolution: 640x480

Palette: 16

Colours: 16

Normally fitted as upgrade to basic machine, but comes as standard on some PCs eg. Amstrad PC1640.

Hercules Resolution: 720x480

Colours: Mono only

IBM/compatible or clone PCs.

There are the standard common display standards, measuring performance from the almost all cheap PCs currently in production, but often capable of more. Buying second hand you may well encounter machines with unusual or non-city displays.

Models: 10

Monitor output: Hercules RGB

Monitor supplied: With most packages

Options: Dedicated monitors are

usually supplied or available

to machine. Commonly any

PC will usually.

Sound

Soundchip: None as such — hard

disk speaker installation

Speaker quality: Generally poor

Music output: 16

MP3. Third party interfaces available.

Performance:

First really a machine to be considered in

line of the more recent competitors but



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April

SOFTWARE ROMS: Plus 1 tape using external tape deck. Plus 2 - tape using built-in tape deck. Plus 3 - tape using external recorder. Not supplied and this category does not exist. Not. Most early console titles were available for Plus and Plus 2 (but software needed two more cartridges, two which are for extra levels in the same game).

PERSPECTIVE: New releases will undoubtedly get fewer in number as the strength of the latest machines increases greatly. The plus line will, however, continue to expand for 2 years yet.

Buylines

BEST BUY PRICE: Plus 2 can now be picked up, already at its lowest manufacturing, for a final sale price of all but a lack of around \$35. Can't it do better?

Atari consoles

Models: Atari 2600

Atari XE Video Game Console
Atari XE Game System

Package

2600 console plus software
XE OS: console, software
XE OS: console, joystick, additional keyboard, light gun, software (2 games)

Recommended Retail Price

2600	\$49.99
XE OS	\$79.99
XE OS	\$119.99

Disks

XE only (see Atari II, for details)

Graphics

Resolution: actually 200x160, 380x240
But 60 is considered a mode. Most software is programmed on a res of 160x160

Points: yes
Sprites: yes
TV: yes
Monitor supplied: no
Options: Non-Game System only

Hardware

Comments: Only one of only in the XE Game System. Clearly good quality

OTHER MODELS: All machines sold

In brief...

The Atari range of consoles represents good value in terms of price and volume of software available. But note that the 2600 is strictly a games console while the XE and XGS can both be upgraded to be used as computers.

Plus 2 at £129.99

SECOND HAND AVAILABILITY: Good. Cheap (small) but not without negatives. All the original (single slot) sets are still in good condition. If you're not interested in playing games you can't resist the temptation to buy a good quality, good condition (cheap) Plus 2 for the \$49.99. However, expect any of the original 1000 to be sold for \$100, which is quite a good price for buying a complete system.

MAINTENANCE: An limited budget Systems have a year's guarantee. If they go wrong within the guarantee period, take the machine back to the dealer which sold it to you. The pre-installed Systems (Plus and Plus 2), bought at retail and under guarantee period, contact Service Resources.

numbers from systems.

POINTS: 2600 game console, TV, cartridge slot (100) or 1000, microphone for extra support (100) or 2004

Software

(SEE THE \$499) XE Systems are compatible with all Atari console games.

CURRENT RELEASES: between a bit in production, but not in the same volume as a couple of years ago.

GAMES: Excellent value games abound many adventures.

GRAPHICS: very low

MUSIC: hardly any

SOFTWARE FORMATS: XGS - cartridge only (100) and 1000 cartridge, tape or disk (2 connected)

PERSPECTIVE: Not much better than reasonable. Much depends on what the Classics.

Buylines

BEST BUY PRICE: 2600 when not given a suggested price. Console and System (hard) for consoles in packages listed above otherwise, at \$99.

SECOND HAND AVAILABILITY: Good. Look in computer magazines.

MAINTENANCE: Manufacturer's guarantee. Any problems - return to dealer.

Nintendo

Disks

If that system is available in Japan, using proprietary non-standard Nintendo disks. The format provides greater memory capacity and hence extended versions of some software (e.g. Super Mario Bros II). The system is still considered to be an AT.

Graphics

Display: yes
TV: yes
Monitor options: not yet suggested
Resolution: 260x160
Points: no

Sound

Comments: 1
Performance includes speech synthesis.

Hardware

Points: is 16:16, video is built-in game controller slot. If cartridge slot.

MAINTENANCE: Manufacturer's guarantee.

Additions of light gun and robot make this a suitable machine for younger children. As a true computer, recommended as games console only.

In brief...

Japanese software base not as good as Nintendo's, but what counts is how many titles reach UK. Masteronic have given strong support to machine, so prospects are reasonable.

Software

(SEE THE \$499) XE Systems are compatible with all Atari console games.

CURRENT RELEASES: None

PERSPECTIVE: Good, but lots of support will depend on machine's popularity in UK. Because of the 16:16 to 16:9 conversion rate, Japanese software is likely to contain expensive.

GAMES: good range of arcade-like software. Some arcade adventures.

GRAPHICS: not so good

MUSIC: none

SOFTWARE FORMATS: console, cartridge, tape, disk (not yet available in UK)

Buylines

BEST BUY PRICE: \$49.99

SECOND HAND: Not so good.

MAINTENANCE: Manufacturer's guarantee.

Nintendo Entertainment System

Package: Standard version console, plus game controllers, plus 1 game (Super Mario Brothers) Deluxe version - console, game controller, light gun, PCB card, two games

Recommended Retail Price

Standard model	\$59
Deluxe model	\$159

Sega Master System

Package: console, plus light gun, game controller and 1 game (Pang-O)

Software format

Cassette	no
Cartridge	yes
Smart card	yes

Recommended Retail Price \$59

Disks

Not available.

Graphics

Resolution: 256x192
Points: no
Display: yes
TV: Monitor options: yes

Sound

Comments: 1
Performance: Good sound effects on most games.

Hardware

Quality: 1 game controller, 1 cartridge slot
Features: quality, flat designed for future expansion, has a flip computer recommended as games console only.

Software

(SEE THE \$499) XE Systems are compatible with all Atari console games.

CURRENT RELEASES: not supported by UK manufacturer Masteronic

PERSPECTIVE: good if supported by Tomy and parent company Sega continues.

GAMES: wide selection of arcade titles, generally considered to be of high quality. No adventures. Some of releases normally confined to non-releases of Sega can be played.

GRAPHICS: none

MUSIC: none

Buylines

BEST BUY PRICE: \$49.99

MAINTENANCE: One year's guarantee. Back to dealer if faulty.

In brief...

A reasonable buy if a console is what you want. Interesting, too, because we may see more additions from Japan that give it some power. However, at the moment, nearly all software is Japanese in origin and this is not to everyone's taste. It remains to be seen if it will receive any third-party support.



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PERIPHERALS BUYERS GUIDE

Whichever computer you own, there will come a time when your mind turns to expanding your system. Whether you decide you need to improve on the current set-up, perhaps with a faster data storage medium, or better screen display, or whether you want to add extra features such as a modem or a printer, the list of available peripherals is bewildering.

This ACE buyers guide concentrates on a selection of add-ons: the most popular, the best value for money, the most useful. Check it out before you part with your cash, and you shouldn't be disappointed.

The prices we've quoted here are recommended retail prices including VAT. It's worth noting that many dealers sell add-ons at special offer prices - printers, particularly. Before going out to buy your peripherals, check advertisements in computer magazines or local newspapers for a possible best buy price.

Printers

The number of printers on the market is bewildering, and prices range from £100 to the very latest (ibm) 8010 (£1,000) for heavyweight business use.

The home user really has two choices - between dot matrix printers and those with daisywheels. A dot matrix model/price, well, unfortunately as a matter of fact to make up each letter. Most cheap dot matrix printers use a matrix of five or 11 dot pins to produce the dots - known as 5-pin.

The print quality is acceptable but on some of the very cheap models you may not get five characters to the top of the letters (i.e. and j), for example they are properly aligned below the line of print. Printers using a matrix comprising more pins - usually 24 - give a much better print quality, but inevitably cost more - starting at around £150-£200.

Daisywheels have each available character etched on to a spring steel - the daisywheel that rotates to print each character. Print quality is good but daisywheels are notoriously noisy and slow. Used recently

they have also been expensive.

One other printing technique is thermal transfer - this the printing ribbon is absent, and the print heated, so that the material wax is deposited on to special thermal paper. Print quality tends to be good, and you would be much better off looking at dot matrix or daisywheel models.

Printers also vary in the style of font used in the finished hard copy form. pin-dot matrix printers will print in a simple style which uses six dot dots as far as possible to make up the letter. Known as Pica, if more features, such as bold, emphasis, or proportional type will start to appear, depending on the sophistication of the model. In most letter-quality models, most machines will print in a style called Elite. Again, other type styles may be offered.

Panasonic KXP-1001

Connector Centronics
 Print speed 8 pin dot matrix
 Characters per second 100 cps max
 Draft 100 cps max
 Near letter quality 25 cps max
 Print styles Pica, Elite
 Price £245

Commodore Generally considered an excellent value for money and versatile printer.

Commodore MPS 1300

Connector Centronics
 Print speed 8 pin dot matrix
 Characters per second 100 cps max
 Draft 100 cps max
 Near letter quality 25 cps max
 Print styles Pica, Elite, proportional, emphasis, double underlined, reversed, super and subscript
 Price £250

Centronics 8LP

Connector Centronics and RS 232C
 Print speed 8 pin dot matrix
 Characters per second 100 cps max
 Draft 100 cps max
 Near letter quality 25 cps max
 Print styles Pica, Elite
 Price £250
 Comment Although compact and giving good value for money.

Star ML10

Connector Centronics, RS232C, Commodore

Print speed 8 pin dot matrix

Characters per second 100 cps max
 Draft 100 cps max
 Near letter quality 25 cps max

Print styles Pica, Elite, 14-pin (pins available using printer or serial cartridge), semi-British proportional spacing

Price £275
 Comment Interface for IBM

Centronics 8LP

Connector Centronics and RS 232C
 Print speed 8 pin dot matrix
 Characters per second 100 cps max
 Draft 100 cps max
 Near letter quality 25 cps max
 Print styles Pica, Elite
 Price £250
 Comment Although compact and giving good value for money.

Citizen 1200

Connector Centronics, RS232C and Commodore
 Choose which one offers buying



Print head 8 pin dot matrix

Characters per second 400
dot/s 1/2 cps max
max letter quality 20 cps max

Print styles 10-pin Pica, 12-pin Elite, expanded set, compressed, emulated, double dot/s

Price \$257

Comment Best compact printer giving good value for money.

Amstrad DMP2000

Connector Centronics

Print head 9-pin dot matrix

Characters per second 400
dot/s 1/2 cps max
max letter quality 20 cps

Print styles Pica, Elite, condensed, double-width

Price £158

Comment Good and promising, limited for its DMP range, easily compatible with any computer with standard Centronics interface.

Joysticks

With most of today's games, joysticks can be plugged straight into the Atari standard joystick port on the monitor; notable exceptions being the IBM, single joystick version and Amstrad Spectra-1. For the latter you can either use the joystick supplied with the machine, or connect your own joystick via an interface. It's usually impossible to recommend a particular type or brand of joystick, as choice depends on your personal preferences. Almost certainly though you will be looking for something sturdy and durable, with easily accessed fire buttons, and a position along the directional movements. If you're not handed, check before you buy that the fire buttons aren't designed for right-handers.

Sarnco TAC 5

Connector Atari standard

Fire buttons 2, 2 on base, one on top
Autofire no

Appearance matt black, lightweight, nice positive feel, no slip rubber grips on base

Mechanism microswitches

Price £73.99

Competition Pro 5000

Connector Atari standard

Fire buttons 2 on base only

Autofire no

Appearance two versions, one with silver plastic base so that you can see all the contacts and workings.

Mechanism microswitches

Price £16.49

Quickshot II Turbo

Connector Atari standard

Fire buttons 2 on top or side

Autofire yes

Appearance traditional design with grip-mounted shaft. Rubber buttons on base.

Mechanism microswitches

Price £14.95



Konix Speed King

Connector Atari standard

Fire buttons 2 on base, one on top, 2 on left side, depending on whether you buy a right or left-hand model.

Autofire no

Appearance unusual in design, base is designed to be hand-held only.

Mechanism microswitches

Price 12.99

Cheetah 125 Plus

Connector Atari standard

Fire buttons 2 on top, fire on shaft

Autofire yes

Appearance traditional stick with grip-mounted shaft

Mechanism half switches on shaft, four on base, other switches on base

Price £3.95

MIDI interfaces

The computer can be used to control and store your musical compositions with the aid of a MIDI Musical Instrument Digital Interface connector (five more, the Atari ST, already has MIDI connectors built-in). If you need a third party device, MIDI is a standard form of transmitting music data, mainly between different instruments, one of which can be your computer.



Cheetah

Machine Spectrum

Socket IN, OUT, TBUS

Extra Software Eight track recording, real time or step clock software included

Price £29.95

Operation Good value for money. Compatible with Chess Spectrum drum synth.

XRI Music

Machine Spectrum

Socket IN, OUT, Tally

Extra eight channel OUT operates on 20 pulses per quarter note

Software not provided, but good range available separately

Price £59.95

Comment eight color specific for the Christmas tree.



Datal

Machine Commodore 64

Socket IN, OUT, and Tally

Extra Roland 6YK

Software Not provided, but wide variety of existing software is compatible, including Roland's Advanced Music System

Price £29.95

Comment Cheap for Commodore and supports most software.

C-Link

Machine Commodore 64

Socket IN, OUT and Tally

Extra Software

Software Supertraks package built-in

Price £100 with built-in software, £60 as standard

Comment Arguably the best interface for Commodore, comes loaded with promising professional sequencing facilities.

ElectroMusic Research

Machine Spectrum, Amstrad, CPC, MSX, BBC

Socket IN, OUT, TBUS

Extra Software

Software Good range of software available, including sequencers and patch editors

Price £35 with software

Comment Excellent value equipment, but EMR is one of the few British companies supporting the 8-bit market.

Price £35 with software

Comment Excellent value equipment, but EMR is one of the few British companies supporting the 8-bit market.

Staley's Electric Works

Machine Commodore Amiga

Socket IN, OUT, two TBUS

Extra none

Software none built-in

Price £25.95

Comment software is still scarce on the ground for the Amiga, check out your Staley's Amiga interface at around the same price.

Price £25.95

Comment software is still scarce on the ground for the Amiga, check out your Staley's Amiga interface at around the same price.

Modems

With a modem your computer can access the outside world either sending or receiving data from another computer, or from any number of Bulletin Boards or public databases, such as Prodigy with its home user section Monnet, BBS, or CompuServe.

Along with the modem itself, you'll also need software to interpret the data transmission or response. Some modems are now provided with appropriate software built-in, which is convenient, but makes their use less flexible, so many users need to buy software separately.

Pace Nightingale

Machine any with RS232C interface

Serial rate 120, 300, 600, 1200, 2400, 4800, 9600

Auto features auto-dial, auto

ACE

Collect it!

Missed some earlier issues of ACE? Don't despair. Copies can be dispatched to your letterbox for just £1.50 each (postage free). Look at these highlights.

- ISSUE 1** (Order code A10001)
 A FREE guide containing COMPLETE games worth £175 - (if you're lucky) sent to the ACE and Ocean's 1011182M 1st CD for the Spectrum.
 A Super's Guide describing the ACE at time to time top 99 games.
 A Large colour review of BOB, Bubble Blasts, Garden Impact, Barbarian, Maze and more.
 A Quick Connect? A detailed comparison of the Hercules, Vega and Mini computers and the software available for them.
 A Music Interview and a review of Capricorn's two Cassettes.
 A Great playing tips on Guild of Thieves, Barbarian, Survival, Boulder, Defender of the Crown and more.
 A 500 words paper!

- ISSUE 2** (Order code A12002)
 A FREE score cassette containing the FREE complete levels of the arcade smash BUBBLE BOBBLE. (Data and Spectrum versions)
 A Super's Guide to budget software - 30 top sites listed.
 A News review of 800 1 & 2, SuperJetHead!, Saturn, Omega2000, and more.
 A Detailed playing guides to 2071 and 2074H&H 80, plus games on Treatment 2, Paperboy, Laserblast and others.
 A Feature on recommended printers, 3D graphics and measuring your game-playing skills.

- ISSUE 3** (Order code A12003)
 A Detailed comparison of the Best BT, C84 Amiga and Acorn Archimedes.
 A Comprehensive buyers guide to storage games.
 A Playing guides to Real LEO, Sublighter, Boulderblast, Dory and many more.
 A DigPaint and Deluxe Paint II compared.
 A Music special on sound sampling and the Roland MT-32.
 A Introduction to Play by Mail games.
 A Great Computer Dictionary.
 A Screen Test review on Transmats, Tompkins, Indiana Jones, Nipper 2, Texas, Capricorn America and many others.

- ISSUE 4** (Order code A12004)
 A Super Christmas issue with free 1988 computer user's diary!
 A Game of the Future, An ACE Introduction.
 A Game competitions compared.
 A Review of large range of electronic keyboards.
 A The definitive guide on Defenders, Boulderblast, State of the Day, Buggy Boy, Drive, Dark Starjet and 20 more games.
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 A Pickups for Super Sprint, Gauntlet, Jack the Nipper 2, Hangover, Boulder 1 more.

How to order

Use one of the FREE POST order forms on page 106 (Pink Pages), quoting the relevant order code(s). Or just telephone us on 0458 743117 with your credit card details.

The fabulous ACE binder

(Order code A10000)



Don't just leave your copies lying around to collect the dust. Store them in this superb binder - gleaming black with the logo stamped in gold on the front and spine. Comes complete with wires to hold 12 issues securely. The cost? Just £4.50, post free. Order using the form on page 106.

For nearly 30 months, there is a manufacturer's just dedicated look at the Spectrum, MSX machines and games consoles, which are designed to be used with a TV, are notable exceptions. Overall, you are better off with these models, rather than looking for independent manufacturers' versions. However, you could try Microline, Philips or Tompkins range.

Microline 1431/M23

Hardware: British Spectrum

Screen width: 14"

Connector: RGB, TV, composite

Comments: about

Price: £260

Microline Cub

Hardware: Acorn BT, Amiga

Screen width: 14"

Comments: about

Price: £264.00

Comment: Foster free high resolution graphics available, resolution not included for BT range.

Samsung MD-15520

Hardware: IBM PC plus

Screen width: 12"

Comments: more green, amber or paper white available

Price: £90

Comment: Particularly inexpensive mono monitor for PCs

Samsung GD-1454W

Hardware: IBM PC with VGA, only with RGB cable, Commodore 128i available, TTL, composite

Screen width: 14"

Comments: about

Price: £260

Mice

AMS AMX MK III

Mouse

Buttons: 3

Hardware: (price includes mouse)

Spectrum 486K, 640K, 128K

Commodore 64, 128, 512K (three)

AT/XT (three)

Amstrad CPC: AMX 48 (128K),

512K (128K), 1024K (128K), 1024K (1024K)

without mouse (24.95) Max (steering wheel) (without mouse) (21.95)

PC and compatibles: Freedom (219)

12 (18.95)

MSX: Blue Press (279.99) Blue/

Edna (without mouse) (24.95)

Support (279.99) Max (without mouse) (24.95)

Price generally only in conjunction with software (about). CD mouse can be post-exchanged for MK III mouse for £29.95.

Comment: Of all mice, probably has the widest range of compatible software, covering all DTP and 3D graphics.

Kempston

Hardware: Spectrum,

Amstrad/CPC, PC, IBM PC and compatibles

Buttons: 2

Hardware: Spectrum Turbo

(24.95) Graphics for (25.95)

Amiga (steering environment) for (24.1 209.95)

PC/XT: AT Studio (209.95)

Amiga: Free Wheel (209.95) Plus (209.95), The Classic Publisher (274.95), Amiga (274.95)

Price: about 1000

Price: about 1000

Price: about 1000

Price: about 1000

Comment: excellent packaging in Amiga to accompany DTP mouse

Widgets

Graphic tablets

Good to add drawing graphics, charts, etc. on-screen. The tablet is a pad which takes the place of the keyboard, mouse, etc. for input. By drawing directly on to the tablet with a stylus, the image is reproduced on-screen. A graphic tablet can give you detailed screen images depending on the tablet's resolution - because of the flexibility of drawing on a horizontal surface, you can use place drawings on the tablet and trace and zoom with the digitizer to produce screen copies. (Contact 0756-994498 for finding a new electronic graphics board at 100% for the BT and Amiga 1040-85).

Memory expansion

RAM expansion for older 8-bit machines used to be a popular add-on, particularly for programming. Now with the Spectrum, Commodore and Amstrad machines, it's being available in 128K configurations, the attention has turned to upgrading to 640 machines to one megabyte capacities. Commodore (2028) 175000 offers a 128K expansion to the Amiga, while Amiga (2076 50004) offers a similar pack for the 500BT 640K. Commodore Computing (2070 1444) also offer other memory upgrades.

Digitisers

A digitiser is a device which will enable you to transfer images seen through the video 'camera' on to the computer screen. The image is scanned and each element is reproduced digitally on the video. Depending on the digitiser, the picture on-screen can then be magnified, or colour added, to grayscale or faster degree. Video Systems 20-884 1002 produces a digitiser for the Amiga BT and Amiga 64 at £24.95 and £180 respectively.

Lightpens

Used mostly for graphical applications, a lightpen is a device with which you're directly on to the monitor screen to draw images. Most lightpens come complete with compatible graphics software, so

THE BLITTER END...

LUCKY BLITTERS

We topped our very first ACE PUZZLE (our ACE quiz) with the great ACE PUZZLE. Our ACE quiz was from issue 5, it finally came (Poking your nose into Lucky winners took some doing — they were just 10,000 entries) — but you're not out of it. The first runner-up was A WALKER OF WINDSOR, BARBARA HILL, 548 of Southampton, 5, 5MORNING of Gendry and 3 BARON of Kinky in Ketchikan.

Note: Each of these are no fortunate people with an Amiga 500, a TV monitor and four pieces of software. But the really incredibly fortunate guy is GIBBY MAHON (50000) of Boston, who wins an AM500, 80 pieces of software and a 1991 colour monitor.

Control...

The ACE crew's plans go to the Grand 4-Wheeler Aerobics Club for their invaluable help on the issues flight simulator buyer's guide. Byron and Kevin, take a bow if you fancy learning to fly and you're within striking distance of Grand Airport, why not give the club a ring on Lutetiae (02762) 25447.

Oops...

No Blitter End would be quite complete without a decent ring-size OOPS, and the minor-league footballer in the frozen dairy's phone list hardly counts. Now he has lost issue 5's 'Trotter' Tactics steps into the breach with a dandy date statement in Matt Donnelly's wonderful Remarque style. The problem was with that number 2056 in line 100 — it should have been 205 instead — and was very definitely our OOPS rather than Matt's.

Eat your words...

What kind of month has it been this month? An eating sort of month, that's what. Alan Ford and Boris wonderful helping of prose — with tumble you to follow — the ACE offices were flooded with pots of people chowing down. Prosa of those weeks Pizmas folk eating a rather fancy cake at their birthday party, prosa of those even wackier Cascade people in turgid prose going to eat real or fake, and wackier of all, well there is this one of Evesham Mores from Richard Austin tucking into his food. Now we at the ACE offices are rather partial to the odd fat now and then — who isn't? — but having an AM500 for others does seem a little strange.



Retract your words!

If you really want to know what sort of a month it's been, it's taken a legal suit of one. What with the rather surprising contents of the Video Recordings Act, the oddish subject of inter-library inquiries raised by Telecomsoft, a Newton and the fascinating prospect of Mas-

teronic junk Eodemasters for the rather exotic sort of inquisitiveness, we've hardly been able to get through the door for the crowd of interested friends at the ACE office.

Worse still, the regular readers have turned their attention on ACE staff here. These highly artistic Quater people have written us a capital letter over our use of the word PAINTBOX to mean a formatted art package. PAINTBOX, it appears, is a registered trademark of Quater (no 1 000 007) to be precise and they'd like us to stop using it in a generic sense, but pronto.

Now with respect we think the horse has probably already bolted here: after all, 'paintbox' may not quite fit in the same league as 'horse' or 'ferris' but a lot of people do use it as a general term. Still, Quater feel pretty strongly about it, and we don't so we're happy to oblige. Unfortunately the letter arrived too late to change the references in published in the south of pages. There's another problem, though: what are we going to call the things now, for goodness sake? Answers on a postcard please.

PHONE NUMBERS

Two-look-ups in the ACE 1988 Diary — we go the phone numbers of Palace Software and Proton-ising. The correct number for PALACE is 01-275 0751. Don't ring the Proton number in the Diary — that will get you the European Sales Office. For FREEBIRD ring 01-621 0366.

Next month...

Get another sparkling issue of ACE, will be selling the shelves, on February 4th. As well as all the juicy regulars we'll have:

- Are GAMES of the FUTURE being held back by the CD32 OPS?
- BRAIN GAMES — the complete low-down on all the games that make you think, and what the experts think of them.
- GRAPHICS — part 2 of our GEM series.
- Software houses... who's making the BIG BUCKS?

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There are no random events in **XOR**'s labyrinthine palace and there is a premium on hand-eye coordination. You have all the time in the world to work out the precise nature of the hazards you encounter. Logical thinking, strategy and tactical problem solving are all part of the **XOR** experience. And **XOR** is not simply about finding solutions. If you can solve the entire puzzle (25 levels plus an encrypted anagram), you qualify to be a member of the **CHIEF** of **XOR**, with a certificate and a badge to prove it.

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- 13 graded reinitialising mazes
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	Disk	£12.95
BBC	Disk	£12.95
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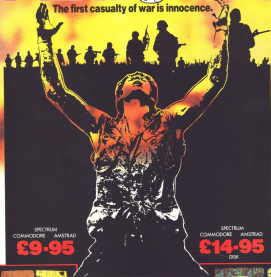
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